

# ORSAM

# ORSAM WATER BULLETIN

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WATER RESEARCH PROGRAMME -Weekly Bulletin-

**Issue 130** 

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27 May 2013 - 02 June 2013

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#### Sudan and Turkey to cooperate in energy

Sudan and Turkey signed a memorandum of understanding in the areas of mining, power generation and hydrocarbons, during Turkish Energy Minister Taner Yıldız's visit to the African country.

Yıldız said May 26 that they would encourage private sector players active in the energy sector – particularly in wind, solar and hydroelectric power – to invest in Sudan.

"We'd like to benefit from Turkey's experience in industry, mining and transportation," said Kemal Abdullatif, the Sudanese minister of mining. Also, Sudanese Electricity and Water Resources Minister Tabita Butros Shokia said they could cooperate with Turkey in wind, solar and nuclear energy.

Turkey and Sudan are set to cooperate in mining, hydrocarbons and electricity generation, particularly renewable energy, in accordance with the deals signed by Yıldız, Abdullatif and Shokia, following negotiations between technical delegations.

Yıldız said Turkey would assist with Sudan's master power generation plan if help was requested. The minister also had talks about possible investment by the Turkish private sector to build a hydroelectric power station on the coast of the Nile river.

#### Turkey may buy '2 mln tons of Yemen LNG'

However, as Turkish firms continue oil exploration activities in Sudan, Turkey's state-run General Directorate of Mineral Research and Exploration (MTA) and Eti Maden (Eti Mine) have been working to develop joint mine exploration projects with related companies in Sudan. If these projects are implemented, Turkish and Sudanese companies will be able to explore for gold, copper and iron. The deals provide for the training of qualified staff so mine resources are efficiently benefited from.

Before the Sudan visit, Yıldız attended the Turkey-Yemen Energy Forum in Sanaa on May 25. He



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said they wanted to supply part of the country's LNG and naphtha needs from Yemen. "Turkey might purchase 2 million tons of LNG in the first stage from Yemen."

"Sudan and Turkey to cooperate in energy", 27/05/2013, online at: <u>http://www.hurriyetdailynews.com/sudan-and-turkey-to-cooperate-in-energy.aspx?pageID=238&nID=47727&NewsCatID=348</u>

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#### Turkey to deepen energy cooperation with Sudan

KHARTOUM, Sudan, May 28 (UPI) -- Turkish Energy Minister <u>Taner Yildiz</u> visited Sudan to express interest in deepening energy ties.

Yildiz is visiting Sudan following an invitation from Sudan's Ministry of Mining.

Sudanese Minister of Mining Kamal <u>Abdul Latif</u> said there exists a framework of strategic relations between the two countries, as memorandums of understanding have already been signed between Turkey's Ministry of Energy and Natural Resources and the Sudanese Ministries of Mining, Dams and Electricity, and Petroleum.

The Turkish delegation included officials from the Ministries of Water Resources and Electricity and of Energy and Natural Resources, who also signed mutual cooperation agreements with their counterparts in the Sudanese Ministry of Water Resources and Electricity, The Sudan Vision newspaper reported.

Sudan Minister of Water Resources and Electricity Tabitha Butrus signed on behalf of the Sudanese side and subsequently issued a press release stating that the agreement covers cooperation in dam building as well as electricity generation from hydraulic, thermal and renewable energy sources.

"Turkey to deepen energy cooperation with Sudan", 26/05/2013, online at: <u>http://www.upi.com/Business\_News/Energy-</u> Resources/2013/05/28/Turkey-to-deepen-energy-cooperation-with-Sudan/UPI-18061369720500/

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# Marsh flooding brings new life to Iraq's 'Garden of Eden'

The lush marshes of Iraq are regarded by some as the original Garden of Eden, but they were drained and decimated by Saddam Hussein. Now a major restoration programme has seen people and wildlife return to one of the world's most famous wetlands.

Ahead of me stretches a channel through the reeds - Phragmites reeds that grow in the marshes near my home in England.

But unlike those at home, these are over 4m tall and seem to reach the sky above me as we gently glide through the avenue of still water they majestically flank.

We are punting in a Mashoof, the common small canoe of the marshes used for centuries for transportation and the collection of reeds.

I am in southern Iraq, in the Marshes of Mesopotamia - the Central Marshes to be precise. It is a paradise for wildlife and home of the Ma'dan, the Marsh Arabs.

For a few days I have been exploring this wetland paradise with my good friend Mudhafar, one of Iraq's top bird conservationists.

Our puntsman, Omar, is a lanky youth of about 18. Wearing a long, flowing thawb and loosely tied head scarf, he moves nimbly around the boat in bare feet to manoeuvre us through the narrow, reed-fringed passages.

Whenever I turn on the radio or TV in UK the news coming out of Iraq is rarely good but my visit was to help celebrate a happy event.

A wildlife conservation organisation, of which Mudhafar is the bird man, and which would not have been allowed under the tight control of Saddam, is holding a Green Festival to celebrate the restoration of one of the world's great wetlands.

Drained to less than 10% of their former size under Saddam's regime, these vast marshes are coming to life again. Through the actions of environmentally-conscious and brave Arabs, the huge embankments have been breached, allowing the water to flow back.

Now at least half have been successfully re-flooded. The wildlife and Marsh Arabs have returned. Overhead a Pied Kingfisher hovers, searching for fish. In the reeds I can hear the song of the endangered Basra Reed Warbler, while on the water a group of birds takes off - four globallythreatened Marbled Ducks.



Along the banks of the Euphrates, that together with the Tigris is the lifeblood of the marshes, throngs are gathering. The festival is underway.

First in the mudheif - a cathedral-like building made of reeds - the town hall of the Marsh Arab sheiks, there is a reading from the Koran followed by the Iraq National Anthem, then come the speeches, music by children and poetry readings.

On the river, the first boat race ever held in the marshes is underway: six Meshoofs, each with a single woman rower wearing a black Abaya, battle for first place.

There were loud cheers from the crowd, which was more than 1,000-strong as the winner crossed the line.

A covered grandstand had been erected on the river bank and here sat sheiks in their full regalia, whilst at the edges noisy children in jeans and T-shirts gathered - one young boy wearing a Chelsea shirt with Lampard written across the back.

I asked one of the spectators, Mohammed, if he had bet on the race. He grinned widely and said "probably next year" - so perhaps it will become an annual event.

Along the Euphrates bank raced several groups of children - some dressed in blue, others in green - and each carrying a plastic bin liner. This was a competition to see who could collect the most rubbish.

Ahead of them walked two masked men - one wearing a suit of plastic bottles, the other a suit of tin cans - to symbolise the rubbish problem and its effect on water pollution.

All of this is against a background of displays about the importance of the marshes, which are now well on the way to recovery following such devastating drainage.

Then the highlight of the day: the arrival along the river of the Tarada, powered by the oars of three sheikhs.

This large canoe with a graceful pointed prow was the war vessel of the marshes - an iconic symbol of pride.

With their draining it disappeared from the reed beds of Mesopotamia. Today was the first time a Tarada had been seen in the marshes for over half a century.

For my friend Mudhafar, who has been studying the wildlife and culture of these vast wetlands for 25 years, it was clearly an emotional moment. He never thought he would see this boat again and I was glad to share his emotions with him.



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Next time I hear bad news about Iraq I will remember this day and the courage of the people who love their heritage.

They really wanted to make a difference and so made possible the rehabilitation of these wild reed beds - these world famous wetlands.

"Marsh flooding brings new life to Iraq's 'Garden of Eden'", 01/06/2013, online at: <u>http://www.bbc.co.uk/news/magazine-22706024</u>

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## Solution Struggles with Next Door's Chaos and Influx of Syrian Refugee

**RAY SUAREZ:** We turn now to another nation struggling to cope with the chaos in next-door Syria, the kingdom of Jordan. The country is now home to roughly a third of Syria's estimated million-and-a-half refugees.

The NewsHour's foreign editor, Justin Kenny, traveled to the kingdom last week and produced this report.

This is Zaatari. It's now second largest refugee camp on Earth. Just over a year ago, the site didn't exist. Jordan's King Abdullah now calls it his country's fifth largest city. More than 120,000 Syrian refugees, including 60,000 children, are packed into the camp, living in tents and trailers on five square miles of dry and dusty ground, just 15 miles from their homeland's border.

They often can hear the fighting between the forces of Syrian President Bashar al-Assad and the rebel Free Syrian Army. The refugees are out of the war zone, but they face plenty of new challenges.

NADIA RAJA, Refugee: My children have all been sick for 20 days now.RAY SUAREZ: 25-year-old Nadia Raja and her five children arrived from Syria five weeks ago.

**NADIA RAJA:** They have fevers. They are suffering from the hot weather, the polluted water, and from their situation in general in the camps because of the heat.

**RAY SUAREZ:** A clean tent didn't protect the family from Zaatari's fly infestation. To say that life in the camp is hard is an understatement by nearly any definition. In the winter, residents endure snowstorms and flooding. In the summer, they struggle to survive temperatures that shoot above 100 degrees Fahrenheit with only limited water and no electricity.

Members of the international aid community say they're straining to keep up with the ballooning humanitarian crisis.

**ANDREW HARPER,** Representative to Jordan, U.N. High Commissioner for Refugees: I don't think you can think it could get any worse, but it does every night.

**RAY SUAREZ:** Andrew Harper is the United Nations High Commissioner for Refugees' representative to Jordan. His organization oversees the camp in coordination with the Jordanian government and many other international humanitarian organizations.



**ANDREW HARPER:** There's over 500,000 Syrians have come through since March last year, anywhere up to 3,000 to 4,000 per night, which basically means 1,000 families. And this means 1,000 families with women and children who come across with nothing, and we have to provide everything for them. It's -- we have to provide the tents, the food, the water, the health facilities, the protection.

**RAY SUAREZ:** A constant stream of aid trucks, nearly 500 per day, according to UNHCR, drop off supplies, including water. There are well-organized distribution centers and medical facilities and schools in the camp.

Despite that, residents said, they don't have enough to eat, clean water to drink, or adequate medical care. Only 20 percent of Zaatari's children attend classes in the camp.

10-year-old Hanin Hariri fled to Jordan with her family 10 months ago:

HANIN HARIRI, Refugee: We don't do anything. We sit in the tents all the time. We don't play anymore.

**RAY SUAREZ:** 20-year-old Abdul Mounim Droubi works at a bakery in the camp's makeshift market. Unlike many others, he is able to earn meager wages. He still says, however, he'd rather go home to war than continue living as a refugee in Zaatari.

**ABDUL MOUNIM DROUBI**, Refugee: It's better to die there, actually, because here you would die from hunger.

**RAY SUAREZ**: Many Syrian refugees apparently feel the same way. The Jordanian government announced this week 60,000 of them have returned home.

Despite the exodus, more refugees continue to pour into the Hashemite kingdom every day, and this has put an enormous strain on Jordan. It's a relatively poor country that already hosts hundreds of thousands of refugees from the Iraq war and more than two million Palestinian refugees who have come in various waves over the past 65 years.

Last week, the country took out a \$150 million dollars World Bank loan to deal with the refugee crisis, and King Abdullah made a plea for help at a World Economic Forum.

**KING ABDULLAH II**, Jordan: Our Jordanian population is now hosting 10 percent of its size in Syrian refugees, and this may double by year-end. The Jordanians are generously sharing scarce water and other resources. For host countries like us and Lebanon, for displaced and vulnerable



Syrians, both inside and outside their country, increased humanitarian assistance from the global community is vital.

**RAY SUAREZ:** Marwan Muasher, Jordan's former foreign minister and deputy prime minister, is now a vice president at the Carnegie Endowment for International Peace.

**MARWAN MUASHER**, Vice President, Carnegie Endowment for International Peace: We are, I think, coming to the limit of the situation today. You cannot, under any circumstances, deal with 20 percent overnight of your population coming to the country. The economy is already suffering, even without the Syrian crisis, from at least a 12 percent budget deficit. Water is scarce and has been scarce throughout Jordan's history. The infrastructure, of course, cannot -- cannot just absorb all these people.

**RAY SUAREZ:** Nowhere is the impact on Jordan's own population more apparent than in the north. Most of the country's 500,000 Syrian refugees live outside camps and many have settled in places like Ramtha on the Syrian border. The city depended on cross-border trade with its sister city, Daraa. That trade is nonexistent today, and Ramtha's population has surged with refugees. The cost of rent, food, and water are up; employment and wages are down.

Jordanian Ali Zoubi attempts to eke out a living by working at various businesses owned by relatives in Ramtha, including in his uncle's shoe store.

**ALI ZOUBI**, Jordan: I feel bad for the Syrians. They had to all leave their homes. I'm not blaming them. They were forced to come here. They lost family members, brothers and sisters. But with Jordanians, things are bad, too. Jordan is a poor country and the economic conditions are bad.

**RAY SUAREZ:** Talk to Syrian refugees or Jordanians, and it's tough to find people who expect a political solution, instead of more war. Virtually all the refugees interviewed supported arming the opposition.

The Jordanian government, however, has publicly said it is against providing arms to the Free Syrian Army.

**MARWAN MUASHER:** Arming the opposition so far is still a problematic issue. It's not clear that arming the opposition is going to lead to a political process that would end the conflict. It's not clear that arming the opposition is going to lead to a reversal of the military situation on the ground.



And in a country such as Jordan, a neighbor to Syria, Jordan of course is very afraid that it would be seen as interfering in the internal issues of a neighbor state. And it is Jordan's belief that is the Syrians themselves who have to decide.

**RAY SUAREZ:** Back at Zaatari, there are tough decisions to be made, says Andrew Harper, including cutting back water and food rations, as the conflict drags on. Harper thinks it may last a long while.

**ANDREW HARPER:** There's no one can give me one positive indicator from Syria that this is going to be resolved any time soon, whether it be one year, two years or beyond that. Whenever people sort of delay a meeting for a month, then it probably means another 6,000 dead in Syria. It probably means another 40,000, 50,000, 60,000, 70,000 refugees. So, the bureaucratic timeline doesn't meet the humanitarian timeline, nor the political imperative is, we do not -- we do not see it as being -- demonstrating the necessary urgency or importance that these people demand.

**RAY SUAREZ:** Nadia Raja says she has no idea how long she and her family will remain refugees. **NADIA RAJA:** We don't talk about it. It's hard to know. There's no electricity. There's no TV. We don't know what's going on in the world.

**RAY SUAREZ:** She and the others hold out varying degrees of hope of ever returning to Syria. Until that day comes, if it comes, they share the hope the world won't forget about them.

"Jordan Struggles with Next Door's Chaos and Influx of Syrian Refugee", 31/05/2013, online at: http://www.pbs.org/newshour/bb/middle\_east/jan-june13/jordan\_05-31.html

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#### Refugee influx worsens Jordan's water woes

Thousands fleeing war in Syria have compounded shortages.

**Amman, Jordan -** Najeem Azzoubi, a heavy-set Jordanian in his mid-60s, is upset. Before Syrian refugees began arriving in droves in 2011, water was delivered once a week to his home in the northern Jordanian town of Ramtha.

Then, as more and more Syrians fled their country's civil war, squeezing into apartments and occupying empty stores in Jordan, water grew scarcer. Now, Azzoubi says, water comes every 14 days and "has stopped being enough".

Nearly half a million Syrian refugees are living in Jordan, according to official statistics from the United Nations High Commission for Refugees (UNHCR). But many Jordanians, officials included, insist that about one million more have taken up residence in cities and towns throughout Jordan, whose population stood at about 6.3 million before the crisis.

The rapid population increase - 1,000 to 2,000 refugees cross into Jordan daily - has left the Jordanian government and local authorities struggling to keep up with the demand for its scant water resources, even as the country is considering drastic solutions to increase its water supply.

Water experts also point out that Jordan's water sector has long been in need of reform, even before the refugee influx. It remains to be seen whether Jordan's Syrian "guests" will push Jordan from a shortage to a full-fledged crisis, as so many Jordanians claim.

Malik Rajdan, director of Ramtha's water authority, is more reserved than Azzoubi, but no less concerned. "We have a refugee camp inside this city," he pronounced soberly in an interview, deliberately stressing the word "inside".

Another official said a water crisis could be imminent.

"We live in a chronic water problem," said Hazem Nasser, Jordan's minister of water. "And we are now at the edge of moving from a chronic water problem into a water crisis. The element that will trigger this movement is the number of Syrian refugees."



#### Acute scarcity

One of the most water-scarce countries in the world, Jordan has an annual per capita water supply of 145 cubic metres, according to the government's <u>most recent water strategy</u>. Countries with less than 500 cubic metres per person per year are classified by the United Nations as having an "absolute scarcity" of water.

Fifty-four percent of Jordan's water supply comes from underground aquifers, which are being depleted at twice the rate of recharge. Jordan runs a water deficit of about 450 million cubic metres per year, and the quality of water overall, both surface and ground, has "deteriorated significantly because of pollution", noted the most recent <u>United Nations World Water Development report</u>, published in 2012.

To alleviate water shortages in the longer term, Jordan is expected to begin experimental pumping from the Disi aquifer shared with Saudi Arabia. It is also considering a controversial project conveying water from the Red Sea to the Dead Sea and Amman, to supply parts of the country with desalinated water from the Red Sea.

In the meantime, to accommodate the spike in water demand, Jordan has begun drawing on additional water resources, including buying water from private wells. It is estimated that the extra demand on water and sanitation services would cost the Jordanian government more than 500 million dinars (\$706m) per year, even as Jordanians receive less water per capita.

Northern governorates have been particularly hit hard by the refugee influx, noted Nasser. "A good part of the water that is usually allocated to these governorates is now, by force, shifting to the refugees, which is causing a water shortage problem all over these governorates."

Ali Abu Summagah, director of the water authority in Mafraq, estimated that 110,000 Syrian refugees were living in Mafraq city alone, with at least as many in surrounding villages. To meet the extra demand, Mafraq has rented five private water wells and has also begun trucking water - an extremely expensive proposition - to surrounding villages.



He estimated that residents each receive less than 70 litres of water daily. In contrast, the USGS estimates that US residents each use up to 378 litres per day.

"We are working 24 hours, in shifts," said Abu Summagah. If pipes start to leak and "we leave it, some people will never have water". People in and around Mafraq are "very tired from the shortage of water", he added. "It's going to be a hard summer for us."

The Syrian refugees are having a hard time. For a month-and-a-half, Rathia, 39, and her nine children have been living in Ramtha, in a store-turned-apartment, empty save for a few mats and cushions. Rathia said she buys water to drink and wash every day, adding she is able to shower only once a week.

It's not only low water quantity that plagues Jordan: low quality is also an issue.

Munqeth Mehyar, president of the Jordanian branch of Friends of the Earth Middle East, noted a large aquifer lies under Zaatari refugee camp. Eventually, he predicted, the aquifer will be damaged. "We're talking about half a million people with all their sanitation effluence - so it will definitely find its way to the aquifer," he said.

Nasser, the water minister, voiced similar concerns.

Yet not all agree. Kitka Goyoi, a specialist in water, sanitation and hygiene for UNICEF, which is responsible for overseeing facilities in Zaatari camp,including trucking 3.5 million litres daily there, called the risk of such pollution "very, very low".

"We decided to do a study to look at the risk of pollution on the groundwater in Zaatari as a result of the activities in the camp," he said. "We do not directly dispose of wastewater into the ground, and studies have shown that, if there is a travel time of up to 50 days from the top of the ground to the groundwater, any germs within the water will die off."

He said UNICEF's study, which is currently being finalised, showed that the minimum travel time for such water in Zaatari was 90 days.

#### **Pre-existing challenges**



Even without the refugee influx, Jordan's water sector needs major reforms, said Mehyar. Sixty percent of Jordan's water is used by the country's agricultural sector, according to the UN water report, although agriculture makes up just 3 percent of Jordan's gross domestic product.

At current rates of consumption, Jordan's existing ground water reserves cannot last forever. "There is a limit to how much you can pump annually from aquifers, because you need to wait for the rainy season to replenish them," Mehyar explained. "You come to a point where the underground water is salty. That's when you lose that aquifer forever."

But such concerns have not stopped Jordanians from illegally digging private wells. Nasser confirmed that, in recent weeks, he had confiscated two drilling machines being used to dig such wells, noting hundreds of others exist throughout the country.

And in parts of Jordan that don't feel the water crisis as sharply, some wealthy residents have their cars washed every morning.

"Cleaning cars with an open hose," Mehyar sighed. "You always find an Egyptian doing that, and I tell him: 'Look, man, we don't have a Nile in our backyard, so what are you doing? A bucket of water will be enough.""

"Refugee influx worsens Jordan's water woes", 30/05/2013, online at: http://www.aljazeera.com/indepth/features/2013/05/20135268026616381.html

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#### Water reform to cut rates 5% by 2015

The Finance Ministry and the Union of Local Authorities have reached agreement on reform of the municipal water companies.

The <u>Ministry of Finance</u> and the Union of Local Authorities in Israel have reached agreement on a thorough reform of the municipal water companies. The reform will include streamlining and cost savings, which should result in lower water rates in 2014 and a 5% reduction by the end of 2015.

"A 5% reduction in the price of water and simplifying the water companies' confusing bureaucracy are important steps for dealing with the high cost of living and for improving efficiency in the water economy," said Minister of Finance Yair Lapid.

Under the agreement, beginning in 2014, all current municipal water companies will be classified as regional companies for calculating operating costs, and reducing them. The new structure will allow the water companies to choose one of three options: full merger between current companies to consolidate assets; regional incorporation in a structure that will allow municipal water companies to cooperate on operational and administrative issues; and keeping their current structure.

Each year, the water companies will tested to see if they meet targets, to ensure administrative efficiency, the provision of reasonable services to the public, and preserving the savings from the operational streamlining.

"Water reform to cut rates 5% by 2015", 28/05/2013, online at: http://www.globes.co.il/serveen/globes/docview.asp?did=1000847495

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#### **Water surplus in Israel? With desalination, once unthinkable is possible**

PALMACHIM, Israel (JTA) – As construction workers pass through sandy corridors between huge rectangular buildings at this desalination plant on Israel's southern coastline, the sound of rushing water resonates from behind a concrete wall.

Drawn from deep in the Mediterranean Sea, the water has flowed through pipelines reaching almost 4,000 feet off of Israel's coast and, once in Israeli soil, buried almost 50 feet underground. Now, it rushes down a tube sending it through a series of filters and purifiers. After 90 minutes, it will be ready to run through the faucets of Tel Aviv.

Set to begin operating as soon as next month, Israel Desalination Enterprises Technologies' Sorek Desalination Plant will provide up to 26,000 cubic meters – or nearly 7 million gallons – of potable water to Israelis every hour. When it's at full capacity, it will be the largest desalination plant of its kind in the world.

"If we didn't do this, we would be sitting at home complaining that we didn't have water," said Raphael Semiat, a member of the Israel Desalination Society and professor at Israel's Technion-Israel Institute of Technology. "We won't be dependent on what the rain brings us. This will give a chance for the aquifers to fill up."

The new plant and several others along Israel's coast are part of the country's latest tactic in its decades-long quest to provide for the nation's water needs. Advocates say desalination — the removal of salt from seawater – could be a game-changing solution to the challenges of Israel's famously fickle rainfall. Instead of the sky, Israel's thirst may be quenched by the Mediterranean's nearly infinite, albeit salty, water supply.

Until the winter of 2011-'12, water shortages were a dire problem for Israel; the country had experienced seven straight years of drought beginning in 2004. The Sea of Galilee (also known as Lake Kinneret), a major freshwater source and barometer of sorts for Israel's water supply, fell to dangerous lows. The situation got so severe that the government ran a series of commercials featuring celebrities, their faces cracking from dryness, begging Israelis not to waste any water. Even as the Sea of Galilee has returned almost to full volume this year, Israeli planners are looking to desalination as a possible permanent solution to the problem of drought. Some even anticipate an event that was once unthinkable: a water surplus in Israel.



IDE opened the first major desalination plant in the country in the southern coastal city of Ashkelon in 2005, following success with a similar plant in nearby Cyprus. With Sorek, the company will own three of Israel's four plants, and 400 plants in 40 countries worldwide. The company's U.S. subsidiary is designing a new desalination plant in San Diego, the \$922 million Carlsbad Desalination Project, which will be the largest desalination plant in America.

In Israel, desalination provides 300 million cubic meters of water per year – about 40 percent of the country's total water needs. That number will jump to 450 million when Sorek opens, and will hit nearly 600 million as plants expand in 2014, providing up to 80 percent of Israel's potable water. Like Israel's other plants, Sorek will work through a process called Seawater Reverse Osmosis that removes salt and waste from the Mediterranean's water. A prefiltration cleansing process clears waste out of the flow before the water enters a series of smaller filters to remove virtually all the salt. After moving through another set of filters that remove boron, the water passes through a limestone filter that adds in minerals. Then, it enters Israel's water pipes.

Semiat says desalination is a virtually harmless process that can help address the water needs prompted by the world's growing population and rising standard of living.

"You take water from the deep sea, from a place that doesn't bother anyone," he said.

But desalination is not without its critics. Some environmentalists question whether the process is worth its monetary and environmental costs. One cubic meter of desalinated water takes just under 4 kWh to produce – that's the equivalent of burning 40 100-watt light bulbs for one hour to produce the equivalent of five bathtubs full of water. Freshwater doesn't have that cost.

Giora Shaham, a former long-term planner at Israel's Water Authority and a critic of Israel's current desalination policy, said that factories like Sorek could be a waste because if there is adequate rainfall the desalination plants will produce more water than Israel needs at a cost that is too high. Then, surplus water may be wasted, or international bodies like the United Nations could pressure Israel to distribute it for free to unfriendly neighboring countries, Shaham said.

"There was a long period of drought where there wasn't a lot of rain, so everyone was in panic," Shaham said. "Instead of cutting back until there is rain, they made decisions to produce too much." Fredi Lokiec, executive vice president for special projects at IDE, says the risks are greater without major desalination efforts. Israel is perennially short on rainfall, and depending on freshwater could further deplete Israel's rivers.



"We'll always be in the shadow of the drought," Lokiec said, but drawing from the Mediterranean is like taking "a drop from the ocean."

Some see a water surplus as an opportunity. Orit Skutelsky, water division manager at the Society for the Protection of Nature in Israel, says desalinated water could free up freshwater to refill Israel's northern streams and raise the level of the Sea of Galilee.

"There's no way we couldn't have done this," she said of desalination. "It was the right move. Now we need to let water flow again to the streams."

"Water surplus in Israel? With desalination, once unthinkable is possible", 28/05/2013, online at: <u>http://www.jta.org/2013/05/28/news-opinion/israel-middle-east/water-surplus-in-israel-with-desalination-once-unthinkable-is-possible</u>

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#### ✤ Israel cuts water shortages with huge leaps in desalination

**PALMACHIM**, Israel — As construction workers pass through sandy corridors between huge rectangular buildings at this desalination plant on Israel's southern coastline, the sound of rushing water resonates from behind a concrete wall.

Drawn from deep in the Mediterranean Sea, the water has flowed through pipelines reaching almost 4,000 feet off of Israel's coast and, once in Israeli soil, buried almost 50 feet underground.

Now, it rushes down a tube sending it through a series of filters and purifiers. After 90 minutes, it will be ready to run through the faucets of Tel Aviv.

Set to begin operating as soon as next month, Israel Desalination Enterprises' Sorek Desalination Plant will provide up to 26,000 cubic meters — or nearly seven million gallons — of potable water to Israelis every hour.

When it's at full capacity, it will be the largest desalination plant of its kind in the world.

"If we didn't do this, we would be sitting at home complaining that we didn't have water," said Raphael Semiat, a member of the Israel Desalination Society and professor at Israel's Technion-Israel Institute of Technology.

"We won't be dependent on what the rain brings us. This will give a chance for the aquifers to fill up."

The new plant and several others along Israel's coast are part of the country's latest tactic in its decades-long quest to provide for the nation's water needs.

Advocates say desalination — the removal of salt from seawater — could be a game-changing solution to the challenges of Israel's famously fickle rainfall.

Instead of the sky, Israel's thirst may be quenched by the Mediterranean's nearly infinite, albeit salty, water supply.

Until the winter of 2011-12, water shortages were a dire problem for Israel; the country had experienced seven straight years of drought beginning in 2004.



The Sea of Galilee (also known as Lake Kinneret), a major freshwater source and barometer of sorts for Israel's water supply, fell to dangerous lows.

The situation got so severe that the government ran a series of commercials featuring celebrities, their faces cracking from dryness, begging Israelis not to waste any water.

**EVEN** as the Sea of Galilee has returned almost to full volume this year, Israeli planners are looking to desalination as a possible permanent solution to the problem of drought.

Some even anticipate an event that was once unthinkable: a water surplus in Israel.

Israel Desalination Enterprises opened the first desalination plant in the country in the southern coastal city of Ashkelon in 2005, following success with a similar plant in nearby Cyprus.

With Sorek, the company will own three of Israel's four plants, and 400 plants in 40 countries worldwide.

The company's US subsidiary is designing a new desalination plant in San Diego, the \$922 million Carlsbad Desalination Project, which will be the largest desalination plant in America.

In Israel, desalination provides 300 million cubic meters of water per year — about 40% of the country's total water needs.

That number will jump to 450 million when Sorek opens, and will hit nearly 600 million as plants expand in 2014, providing up to 80% of Israel's potable water.

Like Israel's other plants, Sorek will work through a process called Seawater Reverse Osmosis that removes salt and waste from the Mediterranean's water.

A prefiltration cleansing process clears waste out of the flow before the water enters a series of smaller filters to remove virtually all the salt.

After moving through another set of filters that remove boron, the water passes through a limestone filter that adds in minerals. Then, it enters Israel's water pipes.

Semiat says desalination is a virtually harmless process that can help address the water needs prompted by the world's growing population and rising standard of living.

"You take water from the deep sea, from a place that doesn't bother anyone," he said.



**BUT** desalination is not without its critics. Some environmentalists question whether the process is worth its monetary and environmental costs.

One cubic meter of desalinated water takes just under 4 kWh to produce — that's the equivalent of burning 40 100-watt light bulbs for one hour to produce the equivalent of five bathtubs full of water. Freshwater doesn't have that cost.

Giora Shaham, a former long-term planner at Israel's Water Authority and a critic of Israel's current desalination policy, said that factories like Sorek could be a waste because if there is adequate rainfall the desalination plants will produce more water than Israel needs at a cost that is too high.

Then, surplus water may be wasted, or international bodies like the UN could pressure Israel to distribute it for free to unfriendly neighboring countries, Shaham said.

"There was a long period of drought where there wasn't a lot of rain, so everyone was in panic," Shaham said. "Instead of cutting back until there is rain, they made decisions to produce too much."

Fredi Lokiec, an executive vice president at the Sorek plant, says the risks are greater without major desalination efforts. Israel is perennially short on rainfall, and depending on freshwater could further deplete Israel's rivers.

"We'll always be in the shadow of the drought," Lokiec said, but drawing from the Mediterranean is like taking "a drop from the ocean."

Some see a water surplus as an opportunity.

Orit Skutelsky, water division manager at the Society for the Protection of Nature in Israel, says desalinated water could free up freshwater to refill Israel's northern streams and raise the level of the Sea of Galilee.

"There's no way we couldn't have done this," she said of desalination. "It was the right move. Now we need to let water flow again to the streams."

"Israel cuts water shortages with huge leaps in desalination", 30/05/2013, online at: <u>http://www.ijn.com/features/3981-israel-cuts-water-shortages-with-huge-leaps-in-desalination</u>

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#### **Sea of Galilee Flow to Jordan River After 49 Years**

For the first time since 1964, <u>Israel</u> will allow Sea of Galilee water to flow into the Jordan River as part of a rehabilitation project that will cost millions of shekels, the Israel Water Authority said. The project, which started today, also includes diverting brackish water and sewage that has been flowing into the water source, according to an e-mailed statement.

"The Jordan River is renowned abroad and we must do everything we can to make it something to be proud of again and guarantee that visitors continue to come," Environmental Protection Minister Amir Peretz said in the statement.

Christian tourists make pilgrimages to a site on the Jordan River east of the West Bank town of Jericho where they believe Jesus was baptized. Kayaking and tubing are also offered on the river, which has been threatened by excessive water diversion and pollution.

After years of drought, the Sea of Galilee, also known as the Kinneret, is 209.96 meters below<u>sea</u> <u>level</u> and nearing its maximum capacity of 208.8 meters below sea level, according to the Water Authority website. The level in Israel's main water source rose as rainfall increased and desalination plants required less water to be pumped.

"Israel Renews Sea of Galilee Flow to Jordan River After 49 Years", 26/05/2013, online at: http://www.bloomberg.com/news/2013-05-26/israel-renews-sea-of-galilee-flow-to-jordan-river-after-49-years.html

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# Water flows from Lake Kinneret to Jordan River

*Project signals plan to rehabilitate polluted waterway; environmental group says annual replenishment of 30 million cubic meters not enough.* 

Water from Lake Kinneret began to flow on Sunday afternoon into the Jordan River, signaling the onset of a comprehensive government plan to rehabilitate the polluted and diminished river.

The project will enable the discharge of approximately 1,000 cubic meters of water per hour, with the ultimate goal of replenishing the Jordan with 30 million cubic meters per year. At the same time, sewage and brackish water will be removed from the riverbed and treated, according to the Water Authority, which is overseeing the project in conjunction with many other organizations and government bodies.

Since the establishment of the Deganya Dam in 1964, water has not been proactively released from the Kinneret basin into the Lower Jordan River, the Water Authority stressed.

"Israeli water has recovered from a major crisis that befell us for the past eight years," Water Authority Commissioner Alexander Kushnir said.

"We have established a system of desalination plants, water purification and waste water reuse facilities, along with optimizing the use and conservation of citizens – which has enabled the Water Authority to significantly increase the amount of water allocated to nature, along with the ever-increasing restoration of natural water resources."

With funds coming from all of the authorities involved with the project, the overhaul of the contaminated river aims to restore the ecology and thereby develop tourism in the region, the Water Authority explained.

The other organizations and bodies participating in the cleanup that came together as the Jordan Rehabilitation Administration in 2009 under the Lower Jordan River Drainage Authority and including the Environmental Protection Ministry, the Israel Nature and Parks Authority, Emek Hamayanot Regional Council and Keren Kayemeth LeIsrael-Jewish National Fund.

A primary goal of the project involves replacing the polluted water in three separate transports -a sewage water transport, a high salinity brackish water transport and a low salinity water transport, the Water Authority said. After wastewater from Tiberias and from the Jordan Valley are treated, all resultant water will be allocated for agricultural purposes and will not be returned to the river.

Meanwhile, some of the saline water will also be made useable by means of desalination processes.



Water from the Tiberias hot springs and other salty wells will be separated from the water transfer conduit and will instead be used for fish breeding in southern Emek Hamayanot, the Water Authority said. The remainder of the desalinated salty water and between 17 and 20 million cubic meters of water from the Kinneret will flow into the Jordan River, totaling about 30 million cubic meters per year. The flow will gradually increase to the program's full intended quantity within two years, the Water Authority added.

"The return of flow from the Kinneret to the Jordan is another symbolic but important step in the restoration of Israel's natural systems," Israel Nature and Parks Authority director-general Shaul Goldstein said. "The successful cooperation among the authorities plus the development of desalination technologies brings changes that will benefit nature."

Shimon Ben-Hamo, CEO of the Mekorot national water company, praised the "revolution to the water sector" that has occurred in recent years, particularly the entrance of desalination into the market – which has in turn reduced the necessity of pumping the nation's aquifers.

Rehabilitating the Jordan River means restoring an asset that will enable Israel to attract visitors from all over the world, according to Environmental Protection Minister Amir Peretz.

"The rehabilitation of the Jordan is a direct continuation of projects like the restoration of the Kishon or the restoration of other rivers that have been transformed from neglected backyards into places of recreation and leisure for residents," Peretz said.

Although in principal in favor of recharging the Jordan River with a clean and reliable water supply, regional environmental organization Friends of the Earth Middle East has repeatedly said that the 30 million cubic meter quantity will not be sufficient for the Lower Jordan's needs.

Overall, between 400 and 600 million cubic meters of water is necessary to replenish the river's supplies, and Israel should be providing at least 220 million cubic meters of that amount, according to Friends of the Earth reports.

Jordan should be responsible for 90 million cubic meters while Syria should be responsible for 100 million cubic meters, they added.

Saad Abu Hammour, head of the Jordan Valley Authority on the Jordanian side of the river, has praised the Israeli project and has said that the Jordanian team is working together with the Israeli team.



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"On the one hand we want to congratulate where congratulations is required," said Gidon Bromberg, Israeli director of Friends of the Earth Middle East. "We welcome this historic first effort and this culminates almost a decade of campaigning and educating for the rehabilitation of the Jordan."

When Friends of the Earth first began advocating for a river restoration using Kinneret waters, previous water officials had said that such an effort would be entirely impossible, Bromberg explained.

"That said, our concern is not only that this is not anywhere near the 220 million cubic meters that we have identified is necessary – our concern relates to the process," Bromberg said.

The master planning process led by the Lower Jordan River Drainage Authority has not involved an independent, expert hydrological table analysis of the Jordan River before determining the restoration quantities necessary, Bromberg argued. Only once such an analysis occurs should the drainage authority be negotiating with the Water Authority about precise amounts, he added.

"At the moment the Water Authority is deciding how much it thinks it can provide without any independent analysis being done as to what is needed to rehabilitate the river," Bromberg said.

"We cannot accept the process that is currently moving forward because it is moving forward in a non-transparent manner that prevents public debate, which is actually needed for the ecological rehabilitation of the Lower Jordan."

"Water flows from Lake Kinneret to Jordan River", 26/05/2013, online at: <u>http://www.jpost.com/Enviro-Tech/Water-flows-from-Lake-Kinneret-to-Jordan-River-314442</u>

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#### **\*** Dam opened to revive Jordan River for first time in 50 years

The water flow from the Kinneret is part of the multiyear plan to revive the ecology along the lower Jordan River.

For the first time since the Degania Dam on the Jordan River just south of the Kinneret was built in 1964, it has been opened for the free flow of water into the lower Jordan River. The Water Authority announced that <u>Mekorot National Water Company</u> will initially allow a flow of 1,000 cubic meters an hour (8.76 million cubic meters a year), and will gradually increase the flow to 30 million cubic meters a year.

The water flow from the Kinneret is part of the multiyear plan to revive the ecology along the lower Jordan River, which has suffered for decades from the pouring of brackish water and sewage into the river. The program begun today includes the construction of sewage treatment plants to improve the quality of the water flow into the lower Jordan River from Tiberias and its environs.

Mekorot, the Israel Nature and National Parks Authority, and the Ministry of Environmental Protection are cooperating on the program. The Water Authority said that, in the coming years, the participating authorities would allocate NIS 400-500 million to reduce the salinity in the lower Jordan River and to develop tourism along its course.

The decision to allow water flow from the Kinneret to the lower Jordan River was made after the heavy rainfall this winter, which improved the condition of the Kinneret and raised its water level. In addition, the construction of seawater desalination plants has allowed Mekorot to pump less water from the lake. According to the Water Authority, half of Israel's water now comes from desalination or recycled water, and that this proportion will rise in the coming years, in order to reduce the dependence on rainfall.

The Water Authority, however, cautioned about the effect of the regular water flow into the lower Jordan River on the condition of the Dead Sea. The Dead Sea's northern basin loses an average of one million cubic meters of water a year, and regular water flow from the Jordan River will not solve the Dead Sea's environmental problems.

"Dam opened to revive Jordan River for first time in 50 years", 26/05/2013, online at: http://www.globes.co.il/serveen/globes/docview.asp?did=1000846802&fid=1725

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#### \* Press TV: Israel depriving Palestinians of clean drinking water

Israel's blockade and inhumane practices continue to take their toll on Gaza's sole fresh water source.

According to Gaza's Environment Quality Authority nearly ninety percent of the tiny coastal enclave's aquifer is polluted.

Among the various chemical pollutants in the Gaza Strip's water are Nitrates and Chloride. Their levels are three times higher than those recommended by the World Health Organization. Nowadays people can only drink filtered water which they buy from private filtration stations.

Throughout the years Tel-Aviv has continued to infringe on Palestinian water rights depriving them of clean water which is a basic human right guaranteed by the international human rights law.

During their numerous aggressions on Gaza Israeli forces bombed sewage treatment plants causing raw sewage to seep into the aquifer and therefore polluting it.

This has left Palestinians with very small amounts of drinking water, meaning that they have no choice but to drink the polluted water even when they know if will be harmful to themselves and their children.

In a report released by the U.N in 2012 the lack of clean water was referred to as the greatest immediate concern in the impoverished coastal enclave.

According Palestinian officials the Israeli Water Company Mekorot has been digging wells along the eastern borders of Gaza in recent years and stealing water from the Gaza Strip's aquifer.

"Press TV: Israel depriving Palestinians of clean drinking water", 29/05/2013, online at: http://uprisingradio.org/home/2013/05/29/press-tv-israel-depriving-palestinians-of-clean-drinking-water/

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## **\*** Export oil, import water – the Middle East's risky economics

The world's driest region, the Middle East and North Africa (MENA), is getting drier at an alarming rate.

And yet, despite massive population growth (the Middle East's population grew 61 percent from 1990 to 2010 to 205 million people)\* predictions of so-called "water wars" have failed to materialize.

So how has a region that water experts say ceased to have enough water for its strategic needs in1970 proved so resilient to water scarcity?

"Trade is the first means of being resilient; it's the process that enables an economy to be resilient. The ability to trade effectively depends on the strength and diversity of the economy," Anthony Allan from King's College London and the School of Oriental and African Studies told IRIN.

That does not literally mean that countries import water directly; it is rather that because so much water is used, not for drinking, but for agriculture (around 90 percent), by importing food staples like wheat you are in effect importing water, something Allan calls "virtual water".

As a result, the region's growing population imports around a third of its food - a figure that shoots up in the Gulf states where arable land is negligible.

But while such resilience may "miraculously" solve extreme water scarcity and make life that exists today possible in the Middle East, it can create its own vulnerabilities; countries need economies that can generate enough foreign currency to pay for imports.

That may be easy in oil-rich countries with small populations like the United Arab Emirates (UAE) and Qatar, but it is far more difficult in places like Egypt, which struggles to find the reserves to pay for wheat imports for its 84 million citizens in a context of declining crude oil exports and a slump in tourism.



Such trade "resilience" is also largely unaffordable in a place like Yemen - the region's poorest country, which has 25 million people in an extremely water scarce (and hence food scarce) environment.

Each Yemeni only has access to about 140 cubic metres of water annually and the capital, Sana'a, is on track to be the first in the world without a viable water supply.

#### An uncertain future

While trade, an abundance of historically cheap food on international markets, and for some oil - sold at high prices - have combined to create an unexpected resilience in the face of water scarcity, such lessons may not travel well in the developing world.

Trade may have reduced dependency on local water supplies, but it has shifted dependency to international markets and exposed people to fluctuating world prices.

It has also hidden the gravity of the water scarcity situation in the Middle East and made it easier to neglect the development of other solutions to a problem that shows no sign of going away.

A recent study of NASA satellite data published last month found that parts of Turkey, Syria, Iraq and Iran along the Tigris and Euphrates river basins had lost 144 cubic kilometres of water from 2003 to 2009 - roughly equivalent to the volume of the Dead Sea.

An analysis of the data published in the Water Resources Research journal attributes about 60 percent of the loss to the pumping of groundwater from underground reservoirs - reserves people fall back on when rivers dry up.

Underground reserves can only last so long, and importing ever increasing amounts of food to feed a growing population is not an option for poorer countries.



Resilience and efficiency

Nevertheless, there are other lessons in water scarcity resilience from the Middle East - either measures that have been shown to build resilience, or that water experts have come to understand would improve the strength of the system to further shocks if they were broadly implemented.

Some of these solutions are not new.

For a start, though the region may be drying, it has been dry for a long time.

"Water scarcity is not new to the region," Hamed Assaf, a water resource management specialist at the American University of Sharjah in the UAE, told IRIN. "It has been the norm for thousands of years and people have adapted their survival strategies to changes in rainfall and temperature," he told IRIN.

With scientist predicting an increase in extreme weather events, adaptability has become increasingly important. It is also true that there remains a degree of unpredictability in the system, particularly in Egypt where it is not clear if future rainfall will increase or decrease.

Resilience is about being strong in the face of whatever happens. And in any situation, strong water systems make the most of what they have - including through treating and reusing waste water like at the Al Gabal Asfar water treatment plant in Egypt.

#### Rainwater harvesting

One old technique is rainwater harvesting. "In Jordan there are indications of early water harvesting structures believed to have been constructed over 9,000 years ago," Rida Al-Adamat, director of the Water, Environment and Arid Regions Research Centre at Jordan's al-Bayt University, told IRIN.

Jordan harvests 400-420 million cubic metres of water annually, according to Ministry of Water and Irrigation spokesperson Omar Salameh.



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"We have 10 major dams with a total capacity of 325 million cubic metres, in addition to hundreds of sand dams in different locations to develop local communities and recharge groundwater."

Water harvesting can be done at the household level especially in areas that get enough rainfall during the rainy season. "If your area gets 500mm of rain per year, you can collect enough water for household use," said Assaf.

"In Lebanon, people used to build ponds to collect water during winter and use it later on for irrigation and breeding animals," said Assaf.

"The main idea of water harvesting is to increase green water or soil moisture... Farmers in the region used to build small sand barriers on slopes to prevent the water from going down and thus recharge the area. Then they used to plant in the areas behind the barriers," he added.

# Data collection

A key aspect of efficient water use is data collection - important for sound water management at the country level.

"As the saying goes: what you cannot measure you cannot manage," Heba Yaken, water and sanitation operation analyst at the World Bank office in Cairo, told IRIN. "It is important to know how much you are consuming in order to manage it in a good way."

Jordan, which some say has one of the most monitored water scarcity situations in the world, has gained widespread recognition for its data collection.

"Jordan's data is relatively well organized, especially when it comes to agriculture. The volume of water consumption is precisely known in every area. They have installed measuring tools in every area so they know what kinds of crops are being cultivated and the amount of water they consume," Hiba Hariri from the Arab Water Council told IRIN.



Data-sharing in the region is limited, according to Yaken. "Countries are not as transparent as they should be," she said.

Other solutions

A whole range of solutions are being piloted and recommended in the Middle East.

In Egypt, the Arab Spring has encouraged farmers to become more outspoken in demanding their water rights, says Yaken from the World Bank.

Farmers have come together in "water users' associations" to help manage supplies and become more aware of water scarcity issues.

"Farmers are now responsible for the `mesqas' [canals]", Yaken told IRIN.

"People at the tail of the `mesqa' don't get as much water as the people upstream. People are receiving much more training so that they can manage those disputes between the different farmers, and different demands," she said.

Elsewhere, capacity building is being carried out by the German Agency for International Cooperation (GIZ), which is running a climate change adaptation scheme designed to help Arab states climate-proof water systems.

While trade provides substitutes for much agricultural water use, the remaining 10 percent of water needs are increasingly being met by desalination, half of which globally is carried out in the Middle East.

Recent years have seen a large increase in desalination, clearly useful in a region without any landlocked countries, but it is an energy-intensive phenomenon almost entirely powered by fossil fuel power, which raises other environmental concerns.



Saudi Arabia uses 1.5 million barrels of oil a day to power its desalination plants, although it is looking to develop solar-powered plants.

Solar is a largely unexplored option for desalination, but also for increasing the efficiency of water systems, through technologies like solar-powered water pumps.

#### Consumption

But although desalination may become an increasingly affordable, and renewable, solution, water experts say it can only be used as part of wider reforms.

A more resilient water system will also need adaptions on the demand side, including more efficient consumption of water, as well as cooperation between countries on the sustainable use of current resources.

"The problem is that we have short-term plans that change with the change of personnel or ministers," said Hariri from the Arab Water Council.

As climate change and population growth increase pressure on water systems, the MENA region will need to be increasingly efficient in its use of water - and may have lessons for other parts of the world.

#### By John James (IRIN)

\*The definition of Middle East used in the OECD/World Bank figures is Bahrain, Iran, Iraq, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, Syria, UAE, Yemen, but not Israel or OPT.

"Export oil, import water – the Middle East's risky economics", 02/06/2013, online at: http://www.english.globalarabnetwork.com/2013060213146/Economics/export-oil-import-water-the-middle-east-s-riskyeconomics.html

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## \* Manitoba regulations don't allow ashes to be scattered in water

## Law infringes on rights: MLA

Should the scattering of cremated human remains be allowed in Manitoba?

That was the question posed Tuesday by NDP MLA Mohinder Saran (Maples) in a resolution aimed at providing clarity to provincial rules.

Saran said it's an issue of religious rights, particularly among Hindus whose religion mandates cremation.

"After cremation, the ashes are put in the water," Saran said.

"It's an important part of their religion, but in Manitoba it's not legal to put the ashes into the water for whatever reason, pollution or whatever."

Saran said it's impractical for a family to fly overseas to scatter the ashes of a person born in Canada in the Ganges River in Varanasi, India, or a river in the Punjab.

"So they will have to do it here, but they don't want to violate the law," he said."

Saran said cremation is controlled under the Cemeteries Act, but there is no mechanism to guide what can be done with the ashes.

He said many jurisdictions, including Alberta, Newfoundland and Labrador and Ontario, allow cremated remains to be scattered on waterways and Crown land.

His resolution asks for all-party support to acknowledge the significance of the religious custom of scattering cremated remains and to consider adopting a policy similar to Ontario's.

But it did not get put to a vote.

Instead, the Progressive Conservatives "talked it out" in the allotted time of one hour, effectively killing it.

Tory house leader Kelvin Goerzten said the Tories are not opposed to Saran's idea, but would like to see more information provided to MLAs on what other provinces allow and whether it would require any legislative or regulatory change.

"We want to make sure we get it right for the faith communities involved," Goertzen said.

A provincial spokesman said the government is looking at Saran's resolution to see if it can be modified for swifter approval.



Saran said he and the faith groups he represents would welcome that as they do not want to break any law when they scatter remains.

"It will be better if they don't feel guilty and so they can do what's part of their religion," he said.

"Manitoba regulations don't allow ashes to be scattered in water", 29/05/2013, online at: http://www.winnipegfreepress.com/breakingnews/law-infringes-on-rights-mla-209302891.html

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## \* Egypt: Ethiopia Starts Diverting Blue Nile Course On Tuesday

Ethiopia will begin on Tuesday the process of diverting the course of the Blue Nile River to continue the construction process of its Renaissance Dam, raising concerns over Egypt's water supply.

The Official Spokesman of the Ethiopian government, Shimeles Kemal, said on Tuesday that diverting the course of the Blue Nile, one of the Nile River's two major tributaries, is essential for building the new dam.

"The river will return to its natural course after the completion of the dam's construction," Kemal said as reported by the Middle East News Agency.

On Monday, Ethiopia's Foreign Minister Berhane Gebre-Christos said that the Grand Ethiopian Renaissance Dam project would not affect Egypt's share of the Nile water.

"The in-construction dam will be used exclusively for power generation and not for irrigation," the Ethiopian minister told reporters on the sidelines of the African Union Summit currently taking place in Addis Ababa.

Ethiopia announced in 2011 its plan to build the largest hydroelectric power plant in Africa on the main stream of the Nile River.

The Renaissance Dam is built along the river that provides Egypt with about 60 percent of its annual 55 million cubic metres of Nile water.

Egypt and Ethiopia are members of the Nile Basin Initiative (NBI), a partnership among Nile states aimed at sharing the river's socio-economic benefits and promoting regional security.

"Egypt: Ethiopia Starts Diverting Blue Nile Course On Tuesday", 28/05/2013, online at: http://allafrica.com/stories/201305281174.html

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## Ethiopian Dam Project Raises Fears Of Water Deficit in Egypt

Ethiopia's decision to begin diverting the course of the Blue Nile (the largest of the Nile river's branches), as a prelude to the construction of the <u>Renaissance Dam</u>, put Egyptian diplomacy in a difficult position and stirred fears over Cairo's declining share in the Nile waters, but the Egyptian presidency managed to tame these fears.

Egyptians were surprised by the decision to divert the course of the Blue Nile — which pumps half of the Nile's water — issued hours following President Mohammed Morsi's visit to Addis Ababa, during which he met with Ethiopian Prime Minister Hailemariam Desalegn on the sidelines of the African Summit. While Egyptian officials played down the Ethiopian move, opposition forces held the ruling Muslim Brotherhood responsible for its failure in managing the water issue.

The spokesman for the Egyptian presidency, Omar Amer, confirmed that the quantities of Nile water received by Egypt "will not be adversely affected by the Ethiopian government's statement announcing the beginning of construction of the Ethiopian Renaissance Dam and the diversion of the Blue Nile's course." This contradicts analyses by experts, notably that of former minister of irrigation Nasreddin Allam, who demanded "swift action and a unified vision with Sudan in order to preserve historical water quotas."

In a news conference [May 28], the presidential spokesman indicated that "a Tripartite Commission [composed of experts from Egypt, Sudan and Ethiopia] is currently examining engineering studies conducted by the Ethiopian government and will issue its decision. Egypt is awaiting this decision to determine its position regarding the project." It is worth mentioning that the commission concludes its sixth and final meeting in Addis Ababa [May 29].

Yet sources close to the issue confirmed to *Al-Hayat* that there are "differences and divisions within the Egyptian delegation as to the usefulness of remaining in the Tripartite Commission. While the commission is still discussing the matter, Ethiopia is setting a new situation on the ground. This implies that these studies are useless." The sources pointed out that "Differences arose as soon as the Tripartite Commission was formed. Some of the parties felt there was no need for Egypt to join this commission, or that — at the very least — Ethiopia must be required to halt any procedures for the construction of the dam until the studies are completed."

The crisis concerning the construction of the Ethiopian dam dates back to mid-2010, when six upstream countries — namely Ethiopia, Uganda, Kenya, Tanzania, Rwanda and Burundi — agreed upon and signed a new treaty to share the dam's resources in a meeting in Uganda. This was fiercely rejected by the two downstream countries (Egypt and Sudan) because of its impact on their historical quotas, estimated at 55.5 billion cubic meters per year for Egypt and 18.5 billion for Sudan. Yet the states which were party to this treaty disregarded the downstream countries' protests and Ethiopia



launched the Renaissance Dam project in April 2012, which is expected to hold about 63 billion cubic meters of water.

It seems that Cairo will rely on negotiations to address this <u>crisis</u>. A military official confirmed to *Al-Hayat* that a military intervention to prevent the construction of the dam — as some had called for yesterday — has been "completely ruled out." He explained that "The military option was raised during discussions held at the beginning of the crisis under the former regime, but officials fiercely rejected it and we maintain this approach."

Minister of Water Resources and Irrigation Mohamed Bahaa al-Din asserted that "the decision to start procedures to divert the river, which have been going on for a while now, does not mean that Egypt approves of the construction of the Renaissance Dam." The minister continued, "We are still awaiting the outcome of the Tripartite Commission's work," adding in a statement that "The diversion of the river at the dam's construction site is simply an engineering procedure to prepare the site for the start of the construction process."

Bahaa al-Din stressed that "The diversion process does not mean the water flow is prevented from eventually coming back to its main course. Our initial position is not to accept any project that would negatively affect our current water flow." The irrigation minister asserted that "The water distribution and management crises Egypt is currently facing, as well complaints by farmers of water shortages, confirm that we cannot spare a single drop of water from the Nile."

On the other hand, he explained that Egypt's position not to oppose any development project in any of the Nile basin countries remains unchanged, as long as it does not harm the two downstream countries. He pointed out that "There are plans in place to deal with the expected results, which are based on the technical report to be submitted by the Tripartite Commission."

On a different note, Ramses El-Najjar, a lawyer for the Coptic Church, revealed that the presidency delegated Coptic Patriarch Pope Tawadros II to mediate in the crisis with Ethiopia. He explained that the pope received calls from the presidency urging the Egyptian church to intervene with the Ethiopian church — which was historically affiliated with the former — in order to reach a consensual solution to the crisis. El-Najjar said that the pope will make his contacts within hours.

The Middle East News Agency quoted Egypt's ambassador to Ethiopia, Mohamed Idris, as saying that the Ethiopian Renaissance Dam is "an accomplished fact and is currently under execution. The ongoing dialogue between Egypt and Ethiopia aims to make the project beneficial to both countries, and not to stop the dam-construction project."

The ambassador added that the Tripartite Commission formed to draft a report on the effects of the construction of the dam visited the dam site [May 27]. He said that no decision may be rendered



before the issuance of the commission's report. He explained that even if the commission's decisions are not binding, it is a commission of experts and it plays an important political role; its decisions may not be disregarded. Moreover, its report is of scientific and technical value and will be taken into consideration.

The ambassador indicated that "Following the completion of the Tripartite Commission's report, this report will be examined at the political level in order to issue the relevant decision. The challenge lies in the political approach to be retained toward it." Moreover, Ambassador Idris asserted that Egypt will promote development in Ethiopia, as long as this will not cause Egypt any harm, and said that Egypt was willing to partner with Addis Ababa on development projects.

The ambassador pointed out that the Ethiopian prime minister confirmed during his meeting with President Morsi, on the sidelines of the African Union summit three days ago, that Ethiopia does not want to cause any damage to Egypt and that he hopes the dam project will be a regional project beneficial to Egypt and Sudan. Ambassador Idris indicated that an agreement was reached during the meeting on holding presidential meetings and technical-commission meetings to discuss the matter in detail.

He confirmed that "The circumstances surrounding the dam issue have changed, since in the past this matter was tackled in the light of tense political relations and negative interactions between the two parties, given the rupture between the two heads of state after the attempted assassination of former president Hosni Mubarak in 1995. These circumstances have changed after the January 25 Revolution. Official and popular interactions have resumed, mutual visits are exchanged between the two countries and relations are now promising and positive rather than negative and tense. However, we currently lack coordination and planning in order for these initiatives to be permanent rather than transitional."

On the other hand, Hani Raslan, the head of the Sudan and Nile Basin Unit at the Al-Ahram Center for Political and Strategic Studies, said that Ethiopia's decision to announce that it would divert the course of the Blue Nile following Morsi's visit was "evidence that [Ethiopia] was following a policy of strategic deception against public opinion and the government in Egypt." He blamed Egyptian officials for "harming the interests of the country."

Raslan called for the dismissal of the minister of irrigation, saying that "his remarks that Egypt would not prevent the construction of the Ethiopian Renaissance Dam is a form of submission, and neglects all of the strategic implications." He called for "taking a firm stance and acting immediately against this danger." He said that "The president and his government's delay in addressing this crisis, which affects national security, requires a popular trial."



<u>Amr Moussa</u>, the former secretary-general of the Arab League and a leader in the opposition National Salvation Front, said that the Ethiopian project was a "historic shift in the path of the waters of the Nile river." He stressed the "need for downstream countries not to be affected, particularly Egypt, and to avoid anything that leads to strained relations in the Horn of Africa region. This requires Ethiopia to keep Egypt's interests in mind, and at the same time for Egypt to consider Ethiopia's interests."

Moussa called for the government to "immediately enter into bilateral negotiations with Ethiopia to develop, identify and ensure their common interests. These negotiations must include various political, legal and economic parties involved in the water issue, and Egypt must actively and effectively participate in gathering the Nile states, but with a clearly defined plan that includes give and take."

The Reform and Development Party held Morsi fully responsible for the "expected water deficit in Egypt." In a statement [May 28], the party said: "The construction of the Ethiopian Renaissance Dam will have a negative impact on Egypt's share of the Nile waters and its arrival to Lake Nasser [the High Dam Lake]. This would render nearly two million feddan [two million acres] of agricultural land unusable, and also cause problems with drinking water and industry, as a result of reduced water levels along the Nile ... By all measures, we are on the verge of a disaster if Egypt does not take swift and direct action." He said that "the fact that this decision was made only one day after <u>President Morsi</u> left [Ethiopia] means that Egypt's affairs are in the hands of a group of amateurs who cannot manage their files externally and internally."

"Ethiopian Dam Project Raises Fears Of Water Deficit in Egypt", 29/05/2013, online at: <u>http://www.al-monitor.com/pulse/politics/2013/05/egyptian-concerns-mount-over-water-deficit.html</u>

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# \* Ethiopia acting 'unilaterally' on Blue Nile

Mideast analysts are concerned about Ethiopia's diverting a stretch of the Blue Nile to construct a dam.

Experts on Middle Eastern hydro politics have described <u>Ethiopia</u>'s diverting a stretch of the Blue Nile to make way for a hydroelectric dam as "a unilateral move" that risked a regional war.

Speaking to the Anadolu Agency (AA), Hani Rislan, director of al-Ahram Political and Strategic Research Center Africa Unit said "<u>Renaissance Dam</u> is part of a giant project composed of 4 dams which will gather 200 billion cubic meters of water."

Rislan said the project threatened Egypt with drought, a \$4 million revenue loss in agriculture, unemployment of 2 million families and with compromising the potential of Egypt's main hydroplant, the Aswan Dam.

Rislan said that <u>Ethiopia</u>'s "surprising decision" meant that the dam construction was pre-planned and it jeopardized possibility of cooperation between the three riparian states, the third being Sudan.

## "Khartoum may submerge"

Professor Ala al-Zewahiri from Hydraulics Engineering Department of Cairo University said Egypt and Sudan do not face any immediate risks in the short-run but until after the construction of the dam was completed.

"In terms of geopolitics, the dam is constructed on an unfavorable location between two mountains, which would lead faults, causing Sudan's capital Khartoum to submerge" said, al-Zewahiri.

## Ethiopian move risks regional war

Salman Mohammed Ahmed Salman, a former advisor to UN International Fund for Agricultural Development (IFAD), and an expert on African water resources claimed that the diversion project could lead to a regional war.

Expressing his concern over the possibility that Egyptian radical militants and political figures' might use the dam project as a pretext to attack <u>Ethiopia</u> and other riparian countries.

Ethiopia, the source of the Blue Nile, wants to take more water from the river, claiming it will meet its electricity and food supply. However, a 1929 agreement between Egypt and Britain as guarantor state gives Egypt most of the Nile's waters.



Nile Basin Initiative (NBI) in 1999 was designed in order to solve the problems between upstream and downstream countries. As it failed, <u>Ethiopia</u>, Tanzania, Rwanda, Uganda and Kenya, as riparian states, signed Entebbe Agreement in 2010 envisaging that all riparian states have the right to access to the Nile.

While South Sudan is also expected to be part of the agreement shortly, Egypt and Sudan, acting together, are opposed to the agreement on the grounds that it harmed their vital water resources.

"Ethiopia acting 'unilaterally' on Blue Nile", 30/05/2013, online at: http://www.worldbulletin.net/?aType=haber&ArticleID=110206

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# \* Ethiopian official: Report finds Nile dam won't significantly affect Egypt, Sudan

ADDIS ABABA, Ethiopia – An Ethiopian government official says an independent panel of experts has concluded that the country's multi-billion dollar hydropower dam being built on the Nile River will not significantly affect Sudan and Egypt, countries that are highly dependent on the water of the world's longest river.

The Ethiopian official, who insisted on anonymity because he was not authorized to speak publicly on the topic, said late Saturday the final report by the panel of experts, which included representatives from Egypt and Sudan, concluded after a year-long study that the dam's construction meets international standards.

Egypt in the past has threatened to go to war over its "historic rights" to Nile River water but diplomats from both countries this week played down the potential for conflict over the construction of the dam.

"Ethiopian official: Report finds Nile dam won't significantly affect Egypt, Sudan", 02/06/2013, online at: http://www.foxnews.com/world/2013/06/02/ethiopian-official-report-finds-nile-dam-wont-significantly-affect-egyptsudan/

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## \* Egypt receives technical report on Ethiopia dam

CAIRO, June 1 -- Egypt received on Saturday a report from the tripartite technical committee on Ethiopia's Renaissance Dam intended to be built on the River Nile, official news agency MENA reported.

"Copies of the report have been sent to the Egyptian presidency, the ministries of foreign affairs, water resources ministry and irrigation as well as other institutions concerned with the Nile water issue," MENA quoted a well-placed source as saying.

Egyptian state TV said on Saturday that the report urged more consultations between the three concerned states on the issue, recommending more sufficient studies on the dam.

On Tuesday, Ethiopia started diverting the course of the Blue Nile, one of the River Nile's two basic tributaries, as a preparatory step for building the Grand Renaissance Dam, a move that raised concerns in Egypt over its share of water as a downstream Nile Basin country besides Sudan.

A technical committee of the three countries, Egypt, Ethiopia and Sudan, has been studying the dam and its effects on water shares of Nile Basin countries.

On Friday, Egyptian Prime Minister Hesham Qandil held talks with his Ethiopian counterpart Hailemariam Desalegn in Japan on the sidelines of an international conference on African development, where they exchanged views on the dam. Qandil told Egyptian state TV that his Ethiopian counterpart asserted "the dam would not affect Egypt's share of Nile water."

However, Some experts believe the dam will cause Egypt great harms, including shortage of Nile water, drying agricultural lands, increasing Nile Delta soil salinity and reducing Egypt's High Dam power generation. They further say it may cause Egypt a loss of 10 billion cubic meters of its annual share of the River Nile water, which is 55.5 billion cubic meters.

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<sup>&</sup>quot;Egypt receives technical report on Ethiopia dam", 02/06/2013, online at: <u>http://english.eastday.com/e/130602/u1a7431438.html</u>



## **\*** Committee on impact of Ethiopia's Renaissance Dam to meet Morsi

Egypt's President Mohamed Morsi will meet Sunday to discuss their final report the tripartite committee that has been studying the impact of Ethiopia's proposed Renaissance Dam.

The joint committee is made of Egyptian, Sudanese and Ethiopian representatives who have been studying since May 2012 the impact of the Renaissance Dam project.

Both Minister of Foreign Affairs Mohamed Kamel Amr and Minister of Irrigation Mohamed Bahaa El-Din will be present at the meeting

Ethiopia announced Tuesday it will begin diverting the course of the Blue Nile, one of the Nile River's two major tributaries, as part of its project to build the new dam.

The majority of Nile water that reaches Egypt and Sudan originates in the Blue Nile.

The Renaissance Dam has been a source of concern for the Egyptian government with fears expressed that the project, if completed, could negatively impact the volume of Nile water that will reach Egypt.

Egypt will need an additional 21 billion cubic metres of water per year by 2050, on top of its current 55 billion metres quota, to meet the water needs of a projected population of 150 million people, according to Egypt's National Planning Institute.

"Committee on impact of Ethiopia's Renaissance Dam to meet Morsi", 02/06/2013, online at:

http://english.ahram.org.eg/NewsContent/1/64/72911/Egypt/Politics-/Committee-on-impact-of-Ethiopias-Renaissance-Dam-t.aspx

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## Dozens protest Blue Nile dam move outside Ethiopia's Cairo embassy

Limited demonstration erupts outside Ethiopian embassy in Cairo as activists protest perceived infringement on Egypt's traditional share of Nile water

Dozens of Egyptian protesters gathered outside the Ethiopian embassy in Cairo on Friday to protest Addis Ababa's decision earlier this week to temporarily divert the course of the Blue Nile as part of a project to build a series of dams on the river.

Protesters held banners aloft reading, "We reject attempts to take our Nile Water." Others chanted: "We are the source of the Nile Basin."

"After Ethiopia's surprising decision, bilateral relations have now been put to the test," according to a statement by the 'Copts without Borders' group, one of the protests' main organisers.

The statement added: "Any agreement between President Mohamed Morsi's government and its Ethiopian counterpart will not be recognised, since Morsi has lost all legitimacy before the Egyptian people."

The statement went on to call on Egyptians to take part in a planned anti-Mors rally on 30 June to call for snap presidential elections.

Other participants at Friday's protest included members of the 'Lawyers Union for the Nile Basin' and the 'Egyptians against Injustice' movement.

Within the context of a plan to build a series of new dams for electricity production, Ethiopia on Tuesday began diverting the course of the Blue Nile, one of the Nile River's two main tributaries. Most Nile water that reaches Egypt and Sudan originates from the Blue Nile.

Ethiopia's 'Renaissance Dam' project – one of four planned hydro-electric power projects – has been a source of concern for the Egyptian government, amid ongoing sensitivities regarding the project's possible effects on Egypt's traditional share of Nile water.

According to the state-run National Planning Institute, Egypt will need an additional 21 billion cubic metres of water per year by 2050 – on top of its current quota of 55 billion metres – to meet the needs of a projected population of some 150 million.

"Dozens protest Blue Nile dam move outside Ethiopia's Cairo embassy", 31/05/2013, online at: <u>http://english.ahram.org.eg/NewsContent/1/64/72835/Egypt/Politics-/Dozens-protest-Blue-Nile-dam-move-outside-Ethiopia.aspx</u>

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## Sudan downplays negative impact of Ethiopian dam project

May 30, 2013 (KHARTOUM) - The Sudanese government has declared that the Grand Ethiopian Renaissance Dam (GERD) does not pose a threat to Sudan, disclosing existence of consultations and understandings among Sudan, Ethiopia and Egypt on the project.

Sudan's foreign ministry denied statements attributed to the Sudanese ambassador in Cairo, Kamal Hassan Ali, in which he expressed Sudan's rejection of the dam's construction.

The foreign ministry spokesperson, Abu Bakr Al-Siddig, said on Wednesday that Sudan's ambassador to Cairo didn't describe the Ethiopian move to change the course of the river Nile as "shocking", denying reports that Sudan and Egypt would resort to the Arab League.

Al-Siddig added that Sudan's ministry of water resources and electricity has affirmed that the Ethiopian move doesn't impose any threat to Sudan, asserting that Sudan is committed to cooperate with Ethiopia and Egypt on issues of the river Nile's water to serve the common interests of the three countries.

Sudan's embassy in Cairo, for its part, denied the statements attributed to ambassador by a correspondent of the Anadolu Agency, adding that they were made on May 23 which is prior to the Ethiopian decision to change the course of the river.

The embassy further said that Ambassador Ali focused in his statements on the permanent and continuous coordination between Sudan and Egypt over all water issues, and relations between the two countries and the Nile Basin countries.

In April 2011 Ethiopia launched construction of the \$4.8 billion dam on the Blue Nile, at about 40 km east of Sudan in the Benishangul-Gumuz region.

On Tuesday, Ethiopia began changing the course of the river Nile. According to a Ethiopian government official the diversion would only cover "a few meters" after which the river will continue flowing on its natural course.



The chief executive officer of the state-run Ethiopian Electric Power Corporation, Mihret Debebe, explained that the "dam is being built in the middle of the river; hence construction work can't be carried out while the river is flowing".

The Ethiopian official further said that changing the course of the river "would allow us carry out civil engineering works without difficulty".

The construction of the dam project on the Blue Nile led to outcry from the downstream countries of Sudan and Egypt; which had control over most of the water resources using a treaty signed during colonial era.

Some Egyptian news media have responded negatively to the Renaissance Dam and demanded sacking the minister of irrigation.

The head of the program on Sudan and Nile basin at Al-Ahram Center for Political and Strategic Studies (ACPSS) said the approval of the minister of irrigation for the construction of the dam reflects submission and negligence as well as ignorance of the strategic repercussions of the dam, calling for dismissal of the minister.

Egypt and Sudan had previously argued that the construction of the dam would negatively affect their water shares and insisted the project should be blocked, calling on international donors against funding it.

However Sudanese president Omer Al-Bashir announced his support to the project in March 2012, saying his government understands the mutual benefits the project could offer Ethiopia and Sudan.

Last Saturday, Egyptian minister of irrigation, Mohamed Baha Eddin, said his country is not opposed to the Ethiopian dam project as it does not impair Egypt's interests.

He told reporters that the Ethiopian prime minister emphasised his country's eagerness to prioritise Egypt's interests above their own.

Ethiopia on 28 May held in Guba area in Benishangul-Gumuz state a ceremony to celebrate the successful diversion of the start of the construction of the Grand Ethiopian Renaissance Dam.



Speaking at the event, president of the GERD construction council and deputy prime minister Demeke Mekonnin said the diversion of the river has been successfully done to utilise the resource for the interest of Ethiopia and the neighbouring countries.

Ethiopia's water and energy minister, Alemayehu Tegenu, also made some statements in the same direction stressing that the construction of the dam is being carried out in such a way that it maintains the mutual benefit of the Nile basin countries.

He underscored that the dam would enhance cooperation and economic integration and would not do any damage to the lower riparian countries.

"Sudan downplays negative impact of Ethiopian dam project", 30/05/2013, online at: <u>http://www.sudantribune.com/spip.php?article46754</u>

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# \* Ethiopia starts Blue Nile diversion in dam project

Ethiopia has begun diverting the Blue Nile as part of a giant dam project, officials said Wednesday, risking potential unease from downstream nations Sudan and Egypt.

The \$4.2 billion (3.2 billion euro) Grand Renaissance Dam <u>hydroelectric project</u> had to divert a short section of the river—one of two major tributaries to the main Nile—to allow the main dam wall to be built.

"To build the dam, the natural course must be dry," said Addis Tadele, spokesman for the Ethiopian Electric Power Corporation (EEPCo), a day after a formal ceremony at the construction site.

The natural course of the river was diverted about 550 metres (yards) from its natural course, Addis said, but stressed that <u>water levels</u> would not be affected.

"There is no problem with the river levels," he added.

The first phase of construction is expected to be complete in three years, with a capacity of 700 megawatts.

Once complete, the dam will have a capacity of 6,000 megawatts.

Both Sudan and Egypt, arid nations that rely heavily on the Nile for water including for agriculture, are extremely sensitive about projects that could alter the flow of the river.

However, EEPCo insists the project will not impact downstream needs, claiming the dam will provide "highly regulated outflows" by reducing floods at peak times and providing more water during otherwise low flows.

The dam project, in Ethiopia's northwestern Benishangul-Gumuz region near the border with Sudan, was launched in April 2011 by late prime minister Meles Zenawi.

Funding is being raised publicly, with the state raising funds locally, and no external financing has been provided.

Ethiopia is constructing a series of dams in order to produce <u>hydroelectric power</u> for local consumption and export.

EEPCo has plans to establish <u>transmission lines</u> to neighbouring countries, including Sudan, Kenya and Djibouti.

One of Ethiopia's deputy Prime Ministers, Demeke Mekonnen, officially launched the river diversion Tuesday, alongside EEPCo chief Mihret Dibebe.



When completed the dam wall will stretch almost 1.8 kilometres (about one mile) in length and 145 metres (475 feet) in height.

"Ethiopia starts Blue Nile diversion in dam project", 29/05/2013, online at: <u>http://phys.org/news/2013-05-ethiopia-blue-nile-diversion.html</u>

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# \* Ethiopia diverts flow of Blue Nile

Egypt and Sudan express concern over multi-billion dollar dam on Nile which violates colonial-era agreement.

Ethiopia has started to divert the flow of the Blue Nile river to construct a giant dam to meet its energy needs, according to state media, amid concerns from other Nile-dependent countries downstream.

Demeke Mekonnen, Ethiopia's deputy prime minister, said on Tuesday that diverting the flow at the site of the Great Ethiopian Renaissance Dam would provide hydroelectricity not only for Ethiopia but also for neighbouring countries, reported the state-owned Ethiopian Radio and Television Agency.

Egypt and Sudan have objected to the construction, saying it violates a colonial-era agreement which gives Egypt nearly 70 percent of Nile River waters.

Ethiopia, however, says the dam will not affect Egypt and that the 1959 agreement ignores the needs of five upriver countries.

"This project is said to cost between \$5-6bn and is expected to produce 6000 megawatts to power not only Ethiopia but also export electric power to a selection of East African countries," said Al Jazeera's Azad Essa, reporting from Addis Ababa.

He added that the hydroelectric project, considered the biggest on the continent, is expected to be fully funded by the Ethiopian government and not foreign donors who refuse to enter into a dispute with Egypt.

## No alternative sources

Egypt says its population of 90 million is among the largest in Africa and that unlike other Nile Basin countries, it does not have readily available alternative water sources.

Egypt's presidency said on Tuesday that it was awaiting a report by the Tripartite Nile Basin Committee, comprised of Egypt, Sudan and Ethiopia, to determine its next steps.



President Mohammed Morsi's spokesman said the move will not have a negative impact on the amount of Nile water reaching Egypt.

"The main issue and the essence of the matter is the impact of the dam itself and not of this step of diverting the course of water," Mohamed Edrees, the Egyptian ambassador to Ethiopia, told Al Jazeera.

He said that the diversion is a step in the construction of the dam, and will not affect either Egypt or Sudan in the amount of water because of an alternative by-pass route.

Some 84 percent of the water from the world's longest river originates in Ethiopia. The Blue Nile is one of two major tributaries of the river. The White Nile, flowing through Sudan, is the other.

"Ethiopia diverts flow of Blue Nile", 29/05/2013, online at: http://www.aljazeera.com/news/africa/2013/05/2013528212950410935.html

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## **\*** Ethiopia diverts Nile for huge \$4.7 bln hydro dam

May 28 (Reuters) - Ethiopia began diverting a stretch of the Nile on Tuesday to make way for a \$4.7 billion hydroelectric dam that is worrying downstream countries dependent on the world's longest river for water.

The Horn of Africa country has laid out plans to invest more than \$12 billion in harnessing the rivers that run through its rugged highlands, to become Africa's leading power exporter.

Centrepiece to the plan is the Grand Renaissance Dam being built in the Benishangul-Gumuz region bordering Sudan. Now 21 percent complete, it will eventually have a 6,000 megawatt capacity, the government says, equivalent to six <u>nuclear power</u> plants.

"The dam is being built in the middle of the river so you can't carry out<u>construction</u> work while the river flowed," said Mihret Debebe, chief executive officer of the state-run Ethiopian Electric Power Corporation, at a ceremony at the site.

"This now enables us to carry out civil <u>engineering</u> work without difficulties. The aim is to divert the river by a few metres and then allow it to flow on its natural course."

Ethiopia's ambitions have heightened concerns in <u>Egypt</u> over fears the projects may reduce the river's flow. Addis Ababa has long complained that Cairo was pressuring donor countries and international lenders to withhold funding.

Ethiopia's energy minister moved to dispel fears over the dam's impact.

"The dam's <u>construction</u> benefits riparian countries, showcases fair and equitable use of the river's flow and does not cause any harm on any country," Alemayehu Tegenu said in a speech.

Mohamed Bahaa El-Din, Egypt's Minister of Water Resources and Irrigation, said Cairo was not opposed to Ethiopia's development projects as long as they did not harm downstream countries.

"Crises in the distribution and management of water faced in Egypt these days and the complaints of farmers from a lack of water confirms that we cannot let go of a single drop of water from the quantity that comes to us from the Upper Nile," he said.



A panel of experts from Ethiopia, Egypt and Sudan is set to announce its findings on the impact of the Ethiopian dam on the Nile's flow in the next two weeks. (Additional reporting by Shaimaa Fayed in Cairo; Editing by Robin Pomeroy)

"Ethiopia diverts Nile for huge \$4.7 bln hydro dam", 28/05/2013, online at: http://www.reuters.com/article/2013/05/28/ethiopia-egypt-nileidUSL5N0E92OD20130528?utm\_source=Circle+of+Blue+WaterNews+%26+Alerts&utm\_campaign=e2972aea53-RSS\_EMAIL\_CAMPAIGN&utm\_medium=email&utm\_term=0\_c1265b6ed7-e2972aea53-250657169

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## **\*** U.S. Response to Ethiopia's Diversion of the Blue Nile

Question: What is the U.S. position on Ethiopia's recent move to divert the course of the Blue Nile and the outrage expressed by Egypt and Sudan?

Answer: We commend the current efforts of Egypt, Ethiopia and Sudan to jointly examine the downstream impacts of the Grand Ethiopian Renaissance Dam (GERD). We urge the countries to continue working together to minimize negative downstream impacts and work together to jointly develop the Blue Nile basin for the benefit of all the people of the region.

"U.S. Response to Ethiopia's Diversion of the Blue Nile", Media Note, Office of the Spokesperson, Washington, DC, 29/05/2013, online at: <u>http://www.state.gov/r/pa/prs/ps/2013/05/210043.htm</u>

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# Egyptians up in arms as Ethiopia builds giant hydro dam on Nile River; minister rules out war

CAIRO — Ethiopia's construction of Africa's largest hydroelectric dam on the world's longest river threatens to affect flows of water to Nile-dependent, water-starved Egypt, where there is growing outrage, anger and fear.

Egypt in the past has threatened to go to war over its "historic rights" to Nile River water but diplomats from both countries this week played down the potential for conflict.

"A military solution for the Nile River crisis is ruled out," Egypt's irrigation and water resources minister, Mohammed Baheddin, said Thursday amid newspaper reports recalling the threats of war from Egypt's two previous leaders, Anwar Sadat and Hosni Mubarak.

Ethiopia on Tuesday started diverting the flow of the Blue Nile for construction of the Grand Ethiopian Renaissance Dam. Eighty-five percent of Nile waters originate in Ethiopia yet the East African nation whose name has become synonymous with famine thus far utilizes very little of those waters.

Ethiopia's decision challenges a colonial-era agreement that had given downstream Egypt and Sudan rights to the Nile water, with Egypt taking 55.5 billion cubic meters and Sudan 18.5 billion cubic meters of 84 billion cubic meters, with 10 billion lost to evaporation. That agreement, first signed in 1929, took no account of the eight other nations along the 6,700-kilometer (4,160-mile) river and its basin, which have been agitating for a decade for a more equitable accord.

And Ethiopia's unilateral action seems to ignore the 10-nation Nile Basin Initiative to promote cooperation.

Ethiopia is leading five nations threatening to sign a new cooperation agreement without Egypt and Sudan, effectively taking control from Egypt of the Nile, which serves some 238 million people.

Mohammed Abdel-Qader, governor of Egypt's Gharbiya province in the Nile Delta, warned the dam spells "disaster" and is a national security issue for the North African nation.



"Taking Egypt's share of water is totally rejected ... The Nile means everything to Egypt," said Gov. Abdel-Qader.

Baheddin said Egypt already is suffering "water poverty" with an individual's share of 640 cubic meters well below the international average of 1,000 cubic meters.

Egypt protests that others along the Nile have alternative water sources, while the Nile is the sole water source in the mainly desert country.

Ethiopian officials say the dam is needed to provide much-needed power for development.

At a ceremony marking the diversion of the Nile, Deputy Prime Minister Demeke Mekonnin said Ethiopia could export cheap electricity from the dam to energy-short Egypt and Sudan. He insisted the dam would not affect the flow of water to Egypt.

Experts say otherwise.

Alaa el-Zawahri, a dams engineer at Cairo University and an expert on a national committee studying the ramifications of the Ethiopian dam, said Egypt stands to lose about 15 billion cubic meters of water — 27 percent of annual share — each of the five years that Ethiopia has said it will take to fill the dam. The country's current share already is insufficient.

"If I was more of an optimist, I would say it will cause significant damage (to Egypt)," he told The Associated Press. "If I was being pessimistic, it is a catastrophe."

"Potentially catastrophic" is the opinion of Haydar Yousif Hussin, an Italian-based Sudanese hydrologist who has worked on Nile water issues for 35 years. The dam's reservoir "will hold back nearly one and a half times the average annual flow of the Blue Nile" and "drastically affect the downstream nations' agriculture, electricity and water supply," he said in an article published in the South African magazine Infrastructure News.

Given the massive size of the dam, it could lose as much as 3 billion cubic meters of water to evaporation each year, Yousif added.



Mekonnin said the dam construction is at 21 percent and should be complete by 2015. Ethiopia has said the massive dam, located 60 kilometers (37 miles) from Sudan's border, is being built with a storage capacity for 74 million cubic meters of water and generating power of 6,000 megawatts — 30 percent more than the electricity produced by Egypt's Aswan Dam, built on the Nile in the 1960s.

But very little other information is available.

"It remains irresponsible for Ethiopia to build Africa's biggest hydropower project, on its most contentious river, with no public access to critical information about the dam's impacts," Yousif wrote. He urged Ethiopian officials to "allow some light to penetrate this secretive development scheme."

Ethiopia has timed the dam's construction while Egypt is at its weakest. The government announced the project in March 2011, when Egypt's government was overwhelmed by the Arab Spring revolution. The Nile diversion came the day after leaders of the two countries met in Addis Ababa, the Ethiopian capital, on the sidelines of an African Union summit, and days before Ethiopia, Egypt and Sudan were due to issue a technical report on the dam.

Information about the funding of the project is also unclear.

The World Bank and other donors have refused involvement, reportedly because of Egyptian lobbying of countries like the United States, which considers Egypt a key ally and pivotal to security in the region.

The contract for the \$4.8 billion project was awarded without competitive bidding to the Italian company Salini Construttori, according to Yousif and other experts.

Ethiopia says it is funding the massive project on its own, urging citizens to buy bonds that earn 5 or 6 percent interest. Norway's Development Today magazine quoted Kjetil Tronvoll of Oslo's International Law and Policy Institute as saying that government employees are being pressed to donate one month's salary to the dam and, when people protested, they were arrested.



A journalist who wrote an article criticizing the fund-raising methods, Reeyot Alemu, was arrested, tried for terrorism and sentenced to two years' jail, according to the Committee to Protect Journalists.

The issue of the dam also highlights traditional differences between Africa's northern Arabs and the blacks of the south.

That perception must be corrected, Egypt's assistant for foreign affairs, Essam el-Haddad, wrote on Egypt's foreign policy blog.

"Egypt's rejection of the project reinforces a negative stereotype of Egypt that is spreading among the people of Africa ... that this country is the reason for the absence of development and economic progress in African countries because it has acquired, unduly, the largest share of (Nile) water for its development," he wrote. "Egypt seeks to be a real partner in development in Africa."

Faul reported from Johannesburg. Associated Press writer Maggie Michael contributed to this report from Cairo.

"Egyptians up in arms as Ethiopia builds giant hydro dam on Nile River; minister rules out war", 30/05/2013, online at: <u>http://www.washingtonpost.com/world/africa/egyptians-up-in-arms-as-ethiopia-builds-giant-hydro-dam-on-nile-river-minister-rules-out-war/2013/05/30/bb284bb4-c95a-11e2-9cd9-3b9a22a4000a\_story.html</u>

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## Millennium Dam: a Report on the Ethiopian Dam, Its Impact on Sudan

The projected millennium dam is 12.5 kilometers away from the Sudanese border on the Blue Nile inside Ethiopian territories and is 35 kilometers behind the confluence of Ples River and the Blue Nile. The dam is 505 meters above sea-level while the water at the operational point is 610 above sea-level. The dam is 145 meters high and 1,800 meters long with a storage capacity of 74 billion cubic meters. Considering its height, the Millennium Dam is regarded among the world's large dams. This dam, of such a size, was not mentioned in anyone of the Ethiopia proposals and since the study that was made by the US Bureau of Reclamation in 1964. It was not either among the projects proposed by the Ethiopia government to the Nile Basin Initiative in 1999. The Ethiopian projects which were previously submitted, studied and accepted were: Karadobi, Mabil, Mandaia and Border dams which were all planned for hydro-electric power generation and designed to yield a total 5,570 megawatts.

The International Water Law and Agreements on Dealing with International Waters:- The relations between nations are subject to the international law and the United Nations Charter and construction of the Millennium Dam in Ethiopia is subject to the International Water Law that is part of the Statute of the International Court of Justice which, in turn, is part of the UN Charter. The mandate of the International Court of Justice is restricted to cases submitted to it by the litigants and the cases specifically indicated in a convention or in valid treaties or agreements. A nation that is a party to the Statute of the Court may make a statement under which, without referring to a specific agreement, it will recognize arbitrary mandate of the Court to consider all legal disputes with another nation that accepts the same commitment so long as those legal disputes are connected with explanation of the treaties or the international law or instances of violation of an international commitment. International Agreements, Public & Private:- Those are the agreements which lay down rules explicitly recognized by the disputing nations and which are of a wider scope than any other source, whether those agreements are public ones that apply to all nations committed to them or private agreements that apply to a limited number of nations. The public agreements include the UN Charter, the Maritime Law Agreement, the 1915 Vienna Water Treaty, the Rome Agreement of 1958, the Helsinki Water Agreement of 1966, etc. The private agreements which apply to a limited number of nations include the Mekong River Agreement, the Senegal River Agreement and the Nile Water



Agreement between Egypt and Sudan, 1959. The Ethio-Sudanese Agreements Before & After Sudan Independence: Mentioned below are some international agreements and arrangements on use of the Nile water concluded during the colonization era between a number of nations that include the Sudan and Ethiopia and are now rejected by Ethiopia on grounds that they were signed by the colonization governments and countries to protect their own interests rather than the interests of the colonized peoples. But many of those agreements remained valid and binding, particularly those dealing with demarcation of the borders between the nations. These agreements include the following:- 1- Rome Protocol of 1891 which was concluded by Britain and Italy under which the latter pledged not to carry out any irrigation work on Atbara River that may change its flow towards the River Nile in a reasonable way.

2- Addis Ababa Treaty of May 1902 under which Emperor Melik XI pledged to the British Government not to carry out or permit the carrying out of any works on the Blue Nile or Lake Tana or Sobat River that might obstruct the flow of their water to the River Nile unless agreement is reached from the British and Sudanese governments. This treaty is binding to the two signatories and to their successors.

3- The Exchanged Notes between the United Kingdom and Italy in December 1925 in which Itlay recognized the hydrological right of Egypt and the Sudan in the upper waters of the Blue Nile and White Nile and their tributaries and pledged not to carry out any works on the upper waters that might unreasonably adjust their flow into the main river. This provision does not prevent the reasonable utilization of the water by the inhabitants of the region, even if this necessitated erection of dams or hydro-electric power installations or reservoirs of the small tributaries for storing water for household purposes or for growing subsistence crops.

4- The African Treaty for Natural Resources Conservation of 1968 (under the national government of Sudan after independence) that was concluded by the African Heads of State in Algiers in 1968. Its provisions included the following:-



\*Article II: The member nations commit themselves to taking arrangement for conservation of the soil, water, flora and fauna and utilizing and developing them in accordance with the scientific in observance of principles and the peoples' best interest. \*Article XIV: Item 3 of this Article calls upon the nations for consultation amongst themselves on whether their development plans affect the natural resources beyond the borders. \*Article XVI: Item 1 of this Article, Part (b) calls upon the nations once again for cooperation amongst themselves if their national arrangements would affect the natural resources of any other nation. 5- The United Nations Human Environment Conference of 1972: The declaration of the conference that was approved in Stockholm included the following principles: \*Principle 21: According to the UN Charter and International Law principles, the nations enjoy the sovereignty right to exploiting their own resources in line with their environmental policies and responsibility to ensure that the activities exercised within their powers and authority would not cause an environmental harm to the other nations or to environments of regions that lie beyond their national borders. \*Principle 22: The nations must cooperate amongst themselves for further development of the International Law regarding the responsibility for the victims of the pollution and other environment harms caused by the activities practiced within the power and control of those nations on regions beyond their borders.

6- The Afro-Asian Legal Consultative Committee- The International Rivers Law of 1973: The Afro-Asian Legal Consultative Committee endorsed in 1973 important statements related to the International Rivers Law. These statements were in line with the philosophy of Helsinki Rules which were formulated by the International Law Society. They included the following:- \*Proposal I: The general rules contained in those rules are applicable to utilization of the water of the international drainage basins, unless provided otherwise in accordance with a binding treaty, agreement or convention between the nations of the Basin (there is no such treaty or agreement between the Sudan and Ethiopia). \*Proposal IV:- 1- Each nation of the Basin should show good-will in exercising its rights to the water of the international drainage basin in accordance with the principles of the goodneighbour relations. 2- Accordingly, the nations of the Basin should not begin works or utilization acts related to the water of the international drainage basin unless those acts are approved by by the nations which could be adversely affected by them or are approved under a decision issued by a concerned international court or an arbitration board. \*Proposal V: The nations which propose an



amendment of an existing utilization of the water of the international drainage basin that gravely affect utilization of the water by other nations sharing the same basin should first consult with the other benefitting nations. If no agreement is reached in those consultations, the concerned nation has to ask advice from a technical expert or organization. If this does not result in an agreement, other peaceful means provided for in Article 33 of the UN Charter, particularly international arbitration and justice should be approached. All legal instances of evidence and testimonies support the Sudan in any position its takes to guarantee its right to survival and honorable living without a threat to imposing it а situation that places it at the mercy of others. on The Approach: First: Although the Ethiopian Government has virtually commenced implementation of the project since February 2011 and with reference to the delayed notification to the Sudan on October 4, 2011, there is still a chance for the Sudan to move as soon as possible to place an official objection to the Ethiopian authorities against implementation of the project. This move by the Sudan is to emphasize its natural and legal right to objection, particularly as the World Bank and the European Community have a clear opinion and general principles on the large dams due to their environmental and social risks and the poor economic viability. It has been decided since the 1980s of the last century that the factors of cost/benefit and environmental and social dimension be taken into consideration in the economic evaluation of the large dams projects (at this point, the civil society organizations can be used to protest continuation of constructing the Dam, in addition to invoking the international law and agreements). Second: The Sudan has to notify the Ethiopian authorities that it would not use or purchase the electricity generated by the Dam and would not allow passage of the current across the Sudanese territories. This will weaken the economic viability of the project, if it is originally planned to bring in economic benefits. What is required now? What is required now and urgently is the technical opinion of the Ministry of Irrigation and Water Resources on the Dam (including the design and operation) and the environmental, economic, social and political impact on the Sudan if the project is implemented. This opinion should be sent to the Ethiopian authorities prior to the meeting of the international technical committee proposed by the Ethiopian authorities. Lastly: Some views for and others against the Millennium Dam project were published on the daily newspapers attributed to Sudanese and Egyptian writers. Among the Sudanese writers was Dr. Salman Mohamed Ahmed Salman (a legal expert with the World Bank) who wrote a series of articles in Al Sahafa daily newspaper about the Nile Basin Initiative.



Those included an article in which the writer called upon Sudan to approve and support implementation of the Millennium Dam. Engineer Omar Abu Bakr Abu Haraz also wrote a lengthy article on Akhir Lahza daily newspaper enumerating the benefits of the Dam to the Sudan and demanding the Sudan to approve it. The A periodical of Technical Department of the Water Resources of the Ministry of Irrigation contained a report supporting and approving the construction of the Millennium Dam for benefits the report believes in would bring to the Sudan. The Technical Department periodical also contained opinions by some Egyptians in support of construction of the Dam. By constructing the Millennium Dam, Ethiopia intends to emphasize that the Nile water is Ethiopian and can control it and has the right to sell its water to the Sudan and Egypt as the Arabs sell their petroleum. This makes it obvious that the Millennium Dam (Project X) and Nile Basic Initiative have originated from the same niche.

"Millennium Dam: a Report on the Ethiopian Dam, Its Impact on Sudan", 02/06/2013, online at: <u>http://news.sudanvisiondaily.com/details.html?rsnpid=223189</u>

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## **\*** Evaporating water supply poses costly risk for miners

(*Reuters*) - High in Chile's bone-dry Atacama desert, mining engineer Enrique Miranda surveys a metal structure filled with a pungent mix of earthworms and woodchips. Sprinklers inside the enclosure snap to life, shooting waste water from the nearby mining camp into the wriggling mass, which serves as a natural filter.

"That's lunch for the worms," says Miranda, an environmental supervisor who has worked at Barrick Gold Corp's Zaldivar copper mine for 18 years.

The worms munch through all the waste water generated each day at the mine's camp and office facilities (not from the mine itself) and eventually produce irrigation quality water. The experimental process forms part of Barrick's efforts to get more than 90 percent of Zaldivar's annual water needs from recycling. The mine also reuses much of the water used in the extraction process, reducing the amount of new fresh water needed.

The recycling plant highlights the lengths that miners like Barrick, BHP Billiton Ltd and Antofagasta Plc have to go to assure adequate supplies of water for everything from toilets for their workers to separating the valuable <u>metals</u> in the ore body from waste rock and tamping down dust that heavy trucks kick up.

"I link the need to have water with the urgency of having an ore body," said Bill Williams, Barrick's vice president for environmental issues, referring to the mineral deposit. "If you don't have the water to produce the ore body, you don't have anything. It's critical for most mining ventures - certainly for the ones we're involved in."

Traditionally, water has come from rivers or underground, but many sources are running dry, crippling production and delaying developments of mines around the world. Shortages have pitted mining companies against farmers and others who fear for the quality and quantity of their supplies.

Miners have been forced to turn to more expensive options like seawater desalination and sewage treatment plants to obtain water for their needs and for the communities around them.

Energy companies face similar challenges, especially given the rise of fracking, a controversial technique that involves pumping millions of gallons of chemical and sand-laced water into shale rock formations to extract gas.



With the world's population expected to reach 9 billion by 2050, boosting global demand for fresh water by 55 percent, according to the OECD, conflicts between communities and industry over water are only likely to get worse.

"In some regions the miners are actually competing with the community," said Rachael Bartels, managing director of Global Mining at Accenture. "We're seeing far more community involvement, and that drives far more licensing requirements and more tightening from around where they can extract water from."

Water-related infrastructure now accounts for some 10 percent of mining capital costs, management consultant Accenture says, and that number continues to grow.

It's made worse by the fact that the world's accessible deposits have already been mined. Many new projects are in remote and inhospitable regions of the world - like the deserts of Southern Africa or high in the Andes mountains.

Mining companies will spend \$11.9 billion on water infrastructure in 2013, up from the \$3.4 billion spent in 2009, says consultancy group Global Water Intelligence.

The rising costs have prompted <u>Moody's</u> Investors Service to warn of possible risks to credit ratings, creating more worries in an industry battered by falling metal prices and surging costs.

"In our opinion, the consequences of poor environmental risk management will increasingly lead to production stoppages, protests, fines, and license withdrawals - all factors which may directly impact mining companies' profitability and credit risk profiles," the ratings agency said in February.

But there are winners, too. Engineers like Fluor Corp and WorleyParsons Ltd are now building water treatment plants and pipelines, along with traditional mine infrastructure, while consultants such as Accenture Plc and AMEC Plc are being called on to help miners better manage their existing water and help find future solutions.

## DRY AS A BONE

In <u>Mexico</u>, battered in recent years by its worst drought in seven decades, Goldcorp Inc was forced to slash planned output last year at its Penasquito mine as a lack of water made it impossible to run the mill at full capacity. The company is still working on a long-term solution.



North of the border, U.S. states New <u>Mexico</u> and Texas are struggling with exceptional drought conditions. Meanwhile, water levels in America's vast underground aquifers are dropping at an accelerated rate.

Drought has held back output at mines in <u>Australia</u> and Africa, and is particularly worrisome in South Africa, where miners are grappling with power outages and worker protests.

But nowhere is the need for water more apparent than in Chile's 600-mile-long Atacama, the world's driest desert. The Zaldivar copper mine was built nearly two decades ago when securing water rights was both easier and cheaper than today.

"In Northern Chile, there is no underground water for new projects, so any new project will require seawater, desalinated or not," said Diego Hernandez, CEO of Antofagasta Plc, which uses raw seawater to process copper at its Esperanza mine.

Desalination is an alternative that does not come cheap. BHP Billiton estimates that using desalinated sea water triples water costs.

The miner currently pumps about 20 percent of water for its Escondida mine up from a desalination plant on the coast. BHP plans to eventually run the copper mine entirely on desalinated water, although costs of such a development remain unclear.

The other concern is making sure that any water infrastructure put in place by mining companies helps not only their operations, but also the surrounding residents.

To that end, Antofagasta Plc runs a desalination plant that provides about 60 percent of the city of Antofagasta's water. A second plant, currently in the planning stage, will make the mining center the first city in the world to get its entire water supply from the ocean.

"What mining companies need to be able to do is to invest in sufficient water capacity to make sure that they leave some of the water that they are producing to other uses," said Christian Grimm, a fund manager with Caisse de depot et placement du Quebec, a pension investor that has stakes in Barrick, Goldcorp and Teck Resources Ltd, among other Canadian-based miners.

## POOLS OF CONFLICT

Indeed, community concerns over water are becoming roadblocks to new mining developments.



Southeast of Zaldivar, on the border between Chile and <u>Argentina</u>, Barrick has run into serious waterrelated issues at its controversial Pascua-Lama gold project.

Work on the Chilean side of the project has been in limbo since early April, when a local court ordered a halt to weigh claims by indigenous communities that the project has damaged glaciers and harmed water supplies. Chilean regulators fined Barrick on Friday, citing environmental breaches, and blocked <u>construction</u> until a water management system is in place.

Barrick is not alone. Worries over the impact of mining on water has led to legal actions, protests and even deadly conflicts at developments across Latin America.

At least three people have died in a series of violent protests this year over Tahoe Resources Inc's Escobal project in Guatemala, which opponents say will pollute the local water supply, a charge the company denies.

Water conflicts, often with political undertones, have also led to deadly confrontations in <u>Peru</u> and Mexico, prompting suspensions at Newmont Mining Corp's \$5 billion Conga project and Bear Creek Mining Corp's smaller Santa Ana development, among others.

Back at Zaldivar, the scene is serene as row upon row of biofuel plants push up like green aliens through the reddish-grey soil. Nourished with the recycled camp water, the plants are the only greenery within a hundred miles.

Barrick is growing the plants as part of a plan to run its smaller trucks on biofuel starting in 2014, eventually handing the plants and biofuel production over to local communities so they get more economic benefits from the mine and its resources.

Communities in mining regions, well aware that mines and the rich jobs they bring are only temporary, are now demanding benefits that will last long after the deposits are gone.

Facilities that can provide fresh water for decades to come are emerging as a major bargaining chip for miners looking for local acceptance and a smooth life for their investment.

Still, for some the potential damage to the quality and quantity of a local water supply outweigh any benefits a mining project may bring to a remote community.


#### WATER RESEARCH PROGRAMME -Weekly Bulletin-

"The majority of rivers in the north (of Chile) are overexploited or highly polluted," said Lucio Cuenca, the director of the OLCA environmental group in Santiago, adding that water recycling efforts amount to little more than "green-washing" by mining companies.

(Additional reporting by Susan Thomas, Alexandra Ulmer and Felipe Iturrieta in Santiago; Editing by Janet Guttsman, Frank McGurty and Claudia Parsons

"Evaporating water supply poses costly risk for miners", 30/05/2013, online at: <u>http://www.reuters.com/article/2013/05/30/us-mining-water-</u> <u>idUSBRE94T04Q20130530?utm\_source=Circle+of+Blue+WaterNews+%26+Alerts&utm\_campaign=bbce7c9d07-</u> <u>RSS\_EMAIL\_CAMPAIGN&utm\_medium=email&utm\_term=0\_c1265b6ed7-bbce7c9d07-250657169</u>

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### \* Central Asian Dams Spark Downstream Fears

Plans by two Central Asian states to build hydropower projects with Russian help on the upper reaches of major regional rivers are causing concern in downstream states, which fear diminished water flows and Moscow's growing influence in this former part of the Soviet Union, experts say.

One dam, the Kambarata-1, will be built in Kyrgyzstan on the Naryn river, which rises in the Tianshan mountains bordering China's restive northwestern region of Xinjiang and flows down to join Syr Darya, the longest river in Central Asia, which then crosses into Uzbekistan and Kazakhstan.

The second dam, the Rogun, is under construction in Tajikistan on the Vahksh river, which flows down to join the Amu, which flows across the border of Uzbekistan and Turkmenistan.

Uzbekistan has voiced particular alarm over the projects, saying that its access to water needed for agriculture could soon be reduced, a U.S. scholar of the region told RFA's Uyghur Service.

"Uzbekistan is heavily dependent upon its cotton production as a state-controlled industry," said Sean Roberts, director of the International Development Studies Program at George Washington University.

"That industry relies on irrigation from rivers that run downstream from Tajikistan and Kyrgyzstan, and Uzbekistan worries that its access to irrigation waters can be controlled by forces beyond its control," Roberts said.

A second reason for Uzbekistan's concern may be that the proposed dams in Tajikistan and Kyrgyzstan would generate "substantial" electricity that could be sold to Afghanistan, thus undercutting Uzbekistan's own energy exports to its southern neighbor, Roberts said.

"In this context, [the Uzbek capital] Tashkent stands to lose on multiple fronts if these dams are successful," Roberts said.



#### Concern over Russia's role

Today's Central Asian states form a region of high passes and mountains, deserts, and treeless, grassy steppes, much of whose land is too dry and rugged for farming, and the countries' shared use of water resources has become a cause of growing friction.

Kazakhstan, Uzbekistan's larger neighbor to the north, also depends on unimpeded water flows from its upstream neighbors, said Sharipjan Nadirov, a professor of geography and economy at Kazakhstan National University.

"The cotton fields and farms of Kazakhstan also rely on the river water of the Amu and Syr," Nadirov said, adding that the two rivers are also a major source of drinking water for downstream areas.

Meanwhile, heavy Russian investment in the projects—pledged at U.S. \$1.7 billion for Kambarata-1 alone—has aroused fears of a new Russian claim to dominance in the region.

"Given the importance of hydro resources in the competition for leadership in the Central Asian region, Russia appears to want to establish control over this strategic resource," said Alisher Khamidov, a Central Asia expert at Newcastle University in the U.K.

"Uzbekistan has long been wary of Russia's geopolitical role in Central Asia," Khamidov said.

# 'Ready to cooperate'

Speaking to reporters following talks last year in Kyrgyzstan, Russian president Vladimir Putin said that plans for the projects date back to when today's independent Central Asian states were all Soviet republics.

"No one had any concerns then, bearing in mind that the projects were to be realized in a single state," Putin said, according to an UzDaily report on Sept. 20.



"The construction of the Kambarata-1 hydropower dam will meet the interests of all Central Asian countries," Kyrgyz president Almazbek Atambayev said following the talks, the online Interfax news outlet reported the same day.

"It will help irrigation in Uzbekistan and Kazakhstan, but we are aware of the concerns of these countries and are ready to cooperate," he said.

The Central Asian states must now establish better cooperation in water use, "but to date they have proven unable to do so," George Washington University's Sean Roberts said.

"They must begin to realize that water will be perhaps the most critical resource for them in the future, and they must explore sustainable ways to share in its use and conservation."

"Central Asian Dams Spark Downstream Fears", 31/05/2013, online at: <u>http://www.rfa.org/english/news/uyghur/fears-05312013152946.html</u>

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#### **\*** Water vowes dominate poll promises in election bound Rajasthan

The issue of water today dominated political public meetings in poll-bound <u>Rajasthan</u> with the ruling <u>Congress</u> claiming that everything possible was done to provide potable water and the <u>BJP</u>, in disagreement to it, promised drinking water facility to people if voted to power.

Besides the blame-game on different issues, focus of politicians of both the parties revolved around water in their Yatras which are underway in separate areas in the state.

"Congress always gave new dimensions to water and irrigation projects in the state. A big project of <u>Indira Gandhi</u> canal was initiated in the state post independence which benefited Western Rajasthan. Besides, arrangement was made to supply water from Bisalpur dam to cities like <u>Jaipur</u>, <u>Ajmer</u> and Bhilwara," PCC President Dr Chandrabhan said at a meeting under 'Congress <u>Sandesh</u> Yatra' in Tonk district's Uniyara town.

Chief minister Ashok Gehlot, while pointing out at geographical location of the state and limited availability of ground water, insisted that people of the desert state understand the value of water.

The Chief Minister claimed that despite all adverse conditions, his government has taken several steps to provide potable water to remote areas in the state and water-related projects were sanctioned for the same.

He also accused BJP of indulging in negative politics.

On the other hand, BJP state president Vasundhara Raje promised to provide safe water and 24-hour electricity if voted to power in the ensuring assembly elections.

Speaking at Suraj Sankalp Yatra in Nagaur, Raje alleged that the state government did nothing for the welfare of the state and to provide basic amenities and promised that she would provide safe water and round the clock power supply in the state and make a 'new Rajasthan' if her party got the mandate of people.



She mentioned that BJP ruled Gujarat, Madhya Pradesh and Chhattisgarh state government worked well for the growth of their respective states but Rajasthan ruled by Congress was far behind from growth under the Congress rule.

Raje also blamed the state government for trying to target leader of opposition Gulabchand Kataria by falsely implicating him in Sohrabuddin encounter case through CBI and said the party was standing by him.

"Water vowes dominate poll promises in election bound Rajasthan", 01/06/2013, online at: <u>http://www.business-</u> standard.com/article/pti-stories/water-vowes-dominate-poll-promises-in-election-bound-rajasthan-113060100833\_1.html

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# **\*** WWF warns of mismanagement of natural resources in Mekong Region

Mismanagement of natural resources is one of the reasons behind the decline in the bio diversity in the Greater Mekong Region in Southeast Asia, according to a recent report from World Wildlife Fund (WWF).

WWF analyses that Mekong Region, which covers Myanmar, Thailand, Cambodia, Laos, Vietnam and China, has been undergoing many changes in recent years from poverty to economic growth and political stabilization while its natural resources are under threat, particularly native forests, wild plants, and species.

The report offers two scenarios for the region's ecosystems. One predicts what will likely happen by 2030 under an unsustainable growth model in which the deforestation and degradation observed over the past decade persists, while the other scenario predicted a 50 per cent cut in the annual deforestation rate and offers a future based on green growth. Under the green economy scenario, core forest areas extant in 2009 across the five Greater Mekong countries would remain intact, WWF have stated in its press release earlier last month.

WWF analyses that the Mekong Region has lost one-third of its forest cover between 1973 and 2009 where Cambodia lost 22 per cent of its 1973 forest cover, Laos and Myanmar lost 24 per cent, and Thailand and Vietnam lost 43 per cent. Myanmar accounted for 30 percent of total forest loss in the region during this period.

The Daily Eleven has earlier reported that the forest coverage area in Myanmar has been reduced to 51,910 square miles (19 per cent of its area).

"WWF warns of mismanagement of natural resources in Mekong Region", 02/06/2013, online at: <u>http://www.elevenmyanmar.com/national/3770-wwf-warns-of-mismanagement-of-natural-resources-in-mekong-region</u>

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#### Small dams harm environment more than bigger dams?

Small dams can pose a greater threat to ecosystems and natural landscapes than large ones, a new study in <u>China</u> has warned.

Although large dams are generally considered more harmful than the smaller ones, the research team's surveys of habitat loss and damage at several dam sites on the Nu River and its tributaries in Yunnan Province revealed that, watt-for-watt, the environmental harm from small dams was often greater - sometimes by several orders of magnitude - than from large dams.

Because of undesirable social, environmental, and political implications, the construction of large dams often stirs controversy. Current policies in China and many other nations encourage the growth of the small hydro-power sector, researchers said.

But, "small dams have hidden detrimental effects, particularly when effects accumulate" through multiple dam sites, said Kelly Kibler, a water resources engineer who led this study at Oregon State University in Corvallis.

"That is one of the main outcomes of this paper, to demonstrate that the perceived absence of negative effects from small hydropower is not always correct," said Kibler.

To compare the impacts of small and large dams, Kibler investigated 31 small dams built on tributaries of China's Nu River and four large dams proposed for the main stem of the Nu River.

She assessed the environmental effects of these dams in 14 categories, including the area and quality of habitat lost, the length of river channel affected, the amount of conservation land impacted, and the landslide risk.

Because information regarding large dams is restricted under the Chinese State Secrets Act, Kibler modelled the potential effects of the four large dams using publically-available information from hydropower companies, development agencies, and academic literature.



After evaluating data from the field, hydrological models, and Environmental Impact Assessment reports about the small dams, Kibler and Desiree D Tullos, also a water resources engineer at Oregon State, concluded that impacts of the small dams exceeded those of large dams on nine of the 14 characteristics they studied.

One particularly detrimental impact of the small dams observed in this study is that they often divert the flow of the river to hydropower stations, leaving several kilometres of river bed dewatered, Kibler said.

In order to mitigate the detrimental effects of small dams, there is a "need for comprehensive planning of low-impact energy development," researchers said.

"Small dams harm environment more than bigger dams?", 31/05/2013, online at: <u>http://www.business-</u> standard.com/article/pti-stories/small-dams-harm-environment-more-than-bigger-dams-113053100705\_1.html

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## \* New Mexico county first in nation to ban fracking to safeguard water

In acting to protect their water supply, the 5,000 residents of poor, conservative Mora County make it the first in the U.S. to ban fracking -- hydraulic fracturing for oil.

OCATE, N.M. — Sitting in the tidy living room of the home they built themselves, Sandra and Roger <u>Alcon</u> inventory what they see as the bounty of their lives: freedom, family, community, land, animals ... and water.

"We've lived off the land for five generations," said Roger Alcon, 63, looking out on a northern New Mexico landscape of high mesas, ponderosa pines and black Angus cattle. "We have what we need. We've been very happy, living in peace."

Wells are the Alcons' only source of water. The same is true for everyone else in Mora County, which is why last month this poor, conservative ranching region of energy-rich New Mexico became the first county in the nation to pass an ordinance banning hydraulic fracturing, the controversial oil and gas extraction technique known as "fracking" that has compromised water quantity and quality in communities around the country.

"I don't want to destroy our water," Alcon said. "You can't drink oil."

In embracing the ban, landowners turned their back on potentially lucrative royalty payments from drilling on their property and joined in a groundswell of civic opposition to fracking that is rolling west from Ohio, New York and Pennsylvania in the gas-rich Marcellus shale formation.

Pittsburgh became the first U.S. city to outlaw fracking in November 2010 after it came to light that an energy company held a lease to drill under a beloved city cemetery.

Since then, more than a dozen cities in the East have passed similar ordinances.

The movement leapfrogged west last summer when the town of Las Vegas, N.M., took up the cause, calling for a halt to fracking until adequate regulations protecting public health are adopted.

It has now reached California, where communities are considering similar bans.



Culver City — home to the nation's largest urban oil field — is drafting oil and gas regulations that call for a moratorium on fracking. Citizen groups in San Luis Obispo and Santa Barbara are preparing their own community rights ballot measures aimed at outlawing the procedure.

Hydraulic fracturing involves injecting a high-pressure mix of water, sand and chemicals deep underground to fracture rock formations, releasing oil and gas that is hard to reach with conventional drilling methods. A blizzard of applications to sink wells using fracking is spurring a nationwide energy rush sometimes called the "shale gale."

Among the leading concerns of opponents is the absence of any federal law requiring companies to fully identify the chemicals in their fracking fluids. Such formulas are considered by the industry to be a trade secret. Community-based anti-fracking campaigns — citing public health issues — call for complete disclosure of injection fluids.

Many New Mexico counties welcome oil and gas production, an industry that adds to the tax base and employment rolls. But in sparsely populated Mora County, where 67% of the 5,000 residents are Spanish-speaking, people cherish their culture and way of life.

Sandra Alcon said her neighbors don't care about mineral rights or oil money. They are angry about the way energy companies' "land men" treated them. Residents here are seen as easy marks for hustlers offering little compensation for oil and water rights, she said.

"They know we have a lot of elderly and rural people; some don't speak English," she said. "They don't know that some of us went to college and some of us have the Internet.

"I may look stupid, but I'm not. I know what they are doing."

Mora County, using its authority to regulate commercial activity, specifically barred corporations from fracking. The ordinance also established that citizens have a right to a safe and clean environment.

County Commission Chairman John Olivas said the ordinance is not a referendum on oil and gas. Rather, he said, it "is all about water," estimating that 95% of the county's residents support the ban, although some argue that the jobs and income that accompany drilling would help the depressed area.



Olivas, a hunting and fishing guide, said he grew up watching his parents work in the uranium mines of eastern New Mexico. When the mines played out, towns shriveled up.

Chasing that boom-and-bust economy is not worth despoiling an environment that remains remarkably untouched and provides a sustainable living for most people here, he said.

"We are one of the poorest counties in the nation, yes, but we are money-poor, we are not assetpoor," Olivas said. "We've got land, we've got agriculture, we've got our heritage and we've got our culture."

The California community closest to adopting an anti-fracking ordinance is Culver City, which includes a portion of the 1,000-acre Inglewood Oil Field. More than 1 million people live within five miles of the field, where some 1,600 wells have been drilled since 1925.

The City Council is considering a fracking moratorium, even though only 10% of the field is within the city limits. The bulk of the wells are in unincorporated Los Angeles County.

City officials and residents say they are concerned about air and water quality, as well as about earthquakes being triggered by drilling at 8,000 to 10,000 feet — the depths where the untapped oil is found.

Low-magnitude earthquakes have been associated with fracking, but Ed Memi, a spokesman for PXP, which operates in the Inglewood Field, called suggestions that high-pressure drilling causes earthquakes "hysterical accusations."

"There is no evidence that hydraulic fracturing has caused felt seismic activity anywhere in California," Memi said. "The practice of hydraulic fracturing has been subjected to dozens of studies in recent years, and the fundamental safety of the technology is well understood by scientists, engineers, regulators and other technical experts."

But Meghan Sahli-Wells, Culver City's vice mayor, said the city needs to see more study of fracking's impact before it could be allowed.

"I grew up in L.A. All my life I've heard about air-quality problems, earthquakes and water issues," Sahli-Wells said. "It just so happens that fracking really hits on the three major challenges of this



area. Frankly, I've been waiting for people to wake up and say, 'We are fracking on a fault line? Is this really in our interests?'"

If Culver City moves forward with a moratorium, it could take months to complete, she said.

Fracking is unregulated in California, and no accurate figures exist detailing how many of the state's wells are completed using the technique.

A number of anti-fracking bills are pending before the state Assembly, and statewide regulations are being finalized by the state Department of Conservation.

Sahli-Wells endorses legislation sponsored by Assemblywoman <u>Holly Mitchell</u> (D-Culver City) that calls for a moratorium on fracking in California until a comprehensive six-year study can be undertaken.

"Look before you leap" legislation is pending in other states.

On a recent day back in Mora County, Roger Alcon drove his ranch with his herding dog, Pepper, at his side. He said the region's aquifer has been depleted by oil and gas operations in the region. He sees no reason to hasten the water decline.

Alcon pointed out the truck window toward the snowcapped Sangre de Cristo mountains.

"We have what we need," he said. "To me, the fresh air and the land, and water. It's better than money."

"New Mexico county first in nation to ban fracking to safeguard water", 28/05/2013, online at: <u>http://www.latimes.com/news/local/la-me-fracking-ban-</u> 20130529,0,4631146.story?utm\_source=Circle+of+Blue+WaterNews+%26+Alerts&utm\_campaign=e2972aea53-<u>RSS\_EMAIL\_CAMPAIGN&utm\_medium=email&utm\_term=0\_c1265b6ed7-e2972aea53-250657169</u>

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# Greenpeace releases data on water usage by power plants in drought-affected areas Water used by these plats are as per the norms set by the government

G<u>reenpeace India</u> has called upon the Maharashtra government to review the <u>water</u> <u>utilisation</u> by <u>coal-fired thermal power</u> plants owned by the state-run Maharashtra Power Generation Company (<u>Mahagenco</u>) especially in the drought hit areas.

Four state owned power plants, Bhusawal in Jalgaon, Parli in Beed, Paras in Akola and Nasik with an installed capacity of 3,680 MW are located in the drought affected parts of Maharashtra. Parli project has been closed since February for want of water while others are still in operation.

Greenpeace in its report released today estimated that the total water consumed by these power plants till March this year is about 17,000 million litres and are expected to consume another 15,000 million litres till June 2013.

This is equivalent to the water required for more than 6 lakh people a year at a requirement of 135 litres per person per day.

"Even during a drought, the state seems to de-prioritise the drinking water needs of farmers and villagers in the drought affected regions. Additional water seems to have been given to thermal power plants even during December last year despite being fully aware of the upcoming crisis in summer." said Jai Krishna, Campaigner, Greenpeace.

"Instead of assessing whether the power plants have enough water, the state should concentrate on whether people have sufficient drinking water during this drought" he added.

However, MahaGenco official told Business Standard" The water used by these plats are as per the norms set by the government. Power generation is equally important. Further, MahaGenco also uses the recycled water in these plants."

Moreover, Greenpeace has demanded a cumulative assessment of the water availability and use in the



state be conducted on a war footing to ensure that water allocations to thermal power plants are not made in violation of the existing water policy and ensure that drinking and agriculture requirements are prioritised.

Besides this, all previous allocations should be suspended and an immediate moratorium should be imposed on any new allocations till these assessments are completed.

"Greenpeace releases data on water usage by power plants in drought-affected areas", 30/05/2013, online at: <u>http://www.business-standard.com/article/economy-policy/greenpeace-releases-data-on-water-usage-by-power-plants-in-drought-affected-regions-113053000733\_1.html</u>

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