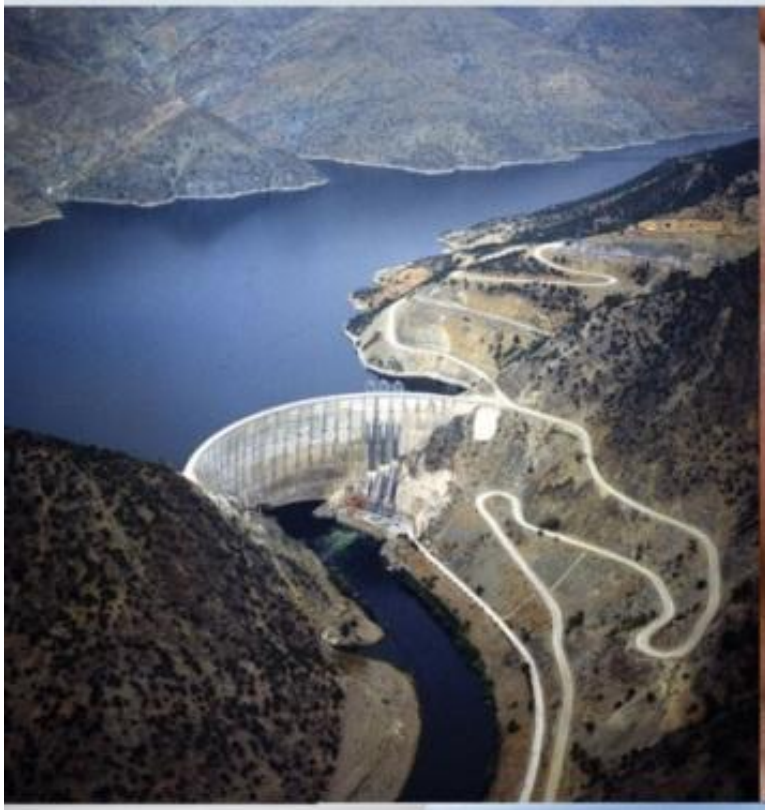


ORSAM WATER BULLETIN

Weekly Bulletin by ORSAM Water Research Programme

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





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❖ Turkey: Country's Southeast Region Facing a Looming Water Crisis

As the land between the Tigris and Euphrates rivers, Turkey's southeast region appears to be rich with water resources. But a new study indicates that the reality might be quite different. From a release about the study, issued by NASA and the University of California, Irvine:

> Scientists at the University of California, Irvine; NASA's Goddard Space Flight Center in Greenbelt, Md.; and the National Center for Atmospheric Research in Boulder, Colo., found during a seven-year period beginning in 2003 that parts of Turkey, Syria, Iraq and Iran along the Tigris and Euphrates river basins lost 117 million acre feet (144 cubic kilometers) of total stored freshwater. That is almost the amount of water in the Dead Sea. The researchers attribute about 60 percent of the loss to pumping of groundwater from underground reservoirs.
>
> The findings, to be published Friday, Feb. 15, in the journal Water Resources Research, are the result of one of the first comprehensive hydrological assessments of the entire Tigris-Euphrates-Western Iran region. Because obtaining ground-based data in the area is difficult, satellite data, such as those from NASA's twin Gravity Recovery and Climate Experiment (GRACE) satellites, are essential. GRACE is providing a global picture of water storage trends and is invaluable when hydrologic observations are not routinely collected or shared beyond political boundaries.
>
> "GRACE data show an alarming rate of decrease in total water storage in the Tigris and Euphrates river basins, which currently have the second fastest rate of groundwater storage loss on Earth, after India," said Jay Famiglietti, principal investigator of the study and a hydrologist and professor at UC Irvine. "The rate was especially striking after the 2007 drought. Meanwhile, demand for freshwater continues to rise, and the region does not coordinate its water management because of different interpretations of international laws."
>
> Along with declining supplies, another concern for the region is the declining quality of the water. In southern Iraq, for example, the declining flow of the Tigris and Euphrates -- mostly because of Turkish and Syrian dam projects -- has allowed for ocean water to infiltrate the rivers, a development that could threaten local agriculture. (Turkey is also dealing with salinity issues, but because of using too much water.)

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As the NASA study points out, the backdrop to this looming water shortage is the fact that the countries involved -- namely, Turkey, Syria and Iraq -- have never really come to an agreement on how to share their water resources. Considering everything else these three countries arefighting over right now, it's hard to imagine them working out this difficult issue anytime soon.

"Turkey: Country's Southeast Region Facing a Looming Water Crisis", 13/02/2013, online at: http://www.eurasianet.org/node/66552

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❖ Somaliland: Turkey to Develop Water Infrastructure in Sahil Region

Somaliland Minister of Energy, Water and Mineral Resources Hon Hussein Abdi Duale accompanied by elders from Sahil region earlier this week received a delegation from Turkey.

Speaking to reporter at the V.I.P lounge the minister of Energy H on Hussein Abdi Duale the members visiting Turkish delegation are from the Turkish water and mineral resources ministry are in the country to access and facilitate the implementation of several water projects.

The Turkish team will be working in cooperation with the water authority of coastal municipalities to solve and limit these existing problems," Hon Duale stated.

The Turkish team is expected to start work in the coming few days as they have brought with them all the necessary equipment for the work," Hon Duale added

The minister of Energy told reporters" The Turkish team will help set up a sustainable water delivery system and also dig more dams for drinking water in remote parts of Sahil region,.

The diversity of TIKA's projects has allowed the agency to not only serve as an effective manager of Turkey's development aid but to also become an important tool of Turkish public diplomacy, added Hon Duale.

Turkey believes that the water projects once finished will create a new momentum for an "accelerated", "sustained", "and inclusive" and "equitable" economic development in Somaliland, said the head of the Turkish team.

The Head Of the Turkish team stated In this regard, Turkey is committed, ready and willing to do its part in assisting the development process in Somaliland.

"Somaliland: Turkey to Develop Water Infrastructure in Sahil Region", 16/02/2013, online at: http://somalilandpress.com/somaliland-turkey-to-develop-water-infrastructure-in-sahil-region-39937

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❖ Middle East Loses Freshwater Reserves Size Of Dead Sea In 7 Years

The Middle East is headed towards a water shortage crisis, as NASA satellites show that reserves the size of the Dead Sea have been depleted in just seven years, largely due to well-drilling.

Newly-obtained results show that 144 cubic kilometres of freshwater – a volume nearly equivalent to that of the Dead Sea or Lake Tahoe – had been removed from the ground in the area that encompasses Turkey, Iran, Iraq and Syria between 2003 and 2009.

"That's enough water to meet the needs of tens of millions to more than a hundred million people in the region each year, depending on regional water use standards and availability," said Jay Famiglietti, the UC Irvine professor who led the team who made the findings, which are due to be published on Friday in Water Resources Reasearch magazine.

While 40 percent of the decline is in the soil and surface water, the decrease in groundwater, caused by human actions, is responsible for 90 cubic kilometers of the shortfall.

"Satellite data shows an alarming rate of decrease in total water storage in the Tigris and Euphrates river basins, which currently have the second fastest rate of groundwater storage loss on Earth, after India," said Famiglietti.

The study was made possible by the US space agency's Gravity Recovery and Climate Experiment (GRACE) satellites. The two identical vessels measure miniscule changes in the planet's gravity through the variations in distance between them as they circle the Earth, their positions influenced by the varying mass of the water reserves.

The research team said the depletion was caused by poor water management, combined with unfavorable climate conditions.

A devastating 2007 drought in the area not only caused depletions of surface water, which have still not been compensated, but also forced Iraqi authorities to order the drilling of more than 1,000 water wells. The actual number of wells drilled is likely to be much higher, as official statistics in the region are often patchy.

"That decline in stream flow put a lot of pressure on northern Iraq," said Kate Voss, another study author. "Both the UN and anecdotal reports from area residents note that once stream flow declined, this northern region of Iraq had to switch to groundwater."

At the time, the country was at the height of a deadly sectarian conflict.

"In an already fragile social, economic and political environment, this did not help the situation," said Voss.

Last year's authoritative Global Water Security report, produced by US intelligence agencies, marked the Middle East, naturally the driest region in the world alongside North Africa, as the area most vulnerable to water shortages, saying the situation was exacerbated by a lack of legal agreements and political instability.

"They just do not have that much water to begin with, and they're in a part of the world that will be experiencing less rainfall with climate change," Famiglietti said. "Those dry areas are getting dryer. Demand for freshwater continues to rise, and the region does not coordinate its water management because of different interpretations of international laws."

Turkey, whose territory houses the headwaters of the region's two major rivers, Tigris and Euphrates, enjoys a strained relationship with Syria and Iraq, the countries further downstream, and has systematically diverted water for its irrigation, which is frequently inefficient (throughout the Middle East).

Meanwhile, the World Bank predicts that water demand in the region will rise by 60 percent by 2045.

Groundwater has made up the shortage so far but it is being extracted at much faster rates than it is replaced.

"Groundwater is like your savings account," said Matt Rodell, another study author. "It's okay to draw it down when you need it, but if it's not replenished, eventually it will be gone."

"Middle East Loses Freshwater Reserves Size Of Dead Sea In 7 Years", 14/01/2013, online at: http://www.eurasiareview.com/14022013-middle-east-loses-freshwater-reserves-size-of-dead-sea-in-7-years/

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❖ Middle East lost a Dead Sea's worth of water, study finds

Freshwater resources in the water-stressed Middle East are rapidly declining at a time when global climate change is projected to make the region even drier, scientists report in a new study.

Between 2003 and 2009, parts of Turkey, Syria, Iraq, and Iran along the Tigris and Euphrates river basins lost 117 million acre feet of stored water, according to gravity measurements taken by a pair of wedge-shaped satellites. That's nearly the equivalent of all the water in the Dead Sea.

"It is a pretty big water loss," Jay Famiglietti, a hydrologist at the University of California Irvine, told NBC News. "And (the Middle East) is right up there with some of the most water-stressed regions of the world."

Since ground-based data on water usage in the Middle East is difficult to obtain, Famiglietti and colleagues used NASA'sGravity Recovery and Satellite Experiment (GRACE) to understand how much water mass moved out of the region.

Then, using satellite images of changes in lake and reservoir water levels, the researchers accounted for about a fifth of the water loss. Computer models of soil moisture and snowpack drying accounted for another fifth. The rest was due to groundwater pumping, primarily for irrigation purposes, Famiglietti said.

Groundwater pumping increased during 2007, when the region experienced a drought, which is a normal response to dwindling surface water supplies, he noted. Such droughts, he added, are expected to increase in the future in response to global climate change.

"So, it is probably a pretty good idea for us to begin thinking about managing the available water resources more carefully, thinking about how to sustain them for the long term," Famiglietti said.

In particular, he said the region needs to begin to pay closer attention to groundwater. The study indicates groundwater withdrawals are high, but what is unclear is how much water is actually in the ground.

Sandra Postel is director of the Global Water Policy Project, which promotes the preservation and sustainable use of freshwater. In an email to NBC News, she said the best opportunity for the Middle East is joint management of shared rivers and aquifers.

"Because water flows across and under political boundaries, it can be used over and over again if managed effectively," she said. "In this way water use is optimized to create greater overall benefits

for all parties. If those benefits are then shared equitably among all the parties, water can be a force for peace and trust-building."

Water management in the Middle East is tricky, noted Katalyn Voss, lead author of the paper and a water policy fellow at the Center for Hydrologic Modeling. Turkey has jurisdiction over the Tigris and Euphrates headwaters and controls how much water flows downstream to Syria, Iran, and Iraq. Turkey's control of water distribution to the adjacent countries has already caused tension. For example, during the 2007 drought, it continued to divert river water to irrigate its crops, which put pressure on the downstream neighbors.

"Both the United Nations and anecdotal reports from area residents note that once stream flow declined, the northern part of Iraq had to switch to groundwater," she said in a news release. "In a fragile social, economic, and political environment, this did not help."

"Middle East lost a Dead Sea's worth of water, study finds", 13/02/2013, online at: http://science.nbcnews.com/_news/2013/02/12/16939565-middle-east-lost-a-dead-seas-worth-of-water-study-finds?lite

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❖ Tigris and Euphrates River Basin Has Lost as Much Water as the Dead Sea

The Tigris and Euphrates River Basin is losing water at a startling pace. Between 2003 and 2010, the region, which includes land in Turkey, Syria, Iran and Iraq, has lost as much water as there is in the Dead Sea.

How does a watershed lose enough water to cover 117 million acres in one foot of water? Researchers say about 60 percent comes from pumping water from underground reservoirs. This rate of water loss is the largest after that of India.

Water management in the region is a complicated issue. Turkey has jurisdiction over the headwaters of the Tigris and Euphrates rivers, and the reservoirs and dams of its Southeastern Anatolia Project actually control the water flow into Syria, Iraq and Iran. Tensions were raised when, during a 2007 drought, Turkey continued to divert water from the system to irrigate crops.

A new study to be published in the American Geophysical Union journal Water Resources Research shows the extent of the water loss, using data from NASA's Gravity Recovery and Climate Experiment satellites. Researchers from UC Irvine were unable to study the region on the ground because of political instability.

"Whenever you do international work, it's exceedingly difficult to obtain data from different countries," Jay Famiglietti, hydrologist, UC Irvine Earth system science professor and principal investigator of the study told Phys Org. For political, economic and security reasons, neighbors don't want each other to know how much water they're using. In regions like the Middle East, where data are relatively inaccessible, satellite observations are among the few options."

GRACE is "like having a giant scale in the sky," said Famiglietti. Changing water reserves in a region change the Earth's mass in that region, and with it, the gravitational attraction in that area. This allows scientists to remotely assess the amount of water in the region. NASA's Goddard Space Flight Center calculated that the 291,00 square mile Tigris-Euphrates River Basin has lost an average of 16 million acre feet annually.

The problem seems to be only getting worse. "They just do not have that much water to begin with, and they're in a part of the world that will be experiencing less rainfall with climate change. Those dry areas are getting drier," said Famiglietti.

The once fertile region around the Tigris and Euphrates Rivers is historically known as the cradle of civilization, where human civilization first emerged.

"Tigris and Euphrates River Basin Has Lost as Much Water as the Dead Sea", 12/02/2013, online at: http://www.itechpost.com/articles/5364/20130212/tigris-euphrates-river-basin-lost-much-water-dead-sea.htm

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❖ Water and the Slippery Slope to Conflict in the Middle East

Experts are drawing a connection between an important natural resource and tensions in the Middle East. In this case, it's water, not oil.

In an arid region, the availability of fresh water from rivers, lakes, and aquifers is crucial for agriculture. If the water runs out, it costs people their livelihood and it could even create a catalyst for a popular uprising against an oppressive regime. Middle East experts say water scarcity is playing at least some role in the Arab Spring upheaval.

That's why a new NASA study of the Tigris and Euphrates river basins is getting attention among these scholars. The study shows staggering depletion in the river basins over the last decade in a region that includes parts of Turkey, Syria, Iraq, and Iran. The area has lost 117 million acre-feet of stored fresh water—nearly the amount of water in the Dead Sea.

The Science

Since aquifer levels are rarely tested in the region, nor shared with the outside world, NASA relied on data from its satellites. The Gravity Recovery and Climate Experiment satellites measure changes in Earth's gravitational pull, which can fluctuate when the planet's mass varies. In this case, the mass changes when water levels in aquifers underground increase or decrease over time.

NASA attributes the loss in ground water to a severe drought that hit the region in 2007. When lack of rain causes surface water in rivers and lakes to dry up, people turn to ground water in aquifers. Needing enough water to sustain their crops, people continue to pump water, often unchecked by government officials, and because of the lack of rain, the water in the ground is not refilled.

"The question is whether, given a few wet years, if they'd be able to bounce back or not," said Matt Rodell, the chief of the Hydrological Sciences Laboratory at NASA's Goddard Space Flight Center. "Just because it's a huge amount of water, doesn't mean it couldn't come back. But on the other hand, it could be completely gone. We just don't know yet."

For decades, the Middle East has had unsustainable agricultural programs that don't take into account that the water that the region uses will eventually run out. For example, Saudi Arabia is a net milk

exporter, even though it takes 2,300 gallons of water to produce one gallon of milk, said Jon Alterman of the Center for Strategic and International Studies.

“In the Middle East, starting in the 1970s, there was a huge effort to exploit water, create agriculture, and buy political prosperity,” said Alterman, who is the director of the group's Middle East Program. “And the water is running out.”

There are some countries in the Middle East, Alterman said, that have not tested their aquifers in 20 years because they’re terrified of what they might learn.

The problem is not unique to the Middle East. It has happened in several parts of the world, from the Central Valley of California to Kashmir. In fact, water scarcity has been one of the sources of tension between India and Pakistan. NASA says the Tigris and Euphrates region is losing fresh water at the second-highest pace in the world, right behind India.

The Political Implications

The political system in the Middle East is built on access to fresh water that will eventually run out. If that happens, it could spur huge migration flows, displace farmers, and add to frustration with governments.

Take one of the countries that the NASA study highlights: Syria. Farmers were hit hard by the 2007 drought and many people were forced to move from the countyside to big cities to earn their living. But what happens when you have displaced workers, watching the better-off thrive while they are struggling to survive? Alterman sees this as a factor in the Syrian uprising.

“That’s part of what feeds the hostility of young people,” said Alterman, who highlighted these issues in a 2010 study. “ 'I’ve been stripped of everything that I thought I deserved, and the government is not there to help me at all.’ ”

Not all experts, however, would go that far. Fred Wehrey, of the Carnegie Endowment for International Peace, agreed that water has been source a tension in certain regions, either through droughts or water territorial claim. But he wouldn't go as far as to connect it to larger uprisings in the Middle East. Instead, he said this latest study should more importantly serve as a wake-up call for leaders in the region.

"This again proves the imperative of strategic planning in this region, and governments often don't do a good job of that," said Wehrey, who is a senior associate for the organization's Middle East Program. "This is scientific evidence and I would think governments are going to want to pay attention to it."

"Water and the Slippery Slope to Conflict in the Middle East", 14/02/2013, online at: http://www.nationaljournal.com/nationalsecurity/water-and-the-slippery-slope-to-conflict-in-the-middle-east-20130214

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❖ Disruption Of Water, Sanitation Services Threaten Health In Syria; Conflict Causes Surge In Number Of Syrian Refugees

"The severe disruption of water and sanitation services and a lack of access to basic hygiene in Syria have increased the risk of waterborne diseases among children, the United Nations Children's Fund (UNICEF) [warned Friday], following a nationwide assessment," the U.N. News Centre reports. "The agency found that in areas affected by the conflict, water supplies are only available at one-third of pre-crisis levels, with many people having only 25 liters of water a day, compared with 75 liters when the conflict began two years ago," the news service writes. "More than 60,000 people, mostly civilians, have been killed since the uprising against President Bashar al-Assad began in early 2011," and "[r]ecent months have witnessed an escalation in the conflict, which has also left more than four million people in need of humanitarian assistance," according to the news service (2/8).

"Secretary of State John Kerry said the Obama administration is evaluating ways to reduce the bloodshed in Syria,"Bloomberg Businessweek notes, adding that Kerry said, "There is too much killing, there's too much violence, and we obviously want to try to find a way forward" (Atlas/Gaouette, 2/8). "Syria's conflict is now driving 5,000 people out of the country each day in an increasingly desperate scramble for safety, the United Nations refugee agency said Friday as it reported a surge in their numbers to nearly 800,000," the New York Times writes (Bruce/Gladstone, 2/8). In related news, "The Lebanese government and U.N. Refugee Agency (UNHCR) say they are trying to scale up their assistance to hundreds of thousands of Syrian refugees but are hampered by a lack of funds," IRIN reports, adding, "On 7 February Médecins Sans Frontières (MSF) released a report, entitled 'Misery Beyond the War Zone,' which painted an alarming picture of the living and health conditions of refugees in Lebanon and called on both the U.N. and the government to increase registration and aid" (2/8).

"Disruption Of Water, Sanitation Services Threaten Health In Syria; Conflict Causes Surge In Number Of Syrian Refugees", 11/02/2013, online at: http://globalhealth.kff.org/Daily-Reports/2013/February/11/GH-021113-Syria-Conflict.aspx?utm_source=feedburner&utm_medium=feed&utm_campaign=Feed%3A+kff%2Fkdghpr+(Kaiser+Daily+Global+Health+Policy+Report)

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❖ Syrian rebels reportedly take dam

BEIRUT — Syrian insurgents and opposition activists said Monday that rebel forces had taken control of Syria's largest hydroelectric dam, an assertion that, if confirmed, would give them significant control over a vital reservoir and what remains of the sporadic power supplies in their war-ravaged country.

The Tabqa Dam, built more than 40 years ago with Russian help on the Euphrates River in northeast Syria's Raqqa province, provides electricity to areas that are both in rebel and loyalist hands, including the contested city of Aleppo. It would be the third Euphrates dam taken by the rebels, who control two smaller facilities upriver.

But the Tabqa Dam, which the government once boasted had made Syria self-sufficient in power generation, is considered a more potent weapon in the battle for allegiances in the nearly two-year-old Syria conflict. Rebel-held areas have been systematically denied electricity by President Bashar Assad's forces in their effort to turn the population against the insurgency.

Claims that the Tabqa Dam was in rebel control came as a possible new confrontation was brewing between Turkey and Syria after a Syrian minivan exploded just inside Turkish territory at Cilvegozu, an important border crossing near the rebel-held Syrian town of Bab al-Hawa, killing at least 13 people, including three Turkish civilians, wounding at least 28, and damaging at least 19 vehicles.

The Turkish fatalities were believed to be the first related to the Syrian conflict since October, when a Syrian mortar shell killed five Turks near the border-crossing town of Akcakale, Turkey, eliciting a warning of retaliation by the Turkish government.

Turkey's deputy prime minister, Bulent Arinc, did not rule out a bombing or suicide attack as the cause of the Cilvegozu explosion and said all possibilities were under investigation at the border post in southern Turkey's Hatay province.

Syrian rebels, who get military and financial support from Turkey, blamed Assad's government for the explosion. Turkey, which hosts nearly 200,000 Syrian refugees, has repeatedly warned Assad's government it would not tolerate attacks along the 550-mile border.

Reports by rebel commanders and by the Syrian Observatory for Human Rights, an opposition group based in Britain with a network of contacts in Syria, said insurgents had met little resistance as they swept into the Tabqa area Sunday, seizing the dam and setting fire to an imposing statue of Assad's father and predecessor, Hafez, in the city of Tabqa.

The reservoir created by the dam, known as Lake Assad, is Syria's largest and is vital for irrigating farms and supplying drinking water to Aleppo.

The Syrian government did not confirm the insurgent claims. But videos uploaded on the Internet by insurgents appeared to corroborate they were in control of areas inside and outside the dam, although not necessarily the control room. One rebel was quoted as saying the insurgents intended to divert power from the dam to rebel-held areas.

He said that rebels also had taken control of large areas of Tabqa, including a military police barracks, an air force facility, and an artillery base, seizing weapons and ammunition, and that they did not intend to damage any infrastructure.

‘‘The Shabiha says, ‘Assad or burn the country,’’’ he said, using the term for the feared plainclothes pro-government militias. ‘‘We say, ‘We will burn Assad and keep the country.’’’

Fighters in the operation included members of the Al Nusra Front, the Islamic militant group that has developed a reputation for its fearless attacks on Assad's military but has emerged as a problem for the United States, which wants to aid the Syrian insurgency but considers Al Nusra a terrorist organization with ties to Al Qaeda in Iraq.

"Syrian rebels reportedly take dam", 12/02/2013, online at: http://bostonglobe.com/news/world/2013/02/12/syrian-rebels-seize-country-largest-dam-key-source-power/VDvvUP7LFa6H4yl0IIxPtM/story.html?utm_source=Circle+of+Blue+WaterNews+%26+Alerts&utm_campaign=dc64407100-RSS_EMAIL_CAMPAIGN&utm_medium=email

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❖ Rebels seize Syria's largest dam, controlling water and electricity supplies to wide areas

BEIRUT — Syrian rebels scored one of their biggest strategic victories Monday since the country's crisis began two years ago, capturing the nation's largest dam and iconic industrial symbol of the Assad family's four-decade rule.

Rebels led by the al-Qaida-linked militant group Jabhat al-Nusra now control much of the water flow in the country's north and east, eliciting warnings from experts that any mistake in managing the dam may drown wide areas in Syria and Iraq.

A Syrian government official denied that the rebels captured the dam, saying "heavy clashes are taking place around it." The official spoke on condition of anonymity in line with regulations. But amateur video released by activists showed gunmen walking around the facility's operations rooms and employees apparently carrying on with their work as usual.

In the capital, Damascus, the rebels kept the battle going mostly in northeastern and southern neighborhoods as the fighting gets closer to the heart of President Bashar Assad's seat of power.

The capture of the al-Furat dam came after rebels seized two smaller dams on the Euphrates river, which flows from Turkey through Syria and into Iraq. Behind al-Furat dam lies Lake Assad, which at 640 square kilometers (247 square miles) is the country's largest water reservoir.

The dam produces 880 megawatts of electricity, a small amount of the country's production. Syria's electricity production relies on plants powered by natural gas and fuel oil.

Still, the capture handed the rebels control over water and electricity supplies for both government-held areas and large swaths of land the opposition has captured over the past 22 months of fighting.

"This is the most important dam in Syria. It is a strategic dam, and Lake Assad is one of the largest artificial lakes in the region," said Rami Abdul-Rahman, who heads the Britain-based Syrian Observatory for Human Rights.

"It supplies many areas around Syria with electricity," Abdul-Rahman said, citing the provinces of Raqqa, Hassaka and Aleppo in the north as well as Deir el-Zour in the east near the Iraqi border.

The dam, constructed in the late 1960s in cooperation with the Soviet Union, is located in a northeastern town once called Tabqa. After the dam was built, the town's name changed to Thawra, Arabic for revolution, to mark the March 8, 1963 coup that brought Assad's ruling Baath party to power.

Early Monday, when the rebels stormed the dam and the town, one of the first things they did was set ablaze a giant statue of the late President Hafez Assad, the current president's father.

"This is one of the biggest projects that have a moral value in Syria's history," said Dubai-based Syrian economist Samir Seifan. "It was the Syrian government's biggest project in the 20th century."

Seifan said that the dam is "a very sensitive plant" and it is very important that technicians and experts keep it running as usual because any mistake could have dangerous consequences.

He added that any mistake could "release massive amounts of water that will drown wide areas including the city of Deir el-Zour as well as cities in Iraq." Seifan added that "any damage will have dangerous consequences on civilians. It supplies hundreds of thousands of hectares with water."

An amateur video released by activists showed rebels walking through large operations rooms as employees went on with their work as usual.

"The al-Furat dam is now in the hands of the Free Syrian Army heroes," says the narrator. "And these are the workers, continuing their work as usual."

The video appeared genuine and corresponded to other Associated Press reporting on the events depicted.

Abdul-Rahman, of the Observatory, said the rebels have told their fighters not to interfere with the work of the dam. He added that the gunmen will leave the dam for employees to run but will keep their checkpoints around the dam.

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The rebels now control three dams on the Euphrates. In November, they captured the Tishrin Dam, near the northern town of Manbij. And last week, they took the Baath dam, close to al-Furat.

In Damascus, activists reported clashes and shelling mostly in the northeastern neighborhoods of Jobar and Qaboun as well as the southern parts of the city.

Over the past four days, the rebels brought their fight to within a mile of the heart of the capital, seizing army checkpoints and cutting a key highway.

Syrian TV showed footage from Abbasid Square, a landmark plaza in central Damascus, after sunset Monday to counter activists' claims of fighting only hundreds of meters (yards) away. The footage showed little traffic in the square, and it was dark.

Meanwhile, the Observatory said members of Jabhat al-Nusra blew themselves up in two car bombs outside an intelligence office in the northeastern city of Shadadah, killing at least 14 security agents and wounding many people.

The Observatory said Shadadah has been witnessing heavy clashes between troops and rebels.

Jabhat al-Nusra, which led the fighting at the dam, has been named by the U.S. government as a terrorist organization. It has proved to be the most effective group among rebels fighting in Syria.

Also in northern Syria, a car bomb exploded at a border crossing with Turkey in Idlib province. Turkey's prime minister, Recep Tayyip Erdogan, said 13 people died in the blast. He didn't specifically say the explosion was caused by a bomb, possibly in deference to an ongoing investigation, but he left little doubt that authorities believed it was the work of assailants.

"The incident is very important in showing to what extent our stance on terror and our sensibility toward Syrian incidents is well-directed," Erdogan said.

The border area between the two countries has seen fierce fighting in the civil war. Tensions have also flared between the Syrian regime and Turkey in the past months after shells fired from Syria landed on the Turkish side.

As a result, Germany, the Netherlands and the United States decided to send two batteries of Patriot air defense missiles each to protect Turkey, their NATO ally.

"Rebels seize Syria's largest dam, controlling water and electricity supplies to wide areas", 11/02/2013, online at: http://www.washingtonpost.com/world/middle_east/rebels-seize-syrias-largest-dam-taking-control-of-water-and-electricity-to-parts-of-country/2013/02/11/d0a659e8-7461-11e2-9889-60bfcbb02149_story.html

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❖ Al Nusrah front spearheads capture of Syrian dam, claims suicide assault

The Al Nusrah Front for the People of the Levant, al Qaeda in Iraq's affiliate in Syria, led an assault today that resulted in the takeover of a major dam on the Euphrates River in northern Syria. Additionally, the terror group claimed credit for a suicide assault on an intelligence headquarters in the city of Palmyra.

The Al Nusrah Front spearheaded today's assault on the "strategic" dam in Thawra in Raqqa province, according to the Syrian Observatory for Human Rights. The Nusrah Front led "other factions" of the insurgency to take control of Thawra, which "is considered one of the most important cities in north-east of Syria," and its dam, which is the largest in the country.

The Syrian military melted in the face of the Al Nusrah Front-led attack, the Observatory reported on its Facebook page. The group also published video of jihadists in control of the dam.

"The regime has not shown any serious resistance to the rebel takeover, the leaders of the security services were flown out of the cities with helicopters, they are now stationed at the Tabqa military airport," the human rights group reported.

The fall of Thawra puts the Al Nusrah Front and its rebel allies in virtual control of the Euphrates River Valley. Thawra is upriver from Deir al Zour, a major stronghold of the Al Nusrah Front and jihadist allies. The Al Nusrah Front has banded together with nine other Islamist groups to create the "Mujahideen Shura Council," which is modeled after a group with the same name that was formed by al Qaeda in Iraq in 2006 and which eventually became the Islamic State of Iraq. Al Nusrah has also imposed sharia, or Islamic law, in Mayadin and has a strong presence in Abu Kamal, which is on the border with Iraq.

Rebel groups also seized control of the Baath dam in Raqqa province and the Tishrin hydroelectric dam in Aleppo province, according to *The Associated Press*.

Control of the Euphrates River Valley will solidify Al Nusrah Front's lines of communication with al Qaeda in Iraq in Anbar province.

The Al Nusrah Front routinely conducts joint operations with other jihadist groups, as well as with supposedly secular rebel groups such as the Free Syrian Army. The al Qaeda affiliate's ranks have been growing, and it is now estimated to have upwards of 10,000 fighters in its ranks.

Due to its organization and prowess on the battlefield, the terror group has become popular and is recruiting from other rival groups. The Nusrah Front has overrun three major military bases and conducted multiple suicide assaults, or "storming operations" as Al Nusrah calls them, on security and intelligence bases and headquarters throughout the country.

Al Nusrah Front claims suicide assault in Palmyra

Also today, the Al Nusrah Front claimed credit for the Feb. 6 suicide assault on an intelligence headquarters in the city of Palmyra in Homs province.

The terror group said it executed the attack "after a whole month of monitoring and planning," according to the SITE Intelligence Group, which obtained and translated the statement. A squad of five fighters assaulted the gate at sunrise, killing several guards, which then opened "the way for their martyrdom-seeking brothers ...."

The first suicide bomber "stormed in with his vehicle laden with 3 tons of explosives" and breached the inner gate. The second suicide bomber rammed "his truck laden with about 4.5 tons of explosives" into the heart of the compound. A third suicide bomber attacked a separate "State Security" compound about a half a mile away

The Al Nusrah Front said "private sources" claimed that "400 elements from the security forces" were killed in the attacks. Reports the day of the assault in Palmyra said that between 12 and 19 security personnel were killed [see *Threat Matrix* report, Suicide assault team hits Syrian intelligence in Palmyra].

An al Qaeda affiliate

On Dec. 11, 2012, the US designated the Al Nusrah Front as a Foreign Terrorist Organization. The designation stated that the emir of al Qaeda in Iraq, Abu Du'a (a.k.a. Abu Bakr al Baghdadi al Husseini al Qurshi), "is in control of both AQI and Al Nusrah."

At the same time, the US added two senior Al Nusrah leaders, Maysar Ali Musa Abdallah al Juburi and Anas Hasan Khattab, both members of al Qaeda in Iraq, to the list of global terrorists; the US did not add the emir of Al Nusrah, Sheikh Abu Muhammad al Julani, to the list, however.
[See *LWJ* report, US adds Al Nusrah Front, 2 leaders to terrorism list, for information on the designation of the Al Nusrah Front and the two leaders.]

Despite Al Nusrah's known affiliation with al Qaeda and its radical ideology, Syrian opposition groups, including the supposedly secular Syrian National Coalition, have rallied to support Al Nusrah. Immediately after the US designated Al Nusrah as a terrorist group, 29 Syrian opposition groups signed a petition that not only condemned the US's designation, but said "we are all Al Nusrah," and urged their supporters to raise Al Nusrah's flag (which is the flag of al Qaeda) [see *LWJ* report, Syrian National Coalition urges US to drop Al Nusrah terrorism designation].

The Al Nusrah Front has used al Qaeda's signature tactic -- the suicide bomber and suicide assault team -- to target Syrian security forces. The Al Nusrah Front has now claimed credit for 49 of the 59 suicide attacks that have taken place in Syria since December 2011, according to a tally by *The Long War Journal* (note that multiple suicide bombers deployed in a single operation are counted as part of a single attack). Seven suicide attacks have now been reported in Syria so far this year; Al Nusrah has claimed credit for six of them.

"Al Nusrah front spearheads capture of Syrian dam, claims suicide assault", 11/02/2013, online at: http://www.longwarjournal.org/archives/2013/02/al_nusrah_front_spea.php

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❖ NASA: Alarming water loss in Middle East

Freshwater reserves in parts of Turkey, Syria, Iraq and Iran along Tigris and Euphrates river basins have lost 117 million acre feet (144 cubic kilometers) of total stored freshwater, the second fastest loss of groundwater storage loss after India.

An amount of freshwater almost amounting to the volume of the Dead Sea has been lost in parts of the Middle East due to poor management, increased demands for groundwater and the effects of a 2007 drought, according to a NASA study.

The study, to be published Friday in Water Resources Research, a journal of the American Geophysical Union, examined data over seven years, starting in 2003, from a pair of gravity-measuring satellites that are part of NASA's Gravity Recovery and Climate Experiment or GRACE.

Researchers found that freshwater reserves in parts of Turkey, Syria, Iraq and Iran, along the Tigris and Euphrates river basins, had lost 117 million acre feet (144 cubic kilometers) of its total stored freshwater, the second fastest loss of groundwater storage after India.

About 60 percent of the loss resulted from pumping underground reservoirs for ground water, including 1,000 wells in Iraq, and another fifth was due to the impact of the 2007 drought, including declining snow packs and dried up soil. Loss of surface water from lakes and reservoirs accounted for about another 20% of the decline, the study found.

"This rate of water loss is among the largest liquid freshwater losses on the continents," the authors wrote in the study, noting the declines were most obvious after a drought.

The study is the latest evidence of a worsening water crisis in the Middle East, where demands from growing populations, war and the worsening effects of climate change are raising the prospect that some countries could face severe water shortages in the decades to come. Some, like impoverished Yemen, blame their water woes on the semi-arid conditions and grinding poverty, while the oil-rich Gulf faces water shortages mostly due to the economic boom that has created glistening cities out of the desert.

In a report released during the U.N. climate talks in Qatar, the World Bank concluded among the most critical problems in the Middle East and North Africa will be worsening water shortages. The region already has the lowest amount of freshwater in the world. With climate change, droughts in the region are expected to turn more extreme, water runoff is expected to decline 10% by 2050, while demand for water is expected to increase 60% by 2045.

One of the biggest challenges to improving water conservation is often competing demands, which has worsened the problem in the Tigris and Euphrates river basins.

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Turkey controls the Tigris and Euphrates headwaters, as well as the reservoirs and infrastructure of Turkey's Greater Anatolia Project, which dictates how much water flows downstream into Syria and Iraq, the researchers said. With no coordinated water management between the three countries, tensions have intensified since the 2007 drought because Turkey continues to divert water to irrigate its farmland.

"That decline in stream flow put a lot of pressure on northern Iraq," Kate Voss, lead author of the study and a water policy fellow with the University of California's Center for Hydrological Modeling in Irvine, said. "Both the U.N. and anecdotal reports from area residents note that once stream flow declined, this northern region of Iraq had to switch to groundwater. In an already fragile social, economic and political environment, this did not help the situation."

Jay Famiglietti, principle investigator of the new study and a hydrologist and UC Irvine professor of Earth System Science, plans to visit the region later this month, along with Voss and two other UC Irvine colleagues, to discuss their findings and raise awareness of the problem and the need for a regional approach to solve the problem.

"They just do not have that much water to begin with, and they're in a part of the world that will be experiencing less rainfall with climate change," Famiglietti said. "Those dry areas are getting dryer. They and everyone else in the world's arid regions need to manage their available water resources as best they can."

"NASA: Alarming water loss in Middle East", 13/02/2013, online at:
http://www.israelhayom.com/site/newsletter_article.php?id=7374

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❖ Alarming water loss detected in Mideast river basins

US study funds river basins, which water parts of Iraq, Iran, Turkey, Syria, have lost almost as much water as is in Dead Sea from 2003 to 2010.

WASHINGTON - US satellites have detected a large loss of fresh water reserves in the Tigris and Euphrates river basins during a seven-year period beginning in 2003, a new study has found.

The river basins, which water parts of Iraq, Iran, Turkey and Syria, have lost almost as much water as is in the Dead Sea, the study found.

"That's enough water to meet the needs of tens of millions to more than a hundred million people in the region each year, depending on regional water use standards and availability," said Jay Famiglietti, the lead investigator.

The study, which is to be published Friday in the journal Water Resources Research, was conducted by scientists at the University of California at Irvine, NASA's Goddard Space Flight Center and the National Center for Atmospheric Research.

It relies on data gathered over a seven year period by NASA's GRACE satellites, which track global changes in water reserves.

Because changes in water reserves affect the Earth's mass within a given region, the satellites measure gravity locally to tease out those changes.

"GRACE data show an alarming rate of decrease in total water storage in the Tigris and Euphrates river basins, which currently have the second fastest rate of groundwater storage loss on Earth, after India," said Famiglietti, a hydrologist at UC Irvine.

Part of the loss was attributed to a 2007 drought that dried out soil and shrank snowpacks, and another part to the loss of surface water from lakes.

But most of it -- about 60 percent -- was traced to the pumping of groundwater, which typically increases during and after a drought.

Famiglietti noted, as an example, that Iraq drilled about 1,000 wells in response to the 2007 drought.

"The rate (of loss) was especially striking after the 2007 drought. Meanwhile, demand for freshwater continues to rise, and the region does not coordinate its water management because of different interpretations of international laws," he said.

"Alarming water loss detected in Mideast river basins", 13/02/2013, online at: http://www.middle-east-online.com/english/?id=56950&utm_source=Circle+of+Blue+WaterNews+%26+Alerts&utm_campaign=aef44d1bae-RSS_EMAIL_CAMPAIGN&utm_medium=email

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❖ Israel Says Galilee Water Needs Cut by Rain, Desalination

Israel's Water Authority has been able to reduce the amount of water pumped from the nation's main source, the Sea of Galilee, by more than half due to above- average rain and higher use of desalination plants.

"There has been a significant drop, we are now pumping less than half the multi-year average," spokesman Uri Schor said in a phone interview. About 160 million cubic meters (42.3 billion gallons) of water were pumped last year from the northern Israel lake compared with as much as 360 million cubic meters the past two to three decades, he said yesterday.

To address water shortages, Israel enacted a conservation program in 2008 that included boosting the amount of desalination, or seawater made potable mostly via reverse osmosis filtration. Desalination currently provides about 330 million cubic meters of potable water, which will increase next year to 550 million cubic meters, Schor said.

"The water sources will be more stable and there will be a reliable supply of water until 2025 as long as the public continues to conserve," Schor said. Israel gets most of its drinking water from the Galilee in tandem with desalination.

Two-thirds of Israel is desert and freshwater sources are scarce, leading the Water Authority to start a countrywide water conservation campaign in 2008. Need has driven Israeli companies to develop new and cheaper technologies to desalinate water.

IDE Technologies Ltd., owned by Delek Group Ltd. and Israel Chemicals Ltd., announced last month it won contracts valued at $650 million to design and maintain the Western Hemisphere's largest seawater desalination plant that's being developed in Southern California.

The Sea of Galilee, also known as the Kinneret, is 210.48 meters below sea level, while not as low as the salty Dead Sea it's nearing its maximum capacity of 208.8 meters below sea level, according to the Water Authority website. The level has been boosted by months of heavy rains.

"Israel Says Galilee Water Needs Cut by Rain, Desalination", 11/02/2013, online at:
http://www.bloomberg.com/news/2013-02-11/israel-says-galilee-water-needs-cut-by-rain-desalination.html

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❖ Environmentalists slam Red-Dead Sea plan

Groups say World Bank's plan to build pipeline from Red Sea will destroy the Dead Sea, as water levels decline at rapid rate.

As the World Bank prepares to move forward with public hearings on a Red Sea-Dead Sea conduit project next week, regional environmental group Friends of the Earth Middle East and the Environmental Protection Ministry have slammed the plan as destructive to the very sea that it aims to save.

"We coined the phrase 'Save the Dead Sea' 15 or 16 years ago, so we want our governments to come with support – but to the right project, not the wrong project," Friends of the Earth executive director Gidon Bromberg said, at a press conference in Tel Aviv on Tuesday.

A month ago, the World Bank released three detailed reports regarding a trilateral plan to build a 180-kilometer pipeline to transport water from the Red Sea to the Dead Sea – a feasibility study, an environmental and social assessment, and a study of strategic alternatives, drafted by different external authors.

Defining the objectives of such a project as saving the Dead Sea from environmental degradation, desalinating water and generating hydroelectricity at reasonable prices, the World Bank also stressed that the program should be "a symbol of peace in the Middle East," particularly among the Israeli, Jordanian and Palestinian participants.

As those involved have pondered the pros and cons of such a project for a decade, the Dead Sea water level has continued to decline at a rate of one meter per year, due to the progressive decline of the Jordan River flow.

The feasibility study determined that going ahead with the conduit would feasible, involving 180 km. of tunnels and pipelines, a tremendous desalination plant and two hydropower plants, all in Jordan.

The project would cost an estimated $9.97 billion.

While the feasibility study gave the project an unofficial go-ahead, the environmental and social assessment warned of grave risks such as detrimental "changes to the appearance and water quality" of the Dead Sea as well as damage to the region's overall ecology.

The third report, on alternatives to the Red-Dead conduit plan, pinpoints an option that combines several solutions – desalination at Aqaba and the Mediterranean shore, with water importation from Turkey and water conservation and recycling.

Although both the Environmental Protection Ministry and Friends of the Earth Middle East vehemently object to carrying out the plan offered in the feasibility study, Regional Cooperation Minister Silvan Shalom has continually supported the project as one that will benefit all sides and save the Dead Sea.

The World Bank will hold a public hearing in Jerusalem next Tuesday, as well as similar forums in Amman this Wednesday and Ramallah next Wednesday.

The feasibility study identifies issues that might be bad for the Dead Sea environment, Bromberg explained. Gypsum levels may rise as marine water mixes with the hypersaline Dead Sea. If the gypsum does not crystallize and fails to sink to the sea's floor, the water will become a milky white color, Bromberg said.

There is also the possibility of rampant red algal blooms following the change in chemical composition of the waters, he said, citing the feasibility study.

"When you have the growth of algae, you're going to have slime," Bromberg said.

Quoting a section of the environment and social assessment, he pointed to an inherent risk of irreversible damage to the Dead Sea waters, destroying its integrity and rendering it incapable of ever achieving World Heritage Site status.

The feasibility study deems a pilot program impossible, as only one of at least 75 percent of the full project size would be a reliable model for evaluation, Bromberg said.

"Either we go the whole way and play God or we don't do anything at all," he said.

The project could also threaten the Arava on both sides of the border, creating vulnerabilities to insidious leakage or catastrophic failures resulting from terrorist attacks or earthquakes, Bromberg added, quoting the environmental and social assessment.

If entrepreneurs decided to develop tourist sites with additions such as artificial lakes stemming from the aqueous pipeline, "Disneyland style development" could also damage the region, he added.

And due to the energy required to pump the water, the project would actually leave Israel/Jordan 880 megawatts in the hole and double Jordan's greenhouse gas emissions output, he said, citing both the Environmental and social assessment and the feasibility study.

Because the brunt of the project would occur in Jordan, Friends of the Earth Jordanian executive director Munqeth Meyhar expressed major concerns about potential land and habitat degradation in his country.

"We do have regional concerns as Friends of the Earth Middle East, but as a Jordanian I have a bit more concerns," Meyhar said. "As you see the whole project is in Jordanian land. The intake will affect coral reefs of the Jordanian side. The water will be dropped in the Dead Sea on the Jordanian side, so this area will be affected first if anything will happen."

As far as providing desalinated water and generating affordable hydroelectricity, Bromberg argued that neither would be achieved affordably, with water costing three times as much as now, according to feasibility study data.

In addition, for the first $4.5b. required for the project, the countries involved would be dependent on international gifts, and Jordan would also need to raise a loan of about $2.6b. for water pumping.

"Everybody knows that the Jordanian economy is suffering," Meyhar said. "We are in deficit of about $20b. and here we are looking for another grant from somewhere."

While the Jordanian government renounced interest in the project a few months ago due to such financial concerns, following the World Bank report publications, officials once again declared their eagerness to participate, Meyhar said.

"They received a promise from the Gulf in case this project will be a peace-building project," he said.

Looking at the project's other objective – building peace – Bromberg said he felt achieving such an objective was impossible if the countries involved did not first recognize each other as equals.

"Rather than being a symbol of peace, we are likely to see the Dead Sea as another issue of controversy and squander," he said.

The Environmental Protection Ministry likewise announced its rejection of the Red-Dead program on Tuesday morning, stressing that without more informed data and experimentation, such a plan cannot proceed. Citing experts from the Geological Survey of Israel, the ministry said that pumping more than 350 million cubic meters of seawater and brine to the Dead Sea could lead to an outbreak of bacteria and algal growth, causing disturbing odors in the region. The ministry likewise described the unsightly gypsum that could take hold in the water, creating an unattractive sea and deterring tourists from visiting the area.

But Friends of the Earth and the Environment Ministry differ on what precisely should occur going forward.

"The ministry welcomes the project in general," it said.

"However, from a national and regional responsibility standpoint, there is a need for precautionary measures, while examining the environmental of implementing the project."

Before proceeding with any plan, ministry officials said they advocate a limited pilot program that would enable the flow of large quantities of water into the Dead Sea while examining the effects on the ecosystem. Transferring brine through pipelines on a limited, closed basis into a southern portion of the northern Dead Sea basin would allow researchers to monitor environmental impact and gain more certainty about the processes that would take place, according to the ministry.

Acknowledging that the World Bank has denied that a small pilot project is a viable option, the ministry stressed the necessity to implement one in the face of possible irreversible consequences. "The Dead Sea is a unique natural resource, and a hasty decision, devoid of real data and tests, is

likely to destroy it completely and with it all the tourism in the area," Environmental Protection Minister Gilad Erdan said. "Launching a preliminary pilot is the only viable option for saving the sea in a responsible manner."

Friends of the Earth, on the other hand, has championed the combination option suggested in the study of alternatives, that calls for combining Aqaba and Mediterranean desalination with Turkish water import, conservation and water recycling – the last of which could also be used to the Jordan River's benefit.

"There's no need for pilots because everything is using existing technologies," Bromberg said. "For your money, you get double impact – not only do you get rehabilitation of the Dead Sea but also partial rehabilitation of the Jordan River."

"We are calling on our own governments to support the combination of alternatives, and in that manner we can rehabilitate both the Lower Jordan River and the Dead Sea, providing more affordable [water] prices to our own people," he said.

"Environmentalists slam Red-Dead Sea plan" ,Jerusalem Post, 14/02/2013, online at: http://mideastenvironment.apps01.yorku.ca/?p=6844

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❖ 'Two big unknowns remain' in Red-Dead project

AMMAN — Although the final draft reports of the Red Sea-Dead Sea Water Conveyance Study Programme concluded that the Red-Dead project is environmentally and economically feasible, two major concerns remain, according to the programme's team leader.

"As the study programme nears completion, two big unknowns remain," Alexander McPhail said at a public consultation meeting on the findings of the study programme on Thursday.

These are securing funding for the mega-multibillion-dollar scheme and identifying the impact of mixing brine rejected from the desalination of the Red Sea water with the unique mixture of the Dead Sea.

McPhail noted that the Red-Dead project is feasible economically and environmentally if it is "implemented properly".

The study programme concluded that mixing seawater and/or desalination brine with the Dead Sea water entails risks, especially when the amounts exceed 400 million cubic metres (mcm) per year.

If more than 400mcm of brine or seawater are channelled into the Dead Sea, the future frequency and magnitude of both red algae blooms and whitening events due to precipitation of gypsum are likely to occur, it indicated.

This poses a problem because the Red-Dead project proposes pumping two billion cubic metres of water annually from the Red Sea into the rapidly depleting Dead Sea, while the study indicates that the Dead Sea requires 700mcm per year to stabilise at its current level, which dropped from -395 metres to the current level of -426 metres (below sea level).

Launched in 2008, the study programme involved the preparation of five interrelated studies: a feasibility study, an environmental and social assessment, a study of alternatives (which examined other options available to the beneficiary parties to address the degradation of the Dead Sea and the production of additional potable water by means other than the identified water conveyance option), a Red Sea modelling study and a Dead Sea modelling study.

The $10 billion Red-Dead project, which the study programmes refers to as the "identified option", is part of international efforts to save the Dead Sea that has been shrinking at the rate of one metre per year, largely due to the diversion of water from the Jordan River for agricultural and industrial use.

"More studies need to be carried out in the future to measure the impact of mixing more than 400mcm of Red Sea water per year with the Dead Sea," McPhail told The Jordan Times yesterday.

He noted that the movement of two billion cubic metres of seawater is another major concern, underscoring that the study programme recommends a pipeline for the conveyance of seawater between the two bodies of water.

"There has also been concern that the movement of water could cause earthquakes, to which no evidence has been found," McPhail told more than 150 participants at the public consultation meeting.

He added that the study programme expects the formation of sinkholes on the shores of the Dead Sea to slow down if its water levels rise, noting that there are currently 3,000 sinkholes.

A sinkhole is a natural depression or hole in the Earth's surface. They were formed because the water coming from surrounding mountains to compensate for lost water in the Dead Sea dissolved the salt underneath and created massive cavities. Sinkholes not only pose a threat to agricultural lands, but also to residents and biodiversity in the area, according to ecologists.

During Thursday's meeting, Jordan Valley Authority Secretary General Saad Abu Hammour said the feedback from participants will be taken into consideration before announcing the final reports of the study programme by the end of March.

"The Jordanian government perceives the Red-Dead project as economically and environmentally feasible… once the final drafts are ready, the three stakeholders will meet to decide future arrangements," Abu Hammour told reporters on the sidelines of the session.

He added that the project will be announced during the May 24-26 World Economic Forum meeting on the Middle East and North Africa at the Dead Sea.

"It will also be a good chance to raise funds for the project," Abu Hammour told The Jordan Times.

'Two big unknowns remain' in Red-Dead project , Hana Namrouqa ,Jordan Times, 14/02/2013, online at: http://mideastenvironment.apps01.yorku.ca/?p=6846

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❖ Borderline Views: A new water policy for Israel

We should be thankful for the daily rise of the water levels in the Kinneret and, at the same time, should demand a new and comprehensive water policy for the country.

The good news is that the Kinneret is filling up.

Thanks to the rains and the melting snow, the country's most important water reservoir is likely to finish the winter season at its highest level for some years. The water experts and hydrologists tell us that if we have two such years in succession, the lake will reach its upper limit, perhaps necessitating the opening of the dam which prevents the free flow of water south into the River Jordan – or at least what used to be the River Jordan but is no more than a slow moving stream at present.

It is not only the abundant precipitation which has caused the lake to fill up. In recent years, Israel has finally started to desalinate water on a scale such that the pumping of water from the Kinneret though the national water carrier into the underground aquifers in the center of the country is not as critical as it used to be. For years, due to a combination of political and economic factors, the government refused to promote the construction of new water desalination plants, but given the severity of the water problem in recent years, they finally went ahead with the new projects, resulting in a significant increase in the amount of available sweet water for domestic consumption.

Regulating the pumping of water from the Kinneret in such a way that by the end of the rainy season, the country's aquifers are filled to the maximum is a very delicate task for the country's hydrologists and water planners. Storage in the underground aquifers is better than leaving water in the Kinneret if only because the rate of evaporation during the hot summer months is far lower. But pumping too much can deplete the Kinneret to levels which are too low, while pumping too little can bring about the potential flooding of the communities around the lake, including the city of Tiberias. The latter is offset by the opening of the dam, allowing surplus water to escape south into the Jordan River.

While this is positive in terms of the rejuvenation of the Jordan River and the tourism potential along the Jordan Valley, it is perceived as an exercise in water wastage given the long-term scarcity of water in the region as a whole. This, in turn, affects the amount of water flowing into the Dead Sea,

which has been receding at the rate of almost a meter a year during the past decade. The northern section of the Dead Sea is, in effect, little more than an artificial lake, with much of its water – especially in the hotel tourism areas – flowing through a canal from the now disconnected southern section of the sea.

The renaissance of the idea of a Dead-Red Canal, in which a canal and pipeline would bring water into the Dead Sea from the Gulf of Aqaba to the south, increasing the country's hydroelectric capacity on the way, would signify a total reversal of the of the direction of water flow into the Dead Sea. The canal idea, which is supported by Jordan, but which is strongly opposed by the environmental lobbies in Israel, would enable the production of hydroelectric power which in turn could be used for even more water desalination.

AN UNDERSTANDING of water geopolitics is central to any future conflict resolution in the region. From the mid-1960s, when the Israel Air Force bombed the dams being constructed along the Yarmouk River by Syria in an attempt to prevent the natural flow of water into the Jordan headwaters, and through to the Israel-Jordan peace treaty in the 1990s when Israel agreed to transfer 50 million cubic meters of water per annum to a country which has an even greater water scarcity than Israel, along with the multilateral Israeli-Palestinian negotiations which have discussed the water quotas which will be available to both sides, water has always constituted a major geopolitical factor in this region.

Although a water transfer arrangement with Turkey was signed, it has never been implemented and, given today's changed water economy on the one hand, and Israel's worsened political relations with Turkey on the other, it never will be.

Within Israel as well, the allocation and pricing of water has always been a topic of major political contention.

The continued allocation of relatively large water quotas to a diminishing agricultural sector, at considerably lower prices than those available to the rest of the population, is a sensitive issue. The recent rains and the increase in desalination has not brought about the expected decrease in water prices for the consumer, and this is perceived by many as being due to the powerful political lobby of

the agricultural sector – even today – rather than any logical balance between water supply and demand.

Ever since the construction of the national water carrier back in the 1960s, enabling the distribution of water from the Kinneret to the center of the country and even further afield, the country has lacked a longterm water planning policy. During periods of scarcity, there have been constant demands for a major restructuring of water exploitation, allocation and pricing. But each time there has been a rainy season, such as this year, and the debate has been shelved, the plans put away, with the result that the country goes on from one water crisis to the next one without making any major structural changes.

The demands for water in the Israel of today are vastly different to those of 40 years ago, when the current water policy was instituted. The population has increased six-fold, individual consumption needs have also increased as today's Israelis irrigate lawns, wash cars and use water-consuming appliances such as washing machines and dish washers to a much greater degree than in the past. At the same time, the needs of a declining agricultural sector in an era when Israel imports agricultural produce, are completely different to the era when, for geopolitical and ideological reasons, it was considered of utmost importance to be totally self sufficient and not reliant on any external sources.

This year's rains, coupled with the increase in desalination, has once again given the country a brief respite.

But the new government should not interpret this as yet another reason for shelving the water debate until the next crisis which, given the changing global climate, will only be a year or two into the future. We should be thankful for the daily rise of the water levels in the Kinneret and, at the same time, should demand a new and comprehensive water policy for the country which reflects both the internal and external realities of the present era, rather than continuing to rely on criteria which were relevant four decades ago.

"Borderline Views: A new water policy for Israel", 11/02/2013, online at:
http://www.jpost.com/Opinion/Columnists/Article.aspx?id=302931

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❖ Is Israel really to blame for Gaza's water shortages?

Israel has met and exceeded expectations in terms of the supply of water to the Palestinian people. So why are Palestinian and British politicians still playing politics with this issue?

The question is often posed: If their Arab and Muslim brothers around the region feel so strongly about the Palestinian people, why haven't billions of dirhams, dinars, riyals, pounds or even rupees found their way into large-scale development projects aimed at alleviating poverty in the Gaza Strip?

"But.. but... but… Israel!" the cry often comes. An argument that makes as little sense in theory as it does in practice. To get the facts straight from the outset is important, as misinformation propagated by the delegitimisers of the Jewish state often leads to erroneous beliefs being implanted in the minds of journalists, activists and, importantly, legislators. Take a look at what passed between Israel and Gaza just last week, here. and here.

How else could an Early Day Motion in the British Parliament have been tabled blaming the Israeli government for a situation that the World Bank claimed in 2009 would make the Gaza strip 'uninhabitable'? But the World Bank didn't blame Israel and a similar report by the United Nations stated that while Operation Cast Lead intensified the problems already faced, Gaza's problems were "due to underinvestment in environmental systems, lack of progress on priority environmental projects and the collapse of governance mechanisms."

The Early Day Motion (below) states that "Israeli occupation policies" are to blame for the shortage of water in Gaza. In reality, the situation comes down to a number of factors that are not down to the "Israeli occupation", a nonsensical reference to the state-of-affairs in Gaza that ended with Israeli withdrawal in 2005.

Since Hamas took control of the Gaza strip and turned the area into a launching pad for its terrorist attacks against Israel, ordinary Gazans have suffered as Hamas continues to provoke Israeli responses through rocket-fire into civilian areas of Israel. In late 2012, Hamas targeted both Tel Aviv and Jerusalem, evidence that its goal is to cause as much human suffering as possible. And indeed it has.

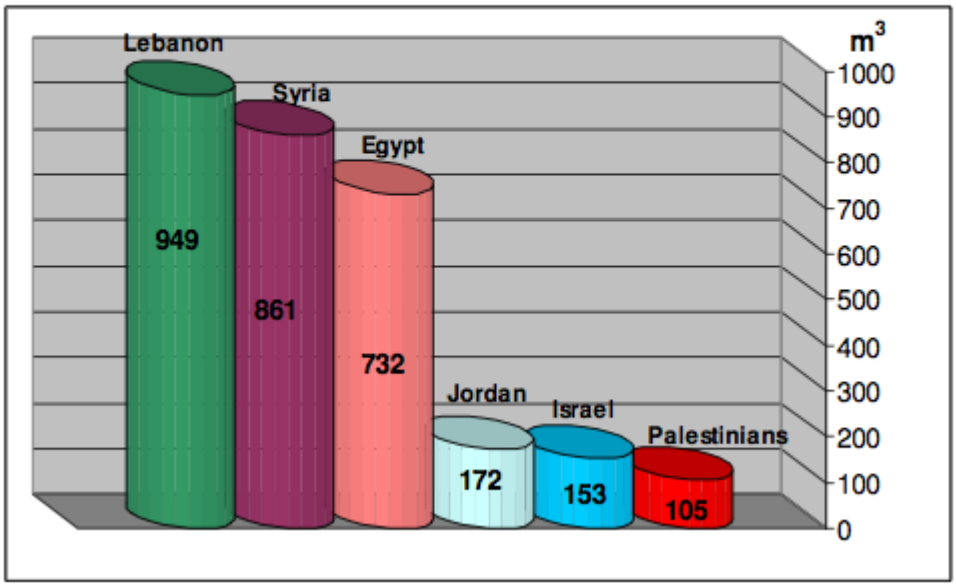
In Gaza, Hamas's effective dictatorship over the strip means it is the authority responsible for infrastructure. Yet the aid it receives from international donors goes primarily into funding its terrorist activities. Supplies into Gaza are often, rightfully throttled to stop machine parts and materials that can be forged into weaponry getting in. This is not an 'occupation policy'. It is a necessary defensive move taken by an embattled state in the throes of a prolonged conflict.

The World Bank found that indeed it is the case that a lack of materials remains a pre-eminent factor in the Gazan water problem. While Israel, it claims, is guilty of overreaching in terms of the extract of water from the aquifers; the point has been conversely made that authorities in Gaza have done similar things, such as illegally drilling over 250 wells without authorization from the Israeli-Palestinian Joint Water Committee.

Most recently of course, it was announced that the World Bank will be donating $6.4m to Gaza in order to assist in infrastructure building in Gaza. The grant will finally be augmented by an Islamic organisation, the Islamic Development Bank, to the tune of $11.1m, in order to construct water tanks and distribute water. Israel of course, has been keen to move forward with a project of this sort since early 2012, when Energy and Water Minister Uzi Landau stated, "Our expertise is available to all of our friends, including some of those who don't accept us there, which is the Palestinians. We would like to see their projects going on. They however say they want to take care of their own needs, which is fine with us."

Israel is no stranger to resourcefulness in this area, with government-sponsored innovations helping Israel to reduce its wastefulness and bring down the amount of water required per capita. In reality, Israel consumes only a fraction more water than Gaza does, on a per capita basis. The subject of water was agreed upon under the terms of the Oslo Accords (part II) and Israel has not only fulfilled its obligations under the terms of that agreement, but actually supplies more water to Gaza and the West Bank than it is obliged to do.

Fig. 5.4: Total Quantity of Fresh Water per Capita on Multiannual Average in Countries Bordering Israel



To repeat, for this is key, Israel has met *all* its obligations according to the Oslo Water Agreement, in terms of the additional quantities of water to the Palestinians, and has *exceeded* the requirements. Conversely, the Palestinians have breached two major areas of the agreement, specifically with relation to the digging of 'pirate wells' and in allowing wastewater to flow into streams untreated. That was their part of the bargain.

Meanwhile, of course, while Gazans continue to require more and more water to fuel the growing population in the area, their brothers in Egypt are squandering gallons of it to close off tunnels that run between Egypt and Gaza, as has been reported today. The Muslim Brotherhood-run country has connected a well on their side of the border to rubber hoses which flood the tunnels. Of course, this is an attempt to crack down on illegal smuggling similar, though arguably harsher and more wasteful than the policies enacted by the Israeli government. One can't help but wonder when the charges of 'creating a prison camp' and 'oppressing the Palestinian people' will be leveled at Egypt. I eagerly await the Early Day Motion from Mike Wood.

Here is the text of the Early Day Motion 1062 tabled by Mike Wood MP:

> *"That this House calls on the Government to recognise the dire water situation faced by Palestinians in Gaza; notes reports by both the World Bank and the United Nations Environment Programme that found the water crisis in Gaza to be critical and potentially irreversible by 2020; recognises that Gaza is almost completely dependent on a coastal aquifer but that low levels of rainfall have left it filled with inconsumable sea water; expresses concern that Israeli occupation policies in both the West Bank and Gaza Strip mean that essential access to consumable water supplies by Palestinians is hampered; and calls on the Government to lobby its counterparts in Israel to ensure adequate water sources and supplies are restored."*

Signed by:

Sir Peter Bottomley MP, John McDonnell MP, Mark Durkan MP, Andrew George MP, Sir Bob Russell MP

"Is Israel really to blame for Gaza's water shortages?", 13/02/2013, online at:
http://www.thecommentator.com/article/2706/is_israel_really_to_blame_for_gaza_s_water_shortages

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❖ From trees to water

Rarely do Tu b'Shvat and Shabbat Shirah occur on the same Shabbat. But this year was an exception, and the exception led me to an exploration of the subject of trees, which led to the subject of water.

Josh Cooper, CEO of the Jewish National Fund of Canada (JNF), contacted me after reading one of my columns about water. "I bet when you think about JNF all you think about is trees, but do you know what we are doing with water?" he asked.

I had to admit, after spending so much time on the topic of water over the last few columns, I thought I had seen it all, but alas, there was more to be learned.

Many of us remember the blue boxes in Hebrew schools in which coins were collected to support the work of JNF in Israel. We may also remember various school-based campaigns to plant trees in Israel.

JNF remains active in local Jewish schools and the community today. But the message and their projects have evolved to meet the needs of Israel and to help the country deal with water in a more sustainable way.

I recently met Avri Kadmon, manager of the information unit for the Land Development Authority at JNF Israel – Keren Kayemet L'Yisrael. (KKL)

Kadmon was on a speaking tour across Canada, helping JNF-KKL get its message out about existing and expanding projects – including research and development – aimed at promoting environmental protection and helping to deal with the water problem in Israel.

He spoke to Grade 8 students at Toronto's Robbins Hebrew Academy in Toronto. They were working on a water project highlighting similarities and differences between Canada and Israel.

After going over statistics on Israeli water supply and consumption, Avri touched on the role that JNF-KKL played in pre-1948 Israel, helping establish the country by draining the swamps and reclaiming land for agricultural purposes.

Kadmon reviewed JNF-KKL's large-scale Israeli water conservation projects prior to the recent arrival of large-scale desalination plants in Israel, including building dams and reservoirs to capture rainwater run-off.

JNF-KKL realizes that a way to address Israel's water shortage is to use high-quality recycled wastewater for agriculture instead of scarce and expensive freshwater. Two hundred and fifty JNF-KKL reservoirs can now hold rain run-off and high-quality recycled wastewater. This helped increase Israel's water supply by 12 per cent, providing half of the water used by the agricultural sector, and freeing up drinking water for domestic purposes, according to the JNF website.

Israel was forced to innovate in wastewater recycling because it has a limited supply of fresh water. Today, Israel recycles 75 per cent of its sewage water. Treating wastewater prevents pollution of aquifers, streams and soil. Israel is aiming at 95 per cent recycling by 2020, and JNF-KKL is helping local and regional councils upgrade their existing wastewater treatment systems. Canada, with an abundance of fresh water, is in the low single digits for wastewater recycling.

Remember those drained swamps? JNF is now working on cutting-edge, environmentally friendly recycling technologies such as constructed wetlands. I guess the swamps have a purpose as well.

"From trees to water", 13/02/2013, online at: http://www.cjnews.com/index.php?q=node/101996

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❖ Desalination Seen Booming at 15% a Year as World Water Dries Up

In the Atacama Desert in northern Chile, 158,438 residents of the city of Copiapo suffered daily cutoffs of tap water last year as Anglo American Plc and other companies helped suck nearby aquifers dry for their mines. With little water left for drinking or mining, the government of President Sebastian Pinera convinced the companies to seek a solution to the water crisis 60 kilometers away from Copiapo -- on the shores of the Pacific Ocean.

London-based Anglo American is spending $107 million to build a desalination plant on the coast that will pump about 120 liters (32 gallons) a second of water through the desert to its Mantoverde copper mine. Set for completion in the second half of this year, the project will provide enough salt-free water, which is used to separate copper from ore, to operate the mine. Two other companies are building similar desalination plants in an effort to keep Chile's mining-driven economic boom alive, Bloomberg Markets magazine will report in its March issue.

"If we don't take these steps today, it will become an obstacle to the development of our country," says Loreto Silva, Chile's minister of public works.

As the global population soars by about 74 million people a year, water shortages are becoming more severe. About 300 million people in rural China had no access to safe drinking water in 2005, according to the website of China's Water Resources Ministry. At current rates of growth, the demand for water worldwide may exceed supplies by 40 percent by 2030, according to the World Bank-sponsored 2030 Water Resources Group.

276 Percent Growth

Desalination isn't a panacea -- it's expensive and harmful to marine life -- but governments desperate for supplies are ramping up construction of plants. Some of the first industrial- scale plants emerged in the oil-rich Middle East in the 1950s. Early on, the only method for extracting salt from seawater was by boiling it and capturing the vapors, a costly and energy- intensive process.

As salt-filtering technologies replace boiling and reduce the price of desalinated water, governments in Australia, China, Israel, the United Arab Emirates and the U.S. are tapping the oceans. From 2001 through 2011, the industrial capacity of desalinated water expanded 276 percent to 6.7 billion cubic meters (237 billion cubic feet) a day, according to the International Desalination Association.

There are almost 16,000 plants operating today, according to the association, with Saudi Arabia standing out as the biggest producer. And the industry is now growing about 15 percent a year, says Julio Zorrilla, an international construction director at Acciona Agua, the water unit ofAcciona SA, a Spanish renewable energy company.

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California Project

"As populations grow, countries will have no option but to desalinate water," he says.

A project in Southern California faced stiff opposition from consumers and environmental groups. San Diego, confronting a water crunch as supplies from Northern California and the Colorado River dwindle, approved a $922 million coastal desalination plant to provide 7 percent of the city's drinking water last year after almost a decade of legal challenges and debates.

San Diego residents protested at public hearings to stop the proposal because the costs of desalination may increase the average household water bill by about $5 to $7 a month when the plant is completed in 2016, according to the San Diego County Water Authority.

"It gets down to the cost of energy," says Jeffrey Kightlinger, general manager of theMetropolitan Water District of Southern California.

Harming Marine Life

San Diego Coastkeeper and Surf-rider Foundation, two California environmental groups, sued in state court to block approval of the project because of the harm it will cause to marine organisms as hundreds of millions of gallons of seawater are sucked into the plant each day.

Stamford, Connecticut-based Poseidon Resources Corp., the plant's owner, plans to use water that has already been drawn from the ocean to cool a nearby power station. The lawsuits said the desalination plant will require the power station to pull in even more water, adding to destruction of sea life.

A California court dismissed the lawsuits. Poseidon will also restore 66 hectares (163 acres) of wetlands in Southern California to mitigate the plant's harmful impact.

The industry has introduced innovations that have reduced the costs of desalinating water. Companies started to adopt technologies to pump water through membrane filters to capture salt in the 1990s. That brought down the price of desalinated water to less than $1 a cubic meter from $3, says Ashvalom Felber, chief executive officer of IDE Technologies Ltd., one of the world's three largest manufacturers of desalination plants.

Lower Costs

And technology developed by San Leandro, California-based Energy Recovery Inc. and other companies that recirculates water in filtering plants has cut energy expenses by as much as 60 percent, says Energy Recovery CEO Tom Rooney. The technology lessens the cost of a cubic meter of desalinated water to about 50 cents, Felber says.

Fresh ground supplies, by comparison, run less than 20 cents, according to the 2030 Water Resources Group.

"The industry keeps evolving, and prices keep coming down," Felber says.

Desalination plants will mostly spring up in regions willing to pay a premium for water to keep their economies growing, Rooney says. China plans to more than triple its production to 2.2 million cubic meters a day by 2015, according to the Chinese National Development and Reform Commission. The water will supply 15 percent of the needs of China's factories along its industrial eastern seaboard, the commission says.

The country is on track to become the world's biggest producer of desalinated water, Rooney says. "In places like China, desalination is an economic slam- dunk," he says.

"Desalination Seen Booming at 15% a Year as World Water Dries Up", 14/02/2013, online at: http://www.bloomberg.com/news/2013-02-14/desalination-seen-booming-at-15-a-year-as-world-water-dries-up.html?utm_source=Circle+of+Blue+WaterNews+%26+Alerts&utm_campaign=aef44d1bae-RSS_EMAIL_CAMPAIGN&utm_medium=email

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❖ Breaking the Dam: Water Politics in Central Asia

In Central Asia, water has been more a source of tension than cooperation. While there have been joint efforts to save the Aral Sea, as well as a flood of internationally introduced technical projects, states in the region have spent most of the past two decades squabbling over the use of water. The region is muddling on with outdated allocation quotas from Soviet times, and the creation of new infrastructure projects like the Rogun Dam in Tajikistan has led to diplomatic saber rattling.

During the Soviet period, central planning created a "cotton belt" in the lowlands of what is now Kazakhstan, Uzbekistan, and Turkmenistan, irrigated through a complex system of dams, pumps, and channels using water coming from mountains in Kyrgyzstan and Tajikistan. However, the break up of the Soviet Union left the emerging republics of Central Asia without a regional water management strategy.

The inclusion of Afghanistan in transboundary water agreements (as recently discussed at aseminar organized by the OSCE) is long overdue, yet is not making the situation easier. Nonetheless, initiatives like the launch of the international year of water cooperation 2013in Paris on February 11 can give badly needed attention to the problem. Can water help unite the countries of Central Asia, or will it increase tensions between them?

Key Conclusions

Water is in fact not so scarce as commonly perceived, and much can be done from the demand side, i.e., by improving unsustainable irrigation practices.

Attempts to reach an integrated solution to Central Asia's water problems are doomed if there is no political will.

Afghanistan borders the region's largest river, and, with rising demand for water, it must be part of the solution.

Central Asia is still a long way from an open "water clash," but the course is being set and the ship needs to be turned in time.

Analysis

Most of Central Asia is embedded in the Aral Sea basin, stretching from what is left of the Aral Sea in the west to the melting glacial "water towers" in the east. The two main rivers of the region, which flow from east to west, are the Syr Darya to the north and the Amu Darya to the south. The former runs from Kyrgyzstan and Tajikistan through Uzbekistan to the northern Aral Sea in Kazakhstan; the latter flows from Kyrgyzstan to Tajikistan, along the latter's border with Afghanistan, through Turkmenistan and finally into the southern Aral Sea in Uzbekistan. These two rivers provide the main source for drinking water, irrigation, and hydropower in the region.

A major legacy of the Soviet era in Central Asia was the creation of an electricity-water nexus, whereby the generation of electricity from hydropower in upstream countries was linked to the water needs of those downstream. This system operated in the context of a common management system and shared energy arrangements through regional energy grids and networks. However, this system

ended with the collapse of the Soviet Union and the overnight emergence of international borders. Water was increasingly seen as a national asset rather than a common resource, and the transition to commercial prices for the supply of hydrocarbons to upstream countries (formerly delivered freely as compensation for irrigation water) presented major difficulties for their economies.

Despite the fact that the countries of Central Asia jealously protect their water resources, water is not as scarce in the region as commonly perceived. Uzbekistan, for instance, has almost double the amount of water available per capita in comparison to Spain, which is one of the major agricultural producers in Europe. Therefore, a part of the solution could lie in the demand side by introducing a more effective use of water and a reform of water-consuming production systems. The question remains, of course, whether expensive infrastructure improvements or crop substitution are feasible in the near future.

Apart from consumption, the problem becomes one of distribution: since the break-up of the centrally-controlled system, water is not only disproportionately shared between up- and downstream countries, it is now often unequally distributed throughout the countries and provinces, and amongst populations and economic sectors, creating potential not for interstate, but also for intra-society conflicts.

The use of water was already an issue between the republics in Soviet times, but water allocation was centrally decided in Moscow. After becoming independent, the five new republics signed the Almaty Agreement on Joint Management of Water Resources in 1992, which led to the creation of the Interstate Commission for Water Coordination for Central Asia (ICWC), later subordinated to the International Fund for saving the Aral Sea (IFSA). While these agreements incorporate international water management principles, they lack definite time frames and execution mechanisms, and have in the past been called "dysfunctional."

The main deficit of any agreement or discussion on water sharing in Central Asia is the absence of Afghanistan. It is the second largest contributor to the Amu Darya after Tajikistan. More than a quarter of Afghanistan's population is living in the river basin, and it is the most agriculturally productive area of the country. Due to its internal situation, Afghanistan was not present on the international stage for three decades, and it is argued that the amount of water used by Afghanistan is not significant enough to create serious regional tensions. This, however, will change in the future if there is economic and social recovery in the country. Within its catalogue of possible confidence-building measures (CBMs), the Istanbul Process declaration calls for cooperation on water management, but also for the development of hydroelectric power as well as large-scale irrigation works, which would lead to increased water consumption if implemented.

Another main challenge for integrating Afghanistan in a regional system of water management is a lack of reliable data. For example, estimates of the amount of water from the Amu Darya river that are consumed in Afghanistan range from 2 to 25% of the river's total flow. And not least, the question arises why Afghanistan should cooperate with its neighbors at all: as an upstream country, it does not have to fear water shortages nor does it have much to gain in return.

While the situation remains unresolved, it has, for a long time, been calm. However, mainlybecause of new infrastructure projects, regional tensions are increasing. One of the most controversial is the Rogun Dam in Tajikistan, which, if completed, would be the world's highest hydroelectric dam: downstream Uzbekistan is not only afraid of water scarcity in summer, but also faces flooding in winter when water is released for electricity production. Because of this issue, relations between Tajikistan and Uzbekistan have deteriorated, recently leading to rail blockages and cuts in

Uzbekistan's gas deliveries to Tajikistan. Uzbekistan has also unilaterally closed most border checkpoints with both upstream countries and set mines along parts of the border with Tajikistan.

The international community—particularly the United Nations, the OSCE, and the European Union—has sought to mediate the dispute and find ways to balance the power and water needs of the region. Potential solutions have involved rebuilding cooperative management arrangements, increasing efficiency initiatives in water use, water pricing, and the development of alternative means to generate electricity through a series of much smaller dams. But most of these efforts have shown few results.

While de-escalation is needed in the short term, a new comprehensive and fair agreement for sharing water resources that includes Afghanistan is badly needed. Public participation in the formulation of agreements, as well as new, more inclusive forms of governance, could lead to a long-term settlement. But in the end, it will depend on the political will and readiness of Central Asia's leaders to find a common solution. There is enough water for all countries of the region. Perhaps the international year of water cooperation can bring the parties closer together. Otherwise, tensions over water could open the floodgates to bigger regional tensions.

"Breaking the Dam: Water Politics in Central Asia", 14/02/2013, online at:
http://www.theglobalobservatory.org/analysis/436-breaking-the-dam-water-politics-in-central-asia.html

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❖ City's water bodies could disappear

A third of the ponds and tanks in the city could be in danger of disappearing, according to findings of a comprehensive mapping of the city's water bodies by the Mumbai Metropolitan Region-Environment Improve-ment Society (MMR-EIS).

The report found 36 of the 103 water bodies in the 'topmost category that need urgent attention' on parameters such as deterioration of water quality, embankment, encroachment, solid waste dumping and evaporation loss due to loss of green cover. "A score of nine and above means the water body is critically in need of intervention," the report read.

Water bodies such as lakes and ponds are perfect holding areas for surface run-off water during the monsoon, thereby reducing water logging and flooding. Rainwater also recharges ground water levels. Located in residential areas and near highways or major roads, water bodies are vital for Mumbai's ecology.

Environmentalists say classification of water bodies in the revised DP is imperative. "Water bodies if not preserved would have disastrous consequences for Mumbai," said environmentalist Stalin D of Vanashakti, a non-government organisation. Though the Environment Protection Act 1986 and River Act 1971 protect water bodies, and those involved in land filling can be booked on, they are not implemented.Environmentalist Jagdish Gandhi who has an ongoing petition in the Bombay high court to declare all water bodies as protected, said, "I am sceptical that specific classification of water bodies in the revised DP will ensure their protection because despite open spaces being classified in the existing DP, they have been grabbed." The petition is up for hearing today. Gandhi said, "Once water bodies are declared natural monuments, they can't be touched."
Accessibility to water bodies is linked to their conservation. The report found 49 had restricted entry while 53 were open to the public. "Building walls around water bodies does not help as it removes the asset from public memory and no one will know what is happening," said Prasad Shetty, secretary, MMR-EIS.

"City's water bodies could disappear", 11/02/2013, online at: http://www.hindustantimes.com/India-news/Mumbai/City-s-water-bodies-could-disappear/Article1-1009780.aspx?utm_source=Circle+of+Blue+WaterNews+%26+Alerts&utm_campaign=ba5c341b9a-RSS_EMAIL_CAMPAIGN&utm_medium=email

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❖ Delhi water policy under AAP attack

Alleging collusion with private companies, Arvind Kejriwal, leader of the Aam Aadmi Party, today hit out at the Delhi government for its claim that 50 per cent of the water it supplies through the Delhi Jal Board are lost in leakage and hence, were non-revenue water.

Kejriwal "revealed" data on how a treatment plant run by French company Degremont, with a capacity of 90 million gallons a day, treated twice that amount. He showed UP government's documents that show the Ganges water it supplied to the Sonia Vihar treatment plant, run by Degremont, was almost half of what was actually shown to be treated. "It is a miraculous plant which when fed 90 million gallons of untreated water produces 137 million gallons of treated water," kejriwal said.

"The trick was to show large quantities of treated water and then dismiss half of it as non-revenue water. It was on the basis of the large quantities of leakage in water that private companies were given contracts to run treatment plants," he said.

"Of the 840 million gallons water supplied in Delhi, half of it was shown as non-revenue water, and the Delhi blames leakage for this," he added.

If 210 million gallons were to flow on the roads of Delhi daily, the capital would be flooded all year. But we don't see any of it, he said.

A new contract has been signed with a company in Malviya nagar for Rs 529 crore for 32,000 connections. If this were to get operational each consumer would be paying a monthly bill of Rs 1,500 just toward the interest to the huge project cost he says.

Delhi government he said was planning to sign contracts with different companies all over Delhi for a total cost of Rs 5000 crore.

"Delhi water policy under AAP attack", 16/02/2013, online at: http://www.business-standard.com/article/current-affairs/delhi-water-policy-under-aap-attack-113021600581_1.html

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❖ Egypt: EGP 1 Billion Increase in Water, Drainage Projects Allocations

Minister of Planning and International Cooperation Ashraf el-Arabi has approved one billion pounds as an increase in allocations to projects of drinking water and sanitary drainage. Some EGP 7.4 billion is now allocated to this vital sector.

The Minister pointed out that the allocations for national projects of sanitary drainage increased by EGP 550 million, EGP100 million for main lines in Greater Cairo as well as EGP 222 million for renewal and replacing drinking water stations in villages and governorates.

"Egypt: EGP 1 Billion Increase in Water, Drainage Projects Allocations", 11/02/2013, online at: http://nepadwatercoe.org/egypt-egp-1-billion-increase-in-water-drainage-projects-allocations/?utm_campaign=egypt-egp-1-billion-increase-in-water-drainage-projects-allocations&utm_medium=twitter&utm_source=twitter

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❖ Ethiopia: Aawsa to Select Design for Gerbi Water Project

The two rivers, Gerbi and Sibilu, which are the tributaries of Abay through Muger River will be used as a source of water for capital in the coming five years.

Addis Abeba City Water & Sewerage Authority (AAWSA) will choose a design for the Gerbi water project this week, located 30Km north of Addis Abeba.

GerbiRiver, located beyond Mount Entoto, is a tributary of the Abay River. The project was studied 20 years ago, says Etsegenet Tesfaye, head of communications at AAWSA, although it was not realised due to financial problems.

AAWSA's board, which includes Mayor Kuma Demeksa, is now considering three alternative designs, all made by Wapacon Consulting, an Indian firm.

All designs include a dam. One of the designs includes a water purifying facility at the project site. The second design shows that water has to be transported to Gefersa Dam through a tunnel, whilst the third option has a water purifying facility around Dil Ber in Gulele District located south of the Entoto Mountains.

The project will cost 47 million to 77 million dollars, all of which will be covered by the City Administration, according to Etsegenet.

"When this project is completed, it will help distribute water easily to the areas around Entoto, where it is currently a challenge to pump water," she said.

Construction will start at the end of this fiscal year, with planned completion in five years, she added. The dam will provide 100,000 cubic metres of water a day.

Currently the city gets 374,000 cubic metres of water a day from different sources, allowing 97pc of the City access to the water.

AAWSA is planning to have more water sources in the coming 10 years to produce a total of about 813,500 cubic metres a day.

"Ethiopia: Aawsa to Select Design for Gerbi Water Project", 12/02/2013, online at: http://nepadwatercoe.org/ethiopia-aawsa-to-select-design-for-gerbi-water-project/?utm_campaign=ethiopia-aawsa-to-select-design-for-gerbi-water-project&utm_medium=twitter&utm_source=twitter

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❖ Uganda: Water Shortages Trigger Domestic Problems

Water scarcity in some parts of Uganda has led to increased domestic violence in homes.

One of the worst affected is Bushenyi district in the southwestern region.

Wills Bashasha- the Bushenyi district chairperson says that the water shortage in the district had led to many women being beaten by their husbands, while others are allegedly raped as they travel far off places to collect water from shallow wells.

He now wants households with iron-roofed houses to construct water harvesting tanks as a measure to reduce on causes of domestic violence in homes.

Bashasha notes that it's a shame to find people carrying jerry cans of water collected from far off wetlands and swamps despite the fact that such water could have been tapped during the downpour before flowing off to the wetlands.

He explains that the issue of lack of water in some homes has contributed to domestic violence with women and children being the victims.

According to Bashasha, some children's academic performance especially those in day-schooling has greatly been affected which he attributed to water stress at home.

"They go to schools after walking long distances while chasing for water and as a result they reach at school when they are already stressed and tired," Bashasha notes.

He says they have already started a campaign to encourage people and institutions with permanent houses to construct water tanks that harvest water from roofs.

Bashasha articulates that they are trying to reach development partners to come and help the vulnerable families especially the elderly by constructing water harvesting tanks for them.

"Uganda: Water Shortages Trigger Domestic Problems", 15/02/2013,online at: http://waterjournalistsafrica.wordpress.com/2013/02/15/uganda-water-shortages-trigger-domestic-problems/

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❖ Uganda: Sri Lanka Invests U.S.$150 Million in Water Sector

The Sri Lanka government has earmarked $150m to provide safe water to the people of western Uganda. M/s VATech Wabag, one of the top five leading water solutions providers in the world, recently sent a three-man delegation from its Sri Lanka unit to explore Uganda's potential in the water sector.

The firm has offices in over 33 countries across the world and over 90 years of experience in providing water solutions and inancing options. The move followed President Yoweri Museveni's visit to Sri Lanka last year, where he was impressed with the country's advanced state of water treatment and distribution and requested assistance from technologically competent companies to provide similar sustainable solutions in Uganda.

Meeting the President at State House Entebbe, Taher Jafferjee, Arvind Dullu and Zahid Jafferjee expressed their desire and eagerness to provide safe water to Ugandans. The meeting was attended by the water minister, the National Water and Sewerage Cooperation managing director, Eng. Alex Gisagara and the Consul General of Sri Lanka, Kana V Kananathan.

Last November Museveni was in Sri Lanka on three day state visit. During his sojourn there he assured the government that Uganda needed investors with real money.

"Uganda: Sri Lanka Invests U.S.$150 Million in Water Sector", 11/02/2013, online at: http://allafrica.com/stories/201302111723.html

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❖ Tanzania: Chadema Presses for Water Crisis Solution

THE opposition Chama cha Demokrasia na Maendeleo (Chadema) has threatened to demonstrate to the Ministry of Water offices in Dar es Salaam to demand answers to Dar es Salaam water woes.

The party's legislator for Ubungo, Mr John Mnyika, said this in the city at a public rally which brought together party supporters at Temeke Mwisho grounds.

The party had organized the rally in a bid to give room for MPs to clear the air following the recent confusion that loomed in the just ended National Assembly sessions in Dodoma.

The rally started with a demonstration from Ubungo where a section of members and leaders used cars and motorcycles and later joined other members to walk from Veterinari area to Temeke Mwisho grounds.

One of the issues that brought confusion between the government and the Opposition wing was the move by the Deputy Speaker, Mr Job Ndugai, to rubbish a private motion on the water situation in Dar es Salaam which was to be tabled by Mr Mnyika.

Mr Ndugai acted on the request by the Water Minister, Prof Jumanne Maghembe, who wanted the motion to be removed as the government was working on all stated water related challenges. The minister had told the House that plans were already underway to more than double water supply in the city from the current 300 million litres per day by 2015.

"We are asking the Minister for Water, Prof Maghembe, to come out and publicly tell the residents of this city on how water related challenges are dealt with. If he fails to do so in two weeks from now we will demonstrate to his offices," he said. Mr Mnyika claimed that he was not satisfied by the government statement that it was dealing with the challenges facing the commercial city in as far as lack of enough safe and clean water is concerned.

In his nine-page motion, Mnyika asked the government to take to the House, a special water plan, geared to improve clean and safe water, sewerage infrastructures in Dar es Salaam, which is currently home to more than 4.5 million people.

Mnyika said the metropolitan city is facing serious shortage of clean and safe water, putting millions of city dwellers at risk of contracting water-borne diseases as they are forced to use water which is unfit for human consumption.

In another development, the Party's Secretary General, Dr Wilbroad Slaa, termed the move by the Speaker, Ms Anna Makinda, to dissolve the Parastatal Organisations Accounts Committee (POAC) as unconstitutional. Dr Slaa said at the same gathering that such a move should have emanated from the Speaker but as per the parliamentary standing orders it should have been decided by the MPs themselves.

"We (Chadema) do not recognize the move to dissolve the POAC because proper procedures were not followed," he said. Dr Slaa wondered as to why Ms Makinda thought of dissolving such a crucial committee which had made the Tanzanian parliament a role model.

The Kigoma North MP, Mr Zitto Kabwe, who used to be the committee's chairman also cried foul, saying that the government was not happy with the watchdog role played by the committee. He pointed an accusing finger to Speaker and her deputy for bad leadership, saying that his party will take to the House a motion of no confidence to both leaders.

"Tanzania: Chadema Presses for Water Crisis Solution", 12/02/2013, online at: http://nepadwatercoe.org/tanzania-chadema-presses-for-water-crisis-solution/?utm_campaign=tanzania-chadema-presses-for-water-crisis-solution&utm_medium=twitter&utm_source=twitter

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❖ U.N.'s Water Agenda at Risk of Being Hijacked by Big Business

UNITED NATIONS, Feb 11 2013 (IPS) - Amidst growing new threats of potential conflicts over fast-dwindling water resources in the world's arid regions, the United Nations will commemorate 2013 as the International Year of Water Cooperation (IYWC).

But Maude Barlow, chairperson, Council of Canadians and a former senior advisor on water to the president of the U.N. General Assembly in 2008-2009, warns the U.N.'s water agenda is in danger of being hijacked by big business and water conglomerates.

"We don't need the United Nations to promote private sector participation under the guise of greater 'cooperation' when these same companies force their way into communities and make huge profits from the basic right to water and sanitation," Barlow told IPS.

At this time of scarcity and financial crisis, she said, "We need the United Nations to ensure that governments are fulfilling their obligations to provide basic services rather than relinquishing to transnational corporations."

The Paris-based U.N. Educational, Scientific and Cultural Organisation (UNESCO), which has been designated the lead U.N. agency, formally launched IYWC at a ceremony in the French capital Monday.

In New York, Secretary-General Ban Ki-moon warned of the new pressures on water, including growing populations and climate change. One-third of the world's 7.1 billion people already live in countries with moderate to high water stress, he said.

"Competition is growing between farmers and herders; industry and agriculture; town and country," Ban said. Upstream and downstream, and across borders, "We need to cooperate for the benefit of all now and in the future… Let us harness the best technologies and share the best practices to get more crop per drop."

Back in December 2010, the 193-member General Assembly adopted a resolution declaring 2013 as the IYWC, following a proposal by Tajikistan.

The 2013 World Water Day, which will take place on Mar. 22, will be dedicated to water cooperation.

Barlow told IPS big water corporations have gained influence in almost every agency working at the United Nations.

The CEO Water Mandate, a public-private sector initiative launched by the United Nations in July 2007 and designed to assist companies in the development, implementation and disclosure of water sustainability policies and practices, puts corporations such as Nestle, Coca Cola, Suez and Veolia directly into a position of influence over global water policy and presents a clear conflict of interest, she said.

"For-profit private companies cannot uphold the public interest if it conflicts with their bottom line," said Barlow, who is also founder of the Blue Planet Project.

Even the World Water Development Report is now advised by an industry group on "business, trade, finance and involvement of the private sector," she added.

Tom Slaymaker, senior policy analyst on governance at the London-based WaterAid, told IPS the United Nations recognised the "human right to water and sanitation" back in 2010.

"But today over 780 million lack improved water supplies and 2.5 billion lack basic sanitation facilities," he added.

The 2013 International Year of Water Cooperation will be a critical year for the United Nations to reflect on why universal access has not yet been achieved, he said.

Slaymaker said it's also time to reflect on the kind of political leadership and new forms of partnership that are required to accelerate progress towards universal access as part of the emerging post-2015 development framework of the United Nations.

According to the United Nations, the primary objective of IYWC is to raise awareness, both on the potential for increased cooperation, and on the challenges facing water management in light of the increase in demand for water access, allocation and services.

Since the General Assembly recognised the human right to water and sanitation, a number of countries, including Mexico, Kenya, Bolivia, The Dominican Republic, Rwanda, Ethiopia, Ecuador, El Salvador, The Netherlands, Belgium, the UK and France, have either adopted laws recognising the right to water or amended their constitutions to do so.

The Vatican recently recognised the human right to water and added that "water is not a commercial product but rather a common good that belongs to everyone."

And last June, all 193 member states signed the Rio+20 Declaration which includes the recognition of the human right to water and sanitation as a universal right.

Specifically zeroing on the role of the private sector, Barlow told IPS that corporations are among those pledging their support for IYWC.

Aguas de Barcelona, the water company at the heart of a fierce debate in Spain over control of drinking water, is participating, she pointed out.

So are "corporations who fought us on the right to water are now scrambling to claim it in their own image".

She quoted Nestle as saying that 1.5 percent of the world's water should be put aside for the poor and rest should be put on the open market.

If Nestle gets its way, she argued, there will one day be a water cartel similar to big oil, making life and death decisions about who gets water and under what circumstances every day.

"But at least we have this recognised and acknowledged right that no one should be allowed to appropriate water for personal gain while others die from an inability to pay for water," she said.

With time, "we will build consensus around the right to water and the understanding that water is a common heritage and a public trust."

"U.N.'s Water Agenda at Risk of Being Hijacked by Big Business", 13/02/2013, online at: http://www.ipsnews.net/2013/02/u-n-s-water-agenda-at-risk-of-being-hijacked-by-big-business/?utm_source=Circle+of+Blue+WaterNews+%26+Alerts&utm_campaign=dc64407100-RSS_EMAIL_CAMPAIGN&utm_medium=email

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❖ "Water, water everywhere, only if we share" Kick off of the International Year of Water Cooperation in Paris

Irina Bokova, the Director-General of UNESCO; Michel Jarraud, UN-Water Chair and Secretary-General of the World Meteorological Organization (WMO); and Hamrokhon Zarifi, Minister of Foreign Affairs of the Republic of Tajikistan today launched the International Year of Water Cooperation 2013 at UNESCO Headquarters, in Paris. The Year was proclaimed by the United Nations at the initiative of Tajikistan and UNESCO has been designated by UN-Water to coordinate activities during the year.

The launching ceremony featured a video message from UN Secretary-General Ban Ki-moon and messages from the Presidents of Kenya and Mongolia.

The participants stressed the central role of water in ensuring sustainable development, public health, poverty alleviation and combating the effects of climate change.

"Water is not just one subject among others, it is the central subject of international cooperation," said the Director-General of UNESCO […] In 2010, the UN General Assembly recognized water as a human right and this must now be translated into reality. In a world where 300 water basins are shared between several countries, this can only be achieved through cooperation," Ms Bokova said.

"More than 780 million people still do not have access to improved water and two and a half billion people have no access to improved sanitation services," stressed the Chair of UN Water as he advocated reinforced cooperation in this area. He pointed out that that 40% of all natural disasters concern water, whether drought or flood, and voiced strong support for "UNESCO's effort in favour of water diplomacy as an essential instrument of dialogue and cooperation to create a more peaceful world."

Hamrokhon Zarifi, Minister of Foreign Affairs of the Republic of Tajikistan for his part declared that "we need to strengthen water diplomacy to achieve the 2015 [deadline] of the Millennium Goals. Only close cooperation can secure the achievement of water goals for people, the environment and the economy. […] We must make this year, a year of strengthened mutual understanding, cooperation and dialogue."

France's Minister Delegate for Development, Pascal Canfin, stressed the importance his government gives to environmental sustainability through water cooperation. He pledged France's commitment to help especially Saharan Africa overcome growing water shortage. "The Millennium Development Goals regarding water have almost been reached, but the objectives that they set out are insufficient as they do not address the issue of [water] quality."

Launching events continued during the day, notably with the participation of young people from France, Japan and the Netherlands at a youth event hosted by the municipality of Paris at the Pavillion de l'Eau.

During the launch ceremony, Mega Kumar of India presented her slogan for the International Year of Water Cooperation: Water, water everywhere, only if we share." Ms Kumar's slogan was chosen from over 12,000 slogans submitted as part of a world-wide competition.

""Water, water everywhere, only if we share" Kick off of the International Year of Water Cooperation in Paris", 12/02/2013, online at: http://www.unesco.org/new/en/media-services/single-view/news/water_water_everywhere_only_if_we_share_kick_off_of_the_international_year_of_water_cooperation_in_paris/back/18256/?utm_source=Circle+of+Blue+WaterNews+%26+Alerts&utm_campaign=dc64407100-RSS_EMAIL_CAMPAIGN&utm_medium=email

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❖ EU Water Initiative Collects More Than 1 Million Signatures

A group that wants to prevent the privatization of water in the European Union and keep water services in the public sector said its petition has surpassed 1 million signatures.

"Water is a Human Right," a group run mainly by trade unions that wants water services to remain accessible to all in public hands, collected 1.05 million signatures and seeks to double that by September, the group's website showed.

Petitioners must collect at least 1 million signatures from seven of the EU's 27 member states in order to call on the commission to draft formal legislation. Most of the signatures in January came from Germany and Austria, the group said.

"EU Water Initiative Collects More Than 1 Million Signatures", 12/02/2013, online at: http://www.bloomberg.com/news/2013-02-12/eu-water-initiative-collects-more-than-1-million-signatures.html?utm_source=Circle+of+Blue+WaterNews+%26+Alerts&utm_campaign=dc64407100-RSS_EMAIL_CAMPAIGN&utm_medium=email

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❖ What costs the world $260 billion each year?

More people today have access to a cell phone than to a clean toilet. At the current rate of progress the world will miss the global sanitation target for 2015 by over half a billion people. And while the drinking water global target was met last year, nearly a billion people still lack access to an improved drinking water source. Most of these statistics are well known by water and sanitation experts, and the wider development community. Perhaps, less known is the economic cost of the water and sanitation crisis.

Poor sanitation and water supply result in economic losses estimated at US$260 billion annually in developing countries, or 1.5% of their GDP. The benefits from meeting the water supply and sanitation (WSS) MDG targets combined equal over US$60 billion annually and combined WSS interventions have a US$4.3 return for every dollar invested.

The main contributor to benefits from universal coverage of sanitation and water supply is the value of time savings from closer access and reduced queuing for sanitation and water supply facilities, which account for more than 70% of total benefits globally. This provides a clear case for investing in water supply and sanitation services as opposed to only in health measures like vaccination programs. Additional benefits that are not consistently estimated due to lack of underlying data as well as difficulties in converting some impacts to monetary values include improved water quality in lakes, rivers and coastal waters, a net gain in usable land space due to isolating human excreta, the increase in property values, and tourism revenues. The Southeast Asia ESI study crudely estimated tourism losses for Cambodia, Indonesia, the Philippines and Vietnam to cost US$350 million annually.

Given the very significant benefits from providing sanitation and water services, and the highly favorable returns on these investments, world and national leaders should step up to ensure that the required costs of achieving MDG targets are financed - US$115 billion for sanitation and US$30 billion for water supply (for individual countries that have not met the MDG target). The focus of international efforts to meet these global targets also needs to shift to the countries most in need, and the most needy populations in those countries.

Improved sanitation and water supply has implications for not only malnutrition reduction, child health, access to safe drinking water and the quality of life of marginal populations, but also poverty as a whole. This makes investment in improved sanitation and water supply a key variable in the attainment of equitable and sustainable socio-economic development. Hence, drinking-water and sanitation should be central elements of the discussions on goals and targets for post-2015. Indeed, we should be more ambitious than we have been so far – encouraging governments to think beyond basic household supply to considering measuring drinking-water quality, reducing release of untreated sewage and wastewater to the environment, and institutional WASH (e.g. schools and health facilities) and public sanitation.

"What costs the world $260 billion each year?", 11/02/2013, online at: http://blogs.worldbank.org/water/what-costs-the-world-260-billion-each-year

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❖ 34 More Hydroelectric Dams For Amazon Basin

Brazil is planning to build 34 additional hydroelectric facilities in the Amazon by 2021 in an effort to increase Brazil's national energy output by 50% or more.

Total cost for their construction is over $150 billion. Over 6,000 square kilometers of land will be flooded when the dams are finished. Rivers will be diverted, canals built, and roads constructed to accommodate the new development and re-arranging of the many natural water flows for human purposes.

The Jirau hydroelectric dam will feature the largest number of huge turbines in the world and is scheduled to be finished by 2015. Each of its 50 turbines could house a locomotive. The dam will span five miles of the Madeira River, the largest tributary of the Amazon.

About 18,000 workers are currently toiling away trying to finish the behemoth on schedule. This enormous dam is located in the Western jungle about 2,250 kilometres (1,400 miles) from Sao Paulo where the electricity will be received and used. Areas flooded by the project will no longer be accessible to locals.

Not all the dam projects are of such a colossal scale. Most are much smaller and will function as power sources for industrial sites, or silos. Some will simply help regulate water flows.

Brazil's population growth rate has been slowing due to a number of factors, but their society is becoming more economically developed and power consumption has been increasing steadily. A recent analysis indicated energy demand is growing in parallel with GDP. One of Jirau's directors said two enormous dams must be built each year in Brazil to keep up with energy demand.

Environmentalists are unhappy, however, given the massive swath of industrialised development taking place within the Amazon. They want Brazil to focus on developing solar and wind alternatives, rather than imposing human restrictions on natural resources like the Amazon Basin.

"This is a sort of 1950s development mentality that often proceeds in a very authoritarian way, in terms of not respecting human rights, not respecting environmental law, not really looking at the alternatives," said Brent Millikan, the Brazil Program Director for the International Rivers Network.

Already residents are being forced to leave their homes and communities. Telma Santos Pinto, aged 53, said she had to leave her home of 36 years, receiving $18,000 as compensation from the companies building Jirau.

"The compensation was very, very low," she said. "And we were obligated to accept that."

Her town of Mutum Parana is now under water, one of many subsistence communities left to rot.

"34 More Hydroelectric Dams For Amazon Basin", 15/02/2013, online at: http://cleantechnica.com/2013/02/15/34-more-hydroelectric-dams-for-amazon-basin/

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❖ Hungry For Energy, Brazil Builds Monster Dams In The Amazon

Already Latin America's biggest economy, Brazil envisions a future requiring massive amounts of electrical power for its expanding industries and growing cities.

The response has been a construction boom that will install dozens of hydroelectric dams in the Amazon — and that's generating plenty of controversy, particularly from environmentalists.

In the jungles of far-western Brazil, workers drill and hammer on one end of the giant Jirau hydroelectric dam. It's a massive complex that, when completed, will stretch five miles across the Madeira River.

It takes several minutes to drive over an earthen berm to reach the power houses, where workers prepare to install giant turbines.

Everything about this dam in Rondonia state is on a supersized scale. It will hold enough concrete to build 47 towers the size of the Empire State Building, according to Jose Gomes, a civil engineer who's the institutional director for the Jirau dam.

This will be the third-largest dam in Brazil, Gomes says, and the 14th biggest in the world. He adds that no other dam will have as many turbines — 50 of them, each big enough to accommodate a locomotive.

All of this, from the huge steel reinforcements to the spillways, are to produce electricity for Brazil's largest city, Sao Paulo. That's more than 1,400 miles away from the power source — the mighty Madeira, the largest tributary of the Amazon.

Many Projects In The Works

But this dam is just one of many that will be built over the next decade. The environmental group International Rivers, which tracks Brazil's dam-building plans, says 168 will go up in the Amazon alone.

Many will be small, to regulate water flow or to power a single industrial project. The Energy Ministry lists 34 sizable dams by 2021. The goal is to harness some of the world's greatest rivers.

Paulo Domingues, director of energy planning for the Energy Ministry, says that will permit Brazil to increase its electrical generation capacity by 50 percent.

"Only hydroelectric dams can keep up with the annual increase in demand for electricity," says Domingues. The costs of running thermal-electric, gas or oil-fired plants is too high, he says.

But hydropower in the world's biggest and most biodiverse forest has fueled criticism. The Amazon absorbs much of the world's carbon emissions, regulates the climate and produces a fifth of the world's freshwater.

And its rivers are key in all of that. Indians across the Amazon say the dams will unalterably change their way of life.

Uprooting People

Christian Poirier, who works with the group Amazon Watch, says the government has swept aside such criticism while seeking economic growth at all costs.

"It's done so in a way that ignores human rights, ignores the letter of the law, ignores its own legislation and international conventions," Poirier says.

Here at Jirau, those affected by the dam are fishermen and hunters. They'd lived a simple life on the Madeira River — then the dam started to go up.

Jeferson Campos says now there's no more fishing, no hunting, no gathering of wild fruits. Now, his family's home is under water.

Jose Gomes, the institutional director of the Jirau dam project, counters that families like Campos' were given new homes in a new town, Nova Mutu. With 1,600 new houses, the town was built from scratch by the consortium that's installing the Jirau dam.

He also says the dam has fish ladders so fish can migrate upstream, and that the flooding created by the dam has been relatively small by the standards of the dams of the past.

Construction is now proceeding rapidly, with 18,000 workers toiling to get the dam online by 2015. On a recent day, as some workers put up steel reinforcements, others worked to unhinge a cable that had become stuck in a spillway filled with water. Divers were sent down; they kept in touch with radio operators on the surface.

Gomes watched it all closely and remarked on the larger goal.

"For Brazil to keep up with demand, two giant dams, just like this one, must go up every year," he said.

"Hungry For Energy, Brazil Builds Monster Dams In The Amazon", 13/01/2013, online at: http://www.npr.org/2013/02/13/171902544/hungry-for-energy-brazil-builds-monster-dams-in-the-amazon

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❖ Obama Warns Congress to Act on Climate Change, or He Will

If Congress fails to act soon, Obama threatened to use his executive authority to regulate carbon dioxide emissions

President Obama warned Congress that it must tackle "dangerous carbon pollution" in a pointed State of the Union address describing Superstorm Sandy and othernatural disasters as no "freak coincidence."

The speech establishes a clear turning point for a president who treated climate change tentatively during a re-election campaign that featured a rare autumn hurricane with record storm surges and a blistering drought -- all coming during the nation's warmest year. It also accelerates the momentum on the issue that Obama began three weeks ago in his inaugural address, according to observers.

"But for the sake of our children and our future, we must do more to combat climate change," Obama said last night. "It's true that no single event makes a trend. But the fact is, the 12 hottest years on record have all come in the last 15. Heat waves, droughts, wildfires, floods -- all are now more frequent and intense.

"We can choose to believe that Superstorm Sandy, and the most severe drought in decades, and the worst wildfires some states have ever seen were all just a freak coincidence," he added. "Or we can choose to believe in the overwhelming judgment of science -- and act before it's too late."

Obama openly waved the threat of using his executive authority to regulate the release of carbon dioxide from industry sources if lawmakers fail to "act soon." He suggested that Congress reconsider legislation similar to the cap-and-trade bill pursued in the past by Sen. John McCain (R-Ariz.) and retired Sen. Joe Lieberman (I-Conn.), a program that continues to be reviled among many Republicans.

"But if Congress won't act soon to protect future generations, I will," Obama said. "I will direct my Cabinet to come up with executive actions we can take, now and in the future, to reduce pollution,

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prepare our communities for the consequences of climate change, and speed the transition to more sustainable sources of energy."

The speech failed to satisfy some environmentalists, but Obama's commitment to reviving a political issue that lay largely dormant for two years, combined with his references to the current impacts of warming, won him widespread applause from those concerned about climate change.

"It's probably the best speech that a sitting American president has ever given on the subject," said Michael Oppenheimer, a professor of geosciences and international affairs at Princeton University.

Carol Browner, Obama's former climate adviser and a senior fellow at the Center for American Progress, described the speech in a statement as "a big win for those who want action on climate change and believe now is the time to act."

Sen. Sheldon Whitehouse (D-R.I.) said Obama's words "were very welcome" but added that "we need to see them backed up by action."

"Between this and the inaugural [address], I think he's set a bar that is very promising," said Whitehouse, who is urging Obama to bypass Congress by instructing U.S. EPA to launch carbon dioxide standards for existing power plants.

'Off oil for good'

Still, it fell short of the specific policies that some advocates had hoped to hear, amounting to "not nearly enough," said Daniel Souweine, a campaign manager for Forecast the Facts.

"President Obama set the lowest possible bar for action -- he did not pledge to stop the carbon-spewing Keystone XL pipeline nor promise carbon regulations on existing power plants. In fact, he pledged no specific actions at all," Souweine said in a statement.

The president did offer some details on proposals to double today's level of renewable energy by 2020, to use oil and gas revenue to fund research in carbon-freetransportation technologies, and to erect an award program for states that enact aggressive efficiency measures to help the nation cut its energy use in half by 2030.

"So tonight, I propose we use some of our oil and gas revenues to fund an EnergySecurity Trust that will drive new research and technology to shift our cars and trucks off oil for good," Obama said.
An eight-page plan released by the White House last night says, "the United States must continue to take steps to reduce carbon pollution while also improving our ability to manage the climate impacts that are already being felt at home. The President has directed his cabinet to identify additional executive actions from across the administration to help reduce pollution, prepare our cities and nation for the worsening effects of climate change, and accelerate the transition to more sustainable sources of energy, which will be assessed if Congress does not take action."

Obama's description of the climate challenge is the exact opposite, or nearly so, of how some Republicans interpret mankind's relationship with the world. Sen. Ron Johnson (R-Wis.) said Obama is "pretty dedicated to ... harming our economy" with emissions-reducing programs.

"By the way, I'm certainly somebody who does not believe in man-made global warming," Johnson said yesterday. "I don't believe the science has just proved that in any way, shape or form. And I have no idea why anybody would want to penalize their economy to the tunes of potentially a trillion dollars or more to address something that may not even be caused by man. And even if it were, probably there's nothing we can do to reverse the course."

GOP lawmaker: U.S. climate record is 'really good'

That viewpoint is not emblematic of Republican philosophy. Sen. Lindsey Graham (R-S.C.) was hopeful yesterday that Obama would spark compromises in Congress by delving into environmental and energy issues during his address.
"There's some common ground on cleaning up the air, energy independence and jobs," Graham said before the speech. "It'd be a good way to get us moving forward."

But areas of compromise are difficult to identify in a Congress where many Republicans described Obama's speech as endorsing heavy-handed programs aimed at killing the economy.

"Look, I think our record on climate change is really good," Rep. Joe Barton (R-Texas) said after the speech. "Our emissions are down; the European Union's emissions are up. We didn't do cap and

trade; they did. The market is changing our energy mix through low natural gas pricing, and that's putting pressure on the coal plants, and that's helping our economic competitiveness overseas."
Alaska Sen. Lisa Murkowski, the top Republican on the Energy and Natural Resources Committee, anticipated Obama's threat of using executive authority to stanch the flow of CO2. In 2010, she sought unsuccessfully to hamstring U.S. EPA's ability to regulate greenhouse gases by offering a resolution of disapproval. That remains an option in the future, she said yesterday.

"One of these days, hopefully, it'll work," Murkowski said of the resolution.

Before the speech, there was a school of thought that said Obama should intimately link his emphasis on economic issues with climate change. Sen. Mark Begich (D-Alaska) described "huge" impacts from warming on his state's economy, from fisheries being affected by ocean acidification to homes and roads "buckling" from melting permafrost. That's more persuasive than prioritizing environmental harm, he suggested.

"Now we're dealing with impacts of climate change," Begich said before the speech. "So again people can debate the science. I'm not debating the science. What I'm debating is, let's make this an economic argument, and I hope [Obama] does that."

A compromise on natural gas-powered trucks?

Obama hoed a familiar row on clean energy, a topic he has spoken about since his first State of the Union address, when he called for doubling the generation of electricity derived from wind and solar. He has reached that goal.
"Last year, wind energy added nearly half of all new power capacity in America," Obama said. "So let's generate even more. Solar energy gets cheaper by the year -- so let's drive costs down even further. As long as countries like China keep going all-in on clean energy, so must we."

Republican lawmakers, however, expressed concern that the president's push for renewable energy could come at the expense of domestic fossil fuel industries. Sen. Lamar Alexander (R-Tenn.), a

member of the Senate Environment and Public Works Committee, said he hoped the president would continue to support the expansion of domestic natural gas production.

"Natural gas is creating a jobs boom across our country, and we want to make sure that we continue that," he said before the speech. "I would hope the president will call on natural gas producers and other industries to find new ways to put natural gas to work" -- for example, in the nation's fleets of trucks, he said.

While some Republicans have expressed cautious support for the president's "all of the above" approach to energy, many still resist the expansion of grants or tax credits that stand to make wind and solar power more competitive with fossil fuels. Yesterday before the speech, Sen. Jeff Sessions (R-Ala.), ranking member of the Senate Budget Committee, said that he would oppose federal measures to bring renewables closer to grid parity.
"I've supported alternative fuels in the past, but we simply can't mandate the utilization of energy sources that are not competitive financially," he said.

"Obama Warns Congress to Act on Climate Change, or He Will", 13/02/2013, online at:
http://www.scientificamerican.com/article.cfm?id=obama-warns-congress-to-act-on-climate-change-or-he-will

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❖ Mining Companies Face Ratings Cuts as Water Scarcity Lift Costs

Global mining companies may see increased pressure on their credit ratings as environmental issues including water scarcity add to capital and operating costs, according to Moody's Investors Service. Smaller, less-diversified mining companies in water-scarce regions such as South America are most vulnerable, Moody's said in a report dated yesterday. Larger producers including BHP Billiton Ltd., Rio Tinto Group and Anglo American Plc will also be adversely affected given their global operations and willingness to operate in remote and arid regions, it said.

"Water scarcity is already changing the mining landscape as environmental legislation becomes more stringent," Andrew Metcalf, a Moody's analyst, said in the report. "Operating in some countries increases political risk as mining companies' water supplies can be restricted if the needs of communities increase."

Mining companies are already competing with local communities for limited water resources, and environmental rules and permit requirements are adding to the cost of new mines and project time-lines, Moody's said.

Rio, BHP and Anglo have the expertise and financial strength necessary to build complex water procurement systems for large-scale projects and are likely to become preferred partners in water-scarce countries seeking to benefit from their natural resources as a result, the rating company said.

"Mining Companies Face Ratings Cuts as Water Scarcity Lift Costs", 13/02/2013, online at: http://www.bloomberg.com/news/2013-02-15/mining-companies-face-ratings-cuts-as-water-scarcity-lift-costs.html?utm_source=Circle+of+Blue+WaterNews+%26+Alerts&utm_campaign=0ef1679302-RSS_EMAIL_CAMPAIGN&utm_medium=email

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❖ Secret funding helped build vast network of climate denial thinktanks

Anonymous billionaires donated $120m to more than 100 anti-climate groups working to discredit climate change science

Conservative billionaires used a secretive funding route to channel nearly $120m (£77m) to more than 100 groups casting doubt about the science behind climate change, the Guardian has learned. The funds, doled out between 2002 and 2010, helped build a vast network of thinktanks and activist groups working to a single purpose: to redefine climate change from neutral scientific fact to a highly polarising "wedge issue" for hardcore conservatives.

The millions were routed through two trusts, Donors Trust and theDonors Capital Fund, operating out of a generic town house in the northern Virginia suburbs of Washington DC. Donors Capital caters to those making donations of $1m or more.
Whitney Ball, chief executive of the Donors Trust told the Guardian that her organisation assured wealthy donors that their funds would never by diverted to liberal causes.

"We exist to help donors promote liberty which we understand to be limited government, personal responsibility, and free enterprise," she said in an interview.

By definition that means none of the money is going to end up with groups like Greenpeace, she said. "It won't be going to liberals."

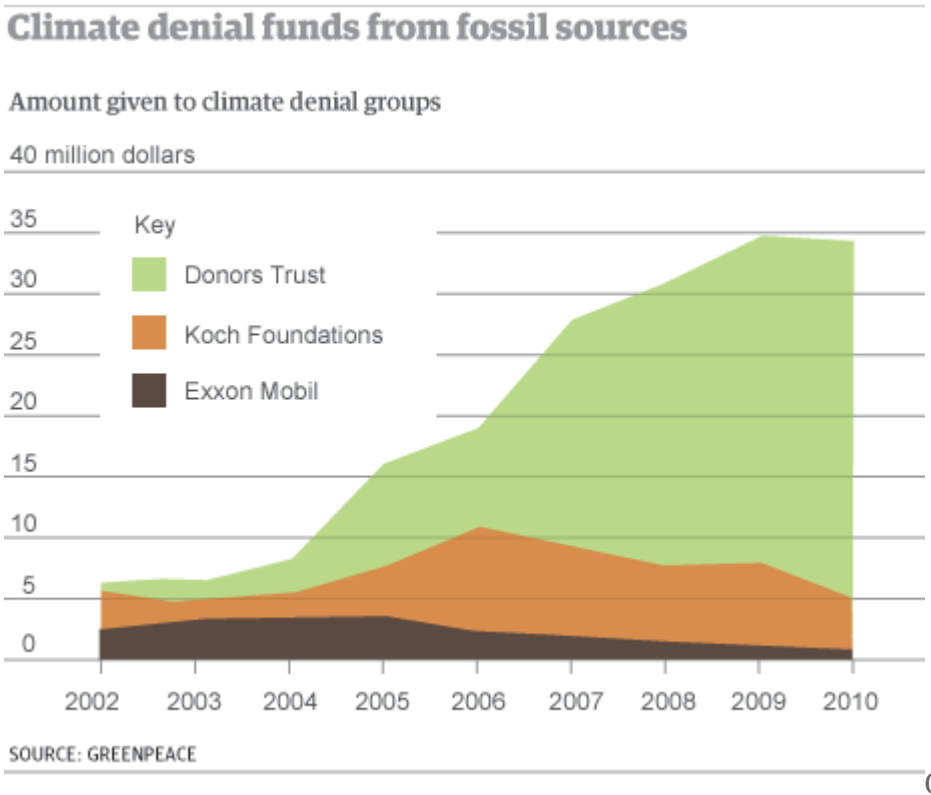
Ball won't divulge names, but she said the stable of donors represents a wide range of opinion on the American right. Increasingly over the years, those conservative donors have been pushing funds towards organisations working to discredit climate science or block climate action.

Donors exhibit sharp differences of opinion on many issues, Ball said. They run the spectrum of conservative opinion, from social conservatives to libertarians. But in opposing mandatory cuts to greenhouse gas emissions, they found common ground.

"Are there both sides of an environmental issue? Probably not," she went on. "Here is the thing. If you look at libertarians, you tend to have a lot of differences on things like defence, immigration, drugs, the war, things like that compared to conservatives. When it comes to issues like the environment, if there are differences, they are not nearly as pronounced."

By 2010, the dark money amounted to $118m distributed to 102 thinktanks or action groups which have a record of denying the existence of a human factor in climate change, or opposing environmental regulations.
The money flowed to Washington thinktanks embedded in Republican party politics, obscure policy forums in Alaska and Tennessee, contrarian scientists at Harvard and lesser institutions, even to buy up DVDs of a film attacking Al Gore.

The ready stream of cash set off a conservative backlash against Barack Obama's environmental agenda that wrecked any chance of Congress taking action on climate change.



Graphic: climate denial funding

Those same groups are now mobilising against Obama's efforts to act on climate change in his second term. A top recipient of the secret funds on Wednesday put out a point-by-point critique of the climate content in the president's state of the union address.

And it was all done with a guarantee of complete anonymity for the donors who wished to remain hidden.

"The funding of the denial machine is becoming increasingly invisible to public scrutiny. It's also growing. Budgets for all these different groups are growing," said Kert Davies, research director of Greenpeace, which compiled the data on funding of the anti-climate groups using tax records.

"These groups are increasingly getting money from sources that are anonymous or untraceable. There is no transparency, no accountability for the money. There is no way to tell who is funding them," Davies said.

The trusts were established for the express purpose of managing donations to a host of conservative causes.

Such vehicles, called donor-advised funds, are not uncommon in America. They offer a number of advantages to wealthy donors. They are convenient, cheaper to run than a private foundation, offer tax breaks and are lawful.

That opposition hardened over the years, especially from the mid-2000s where the Greenpeace record shows a sharp spike in funds to the anti-climate cause.

In effect, the Donors Trust was bankrolling a movement, said Robert Brulle, a Drexel University sociologist who has extensively researched the networks of ultra-conservative donors.
"This is what I call the counter-movement, a large-scale effort that is an organised effort and that is part and parcel of the conservative movement in the United States " Brulle said. "We don't know where a lot of the money is coming from, but we do know that Donors Trust is just one example of the dark money flowing into this effort."
In his view, Brulle said: "Donors Trust is just the tip of a very big iceberg."

The rise of that movement is evident in the funding stream. In 2002, the two trusts raised less than $900,000 for the anti-climate cause. That was a fraction of what Exxon Mobil or the conservative oil billionaire Koch brothers donated to climate sceptic groups that year.

By 2010, the two Donor Trusts between them were channelling just under $30m to a host of conservative organisations opposing climate action or science. That accounted to 46% of all their grants to conservative causes, according to the Greenpeace analysis.

The funding stream far outstripped the support from more visible opponents of climate action such as the oil industry or the conservative billionaire Koch brothers, the records show. When it came to blocking action on the climate crisis, the obscure charity in the suburbs was outspending the Koch brothers by a factor of six to one.

"There is plenty of money coming from elsewhere," said John Mashey, a retired computer executive who has researched funding for climate contrarians. "Focusing on the Kochs gets things confused. You can not ignore the Kochs. They have their fingers in too many things, but they are not the only ones."

It is also possible the Kochs continued to fund their favourite projects using the anonymity offered by Donor Trust.

But the records suggest many other wealthy conservatives opened up their wallets to the anti-climate cause – an impression Ball wishes to stick.

She argued the media had overblown the Kochs support for conservative causes like climate contrarianism over the years. "It's so funny that on the right we think George Soros funds everything, and on the left you guys think it is the evil Koch brothers who are behind everything. It's just not true. If the Koch brothers didn't exist we would still have a very healthy organisation," Ball said.

"Secret funding helped build vast network of climate denial thinktanks", 14/02/2013, online at: http://www.guardian.co.uk/environment/2013/feb/14/funding-climate-change-denial-thinktanks-network?utm_source=Circle+of+Blue+WaterNews+%26+Alerts&utm_campaign=0ef1679302-RSS_EMAIL_CAMPAIGN&utm_medium=email

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