



ORSAM WATER BULLETIN

Weekly Bulletin by ORSAM Water Research Programme

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



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07 February 2017 – 13 February 2017

UN concerned by water shortage for 1.8 million in Syria's Aleppo

The United Nations is gravely concerned that an estimated 1.8 million people in Syria's Aleppo city and its surroundings have been cut off from their main source of water, said UN Spokesperson Stephane Dujarric on Monday.

Dujarric told a daily briefing that the UN continues to respond to the water crisis by supplying fuel to operate 100 deep wells, and is supporting emergency water trucking, reaching nearly 1 million people in need of water assistance.

Noting the severe humanitarian situation in other areas across the country, Dujarric said "the United Nations continues to call for unconditional, unimpeded and sustained access to all 4.72 million people in hard-to-reach locations across the country, including 643,780 in besieged locations."

The Syrian army wrested its full control over the entire city of Aleppo since last December, poised 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.

07/02/2017 online at: http://news.xinhuanet.com/english/2017-02/07/c_136036414.htm

Daesh Militants Hinder Syrian Aleppo Water Supply - Russian Foreign Ministry

On Tuesday, Lt. Gen. Sergei Rudskoy, the chief of the Russian General Staff Main Operational Directorate said that water supplies to the Syrian capital of Damascus from the Wadi Barada region have been restored almost fully as some 2,500 militants have laid down their arms.

"Western humanitarian society, using every opportunity to criticize Damascus, remained silent or has been attributing the accident at the water pumping station [in the Wadi Barada] to the result of Syrian Air Force bombing. By the way, the situation around Aleppo, where the IS [Daesh] militants are now preventing normal water supply, is mainly the same," Gatilov said.

On Monday, a Russian delegation comprising State Duma lawmakers Dmitry Sablin, Sergey Gavrilov and Alexander Yushchenko, as well as Russian medics, arrived in Syria with a working visit.

Syrian President Bashar Assad held a meeting with the delegation members earlier this week. The lawmakers visited the city of Aleppo on Thursday.

On December 16, the Russian Defense Ministry said that the Syrian army's operation to liberate militants-controlled eastern Aleppo ended; however, several hotbeds of militants' resistance remained.

On December 22, last militants left eastern Aleppo, thus the Syrian army gained full control over the city. Syrian President Bashar Assad called the liberation of Aleppo a "watershed moment."

10/02/2017 online at: <https://sputniknews.com/middleeast/201702101050531716-daesh-aleppo-water-supply/>

Water for Sustainable Development Decade to begin in 2018

Following Tajikistan's initiative regarding water-related issues the UN General Assembly adopted a resolution entitled International Decade for Action "Water for Sustainable Development", 2018-2028.

The initiative first came from Tajik President Emomali Rahmon during the 7th World Water Forum in the Republic of Korea on April 12, 2015.

Tajik ambassador to Iran Nematullo Emomzoda made the announcement at a press conference held in the Embassy of the Republic of Tajikistan here on Tuesday.

Adopted on Dec. 21, 2016 the resolution was backed by 177 UN member states. The newly approved resolution is a continuation of the 2005 to 2015 International Decade for Action "Water for Life".

According to United Nations website the goal during the Water for Life Decade was to promote efforts to fulfill international commitments in the water sphere by 2015. Trying to raise the profile of water in the global agenda, and to focus the world's attention on the groundbreaking, lifesaving, empowering work done by those implementing water programs and projects, being a bridge to further cooperation between governments and other stakeholders, between nations and diverse communities, between economic interests and the needs of ecosystems and the poor, and promoting efforts to ensure the participation of women in water and sanitation are some of the goals the UN tried to achieve during the first decade.

"The modern global challenges and threats including financial and economic crises, population growth, climate change, increase of natural hydro-meteorological phenomena, water scarcity and as a result increasing level of poverty, spread of infectious diseases and maternal mortality" urges more actions and measures to tackle water-related issues, said Tajik President Rahmon during the 7th World Water Forum in the Republic of Korea.

Therefore, Rahmon suggested the continuation of the Water for Life Decade in an attempt to create a stable framework for coordination and promotion of efforts to address the challenges related to water management issues.

The Water for Sustainable Development Decade which will initiate on March 22, 2018 concurrent with World Water Day will cover following goals:

Sustainable development and integrated management of water resources for the achievement of social, economic, and environmental goals

Furtherance of cooperation and partnership at all levels in order to help to achieve internationally agreed water-related goals and targets including those contained in sustainable development goals

Implementation and promotion of related program and projects

Improving the knowledge of the generation and dissemination, facilitating access to knowledge and exchange of good practices, generating new information relevant to the water-related sustainable development goal

Perusing advocacy, networking and promoting partnership and action by different actors to implement the water-related goals and targets

Strengthening the communication actions at various levels for the implementation of the water-related goals

The evaluation of the decade implementation process in the framework of the 77th session of the UN is expected.

07/02/2017 online at: <http://www.tehrantimes.com/news/410869/Water-for-Sustainable-Development-Decade-to-begin-in-2018>

Boost to Shadegan Wetland Revival Efforts

A water transfer project aimed at restoring the imperiled Shadegan Wetland in Khuzestan Province is expected to be complete by mid-June, said a top environment figure.

Protected under the Ramsar Convention, the wetland has been at risk of desiccation for years due to climate change and Iran's protracted battle with water scarcity.

To remedy the problem, it was announced over a year ago that a six-kilometer-long canal would be constructed to transfer water from Karoun River to the southern part of Shadegan.

The canal was initially expected to be ready by March 2016, but according to Massoumeh Ebtekar, the head of Department of Environment, it will be complete in June, ISNA reported.

"Siphoning water to Shadegan will help replenish the wetland and improve its water quality," she said

While the northern part of the wetland has been receiving meager amounts of water thanks to Jarahi River, the low discharge of the river is unable to fill the entire lagoon, leaving the southern portion of Shadegan dry.

In line with improving the region's environment, the department has held talks with the Sugarcane and Byproducts Development Company to enlist their help to accelerate the restoration project.

They have agreed to allow DOE officials to use their irrigation systems to pump water from the farms to the wetland during winter when the farms are not watered.

The authorities believe that even though the irrigation system can only be used for three months per year, this method can transfer up to four times the volume of water transferred by the canal.

Excessive dam construction, prolonged drought and failure to uphold Shadegan's water rights have rendered the once thriving wetland vulnerable to desiccation.

Furthermore, the marine species remaining in the wetland are threatened by pollution caused by leaky oil pipes, industrial waste and fertilizers.

11/02/2017 online at: <https://financialtribune.com/articles/people-environment/59253/boost-to-shadegan-wetland-revival-efforts>

Denmark and Israel cosyng up on water tech

The food and agriculture minister, Esben Lunde Larsen, is in Israel this week in a bid to strengthen co-operation between Denmark and Israel within the area of sustainable water tech solutions.

A dry climate and recent droughts has forced Israel to step up its investment in water technology, and Danish companies have developed solutions that could help the Israeli government secure its water supply for the nation's population, agriculture and industry.

“Denmark and Israel have different strengths and challenges. Israel is one of the best countries in the world at attracting research funds, and we can learn from that in Denmark,” said Larsen.

“Conversely, Israel is facing serious environmental issues due to a lack of water and water pollution. Here, Denmark can provide some of the world's best solutions. So a stronger bond would benefit Denmark and Israel.”

Heading to Haifa

Last year, the Education and Research Ministry teamed up with the Foreign Ministry to establish a new innovation centre in Tel Aviv, which will help open doors for Danish companies looking to access leading research arenas and relevant co-operation partners in Israel.

Larsen will visit the innovation centre and meet with the Israeli environmental protection minister, Zeev Elkin.

He will also meet with the mayor of Haifa, where the Danish water tech firm DHI is involved in a large project regarding the protection of the vulnerable ocean environment. And he will visit the Grand Water Research Institute, one of Israel's leading research institutes within water technology.

07/02/2017 online at: <http://cphpost.dk/news/business/denmark-and-israel-cosying-up-on-water-tech.html>

JNF's first-ever water mission looks at Israel's successes

The Tour on the Trail of Israel's Water Solutions trip to Israel attracted over 40 participants, Jews and non-Jews alike, with various backgrounds including civil engineers, academics, long time JNF supporters, as well as four representatives sent by the Thai government, and an official from the United Nations.

The first-ever Jewish National Fund (JNF) Israel water mission, titled IsraelH2O: A Tour on the Trail of Israel's Water Solutions, attracted participants for many different reasons, but ultimately, all came with the same goal-to learn more about how Israel, a once water starved country, has become a place where water issues have become stable and its water crisis mitigated. The mission was a natural continuation and a fitting conclusion to JNF's yearlong successful Water Summits held in dozens of cities around the United States. "The goal of this mission is to show how Israel is a true model to the world of how it is possible to overcome severe water shortages through proper management and constant innovation," explained Talia Tzour Avner, Chief KKL Israel Emissary based in New York.

The 40 participants consisted of Jews and non-Jews alike, civil engineers, academics, long time JNF supporters, as well as four representatives sent by the Thai government, and an official from the United Nations. "I am learning so much about the work that JNF does for water issues in Israel, and I've been able to see the levels of cooperation that exist between corporate entities, farmers, and legislators working together for a common goal," said Anne Juepner, the UN Director of Global Policy Center who is based in Nairobi, Kenya. "I was most impressed and surprised by how fully aware Israelis are of water issues, not only within Israel, but also around the world."

Starting the mission in Northern Israel, which included a visit to waste treatment plants and water reclamation facilities, the group traveled south to JNF's Basor Reservoirs. On the morning of the mission's visit, countless birds were seen nesting in the nearby bushes and flying over the fields in flocks. The JNF group gathered at an overlook point that provided views of the reservoirs as well as fruit trees, farmlands, and the winding Basor River.

The reservoirs created by JNF-over 250 throughout Israel-hold either treated water or rain water collected from annual regional flooding, depending on each reservoir. "The water is mainly used for irrigation purposes in these dry parts of the county-because of the reservoirs, Israeli farmers are able to irrigate 10,800 acres (44,000 dunams) of additional land," Ofer Brokshtain, Keren Kayemeth LeIsrael (KKL) engineering and development officer, told the group. "Before these reservoirs were built, there was nothing here-this region is a desert! All the vegetation and all of the fields and orchards that we see today are thanks to the network of JNF-KKL reservoirs."

The JNF Israel H2O Mission was chaired by Bob Lembke, President of the United Water and Sanitation District, from Greenwood Village, Colorado. Lembke, who brought a number of colleagues with him on this mission, mentioned Seth M. Siegel's best-selling book, *Let There Be Water: Israel's Solution for a Water Starved World*, and hearing Siegel speak a JNF Water Summit. "JNF is key on water," said Lembke. "Israel's water system is well designed and

efficient, while at the same time, Israel is constantly working on new innovations. On this trip, we are seeing how the water distribution system is well managed, and how the water crisis has been addressed through desalination, water conservation, and water recycling."

Overall, per-capita, Israelis use about 27 percent less water than Americans. While a good portion of JNF's IsraelH2O Mission focused on visiting corporations, facilities, or government officials, they also visited an elementary school in Ofakim, a small development town near Be'er Sheva in the Negev, where they witnessed first-hand JNF's rain harvesting water system and learned about the water education program JNF runs in collaboration with partner organization Green Horizon. Standing in a noisy courtyard with curious schoolchildren coming to see the visitors, mission participants met with JNF Green Horizons Liaison Ido Eisikovitz to learn more about how water-saving techniques are taught in Israel from childhood. "If we want to educate people for the future, we have to start at the beginning, which is what JNF is doing in this and about 50 other elementary schools," explained Eisikovitz.

"It is important for us to learn from what Israel has done and continues to do in dealing with water scarcity," said Chompoonoch Dolsuklert, one of three delegates sent by the Thai government on this important mission. "We often have droughts in Thailand, and we need to work to be innovative in addressing the situation."

The focus on Israel's successes in water recycling came up repeatedly throughout the mission. "Israel is number one in the world for using recycling water for irrigation purposes, with about 85 percent of waste water being re-used. The next country after Israel is Spain, who recycles about 20% of their water," said Juepner. "We are seeing how the global water crisis continues to affect countries around the world, and the key is approaching the issue from different directions, not just relying on one solution. A lot of what JNF has been able to do in Israel has worked towards water sustainability, and I'm hoping to see more JNF missions like this in the future, with representatives from different countries touring, learning, and joining in the conversation."

"I really think that this can be a cornerstone of peace in the region-being able to generate useable water in general abundance," added Lembke. "Chairing this mission, I'm pleased that so many others get to see how JNF, the government of Israel, and other stakeholders have worked together to develop technology to desalinate or treat water at a high level, and also ways to supply and store it. All of these elements are vital for anyone looking to work addressing the critical issues of water shortage, which affect us all regardless of borders or nationality."

10/02/2017 online at: <http://www.heritagefl.com/story/2017/02/10/features/jnfs-first-ever-water-mission-looks-at-israels-successes/7538.html>

India Turns to Israeli Firm for Help with Water Pollution

The government of India's capital, Delhi, has turned to an Israeli firm to clean a major drainage stretch of one of the most polluted rivers in the country, the River Yamuna.

Almost the entire household and industrial effluents of the national capital region are dumped into the water of the river.

Israeli firm Ayala Water and Ecology Ltd., known for its water purifying and desalinization technology, has been asked to formulate a detailed plan to clear up the Bhalswa to Surghat stretch of the supplementary drain, according to Sputnik News.

The eight-kilometer stretch of drain empties into the highly polluted Yamuna River.

Ayala Water and Ecology has specialized knowledge in phytoremediation, a natural method using shrubs to remove and destroy contaminants in soil, water and constructed wetlands. The firm is already working on projects in Hyderabad and Chennai, two other Indian cities.

“As we celebrate 25 years of growing partnership, we are glad to offer Israeli technology integrated in government initiatives for the benefit of the Indian citizen,” said Israeli Ambassador to India, Daniel Carmon, according to the Press Trust of India. “This is another example of the multifaceted partnership between India and Israel.”

12/02/2017 online at: <http://www.jewishpress.com/news/breaking-news/india-turns-to-israeli-firm-for-help-with-water-pollution/2017/02/12/>

24/7 Water Supply in Beirut: Fantasy or Reality?

Lebanon is a small country with a ridge of limestone mountains close to its coast. Most of its fresh water is stored in mountain snowcaps or in the ground, the rest of it washing through cracks and caverns into the sea, feeding the thousands of wells that supply water to the capital of Beirut and its surrounding areas along the way.

Snow was abundant in the past, but more recently climate change has led to a decrease in the volume of water generally available, especially in the hot summer months of May to September.

Monitoring rainfall is an important part of the work of the Greater Beirut and Mount Lebanon Water Establishment, which manages the water supply of half Lebanon’s population. Its Director-General, Joseph Nseir, checks on the quantities of snow, water, and rainfall daily. His worries increase when the quantities fall.

Nseir knows that the only way to secure the water supply is to expand the storage of water and improve the management of it.

The World Bank Group supports the Lebanese water sector through technical assistance and a wide range of operations, including the Water Supply Augmentation Project, better known as the Bisri Dam. The Lebanese government decided on the location for the dam after years of studying options, carrying out social and environmental impact assessments, and gathering feedback from public consultation.

Greatly increasing water storage capacity viewed essential

The plan is for the dam to start operating in 2024.

In the meantime, managing Beirut's water supply is also a real challenge, one made even more difficult by the unforeseen influx of more than a million Syrian refugees into Lebanon, compounding an already serious water deficit and stretching water resources to the limit, as well as other public services.

“Tackling the refugee crisis presented us with an opportunity to solve structural issues for the Lebanese, including those in the water, energy, transport and education sectors,” said Amal Talbi, the Bank's project leader for its water program in Lebanon. “This sudden increase in demand for water has triggered a leap in bringing in new technologies and advanced thinking. This includes the use of monitoring technology and real-time management and leakage control to secure Beirut's water supply 24/7. The water utility is now able to take control of the system and respond in real time. It is becoming more agile”.

One challenge for the Beirut Water Establishment was choosing a pilot area for trying out new ways of controlling the water supply. With the help of experts from Malta's water utility—one of the best in the region—a small, densely populated area of Beirut was put to the test. The pilot area was isolated and continuously supplied with water without depriving other neighborhoods from their usual, rationed share.

Detecting leaks saves more water than rationing

The results exceeded all expectations. Close monitoring identified the sources of water leakages, which were duly repaired. As a result, the total volume of water needed was less than when supplies were rationed to an average of eight hours a day.

Nseir is optimistic. “The outcome of this pilot scheme gave me the confidence to enlarge the pilot area. Now it is no longer a pilot, (the area) is ten times larger and soon it will be 100 times more,” he said. “This proves that when the additional supply from the Bisri Dam becomes available, all of Greater Beirut will have secure continuous supply all year round.” Greater Beirut has an estimated population of 1–2 million.

On a recent visit to Beirut, Guangzhe Chen, the Bank's Senior Director of its Global Water Practice, visited the 24/7 water supply pilot area with some beneficiaries.

“The Lebanon water program and its progress is an encouraging example of what can be achieved even in fragile environments,” said Chen. “Water is often at the center of tension or fuels it. Securing water is thus a critical step in fighting poverty and restoring the trust of citizens in a government's capacity to deliver basic public services.”

Reliable water supply wins over Beirut residents

Walking down narrow streets, Chen asked residents how they felt about the service. Residents admitted they were initially skeptical.

“I thought it must be some mistake, that someone at the water establishment forgot the tap was on,” one resident said. The reality of it soon sank in. “It was a surprise to see that I have water,” she added. “But, thinking about it, I realized I shouldn't be surprised because we do

have water in Lebanon. And, now, I can say to people ‘Bonjour’ with a light heart, because a day with water is a good day”.

Before the pilot scheme, residents were paying US\$20 per cubic meter for water to be supplied by private tanker trucks on top of the annual government water fee. This public supply of water saves significant amounts of money that would otherwise have been spent on bottled water and water from tankers.

07/02/2017 online at: <http://www.worldbank.org/en/news/feature/2017/02/06/24-7-water-supply-in-beirut-fantasy-or-reality>

Jordan resorts to cloud seeding tech for water

The promising results of a cloud seeding experiment using ionization technology have persuaded the Jordanian government to extend its use of the technology as figures showed improved rainfall.

Jordan suffers from severe water shortages due to a decline in its renewable water resources and the widening gap between water demand and availability, especially after the large influx of refugees in recent years. It has become second among the world’s most water-poor countries.

The technology has performed well in a six-month pilot that began in May 2016, under an agreement between WeatherTec Services GmbH and the Jordanian government that was signed in March, according to the company's CEO Helmut Fluhrer.

“The government steering committee of the project decided to extend its operation to March 2017, after becoming satisfied with the initial results,” Fluhrer says.

Ismat Sawaqed, a Jordanian member of WeatherTec, cited signs of the experiment’s success from the 2016 report on Jordan’s rainy season, which was issued last December.

“The report shows promising figures. In the North, the performance of the rainy season reached 150 per cent [against the average for the season], while it reached 145 per cent in the Central Western regions and 167 per cent in the Central Eastern regions,” Sawaqed tells SciDev.Net.

"The technology was used in most days of December, doubling rainfall levels in 17 days of the month,” Sawaqed adds.

The technology used by WeatherTec in Jordan has also had good results in Australia and the United Arab Emirates, according to Fluhrer, "and the results showed an improvement in the amounts of rainfall in the targeted areas of these countries".

The technology does not create rain out of nowhere, according to Riad Mubarak, a member of the scientific research group of WeatherTec. It “requires certain conditions such as percentage humidity levels, wind speed and direction, as well as specific conditions related to atmospheric pressure values.”

For example, when humidity reaches 33 per cent the technical emitters are switched on, sending a massive number of negative ions — estimated in the trillions — to the higher layers of the atmosphere to form a ‘rain cell’.

Ionized particles are a hundred times more electrically attracted to water vapour than non-ionized particles. They enhance the process that forms vapour clusters which, through a chain-reaction condensation process, grow into larger clusters that eventually become raindrops. The introduction of ionized particles helps the entire process along and produces more rain that would be the case otherwise.

The ions are emitted by corona wires (wires with a current running through them) charged to a high voltage which are placed at the top of ionization towers, while electricity is generated from solar panels, Fluhrer explains to SciDev.Net.

Atmospheric particles become ionized through this process and get transported into the part of the atmosphere where cloud formation can occur.

The technology mimics sun ionization and uses no chemicals. Sawaqed believes that being environmentally friendly at all stages is its most important characteristic.

Ionization towers have been constructed at four sites in Jordan’s north-western highlands. They are managed from a sophisticated control and monitoring room in Amman.

The sites were selected “because the west wind, which crosses the west of the Kingdom coming from the Mediterranean Sea, has the ability to carry the ions to cover the largest possible area, which assists the geographical expansion of rain cells to reach nearly 160 km²,” Mubarak tells SciDev.Net. “Accordingly, the influence of the technology extends to the beginning of the Eastern Desert in the Mafraq city, 80 kilometers north-east of the Jordanian capital”.

Ibrahim Al-Aroud, professor of physical geography, natural climate, hydrology and water resources at the University of Mutah in Jordan, believes that “ionization technology is still an emerging technology which lacks any solid results to evaluate it in a scientific manner, or even to know its impact on rainfall proportions in neighbouring countries.”

However, Fluhrer rules out any impact on neighbouring countries, as the technology “depends on the west wind coming from the Mediterranean Sea, and therefore affects Jordan directly.”

Sawaqed added that WeatherTec uses this technology only to increase precipitation in Jordan by approximately 20 per cent, which is set to be evaluated after the end of the rainy season in Jordan in the first quarter of 2017.

09/02/2017 online at: <https://www.scidev.net/global/water/news/jordan-cloud-seeding-tech-water.html>

Hyflux signs MOU to develop desalination plants in Saudi Arabia

Water treatment firm Hyflux will be building three desalination plants in Saudi Arabia.

Hyflux, through its wholly-owned subsidiary, Hydrochem Saudi, signed a Memorandum of Understanding (MOU) with Saudi Arabia's state-owned Saline Water Conversion Corporation (SWCC) on Sunday.

This followed a public tender to design, build, supply; test and commission the seawater reverse osmosis desalination plants in Duba, Wajh and Haql, along the Red Sea coast in the western region of the kingdom.

The MOU signing ceremony was at an industry conference held in Riyadh, the capital of Saudi Arabia and witnessed by Minister of Environment, Water and Agriculture of Saudi Arabia, Abdulrahman Abdulmohsen Al-Fadhli and Singapore's Minister of Environment and Water Resources, Masagos Zulkifli.

The three plants, valued at an estimate of 687 million riyal (S\$260.3 million), will each have a designed capacity of 16,000 cubic meters per day. They will use reverse osmosis membrane technologies to treat seawater and turn it into water suitable for potable use.

In a filing with the Singapore Exchange (SGX) on Monday, Hyflux said construction of these plants will start when the contracts have been finalized.

These desalination projects are expected to have a material financial impact on Hyflux pending the finalization of the contracts.

13/02/2017 online at: <http://www.businesstimes.com.sg/companies-markets/hyflux-signs-mou-to-develop-desalination-plants-in-saudi-arabia>

Providers line up for Oman's first private water project

Oman Power and Water Procurement Co has received 13 statements of qualification for a proposed new 16,000 m³/d desalination plant project in Khasab, in the north.

The interested parties comprise seven consortia, led by Abengoa, ACWA Emirates, House of Trading and Services, Metito, Romman Premium Enterprise, SETE Energy, Seven Seas; and six companies, Al Fanar Energy, GS Inima, Osmoflo, Tedagua, Utico, and Veolia Middle East.

The call for qualifications for what will be the first privately delivered water project in Oman was announced last autumn, and closed on 11 December 2016.

Demand for drinking water in Oman's northern region, which includes Muscat, the port and capital city, is expected to rise by 6 per cent a year in the three years to 2020.

08/02/2017 online at: <https://www.desalination.biz/news/0/Providers-line-up-for-Omans-first-private-water-project/8663/>

Water scarcity in Pakistan – A bigger threat than terrorism

The major threat that Pakistan faces today is not Islamist terrorism but water scarcity. While the former makes headlines all over the world, the latter is an issue that is hardly discussed in

the national and international media or by policymakers. But a recent UNDP draft report on the water crisis in Pakistan sheds light on a serious, albeit much-neglected, conflict the South Asian country is grappling with.

While discussing the UNDP report "Development Advocate Pakistan," Shamsul Mulk, former chairman of the Water and Power Development Authority, said that water policy is simply non-existent in Pakistan. Policymakers act like "absentee landlords" of water, he added.

"Because of this absentee landlordism, water has become the property of the landlords and the poor are deprived of their share," Mulk said.

The draft report on water resources was prepared at the request of the ministry of water and power. Mulk said, however, the cabinet ministers never reviewed it.

Last year, the Pakistan Council of Research in Water Resources (PCRWR) warned that the country may run dry by 2025 if the authorities didn't take immediate action. It said the majority-Muslim country touched the "water stress line" in 1990 and crossed the "water scarcity line" in 2005.

If this situation persists, Pakistan is likely to face an acute water shortage or a drought-like situation in the near future, predicted the PCRWR, which is affiliated with the South Asian country's Ministry of Science and Technology.

Expert Irfan Choudhry says the authorities lack the political will to tackle the problem.

"There are no proper water storage facilities in the country. Pakistan hasn't built new dams since the 1960s. What we see is political bickering over the issue. The authorities need to act now. We can store water for only 30 days, and it is worrisome," Choudhry told DW.

Climate change and poor management

Pakistan has the world's fourth highest rate of water use. Its water intensity rate - the amount of water, in cubic meters, used per unit of GDP - is the world's highest. This suggests that no country's economy is more water-intensive than Pakistan's.

According to the International Monetary Fund (IMF), Pakistan is already the third most water-stressed country in the world. Its per capita annual water availability is 1,017 cubic meters - perilously close to the scarcity threshold of 1,000 cubic meters. Back in 2009, Pakistan's water availability was about 1,500 cubic meters.

The bulk of Pakistan's farmland is irrigated through a canal system, but the IMF says in a report canal water is vastly underpriced, recovering only one-quarter of annual operating and maintenance costs. Meanwhile, agriculture, which consumes almost all annual available surface water, is largely untaxed.

Experts say that population growth and urbanization are the main reasons behind the crisis. The issue has also been exacerbated by climate change, poor water management, and a lack of political will to deal with the crisis.

"Pakistan is approaching the scarcity threshold for water. What is even more disturbing is that groundwater supplies - the last resort of water supply - are being rapidly depleted. And worst of all is that the authorities have given no indication that they plan to do anything about any of this," Michael Kugelman, South Asia expert at the Washington-based Woodrow Wilson Center, told DW in an interview.

Blaming India

Yet, Pakistan blames India for its water crisis. The country's authorities say that New Delhi is not fulfilling its responsibilities under the Indus Waters Treaty - brokered by the World Bank in 1960 - as they voice concerns over India's construction of new dams.

Recently, Pakistani Prime Minister Nawaz Sharif took up the dams issue with the World Bank. Sharif urged the Bank to play a "lead role" in resolving the water disputes between Pakistan and India by establishing a Court of Arbitration. But the international community, as well as the UNDP, holds Pakistan responsible for the dispute.

Kugelman says that the Pakistani authorities need to step up efforts to overcome the crisis, which is partly man-made. "First of all, Pakistan's leaders and stakeholders need to take ownership of this challenge and declare their intention to tackle it. Simply blaming previous governments, or blaming India, for the crisis won't solve anything. Next, the government needs to institute a major paradigm shift that promotes more judicious use of water," Kugelman emphasized.

Ashfaq Ahmed Sheikh, director of the Pakistan Council of Research in Water Resources, told DW that the authorities had already introduced several schemes in the cities of Sheikhpura and Sargodha and saved up to 50 percent of water used in the rice fields, without compromising on production. He called on the government to initiate more such projects all over the country.

Fueling tensions

The scarcity of water is also triggering security conflicts in the country. Experts say the economic impact of the water crisis is immense, and the people are fighting for resources. Three out of four Pakistani provinces blame the most populous and politically empowered province, Punjab, for usurping their water sources.

"The government is ignoring the interests of our province," Ayaz Lateef Palejo, a nationalist leader from the southern Sindh province, told DW. "There is massive corruption in the water sector, and we are unhappy with the situation," he added.

Kugelman also believes that the economic implications of the conflict are creating rifts among the population, which are likely to aggravate the security situation in the country.

"The political implications of the crisis have yet to be determined, but we can expect that if nothing is done and the situation gets worse, pressure on the political leadership will intensify. In the years ahead, this could lead to unrest-and, if things get sufficiently out of hand, perhaps

even a military takeover. None of this can be ruled out. Such is the seriousness of the situation," said Kugelman.

"Some may say that loose nukes and Islamist militant takeovers are the big fear for Pakistan. For me, the nightmare is water scarcity, because in Pakistan it is very real and already upon us," the expert added.

07/02/2017 online at: <http://www.dw.com/en/water-scarcity-in-pakistan-a-bigger-threat-than-terrorism/a-37444480>

Pakistan mulls strategy to sign waters treaty with Afghanistan

The concerned officials in the ministry of water and power are in the process to carve out the strategy for entering into waters treaty with Afghanistan, a senior official told Pakistan Observer.

“We have started brainstorming with the concerned ministries and have kept the issue at low profile after recent tension that has risen between Pakistan and India at the level of World Bank on the issues of Kishenganga and Ratle hydropower projects.

To a question, the official also told that that the bank would not hesitate in facilitating both Islamabad and Kabul entering into a water treaty on the pattern of the water treaty signed in 1960 between Pakistan and India.

“The ministry has shown its willingness to go for waters treaty with Afghanistan to ensure the water information sharing mechanism between the two neighboring countries.”

To this effect, we have held many brainstorming sessions in the ministry on this particular issue on receiving credible reports about the plans of Afghanistan to build dams on Kabul River.”

He said that the ministry has asked many agencies to initiate the process for formulating the water information share mechanism with Afghanistan. Being the low riparian, Pakistan has the right to know the data of the water flows in Kabul in the vicinity of Afghanistan.

Afghanistan’s authorities with the help of Indian experts have completed the feasibilities and detailed engineering of 12 hydro power projects with capacity to generate 1177 MW of electricity to be built on Kabul River. And if the 12 projects get completed, then they will store water of 4.7 million acre feet of water squeezing the flows in the said river that are destined to reach Pakistan.

India is assisting Afghanistan in this initiative, which will adversely impact Pakistan. So much so, World Bank has committed to provide funding for the 12 dams that will cost \$7.079 billion.

The most ironic part of the whole episode is that Pakistan’s authorities have failed to develop water uses on Kabul River as they failed to build Kalabagh dam at the site on Indus water where Kabul river merges with Indus river.

Similarly Pakistan's authorities have also failed to construct the Munda dam on Kabul river. The failure in developing water uses has weakened Pakistan's case against the resolve of Afghanistan to build the 12 hydropower projects on Kabul river. However, the World Bank is also ready to conducting a study for a water treaty between Pakistan and Afghanistan, provided both the countries desire so.

08/02/2017 online at: <http://pakobserver.net/pakistan-mulls-strategy-to-sign-waters-treaty-with-afghanistan/>

UNDP Report blames Pakistan for lingering Indus water disputes with India

The United Nations Development Programme (UNDP) says that Pakistan's negligence in conducting a sound analysis of trans-boundary water issues and delays in presenting the cases of dispute with India to the Indus Water Commission or the World Bank on the issues related to the Indus Waters Treaty (IWT) have caused the issues to linger on and remain unaddressed. Releasing the report titled "Development Advocate Pakistan" on 1st February 2017, the UNDP report noted that awareness about trans-boundary water issues is a recent phenomenon. It pressed for systematic studies as water security remains the most critical development challenge for Pakistan. An increase in water stress in the basin states since the early 90s has brought the treaty under strain and survival appears weak, although there is no exit clause. The IWT treaty fails to address two issues: the division of water shortages in dry years with flows reduced to half, and the cumulative impact of storages on the flows of the River Chenab into Pakistan.

The Wular Barrage and Kishenganga project on the Jhelum and Neelum rivers present a similar problem whereby water storage during the Rabi season is critical as flows are almost one-fifth of the Kharif season. The treaty permits India to create storages on the western rivers of 1.25, 1.60 and 0.75 million acre feet (MAF) for general, power and flood storages, respectively, amounting to a total permissible storage of 3.6 MAF. The report says that Pakistan regards the treaty an inefficient forum for resolving water issues, elevating the water issue to a 'core issue' to be included in the composite dialogue. But India is not yet ready to discard the treaty, hence refuses inclusion in the composite dialogue.

The report notes "A clear ambiguity in the treaty occurs in its permission to be interpreted differently, thereby creating conflicts between Pakistan and India. The treaty also fails to clearly address India's share of shortages in relation to storage dams on the western rivers, an issue of major concern." The treaty does not allow Pakistan to prohibit construction of hydropower dams by India, but it grants it right to voice issues regarding Indian developing strategy on water storage during dry periods. Although Pakistan benefits from international legal frameworks for water resources management, it is largely dependent upon the treaty for resolving trans-boundary water conflicts with India, it points out. Issues of water scarcity and resources, as a consequence of climate change, shrinking glaciers and changing precipitation patterns, need be addressed. The report notes that during floods, majority of the water runs into the rivers of Indus-Pakistan flooding the province of Sindh.

Water scarcity is caused by reduced flows from the Chenab owing to the recent storage of water in the Baglihar dam. With control of the River Chenab through the Salal dam, India has several plans under way for development of hydropower with enhanced water storage on the western river. Annual flows in the Chenab during wet years have continued to decline since 1958-59 and same is the case with the River Jhelum being controlled by India. The report concludes that water has been a highly politicized issue in Pakistan and there is an extreme trust deficit among the provinces largely due to a lack of access to data and information and suggests creating mass awareness. Pakistan has is yet to develop an open and transparent inventory for water management since that the base-reliable census figures- does not exist. UNDP has rightly put the blame on Pakistani Administration, for negligence over this vital issue of equitable water division but they unnecessarily blame India for IWT mess. India has built several major dams on shared water. Violations, if any, needed biannual checking by the respecting commission of the two countries for initiating corrective actions in time, but Pakistan ignored.

Considering so much confusion over the Treaty, bilateral dialogue to resolve IWT issue will be in the interest of both the countries. There is no alternative to direct talk with India for an amicable win-win solution. For talks to happen, Pakistan need be a little more sensitive to India's security concerns. India wishes that Pakistan should not be goaded into another International dispute with wrong advices from others. Culturally Indians never think of using water as tool for bargaining. Going to UN or China like a cry baby could be a historical blunder. Now the wait for World Bank report that is expected this month. As far as river waters are concerned India has always been fair and square with Pakistan. Even the Pakistani authorities concede that India has never threatened to use river waters as a weapon, in the thick of wars between India and Pakistan. Whenever India has had to store water behind a newly built dam to raise the initial water level to the height of the dam for free flow, it has paid Pakistan with cash for that water although Pakistan lets that water flow wastefully into the sea. Even now Pakistan gets more water than it can use, flowing into the Arabian Sea, unused.

UN's Human Rights chapter states that, if a country does not use its share of water coming after crossing the international borders, the upper riparian country can use that much water for the benefits of its own country. India is doing just that. Proper water management is lacking in both India and Pakistan. Poor governance results in huge waste of water. We must learn from Israel. All water flows to Pakistan which is not managing with dams like India. India is allowed certain amount of water under the treaty and in the past it has not used the fare share it is entitled to. Water flow can be properly managed if both work together to monitor the weather/snow forecasts and water flow to reduce paucity. India is building dams to generate electricity and Pakistan should ask for their share of electricity paying a fair price. It's nice that the treaty has survived three wars and never been used as a threat. A good neighborly relation with India will solve many problems. Pakistan should talk to India bilaterally since treaty itself is ambiguous. Water treaty, not Kashmir, should be the major theme of dispute resolution between the two countries. Water is life! Let's handle Indus waters carefully. May God bless both the neighbors with lots of water.

13/02/2017 online at: <https://www.newdelhitimes.com/undp-report-blames-pakistan-for-lingering-indus-water-disputes-with-india123/>

Beijing to help Pakistan tackle water crisis for good

In a major development, China has formally decided to wriggle Pakistan out of water crisis for good. To this effect, Beijing has sent two batches of experts to Pakistan who are currently meeting the authorities concerned to discuss how to exploit the potential of storing water and generating hydropower on the mighty Indus, a senior official of the Ministry of Water and Power told The News.

“Beijing wants to bail out Pakistan on the front of acquiring water security under the umbrella of CPEC and to this effect experts from Beijing are in the process of holding a series of meetings with the Wapda’s top mandarins in addition to visiting the various sides of Indus basin.

They are also studying Wapda’s 2025 Vision and after that they will make up their mind on how to exploit the potential of increasing the water storage capacity and hydro generation of the country.”

According to Wapda study, the Indus cascade with the drop of 7,030 feet starting from Shyok hydropower project to Kalabagh Dam has the identified hydro generation potential of 40,000 MW whereas the Indus basin has the total potential of hydro generation of 100,000 MW.

Pakistan has multiple sites for hydrogenation along with the 500 kilometers stretch on Indus cascade.

Shyok hydropower can be built with capacity to generate 690 MW, Skardu 1200 MW, Tungus 2200 MW, Yulbu 2800MW, Bunji 7100MW, Diamer-Basha 4500MW, Dasu 5400 MW, Pattan 2400 MW, Thakot 4000MW, Tarbela and Ghazi Barotha 6356 MW, and Kalabagh dam if built will produce 3,600MW. The sitting government also, the official said, decided to increase reliance on generation of electricity by developing hydropower plants on the Indus and encouraging thermal power plants based on Thar coal.

The government has taken this decision to increase electricity generation in future based on indigenous resources.

In the second phase of CPEC, the government will increase focus on hydrogenation and if viewed the ongoing visit of Chinese experts for exploiting the hydropower potential on Indus basin, then the significance of the recent visit will get understood, the official argued. The decision to exploit, he said, full hydel potential of Indus basin was taken during the sixth meeting of the Joint Cooperation Committee (JCC) of the CPEC recently held in Beijing. The decision is being perceived as vital and strategic.

The per capita water availability is dwindling with every passing day in Pakistan, putting the food security at risk.

The per capita water availability in Pakistan has dwindled by over 406 percent from 5,260 cubic meters in 1951 to 1,038 cubic meters in 2010, only marginally above the 1,000 cubic meters per person threshold value under the global criteria.

“If the status quo continues, then by 2020, the water availability in Pakistan would further plummeted to 877 cubic meters per annum, which will further go down to an alarmingly level of 575 cubic feet in 2050,” Wapda’s water report says.

The report highlighted that Pakistan’s storage capacity is just for 30 days, whereas India has the ability to store water for 120-220 days.

Meanwhile, Egypt has 1,000 days water storage capacity only on River Nile, America 900 days on River Colorado, Australia 600 and South Africa has the ability to store water for 500 days on River Orange.

The agriculture productivity in Pakistan in the wake of just 30 days water storage capacity has also alarmingly tumbled because of the water scarcity and its contribution towards gross domestic product (GDP) has lowered by 21.8 percent of GDP.”

Prime Minister Nawaz Sharif will formally perform the ground-breaking ceremony of strategically important project Diamer-Bhasha dam in December 2017.

The dam portion at cost of \$5 billion of the project will be erected with indigenous resources under which Rs60 billion each year from PSDP (Public Sector Development Program) will be arranged till its completion.

The financing plan through indigenous resources had already been approved by the premier. For this, Wapda will submit the revised PC-I of Diamer-Bhasha dam with the Planning Commission with separate parts of the projects --- dam and power houses--- for approval.

The government will ensure interest-free loans or grants for the dam portion. However, for power houses the government will encourage even Chinese investment in some parts of the power houses. The power houses will be built on commercial loans. So far, 95 percent of the land for the project has been attained at the cost of Rs56 billion.

The remaining portion of the land will also be acquired within 2-4 months. The land for dam site, however, has been fully acquired.

13/02/2017 online at: <https://www.thenews.com.pk/print/185950-Beijing-to-help-Pakistan-tackle-water-crisis-for-good>