

ORSAM WATER BULLETIN

Weekly Bulletin by ORSAM Water Research Programme

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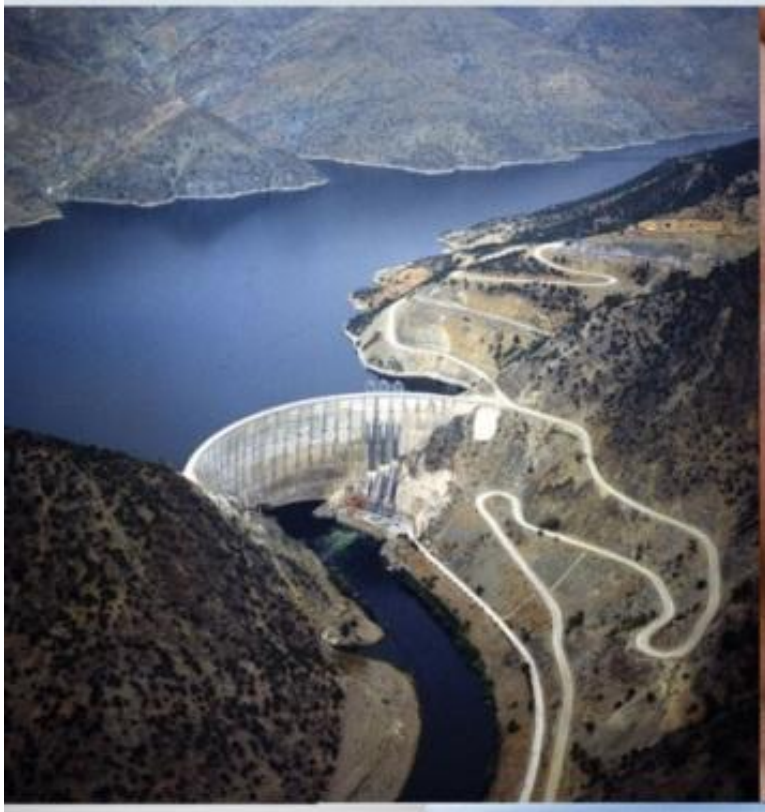



ORSAM WATER BULLETIN

14 February 2017 – 20 February 2017

Stuck Without Water in Mosul, Neighbors Find a Way

The water and sewage system collapsed in this eastern Mosul neighborhood after 100 days of street combat. On Sunday, Haitham Younis Wahab and his neighbor Shamsuldeen Ahmed Saed decided to do something about it.

Out came the sledgehammers, steel pipes and shovels.

The two men pounded and dug for three days. Sixteen feet down. Twenty feet down. Nothing. And then, 26 feet beneath the cracked sidewalk, they struck water. After all, they live just a half mile from the muddy Tigris River, which divides eastern and western Mosul.

We came across the two neighbors as we walked through the crumbling streets of Rashidiya to find out how residents were faring three weeks after Iraqi security forces had driven most Islamic State fighters from eastern Mosul.

Every few blocks was another freshly dug well. Some residents had penetrated worn pavement by pounding a pipe with a sledgehammer for hours and days. Others dug through the muddy earth with picks, shovels or hand-cranked drills operated by two men.

Mr. Wahab and Mr. Saed had cobbled together sections of hose and a small electric pump for sucking up free underground water. Somehow they had coaxed water up through this jury-rigged system — Mosul MacGyvers making use of the tools at hand.

“It took us three days, working every morning and afternoon,” Mr. Saed, 50, said as he and Mr. Wahab struggled to connect the well’s protruding steel pipe to the rest of the contraption with a section of tubing.

“We don’t drink the water,” Mr. Wahab, 30, said. It was good only for washing and cleaning dishes, he said.

For drinking water, residents buy bottled water brought in and sold by anyone who can reach more secure areas of eastern Mosul, where water as well as fruit, vegetables and other food are readily available.

Life in Rashidiya these days requires ingenuity and perseverance. Because the electric grid has been knocked out, several entrepreneurs have set up diesel generators and are charging residents to hook up their homes.

Just down the street, Dhahir Hasan, a burly 32-year-old, cranks up an ancient, oily diesel generator twice a day — from 2 p.m. to 5 p.m., and 6 p.m. to 9 p.m.

Photo

Dhahir Hasan runs a diesel generator twice a day, supplying electricity to local residents. Credit Ben Solomon for The New York Times

Mr. Hasan said he gets 300,000 Iraqi dinars a month, about $235, from the owner of the generator, who charges local residents 9,000 dinars, about $7, per ampere per month to hook up their homes.

Most homes require at least three amperes a month, Mr. Hasan said. That comes to roughly $21 a month for many families in an area where most people have lost their jobs.

Abu Mohammed, 70, was not happy about paying generator fees for power a few hours a day. He was also frustrated by something else: He and his son had hit water after gouging out a hole 33 feet deep, but the water they got was hardly worth it.

"It smelled awful and we couldn't use it," he said.

Mohammed Jameel, 41, had better luck. For days, he pounded a pipe into the ground and finally hit water about 26 feet down this week. He was holding a hose, letting sluggish brown well water run into the gutter.

The murky water was gritty and left behind a gray residue.

"We have to let it run a long time before it turns clear," Mr. Jameel said.

Two streets away, Mahmoud Yunis, 33, a powerfully built former police officer with a pair of pliers tucked into his belt, yanked on a hose connected to a 30-foot-deep well he had dug. He said water had trickled out of the hose for five minutes, then stopped.

Mr. Yunis chatted amiably for a few minutes, and then sent me on my way. He pulled out his pliers and went back to work.

16/02/2017 online at: https://www.nytimes.com/2017/02/16/world/middleeast/stuck-without-water-in-mosul-neighbors-find-a-way.html?_r=0

After Battle for Wadi Barada, the Damascus Water War Isn't Over

On January 29, a small group of Syrian army soldiers entered the mountain town of Ain al-Fijeh, home to the Fijeh Spring, which supplies roughly two thirds of the water to Damascus. They stamped their feet in the cold, took selfies and glowered at the rebel fighters who had controlled the area until that point. One of the soldiers climbed up a metal tower and tied a small Syrian flag to a metal strut.

"They claim they achieved their victory," one of the rebel fighters said bitterly on a videotape of the episode. "But they came in here thanks to an agreement with us."

The flag marked the end of a bloody, month-long government offensive in Wadi Barada, a river valley that runs from the mountainous border with Lebanon all the way to the gates of Damascus. The valley is home to about 18 villages and towns; many of them have been held by various armed groups – including Ahrar al-Sham, Jaish al-Islam, Jabhat Fatah al-Sham and

the Free Syrian Army – since 2012 or later. The government and its allied militias have been imposing a partial siege on the valley since late 2013.

In late December, the government claimed a rebel attack had polluted the Fijeh Spring. Rebel groups released a video of what they claimed were government bombs falling on the large structure that housed the spring. As water taps in Damascus ran dry for weeks, the government stepped up a bombing campaign across the rebel-held parts of the valley. In late January, the two sides agreed to a cease-fire – in essence, a rebel surrender – to evacuate fighters and their wounded from rebel-held parts of Wadi Barada to the largely opposition-controlled province of Idlib.

The agreement ended the immediate crisis. But this was not the first time that water had been used as a weapon in Wadi Barada, and it probably won't be the last.

The Syrian government has always prioritized control of natural resources and geographically strategic areas. Wadi Barada is both. The mountains that bring water to Damascus are also a vital link with the Bekaa Valley in eastern Lebanon. For years, the mountainous valley has been a conduit for smuggling arms and illicit goods – a generator of revenue, and an important social safety valve during the 1980s and '90s, but also a source of unease for the central government.

In the mid-1990s, former Syrian president Hafez al-Assad's government cracked down on the smuggling networks that it had previously allowed to flourish. Throughout the 1970s, '80s and '90s, the government consolidated control by expropriating land along the banks of the Barada River, diverting the water itself and building large-scale military infrastructure in the area. This served a dual purpose: as Damascus and its outskirts expanded, they needed more water. But the government's crackdown also kept the people of Wadi Barada from posing a threat to its control over water resources that are essential to Damascus.

Wadi Barada encapsulates the larger story of the Syrian conflict: A once-thriving rural area is slowly drained of resources – natural, economic and social – until its people either migrate abroad, move to cities or give up. When the uprising against Syrian President Bashar al-Assad's government began in early 2011, many residents of Wadi Barada had seen their land and water – and often their livelihoods – taken away from them for decades.

Muhammad Fares is the alias of a Syrian journalist from Wadi Barada who is currently living in Europe. He has written extensively about the water wars in the valley, and is currently writing a book on the topic.

Syria Deeply: Let's start by defining Wadi Barada. What do people in Syria mean when they say Wadi Barada?

Muhammad Fares: The word wadi means valley, and the valley locates on the edges of the Barada River. But the term Wadi Barada has been built over the past four years to mean an area that is full of smugglers, terrorists, drug dealers, weapon dealers, etc. … Whereas Wadi Barada in fact is a geographical area that locates between the main spring of Barada River and Rabweh, the western gate of Damascus, just by the Tishreen Palace.

Syria Deeply: So it ends right at the gate of Damascus? That answers my next question, which is why this area is strategically so important.

Fares: In my opinion, the conclusion of the ongoing war today is to give Assad and Iran – or the regime, even if Assad is not there – the eastern part of Syria. Wadi Barada is important because it links Damascus with Lebanon and the coastal area. More specifically, with Baalbek, and the whole Beqaa Valley, where Hezbollah fighters are.

Wadi Barada itself is a very militarized area. Here we have the Syrian Republican Guard; and here there is a research center, Jamraya Research Center, which was targeted by the Israelis back in 2013. Just a few kilometers from Wadi Barada, we have Ain as-Saheb, which was targeted by the Israelis in 2003, the first time Israel targeted Syria after 1973. Two or three months ago Israel targeted Sabura, less than 10 kilometers from Wadi Barada. There is a military airport here, called Mezzeh Airport. It was targeted by the Israelis last year as well.

The people of Wadi Barada owned all of those areas, but they were expropriated in the ’70s. We grew up knowing that on the tops of the mountains, it’s all army. It’s a residential area, but in the whole area of Wadi Barada, there is not a single civilian project. For example, it’s full of orchards – in 2010 it had around 200,000 trees of apple, apricot, different types of cherries, et cetera – yet there is no factory for making jam or making juice. There is no development.

Syria Deeply: There’s no civilian economic activity, in other words?

Fares: It depends. People in Ain al-Fijeh, for example, were relying more on tourism. They had around 70 small and medium restaurants in their areas. However, the areas from the valley to the Old Beirut Road are all expropriated, and all of that militarized.

Syria Deeply: Can you describe a little bit what you saw growing up, and how the area changed?

Fares: In my area, the only ones growing richer were the smugglers who were connected to the regime and the army. I used to sit down and listen to those tough guys going on their horses or their mules – in those days; they were smuggling mainly western-manufactured cigarettes. Also stationery. Other people used to smuggle food, like bananas, from Lebanon to Syria. Smugglers who were not coordinating with the regime, they would be arrested, or sometimes killed in the streets if they shot at the customs horses.

In 1992, I remember it was April, all of a sudden I heard people saying: “The army is coming, the army is coming.” One day we woke up and the army was spread throughout the whole area. They asked children things like, “Do you like this gun?” “Yes, I do.” “Do you think this gun is better than your father’s?” If the child says no, or yes, the father is in trouble.

It was a military campaign against areas with smuggling, including the area of Wadi Barada, Zabadani and Madaya, in which Basel al-Assad [Bashar’s older brother who died in 1994] was trying to present himself as the anti-corruption incoming president. Of course, many

smugglers left the area before the anti-corruption campaign. But many people ended up in a really terrible financial situation after that military campaign.

Syria Deeply: Tell me how the river changed as you were growing up.

Fares: As a child, I didn't feel any impending problem with water. But in 1992, 1993, when I started becoming a good swimmer, I started seeing the river change: In the morning it's cut off, at noon it comes back, so we can swim. But also, sadly, it was full of sewage.

Syria Deeply: How did this affect people in the area? Were they using the water?

Fares: People used to grow wheat, barley, animal fodder up in the mountains. That was mostly rain-fed agriculture. After those lands were expropriated in the '70s and '80s, people were irrigating their remaining lands, on the edges of the Barada River. But in the early '90s, suddenly the river disappeared, and we could see the whole mood was getting really terrible. It was really despairing. The river was going dry, and we could not irrigate. The valley became really very very very sad. You could see it in the dried-up old trees, less butterflies, and less water. It became a really sad area.

Syria Deeply: What kind of trees? What were people growing?

Fares: Walnuts, poplar, willow. Apple, apricot. Cherries. Peaches, bananas. The walnut trees were very old – four, five, six hundred years old. People had businesses making boxes from the wood, from poplar – for sending peaches and apricots back to Damascus, to Aleppo, to Jordan, to the Gulf, to Beirut.

Then, in the '90s, the men were in prison, the trees were dying and people were trying to find other sources of irrigation. People started buying water from tankers to irrigate, or sow their lands, or just to drink.

Syria Deeply: So they're living on the banks of the river, but they have to buy water from companies to irrigate or drink?

Fares: Correct. That's until 2006, 2007, when people just gave up on irrigation.

Syria Deeply: Did people try to do anything about the situation? Could they do anything?

Fares: In 2004, an old man from our area, called Abu Ali, he and others went to the prime minister's office and asked for a meeting with him. Abu Ali stood there, carrying a bottle of muddy water that he filled in our village, and started shouting: "If you can drink this, I will drink it myself!" They met the prime minister, and he promised them to do something. People didn't recognize that the water of the river had disappeared forever.

That's why I think that what is going on in Wadi Barada has been underestimated by the international community. The valley itself has been marginalized, even before 2011. And it doesn't have, unfortunately, the international coverage that it needs. The press coverage is mostly "people in Damascus are not drinking." And who cares that people in Wadi Barada are being killed?

Of course the people of Damascus, the real Damascenes, do understand that the people of Wadi Barada will never cut water, will never want them to be thirsty. Wadi Barada was giving Damascus electricity since 1905: The Damascus tramway was running on electricity being produced in the valley. But on the other hand, Wadi Barada itself didn't get electricity until 1960.

The water to Damascus was coming from Wadi Barada, and the wood was coming from Wadi Barada, the fruits from Wadi Barada – and, of course, Eastern Ghouta – and yet this area was really oppressed. And after all of this, I guess that it will go on like this.

Syria Deeply: What's the situation for civilians in Wadi Barada right now, since the cease-fire?

Fares: There is still no electricity (and consequently no water) nor telecommunications. There is a shortage of everything from bread to food to healthcare service. The Red Crescent accompanied the Wadi Barada fighters and their families to Idlib, but if they or the Red Cross or the U.N. have brought any aid to the area so far, I have not heard about it. Some of the villages were destroyed by regime bombardment, either totally or partially, and their residents fled to neighboring villages. Many of them are living in mosques. Around 1,500 civilians from Wadi Barada were displaced into the village of al-Rawdah during the assault. The little information I have is that they are suffering there. They have nothing and life is expensive there for them.

Syria Deeply: What can we learn from the story of Wadi Barada – not just the recent history, but the decades of marginalization?

Fares: I don't think the ones in power in Syria, will ever recognize the injustices against the people of this area. I'm not saying this because I hate, or I love, or whatever: Even if Bashar al-Assad falls, even if the regime is gone, the new government will not understand the importance of this area in the coming years.

14/02/2017 online at: https://www.newsdeeply.com/syria/community/2017/02/14/after-battle-for-wadi-barada-the-damascus-water-war-isnt-over

Syria's Aleppo Residents to Get Drinking Water Supply Soon

According to the Syrian state television, water supply in Aleppo has already been partially restored but inhabitants of the city will get access to water only after it is tested, which is expected to happen in a short time.

Central water supply was cut off in Aleppo since January 14 due to a technical failure at a pumping station, located in a rural area east of Aleppo in the area controlled by the Daesh jihadist group, outlawed in Russia and many other countries worldwide. Over the past month, Daesh militants did not allow maintenance crews to restore the work of the station. The United Nations together with the city's utility services were providing clean water to Aleppo inhabitants through tankers and wells.

The Syrian city of Aleppo was the so-called economic capital of the Middle Eastern country before the beginning of the civil war in 2011. It had been under militants' control for several years and was significantly damaged during the conflict. The city was liberated by the government forces in December 2016.

14/02/2017 online at: https://sputniknews.com/middleeast/201702141050671008-syria-aleppo-water/

U.N. warns of catastrophic dam failure in Syria battle

The United Nations is warning of catastrophic flooding in Syria from the Tabqa dam, which is at risk from high water levels, deliberate sabotage by Islamic State (IS) and further damage from air strikes by the U.S.-led coalition.

The earth-filled dam holds back the Euphrates River 40 km (25 miles) upstream of the IS stronghold of Raqqa and has been controlled by IS since 2014.

Water levels on the river have risen by about 10 meters since Jan. 24, due partly to heavy rainfall and snow and partly to IS opening three turbines of the dam, flooding riverside areas downstream, according to a U.N. report seen by Reuters on Wednesday.

"As per local experts, any further rise of the water level would submerge huge swathes of agricultural land along the river and could potentially damage the Tabqa Dam, which would have catastrophic humanitarian implications in all areas downstream," it said.

The entrance to the dam was already damaged by airstrikes by the U.S.-led coalition, it said.

"For example, on 16 January 2017, airstrikes on the western countryside of Ar-Raqqa impacted the entrance of the Euphrates Dam, which, if further damaged, could lead to massive scale flooding across Ar-Raqqa and as far away as Deir-ez-Zor."

The town of Deir-ez-Zor, or Deir al-Zor, is a further 140 km downstream from Raqqa, and is besieged by IS. The U.N. estimates that 93,500 civilians are trapped in the town, and it has been airdropping food to them for a year.

The U.S.-backed Syrian Democratic Forces (SDF) are undertaking a multiphased operation to encircle Raqqa, and have advanced to within a few kilometers of the dam. The SDF has previously said air strikes are not being used against IS near the dam to avoid damaging it.

As IS, also known as ISIL, retreats, its fighters have deliberately destroyed vital infrastructure, including three water stations and five water towers in the first three weeks of January, the U.N. report said.

"ISIL has reportedly mined water pumping stations on the Euphrates River which hinders the pumping of water and residents are resorting to untreated water from the Euphrates River."

The U.N. has also warned of the danger of a collapse of the Mosul dam on the Tigris River in Iraq, which could affect 20 million people. The dam was briefly captured by IS in 2014, but remains at risk, with constant repairs needed to avoid disaster.

Last month Lise Grande, the top U.N. humanitarian official in Iraq and a trained hydrologist who is an expert on the Mosul dam, said a catastrophic burst could have "Biblical" consequences. The U.N. is preparing an international response in case the Mosul dam collapses.

15/02/2017 online at: http://www.reuters.com/article/us-mideast-crisis-syria-dam-idUSKBN15U1DZ

1.8 million People remain cut from main water source in N. Syria: UN agency

The UN Office for the Coordination of Humanitarian Affairs (OCHA) in Syria said that an estimated 1.8 million people in Aleppo remained cut off from their main water source for more than one month due to a technical failure at the Al Khafse water station, a UN spokesman told reporters here Wednesday.

Local water authorities continued with efforts to access and repair the water infrastructure and were able to visit Al Khafse on Monday, UN deputy spokesman Farhan Haq said at a daily news briefing here.

"Residents currently receive a limited water supply through other distribution networks," he said. "The water authorities are operating wells servicing almost one million people while the UN is providing fuel, water trucking, and distributing water purification materials, installing tanks and rehabilitating additional wells in the city."

"The UN continues to call on all parties to the conflict in Syria to ensure technical teams have unrestricted and safe access to water infrastructure in order to swiftly restore the provision of water to the civilian population," Haq said.

"The UN also reminds all parties to the conflict of their responsibility to safeguard civilians and civilian infrastructure, as required by the International Humanitarian Law and the Human Rights Law," he added.

The Syrian army wrested its full control over the entire city of Aleppo since last December, poising for further military operations in the Aleppo province to drive out Islamic State (IS) militants. Thousands of civilians have been displaced due to the intensive fighting.

So far, the chronic Syrian conflict has killed more than 300,000 people and displaced nearly 11 million others.

16/02/2017 online at:

http://english.cctv.com/2017/02/16/ARTIWYMiv3l3zLDBdhazePGq170216.shtml

Iranian Qanats: Ancient Water Supplement System

Qanats (also called kariz, Lyon, aflaj) is underground galleries that tap and continuously convey groundwater and have been employed since very ancient times.

Qanats have proved to be an extraordinarily valuable and sustainable traditional technology, which throughout the historical ages has been transferred from ancient Persia where it originated to numerous countries all over the world, particularly those with arid and semi-arid climates.

Throughout the arid regions of Iran, agricultural and permanent settlements are supported by the ancient qanat system of tapping alluvial aquifers at the heads of valleys and conducting the water along underground tunnels by gravity, often over many kilometers.

The eleven qanats representing this system include rest areas for workers, water reservoirs and watermills. The traditional communal management system still in place allows equitable and sustainable water sharing and distribution. The qanats provide exceptional testimony to cultural traditions and civilizations in desert areas with an arid climate.

UNESCO has registered 11 lines of qanats in Iran that have been documented dating back from 2500 to 200 years old. They are located in six provinces of Iran: Khorasan-e Razavi, Khorasan-e Jonubi, Yazd, Kerman, and Markazy & Esfahan.

The major reasons for the approval of these lines by the committee in UNESCO were: unique technologies in digging qanats, and unique features like the oldest or the longest. Gonabad Qanat line has got the deepest well. The first well of this qanat line is 350 meters deep and survived large number of earthquakes throughout the history.

Zarch qanat line in Yazd province is the longest, 100 km, with 2115 wells. The strangest line is Ardestan Moon qanat line which has been built in two parallel lines with common wells, but different first and last wells.

17/02/2017 online at: https://www.tasnimnews.com/en/news/2017/02/17/1327194/iranian-qanats-ancient-water-supplement-system

Dam broken in Iran, flood to hit town

Just a few days after heavy flood washed away an earthen dam in Jahrom, Fars Province in southern Iran, a similar incident happened in Bardsir, Kerman Province near the country's center.

The earthen dam of Bardsir is broken and water has run into the villages downstream to it, Mehr news agency reported February 18.

The villagers have been evacuated to prevent life disasters. Bardsir Governor Majid Najafpour said smaller embankments down from the dam were being washed away one by one as water ran its way to the town.

18/02/2017 online at: http://en.trend.az/iran/society/2722746.html

Official: Israel's Water Safer than Most

Panic over the levels of lead in drinking water is out of place, said Professor Itamar Grotto, director of public health issues in the Health Ministry. Speaking to Army Radio, Grotto said

that the reports of higher levels of lead in water in several towns and cities in Israel were true, but that even so, the levels of lead in water were well within the permitted amount.

The higher levels of lead, according to a Health Ministry investigation, are to be found in the water supplies of 29 towns and cities, Haaretz reported on Sunday. Among the locations where the higher levels of the material were found were Haifa, Holon, Afula, Hadera, Zichron Yaakov and the Krayot suburbs of Haifa. "The World Health Organization's recommendations are not being violated in these places, and the danger from lead is negligible," said Grotto. "The main message I would like to convey is that the water in Israel is safe."

So safe it is, the Ministry said in a separate report that Israel's water is among the cleanest in the world. Basing its comments on reports by the U.S. Centers for Disease Control, the Ministry said that Israel's clean water standards were among the worlds' toughest, and that the water flowing from taps had a near-100 percent perfect record (99.7 percent, to be exact). The report was based on 6,000 spot checks of water quality over the past three years. In the rare cases where there were problems, action to correct the issues was swift and effective. There is no need to drink bottled or mineral water, the Ministry added; tap water in Israel was as good, or better, as any of the waters for sale.

15/02/2017 online at: http://hamodia.com/2017/02/15/official-israels-water-safer/

Israel is first in wastewater Reuse, but Palestinians are last

At international water conferences, Israeli participants always make a point of claiming Israel is the world leader in wastewater treatment and reuse, and indeed this is true. Israel treats over 90% of its sewage and reclaims 80% of it for reuse in agriculture. Only Singapore and Spain come close to this achievement. I too make this claim when I attend such conferences, but I also point out that all of Israel's water sources are trans boundary. All of Israel's rivers that drain into the Mediterranean Sea originate upstream in the West Bank and most of these rivers are heavily polluted.

The reason for the pollution is that unlike Israel, wastewater treatment and reuse in the West Bank is only a fraction of that in Israel. Lacking wastewater and sewage infrastructure Palestinian and Israeli settlement communities drain their sewage untreated into open cesspits or directly into the environment. The result is that the sewage flows into the regions' rivers and streams, blighting the landscape, posing public health risks and most importantly contaminating the precious groundwater resources that Israelis and Palestinians both use for drinking. Indeed, the most serious environmental hazard in the West Bank is untreated wastewater, but sewage does not recognize borders and this untreated sewage is as much a problem for Israel as it is for the communities in the West Bank.

According to a recent report from Israel's Civil Administration, the body responsible for environmental management in the West Bank, 82.5% of Palestinian sewage is disposed of into the environment, an amount of around 60 mcm/year. In Israeli settlements the amount of untreated sewage discharged into the environment is around 12% or around 2.5 mcm/year.

The reasons for this large disparity in wastewater management between Israel and the West Bank are a complex mix of politics, financing and capacity. Many plans for the implementation of centralized wastewater treatment facilities to service Palestinian towns and cities get mired in disagreements on whether or not to connect Israeli settlements to such infrastructure and an arduous process of permitting and approvals, according to the Joint Water Committee that was set up under the Oslo II accords to manage such projects. However, many Palestinian communities are off grid, meaning they do not have access to a sewer network and without a network they cannot connect to centralized wastewater treatment facilities. The result is that sewage is disposed of into cesspits or directly into the environment.

The Arava Institute's Center for Trans boundary Water Management, together with Palestinian partners, is promoting a decentralized response to wastewater management in these off-grid communities where sewage (black water) is disposed of in sealed septic tanks and grey water from the kitchen and bathrooms is treated and then reused for localized agriculture. This onsite approach to wastewater management both reduces the flow of untreated sewage into the environment, helping to reduce the flow into the trans boundary streams and rivers, and provides an additional source of water for irrigation for these agrarian communities.

The decentralized approach is just one way by which, working together, Israelis and Palestinians can help to reduce untreated wastewater discharges into our shared environment. However this kind of approach is not enough. Ultimately, agreements need to be forged between Israel and the Palestinian Authority on transboundary wastewater treatment that will replace the unilateral response undertaken so far by Israel, where it treats the sewage downstream as soon as it crosses the Green Line but charges the Palestinians for doing so. This creates tension between the parties as Israel claims the Palestinians are not doing enough to treat their sewage and the Palestinians charge Israel that they are paying for sewage treatment downstream but do not get any benefits of the treated sewage for use in agriculture upstream.

The Arava Institute has recently embarked on a Track II negotiation process to tackle the need for a comprehensive bilateral agreement on wastewater management between the parties. The Track II process is a civil society response that includes experts and organizations from Israel and the PA to jointly promote an agreement that will serve the needs and interest of both sides so that an equitable process of both treatment and reuse can take place. The Track II process also seeks to assist the governments of both sides to formalize such an agreement even in the face of a moribund political process.

Water and wastewater management cannot and need not wait for a political settlement, and if we want to once again enjoy clean rivers and streams then we, the public, must demand from our governments to act now. March 22 of this year is World Water Day and the theme for this year is wastewater management. What better way to celebrate World Water Day than with a wastewater management agreement between Israel and the PA.

19/02/2017 online at: http://www.jpost.com/Opinion/Israel-is-first-in-wastewater-reuse-but-Palestinians-are-last-482025

Dams now nearly half full following depression

The Kingdom's 11 main dams now hold 48.9 per cent of their total capacity of 333.24 million cubic meters (mcm) following a recent depression, which brought rain and snow to several parts of the country, according to the Ministry of Water and Irrigation.

During the depression, which started on Sunday and tapered off on Wednesday, some 6mcm of water entered the Kingdom's dams until Saturday morning, Water Minister Hazem Nasser said in a statement e-mailed to The Jordan Times.

"The dams now hold 163mcm or 48.9 per cent of their total capacity of 333.24mcm," Nasser said in the statement.

An official at the ministry said current water storage at the dams is far below what they held last year, indicating that during the same period last year, the dams held 192.3 or 59.1 per cent of their total capacity.

The official highlighted that water levels in three of the main dams did not increase during the depression, including Tannour Dam in Tafileh, Mujib Dam in Karak and Waleh Dam in Madaba.

The ministry's statement also indicated that rain and snow between Sunday and Friday raised the Kingdom's long-term annual average of rainfall of 8 billion cubic meters to 65.2 per cent.

The highest rainfall during the depression was recorded on Thursday in Thaghret Asfour in Jerash Governorate, some 48km north of Amman, which received 19.8 millimeters of rain in one day.

The ministry indicated that main dams, ponds and desert dams across the country collect 60.5 per cent of rainwater and runoff, noting that the percentage is among the highest rates internationally.

Dams, though expensive to construct, are key for the Kingdom to secure its water needs. Plans are under way to raise the dams' storage to 400mcm by the year 2020.

Approximately 91 per cent of Jordan's total area of 89,213 square kilometers is arid, with an annual rainfall average of 50-200 millimeters, while 2.9 per cent of the country's land is semi-arid, with an annual rainfall average of 400-580 millimeters.

18/02/2017 online at: http://jordantimes.com/news/local/dams-now-nearly-half-full-following-depression

Saudi Arabia, Singapore agree to boost cooperation in water sector

Saudi Arabia and Singapore have pledged to work closely in the water sector, and have signed a memorandum of understanding (MoU) to build three desalination plants at a cost of SR687 million.

These plants, once operational in coastal towns of the Tabuk region, will go a long way in fulfilling the water needs of the people.

The agreement calls for the Singapore-listed firm Hyflux to build three seawater reverse-osmosis desalination plants in Duba, Wajh, and Haql.

Masagos Zulkifli, Singapore's minister for the environment and water resources witnessed the signing of the MoU between the Saline Water Conversion Corporation (SWCC) and Hydrochem, which is the Saudi subsidiary of Singapore-based Hyflux.

Speaking on the occasion during his visit to the Kingdom last week, Zulkifli noted Singapore's efforts in attaining water security by building a robust and diversified supply.

"These supplies include local catchment water, imported water, NEWater (which is Singapore's brand of ultra-pure reclaimed water), and desalinated water," said the minister in a statement released by the Singapore Embassy in Riyadh on Sunday.

He highlighted the common concerns shared by Singapore and Saudi Arabia in dealing with the challenges of water scarcity, and noted that "both Singapore and Saudi Arabia needed to actively look for ways to make desalination more energy-efficient in order to keep water affordable and accessible to all."

Zulkifli also invited Saudi companies to leverage on Singapore's expertise in research and development, noting that Singapore's Public Utilities Board (PUB) and the King Abdullah University of Science and Technology (KAUST) has an existing MoU to collaborate on water technologies.

With 2017 being the 40th anniversary of official relations between Singapore and Saudi Arabia, Zulkifli underscored "the deep and long-standing ties between the two countries."

With both countries facing the challenges of water scarcity exacerbated by climate change, the sharing of expertise in desalination and the recycling of water will become key areas for bilateral cooperation, he added.

Referring to other potential areas for cooperation, Zulkifli said the two countries can work closely in the fields of environmental management and climate change. He said that Singapore views Saudi Arabia as an important and trustworthy friend, and an attractive business partner. "What binds us together is how our survival is inextricably linked to the supply of fresh water," he added.

20/02/2017 online at: http://www.arabnews.com/node/1056896/saudi-arabia

Qatar to Invest $150M to Build Dam in Southern Morocco

Qatar will finance the construction of a dam at Guelmim, which is expected to cost $150 million.

The dam will be located on Oued Sayad, one of the most important tributaries of Oued Asaka.

A Moroccan-Qatari partnership agreement on the construction of the Fask dam on the Oued Sayad in the Province of Guelmim was signed on Wednesday in Rabat by the Minister of the Interior Mohamed Hassad, the delegated Minister for Water, Charafat Afilal, and the Ambassador of the State of Qatar to Morocco, Abdallah Fellah Abdallah Daoussari.

With a capacity of 78 million m3, this dam, which will be constructed out 40 kilometers east of Guelmim, will allow the regularization of 19 million m3 of water.

The construction of the dam will take four years, from 2017 to 2021, according to the established schedule.

“This new dam, which will reinforce the hydraulic works of the region, will make access to drinking water safer for all the population of the region of Guelmim,” said Charafat Afailal at the MAP.

17/02/2017 online at: https://www.moroccoworldnews.com/2017/02/208527/qatar-to-invest-150m-to-build-dam-in-southern-morocco/

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106 million gallons of rainwater pumped out

The country's preparedness to deal with rains, which Qatar received over the last few days, bore fruit as rainwater overflow and logging in different parts of the country were tackled in a record time. With the Rain Emergency Team working round the clock, some 106 million gallons of water have been drained away from the public areas.

With the northern part of the country receiving the highest amount of rain for more than three days, a majority of the complaints were from that part of the country, said Safar Mubarak Al Shafi, head of Rain Emergency Team at the Ministry of Municipality and Environment.

"The priority in removing rain water was given to highways, main roads, internal streets, roundabouts and public and residential areas. We were able to drain all the water-logged streets yesterday, and now only a few places outside the city remain to be cleared", said Al Shafi.

"About 106 million gallons of rain water have been removed through 21,911 trips from Tuesday until yesterday noon. Municipalities used 349 tankers, 45 pumps and 543 workers and employees of the ministry," added Al Shafi, who was appointed by the minister as the head of the team.

The areas which were heavily affected by the rain were Al Khor, Al Daayen, Doha, Al Rayan, Al Ruwais and Al Wakra. Different parts of the country that are not populated were also covered by the team.

The team worked round the clock to tackle water logging in a record time. "During the rainy days, we were working 24 hours without any stop. Our team was out working even as heavy rains continued."

He also added that "we have a control room in collaboration with Ashghal and Municipality. It is equipped with hot lines to receive reports, queries and complaints from the public which are then transferred to authorities concerned."

Earlier, a few days of rains would result in flooding in many parts of the country, especially the major highways and low-lying ones.

Both the public and a number of officials at different government and non-government bodies have praised the Rain Emergency Team for their efforts.

"For the first time, I have seen authorities removing water on the same day. Thanks for the efforts made by the rain emergency team to drain the water from the streets and neighborhood. The efforts are still continuing to remove the stagnant water," tweeted Hassan Al Sai, a media professional.

"This time, the rain water was under control, thanks to the rain emergency team for their work 24 hours," said Hamad Lahdan Al Muhannadi, Central Municipal Council (CMC) member.

Meanwhile, another citizen living in Karthiyath said that the water drainage was “completed in three hours and the efforts have been amazing.”

Another Qatari added also that “compared to last time, Muaither streets were in a better state in terms of water.”

19/02/2017 online at: https://www.thepeninsulaqatar.com/article/19/02/2017/106-million-gallons-of-rainwater-pumped-out

3.9 % decrease of irrigation water used in agriculture in 2015

The amount of irrigation water used for agriculture reached 36.75bn cubic meters in 2015, compared to 38.26bn cubic meters in 2014, a decrease of 3.9%.

The Central Agency for Public Mobilization and Statistics (CAPMAS) issued its annual bulletin on Irrigation and Water Resource statistics in 2015 on Tuesday, showing a decreased amount of irrigation water for agriculture due to an increase in cultivated areas.

The report noted that the amount of water used in irrigation canals reached 41.23bn cubic meters in 2015, versus 43.58bn cubic meters in 2014, a decrease of 5.4%.

It added that the amount of water used for irrigation in Aswan reached 44.23bn cubic meters in 2015, compared to 46.57bn cubic meters in 2014, marking an increase of 5.0%.

Moreover, winter crops used 11.60bn cubic meters of water, which is equivalent to 31.6% of the amount of water used in irrigation, while summer crops accounted for 20.65bn cubic meters, which is equivalent to 56.2%. Additionally, Nile crops used about 1bn cubic meters of water, equivalent to 2.7%, and fruit production 3.50bn cubic meters, accounting for 9.5%.

The amount of water used from irrigation wells for the three types of crops and for fruit reached 26,150 cubic meters in 2015 compared to 21,400 cubic meters in 2014, an increase of 22.2%. This is due to an increase in cultivated areas that depend on water wells for most crops and fruits for three seasons.

14/02/2017 online at: http://www.dailynewsegypt.com/2017/02/14/3-9-decrease-irrigation-water-used-agriculture-2015/

Egypt's Renaissance Dam fears remain despite diplomatic efforts

As Ethiopia's Grand Renaissance Dam nears completion, Egyptian fears that the dam will affect its historic Nile water share remain unchanged.

Expected to be ready by July 2017, Ethiopians consider the dam a great national project and a means of overcoming poverty.

Egypt’s share of 55 billion square meters is the country’s main supply of drinking water and irrigates the Nile Delta and generates nearly half of the country’s electricity through the operation of the Aswan High Dam.

In 2015, Egypt, Ethiopia and Sudan signed a declaration of principles in Khartoum in which the three nations agreed to take all measures to avoid causing damage to the others, and to offer compensation in case of any damage.

While the Ethiopian side has reportedly reassured Egypt that its water share will not be affected, Egyptians are concerned the dam would impact the agricultural output.

Last month, Egyptian President Abdel-Fattah al-Sisi and Ethiopian Prime Minister Hailemariam Desalegn met in Addis Ababa on the sidelines of the African Union summit.

The meeting raised speculations on whether thawing relations between the two countries could have any effect on the construction of the Renaissance Dam.

Prior to the visit, Nader Nourridine, a professor of water resources at Cairo Univeristy, commenting to a local newspaper on Sisi's visit, said it should help Egypt reach solution that preserve its water rights and reduces possible damages that could occur as a result of the Renaissance Dam.

Too late?

The Egyptian diplomacy handled the issue very late, political sociology professor Saeed Sadek told Al Arabiya English.

"Egypt now has no option but to wait for the dam to start operating to see how that would affect its water share."

While there were several attempts to build the dam during the era of former President Hosni Mubarak, Ethiopia "took advantage of the political turmoil that followed his overthrow to construct the dam," Sadek explained.

A different approach was taken when Sisi came to power, he said, mentioning Egypt's intervention in retrieving 27 Ethiopians who were kidnapped in Libya.

But still, Sadek said, "we are yet to witness a major push in Egyptian-Ethiopian relations" that would provide water security for Egypt.

18/02/2017 online at: https://english.alarabiya.net/en/features/2017/02/18/Egypt-s-Renaissance-Dam-fears-remain-despite-diplomatic-efforts-.html

Morocco to Play Key Role in Africa's Access to Water and Sanitation

The African Water Association (AAE) conference, entitled "Water and Sanitation in Africa: Challenges and Prospects", opened in Skhirat on Monday, with the participation of more than 200 decision makers from Francophone and Anglophone Africa.

Initiated by the Moroccan Office of Electricity and Drinking Water (ONEE), these meetings, which will take place February 13 to 17, provide an opportunity for African leaders to discuss the challenges facing the African continent.

The conference is scheduled to discuss the critical issues of drinking water access and sanitation in the continent, as only 30% of the African population has access to these recourses. Some of the main themes of the conference include access to safe drinking water and sanitation services, as well as prospects for improving access to these basic services, essential for the sustainable development of the continent.

Throughout the five days of the conference, meetings will take place corresponding to the AAE's organizational bodies: the Scientific and Technical Committee, the Management Committee, the Governance Committee, and the General Assembly.

Speaking at the opening, ONEE's General Director, Ali Fassi Fihri, noted that the African Water Summit, one of the first inter-African meetings following the return of Morocco to the African Union (AU), confirms Morocco's commitment to strengthening South-South cooperation, particularly in areas where the Moroccan experience is proven.

During the ceremony, Fihri stressed that drinking water and proper sanitation are some of the most important public services required for a decent and healthy life, but that the implementation of such projects needs major financing.

Morocco is, according to Fihri, engaged in a sanitation program that plans to reach 140 wastewater treatment plants by 2020, for a cost of € 2.3 billion. Accordingly, the Office plans to take action to improve water yields from 95.4% in 2016 to 96% in 2020.

In the case of liquid sanitation, the same program aims to achieve a higher purification capacity of 15.000 m3/day by using clean energy sources such as biogas energy recovery and the use of solar photovoltaic energy.

The AAE is made up of a network of about 100 member companies located throughout the African continent. It is positioning itself as an essential institution for improving the performance of water and sanitation companies in Africa. The AAE also contributes to influencing sectorial policies in Africa and accompanies its members to achieve the goals set by the international community regarding people's access to drinking water and sanitation services.

14/02/2017 online at: https://www.moroccoworldnews.com/2017/02/208263/morocco-play-key-role-africas-access-water-sanitation/

Irrigation efficiency key to ending Indus water shortages

Author Fred Pearce in his book When the Rivers Run Dry argues, "For most countries of the world, agriculture is the biggest user of water and the biggest cause of water shortages. And that is where the big solutions lie."

Sandra Postel in her book The Last Oasis maintains that the "technology and know-how for effective water husbandry does exist and with the methods already in use, farmers could cut their demand for water by 40-90 per cent."

If agriculture demand, which accounts for over 80pc of all water usage in South Asia, can be cut to one-tenth of what it is, the water problem is over. So, all the hue and cry over water shortages narrows down to one issue – irrigation inefficiency.

Let us look at the Indus basin as an example. The way the Indus Water Treaty – the water sharing agreement between India and Pakistan – was drafted in the late 1950s, it encouraged water withdrawals from the rivers to the maximum extent possible, with no provision for long-term sustainability.

Although today's global mind reckons sustainability as the foremost element while exploiting natural resources, water management in the Indus basin still seems hostage to the old mind set of the 1950s which considered every drop of water left in the rivers as ‘unused’ and the flows reaching the Indus delta as 'escapages'.

Water in the brain

The management of water in the Indus basin has remained dominated by large structural interventions, financed by loans, focusing only on supplying water in abundance without managing the demand. These projects provided water in such abundance that water-rich cultures emerged with no sense of water conservation. Wasteful practices of flood irrigation became a way of life.

This water-rich mind set, which engulfed water managers and water users alike, is now one of the biggest impediments to adopting efficient practices and conservation of water in the Indus basin.

Engineering interventions do not create water but only store and/or divert it to where it did not exist, while simultaneously depriving it from where it existed earlier. The negative environmental consequences, social impacts and economic externalities of large dams and diversions remain obscure because they are usually offset in time and space.

The impacts, for example, of structures in the Indian state of Himachal Pradesh or the Mangla dam in Pakistan's Jammu and Kashmir, hit the communities more than 1,000 kilometers downstream in the Indus delta 50 years later, by reducing the flow of water and sediment and loss of fertile land. No engineering or financial mechanisms have ever been devised to assess these impacts let alone compensation for the downstream communities and the environment.

The unsustainable nature of our irrigation system is becoming increasingly obvious with time. John Briscoe and Usman Qamar in their book Pakistan’s Water Economy Running Dry have identified the Indus basin in Pakistani Punjab as the most inefficient irrigation region in the world. Over-irrigation caused water logging and salinity, which triggered Salinity Control and Reclamation Projects (SCARP) to revive groundwater.

However, these projects – yet again dominated by engineers and financed by loans – focused on treating the symptoms with structural solutions (networks of pipes/drains and tube wells) but ignored the cause (irrigation inefficiency). Such symptoms-focused solutions have proven to be unsustainable socially, financially and environmentally.

SCARP tube wells had to be abandoned and pipes/drains in many cases just shifted the problems from their start to their terminus. The dumping of saline waste from these drains into low-lying areas, streams and water courses is an environmental issue rarely talked about. Many of these drains and pipes are already choked. The drains, which have become an eyesore in the landscape with their stagnant stinking waters, are also a nuisance in built up areas – providing permanent breeding environment for mosquitoes and other disease vectors.

Irrigation inefficiency cause of all ills

It is becoming increasingly clear that almost every contemporary issue in the Indus basin are directly or indirectly linked to inefficient irrigation, be it delta erosion, environmental degradation, soil degradation, water shortages, human health, exacerbated floods, low agriculture productivity, pollution of aquifers, or the water-sharing issue.

Unfortunately, all basin-scale interventions in the Indus basin thus far have compromised perpetual sustainability over temporal suitability. Projects worth billions of dollars are still being proposed to dam and divert the rivers, but nothing at this scale has ever been proposed to address demand management or to improve basin wide irrigation efficiency.

Fortunately, however, the global mind is now ever more cognizant of sustainability – the recently adopted Sustainability Development Goals (SDGs) speak for it. All countries sharing the Indus Basin are signatories to the SDGs, and the Indus basin provides them a grand opportunity to steer the cause through cooperation, coordination and commitment.

Shift paradigm, manage demand

A paradigm-shift from supply management through mega structures to demand management through an integrated suite of water supply and irrigation technologies, policies, legislation, institutions, capacity building, water pricing and business models etc., could be the game changer in the region. These interventions can potentially reduce irrigation requirements by 90pc, rendering mega diversions irrelevant.

The canals could be replaced by pipes and diversion barrages by riverine well-fields, feeding water into irrigation-pipes network. Piped and metered water supply at farms is then connected to efficient irrigation systems.

Free-flowing rivers, the way nature intended them to be, meandering in the flood plains, replenishing the soils and recharging the riverine aquifers, would become the sustainable source of water. The potential storage in riverine aquifers will make agriculture sector virtually drought proof – and bring environmental health and social well-being.

To succeed in this, policymakers must devise mechanisms which reward efficiency in the irrigation sector and promote emerging efficient technologies so that they become accessible to farms. Simultaneously, economic engines, which thrive on green technologies and flowing

rivers, should be invoked to add commercial and intrinsic value to water that comes back to the environment.

If such an approach takes hold in the next half century or so, the outdated technologies of large dams and mega diversions could be gradually phased out and replaced by flowing rivers.

15/02/2017 online at: http://www.dawn.com/news/1314942