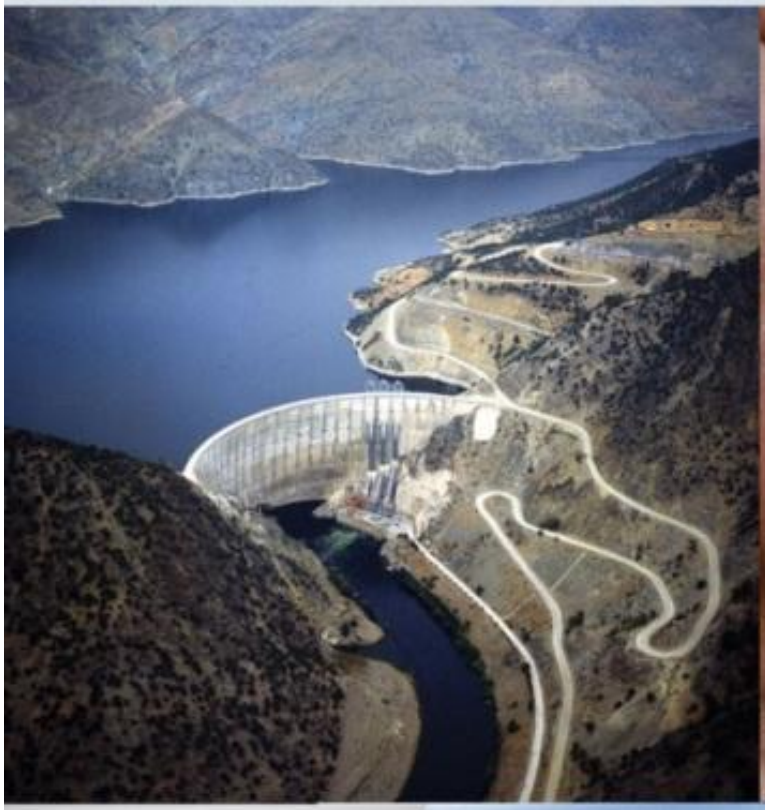


ORSAM WATER BULLETIN

Weekly Bulletin by ORSAM Water Research Programme

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





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❖ Iraq and flood problems

While water shortage issues frequently show up on the Iraqi agenda, recently it is the issue of flooding that is taking center stage.

With heavy precipitation in short periods and early snow melts due to rising temperatures, floods have occurred in the past and present, particularly, in the Euphrates and Tigris rivers, where the flow rate varies. While global climate change influences precipitation levels, it can also cause rapid snow melts and changes in the intervals between climate periods.

Floods along the Tigris River are seen between February and June, while they are seen in March and July in the Euphrates. From the information obtained from the UN's Food and Agriculture Organization (FAO), the Tigris River, especially during periods of floods, can rise by 30 centimeters per hour. Iraq first constructed dams for the purpose of controlling floods, but later the country started to build dams for energy and irrigation purposes. There are also indications that the purpose of the Tharthar Lake project in particular, which was completed in 1956, was built to protect the capital of Baghdad from floods. The lake which diverted water flow from the Tigris River to the Euphrates in the 1970s has been criticized for damaging the quality of water by creating salinity in the Euphrates River.

In Iraq cultivated land exists in two regions. The first in the mountainous regions and plateaus in Northern Iraq where there is plenty of precipitation, while the second region consists of irrigation lands existing in Baghdad and Ramadi along the shore of the Tigris and Euphrates rivers. In the south the quantity of precipitation varies greatly throughout the year, while floods originating from the Tigris, particularly in the spring, can be regarded as a benefit for producers of rice, they also cause great harm to the products to be harvested in the summer and especially to the city of Baghdad.

The great flood that took place in February 2006 caused great damage to the cities of Arbil, Duhok, Sulaymaniyah, Salahaddin, Tameem, Kirkuk, Diyala, Missan, Wasit and Kut in Iraq. The Red Cross and Red Crescent gathered approximately $1.3 million in aid to assist in repairing the damage caused.

Since January this year, floods have occurred in Northern Iraq and since the beginning of this month, in the south of Iraq due to heavy precipitation. The heavy flooding seen in the winter was the heaviest in 30 years. The Tigris River rose approximately 5 meters and had the greatest flow in the last 50 years. Especially in the northern cities of Iraq, a state of emergency has been declared. According to information obtained from media outlets, two small dams have collapsed due to the floods. Moreover, improvement work is underway on the dams to prevent flooding. Drainage channels for the drainage of extreme flows formed in the Tigris and Euphrates rivers have also been opened.

According to their hydrologic features, the Tigris and Euphrates can display great changes in their flow over the years. Throughout history, periods of great drought and great flood have been experienced in this basin and these processes have been felt the most intensively in Syria and Iraq. Actually, the dams, which were built by Turkey, aim to regulate the flow of the two rivers during droughts and floods, which would be a benefit to Syria and Iraq.

"Iraq and flood problems", Tuğba Evrim Maden, Todays Zaman, 09/06/2013, online at: http://www.todayszaman.com/news-317752-iraq-and-flood-problems.html

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❖ Trouble Downstream

While the fighting in Syria drags on, another danger looms ever larger

Today, Syrians say they are fighting for freedom. Will access to water be tomorrow's struggle?

While the fighting in Syria rages on, another threat to its people is steadily growing—one that may worsen the struggles of today and haunt the entire region tomorrow: thirst. Specifically, the Tigris and Euphrates rivers, waterways that have been at the heart of the lives of the inhabitants of their banks for centuries, may come to be the source of desperate international disputes in the future if action is not taken now.

By the time a future Syrian government develops a trans-boundary water strategy, there may be very little water left. Even as the violent political conflict rages, effective diplomacy based on international water law can reduce the water conflict's devastation and put into place mechanisms to mitigate the coming flare-ups.

The Issue

Water politics may be one of the last concerns of the Syrian and international diplomatic community at the moment, but the war compounds the effects of a water conflict that already shatters the rivers and people alike, creating a crisis that would be any other state's first priority. Today, the Euphrates barely reaches her sister, the Tigris, north of the Iraqi city of Basra at a site claimed as the location of the Garden of Eden, and the flows are too salty to grow anything with, much less drink.

Some blame climate change for the drying-up of the waters, but it is human activity in a highly politicized economy that is responsible. The flows have been over-exploited following neoliberal reforms in Syria, and are dammed thoroughly throughout Turkey, Syria and Iraq.

This type of water conflict poses a challenge often identified but rarely acted upon: the mitigation of long-term issues during times of crisis. Theory suggests efforts should be focused on at least keeping the issue in check until the crisis subsides, through honoring established principles. In the Tigris and Euphrates River basin, this means pushing for all parties to follow the principles of sustainable water management and fair water-sharing. Like the rivers themselves, however, attention is diverted.

The Obstacles

Upstream, Turkey and Iran are capably engaged in "hydraulic missions"—policies to tame and exploit water resources followed at different times by almost every national government around the globe, and with particular zeal by those keen to name new water bodies after their queens and statesmen, or with local populations to appease. Downstream, Syria and Iraq completed their own hydraulic missions decades ago, but the potential benefits of the hydro-electric and irrigation schemes have long since dried up.

In Syria, the hydraulic mission culminated in 1973 in the iconic Tabqa dam and its reservoir, Lake Assad. The dam—the devastating social costs of which were brilliantly documented by Omar Amiraley in his film, *A Flood in Ba'ath Country*—became a central part of the 1970–2000 Ba'ath government's policy of national agricultural self-sufficiency.

Though widely derided by international consultants for relying on state-owned farms, the policy depended upon and ensured a degree of sustainable use of water for irrigation. In 2000, the current government replaced it with private land tenure, neoliberal market reforms and the modernization of irrigation schemes. More crops were quickly produced with less water, but the easy profits ensured the farms expanded until more water was used than ever before. Government oversight of the sector was open to corruption, and the affluent landowners soon pumped beyond the resource's limits. Concurrently with the drought winters of 2007 to 2010 and the very poor economic situation, the land and water reforms contributed to pushing hundreds of thousands people to the cities. In hindsight, this can be read as another drop in the bucket of social tensions that were building up just prior to the revolution.

There is little wriggle room for mismanagement when your powerful upstream neighbors are fully engaged in their own hydraulic missions. The Turkish GAP project will see twenty-two dams completed on the rivers' headwaters by 2023, according to the latest schedule. These are to provide about 4% of total electricity consumption (at 2011 rates) in nearly fossil fuel-free Turkey, and enough irrigation water for 20% of its arable (and as yet unplanted) land. The twelve dams already completed most directly affect Syria, with the remaining planned and currently under construction more likely to impact on Iraq.

The consequences of the dams will be in the same order of magnitude as the benefits. Some of these are felt within Turkey—witness the Kurdish and environmentalist resistance to the Illisu dam soon to flood Hasankeyf. But most are felt downstream, as when Turkey cut the flow of the Euphrates for a month in 1989 to fill the reservoir of the Atatürk Dam. Tensions were reduced at the time, following a negotiated agreement of Turkish water releases to Syria, though the quantity was not founded on any principle, and was a persistent issue in the official water discussions held infrequently until recently.

As the concrete continues to pour into the river headwaters, however, even such an imperfect agreement may be envied. It has taken downstream Iraq over a decade since the US–UK invasion to firm up the required diplomatic strategy to negotiate on the issue of trans-boundary waters with Turkey. Hoping for a sudden end to the conflict, and expecting a similar delay in Syria, a water strategy would not be in place before 2025—several years after the last dam is complete, and two decades after the profits of the earlier dams become entrenched.

In any case, a future Syrian government will face several other water woes. It will have to decide, for instance, whether to push on with the dam planned on the El-Assi/Orontes River just upstream of Iskenderun/Hatay province. With Syria upstream on the river this time, the Ba'ath and Justice and Development Party governments had agreed in April 2011 to begin construction of the Friendship Dam—named with no hint of irony that month. The move might have officially settled the longstanding territorial dispute by granting effective Syrian consent to Turkish control of the province, but the future government may well face more organised internal opposition were it to proceed with the dam. Alternatively, it could reach for fair water-sharing principles in a step to resolve both the territorial and water conflicts.

Challenges on the Jordan River will resurface as well. Access to, and possible pollution of, the Lake of Tiberias proved a central element during the negotiations over the Israeli-occupied Golan in the late 1990s. Asymmetric Syrian withdrawals on the Yarmouk tributary to the Jordan, meanwhile, are a source of increasing tension for the Hashemite Kingdom, obliging negotiation of a reduced and more equitable Syrian share, preferably within the context of a Jordan River basin-wide agreement.

Few within Syria have the luxury to contemplate these future tensions, of course, with the country currently caught up in the throes of war. The Tabqa dam was captured by the rebels a few months

ago (fortunately, it has not been attacked by either side at time of writing), water services in Aleppo and other urban centers are more disrupted than usual, and the rivers themselves have been robbed of their life-sustaining nature—used in equal, if tragic, measure to grow emergency food and dump bodies. Those of us spared the violence have no excuse to remain passive, however, and can reduce the coming cataclysm by spotting future paths and acting where possible now.

The Future

International water law and EU regulation may be the best crutch the future Syrian government can reach for. Syria's 1998 accession to the UN Watercourses Convention (UNWC) makes any government well placed to invoke its formula for fair water-sharing. This is based on equitable (not equal) shares for "reasonable" use between states, mechanisms for dispute resolution, and justice for future generations.

Support for the Convention and its dispute resolution clauses is growing, with the UK's expected accession this summer likely to be the tipping vote towards it coming into force. But there is typically little support for the laws from well-placed upstream states. Turkey openly prefers direct or Track II bilateral negotiations and offers water resources management training for Iraqi and Syrian professionals. Recent transnational academic and NGO efforts also generally ignore what the legal principles have to offer, while UN and World Bank diplomacy efforts are focused instead on benefit-sharing approaches—which, of course, can work only after negotiations have started. These standard approaches are of little use in times of turmoil.

But promotion of fair water sharing can begin now. Turkey would in any case, be subject to the much more stringent regulations of the EU Water Framework Directive, were it ever to become a member state. Water resource managers throughout the Tigris and Euphrates basin would do well to learn from the mistakes of Europe; the regulations only came about after industrialized European governments and nations decimated their own people and rivers.

An important burden falls on local and expatriate Syrian students: to prepare for future challenges through specialized training in water resource management, and especially in environmental law and diplomacy. They will be the ones to develop the post-war water strategy on national and trans-boundary waters over the coming decades. At some point, alliances with Iraq and other states

supporting international water law will also prove effective tools, particularly in creating opportunities for sharing international benefits that will surely emerge.

The parallel role of the international community is equally clear, and much more feasible. Firm international support for the UNWC at every turn will not halt the dam-building, but may help soften the blow and buy time for downstream farmers and states to adapt. Fair water-sharing principles could be integrated into basin-wide diplomacy efforts (which would include Iran), and these should be maintained for years with little expectation of immediate or observable results.

If the UNWC and fair water-sharing norms are discredited or ignored by influential players, the result is entirely predictable. We will have failed again to mitigate completely foreseeable long-term environmental disasters, and will be obliged to deal with the equally certain continued regional devastation. The people in Syria will be obliged to cope with the troubles downstream alone.

"Trouble Downstream", Mark Zeitoun,06/06/2013, online at: http://www.majalla.com/eng/2013/06/article55242043

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❖ Iran inaugurates new dams

TEHRAN (ISNA)- Iran inaugurated two dams in Golestan Province, northeastern Iran, on Monday in a ceremony attended by Iranian President Mahmoud Ahmadinejad.

'Kaboudwal' Dam and 'Zaringol' Diversion Dam as well as a water transfer tunnel carrying Zaringol's water to the main dam were opened in the ceremony. The projects cost $12,500,000.

Kaboudwal Dam provides water for industrial purposes and irrigation of agricultural lands for about 10,000 hectares. It can be used for flood control, establishing recreation and tourism facilities near the dam and making job opportunities.

Kaboudwal with the capability of storing 17 mcm of water can arrange for 50 mcm of water annually.

Iran is a leading country in dam construction and many countries, including Sri Lanka, Syria, and Tajikistan as well as several African states, have entered either dam construction or consultation projects with Tehran.

In July 2012, Iran inaugurated its highest roller-compact concrete (RCC) dam in the Southwestern province of Khuzestan in a ceremony attended by President Mahmoud Ahmadinejad.

President Ahmadinejad inaugurated the Upper Gatvand Dam, which is located five kilometers from the city of Gatvand and has the country's second largest reservoir after the Karkheh Dam.

Earlier this year, Managing-Director of Iran's Water Management Company Mohammad Haj-Rasouli praised Iran's eye-catching progress in area of dam construction in recent decades, saying Iran is now among the world's top dam-builders and enjoys the most advanced technology in the field.

Iran is among five major dam-constructor countries in the world, Haj-Rasouli said in Southern city of Bandar Abbas in February, and added that the country has currently 145 operational dams with the total capacity of 50 billion cubic meters.

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Referring to the fact that dry and semi-dry climate has dominated some 75 percent of Iran's soil, he said that during the past decade, the country has faced severe climate situation and lack of rainfalls.

However, he added that the crisis was successfully overcome to some extent through appropriate management and planning.

Iran is now viewed as a leading country in dam building. Iranian specialists now provide consultation services for the design and construction of various dams in different sizes

"Iran inaugurates new dams", 09/06/2013, online at: http://isna.ir/en/news/92030603303/Iran-inaugurates-new-dams

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❖ Nile dams – Egypt, Ethiopia, look for safe ground

Nile dams. The Nile River Basin Initiative can provide clean power to 375 million East African citizens.

East Africa population may exceed 760 million people by 2030 (currently it is 375 million) – while Egypt's population could exceed 140 million by 2030.

Survival in this age necessitates working together for the benefit of all.

Safety of future Nile Dams.

The Grand Ethiopian Renaissance Dam — *Seismic-politics and Renaissance-phobia*

It would be beyond rationality that a 21st Century synthesis, resulting after more than 5000 years of common history and intercultural exchange between the nations of the Nile Basin and East Africa, would finally emerge in backward clash, threat of war, and promote further obstacles to cooperation.

Survival in a ***"Flat World"*** which has become based on interrelated and interdependent economies, mutual understanding between its various ethnicities, and alliances between entities — and on joint projects, cannot withstand gaps in this global fabric. Nor can it tolerate new conflicts between Egypt and Ethiopia, dragging the peoples of East Africa into fierce war and concomitant starvation implications.

Survival in this age necessitates working together for the benefit of all

Islamic civilization history was clear from any military confrontations with ***'Habasha'*** and it was not until after the Western colonialism intervention, that one or two transient conflict incidents were recorded in the region.

It's quite ironic that some world powers — formerly the architects of past treaties and border demarcation, and which are still intervening in all aspects of life all around the world, are not contributing proposals, advice nor technical supervision and support concerning such critical situations presently at play in the Nile River basin. Instead, they are watching while their regional proxies and agents deliver speeches and launch rhetorical threats on their behalf.

Obviously, the gradual increase in demand for energy, water, food, industry, security is accelerating – I don't think that the Nile River would still be the exclusive gift of Egypt, or the only lifeblood tribute to Egypt and East Africa, at the end. New solutions should be found.

East Africa population could exceed 760 million people by 2030 (currently it is 375 million) – while Egypt's population could exceed 140 million by 2030.

Safety of future Nile Dams

In this present moment, the Grand Ethiopian Renaissance Dam is the center of focus and the core of serious implications which could have devastating implications and would affect the life of generations to come in the future.

No one denies that this project is objectively controversial, and there are real concerns which should be technically and thoroughly reviewed by highly professional experts, the topmost critical hazard: the safety of the Nile dams, chances of seismic activity, and possibility of collapse leading to flooding huge areas with 63 billion tons of reservoir water.

For these worries and reasons, the *late Ethiopian Prime Minister Meles Zenawi* suggested the formation of *The International Panel of Experts* upon which its recommendations, the three involved countries, Egypt, Ethiopia and Sudan, would cooperate to fulfill.

The International Panel of Experts was accordingly formed and delivered its report to the three governments concerned on the 1st of June 2013. The IPE is merely a consultancy team, and its recommendations are not obligatory: the responsibility and decision making, technical issues and construction on the ground, and the ethical responsibility towards their peoples, are solely left for these governments.

On The Grand Ethiopian Renaissance Dam — The IPE Report: between objective findings and subjective politics

Since the *"Report"* was prepared and delivered to governments, and not to public media, it has become clear that each country has selected from the Report what suits its plans and agendas. But while announcing to the public what have been selected, one can perceive filtered objective conclusions that are most important and have significant assessment value, apart from the sound and fury raged by this person or that political party.

The general impression is that the Dam would not cause significant harm on both of the lower riparian countries.

Of these objective findings are these following official statements:

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Ethiopia; *"The Panel's report indicates that the design of the GERD has been based on international standards and principles and that the Dam offers high benefit for all the three countries and would not cause significant harm on both of the lower riparian countries."*

"The panel which appreciated the initiative Ethiopia was taking for its establishment has also suggested extra impact assessment possibilities and proposed ideas with a view to help the three basin countries' benefit better from the Dam."

Egypt; *"Ethiopian studies do not show quantities specification for neither benefits nor harms. Studies and data delivered by Ethiopia was not enough qualifying for a huge project like this dam. Lack of accurate and advanced simulation."*

"The report recommended further studies and research concerning the economic, social, dam safety, water revenues, and environmental implications."

Sudan; *"the diversion of the Blue Nile's course by Ethiopia as part of a grand Dam construction is routine action that will not affect the river flow. Similar action was cited during the construction of the Meroe, Setit and Upper Atbara Dams."*

"the diversion will not impact the river flow."

"the panel carried out its task as per the terms of reference accepted by the three countries. Consultations between the three governments will continue to follow up on the implementation of the findings of the committee."

Saudi Arabia; *"The Grand Renaissance dam has its capacity of flood waters reaching more than 70 billion cubic meters of water, and is located at an altitude of 700 meters and if it collapsed then Khartoum will drown completely and the impact will even reach the Aswan Dam," the Saudi deputy defense minister Khalid Bin Sultan said at the meetings of the Arab Water Council in Cairo."*

Of all the above-mentioned, the solutions and alternatives within the context of the inevitable necessity for creating new alternatives facing increasingly growing populations in East Africa, only the issue of dam safety and chances of collapse qualifies as a critical hazard which all countries must work through diligently and thoroughly.

Death by Water

Seismic activity is real threat which has caused dam failure and large scale catastrophic consequences in some countries. The most notable, and still up to this date scientifically argued, is the collapse of Zipingpu dam in China back in 2004.

A massive 7.9 magnitude earthquake occurred near the dam and caused the death of 85,000 people and swept villages away with floodwater. Scientists argue that the earthquake may have been caused by the dam, since there is possibility that the weight of water in the reservoir behind the dam which contained 315,000,000 tons of water, caused seismic activity which escalated to an earthquake. Other dam failures in other countries also occur for various reasons.

As far as the Grand Renaissance Dam (gravity concrete dam) is concerned, the water reservoir will contain 63,000,000,000 cubic meters, which is much more quantity than that of the Zipingpu.

Apparently, the geography in the Benishangul-Gumuz Region of Ethiopia where the dam is under construction is different from that in China, and the density of inhabitants per kilometre in the area downstream is much more less than that in China; but this hazard opens wide gates from which many claims would simply enter and engage to magnify the debate. The first to enter was the Kingdom of Saudi Arabia with the statement by the Saudi deputy defense minister Khalid Bin Sultan. Many others will follow.

In my view, this is the most essential detail which all parties must evaluate.

- *Is it possible a collapse might occur?*
- *If such collapse would occur (God Forbid), what is the actual amount of water which would abruptly flow downstream and what is the area of land and distances that water would cover?*
- *A simulation of such disaster should be performed by computers to great precision. Is there possibility to create series of reservoirs with less water content so that any damage would be minimized?*

Sometimes, vital needs overcome conservatism. Nuclear plants are good example on this context, the Chernobyl disaster is one of them, and dangers of nuclear plant core meltdown have equal threats, and even greater since released radioactive particles are carried by wind, reach destinations thousands of kilometres away, and remain active for thousands of years to come.

Collective Altruism

When millions of Ethiopian middle income individuals, and other wealthy ones, donate money (birr) from their pockets in order to accomplish this project and see their collective dream come true, after all countries turned their shoulders to their motherland, this becomes a demonstration of heroic and rare, modern example of humanism and accomplishment.

People will be working to diminish poverty, expand agricultural projects, developing industrial projects, raising the standards of living of each and every individual. I don't think it is either ethical nor acceptable to confront those people, or to place obstacles in their way toward renaissance, as long as no real threats or significant harm on neighboring countries exists.

Egypt and Sudan should pursue other alternative water and energy sources in addition to their future mutually-agreed-upon share of the Nile water. Solar Energy, Nuclear Energy, Gas Energy, water desalination plants, groundwater utilizing *(in Al Qantara, and other huge reserves which Dr. Farouk Al Baz has recommended),* and other means to insure satisfaction of the needs of the growing population in Egypt.
Escalation, or going to war with Ethiopia, won't bring progress for any party — ultimately, it is worse than any scenario brought by the dam.

Sudan can take a similar stance, and ultimately, benefit from the Ethiopian projects as well.

The three countries, Egypt, Ethiopia and Sudan, along with the other East African countries, in the final analysis, must SUCCEED TOGETHER.

"Nile dams – Egypt, Ethiopia, look for safe ground", 06/06/2013, online at: http://arabiangazette.com/nile-dams-egypt-ethiopia-safe-2013-06-06/

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❖ Who Owns the Nile? Egypt, Sudan, and Ethiopia's History-Changing Dam

Editor's Note:

Egypt and Sudan are utterly dependent on the waters of the Nile River. Over the past century both of these desert countries have built several dams and reservoirs, hoping to limit the ravages of droughts and floods which have so defined their histories. Now Ethiopia, one of eight upriver states and the source of most of the Nile waters, is building the largest dam in Africa. Located on the Blue Nile twenty five miles from the Ethiopian border with Sudan, the Grand Renaissance Dam begins a new chapter in the long, bellicose history of debate on the ownership of the Nile waters, and its effects for the entire region could be profound.

In the fall of 2012 newspapers around the world reported on a Wikileaks document, surreptitiously acquired from Stratfor, the Texas security company, revealing Egyptian and Sudanese plans to build an airstrip for bombing a dam in the Blue Nile River Gorge in Ethiopia. The Egyptian and Sudanese governments denied the reports.

Whether or not there were such plans in 2012, there is a long history of threats and conflicts in the Nile River Basin. Downriver Egypt and Sudan argue that they have historic rights to the water upon which they absolutely depend—and in 1979 Egyptian President Anwar Sadat threatened war on violators of what he saw as his country's rights to Nile waters. Upriver Ethiopia, Kenya, Uganda, Rwanda, Burundi, and Tanzania argue that they too need the water that originates on their lands. Since the twelfth century C.E. Christian Ethiopian kings have warned Muslim Egyptian sultans of their power to divert waters of the Nile, often in response to religious conflicts. But these were hypothetical threats.

Today, however, Ethiopia is building the Grand Renaissance Dam and, with it, Ethiopia will physically control the Blue Nile Gorge—the primary source of most of the Nile waters.

The stakes could not be higher for the new leaders in Egypt and Ethiopia, President Mohamed Morsi and Prime Minister Hailemariam Desalegn, as well as Sudan's long-time President, Omar El Bashir. The stakes are perhaps even higher for the millions of people who owe their livelihood and very existence to the Nile's waters.

Egypt and the Nile

The Nile has been essential for civilization in Egypt and Sudan. Without that water, there would have been no food, no people, no state, and no monuments. As Herodutus famously wrote in the 5th century B.C.E., "Egypt is the gift of the Nile."

For millennia peoples have travelled along the banks of the Nile and its tributaries. Scores of ethnic groups in Egypt, Ethiopia, and Sudan share architecture and engineering, ideas and traditions of religion and political organization, languages and alphabets, food and agricultural practices.

In 3000 B.C.E., when the first Egyptian dynasty unified the lower and upper parts of the Nile River, there were no states in Eastern or Central Africa to challenge Egypt's access to Nile waters.

The Nile was a mysterious god: sometimes beneficent, sometimes vengeful. Floods between June and September, the months of peak flow, could wipe out entire villages, drowning thousands of people. Floods also brought the brown silt that nourished the delta, one of the world's most productive agricultural regions, feeding not only Egypt but many of its neighbors.

The river's central importance to Egyptian life is captured in *A Hymn to the Nile*, recorded in Papyrus Sallier II:

Hail to thee, O Nile, that issues from the earth and comes to keep Egypt alive! …
He that waters the meadows which He created …
He that makes to drink the desert …
He who makes barley and brings emmer into being …
He who brings grass into being for the cattle …
He who makes every beloved tree to grow …
O, Nile, verdant art thou, who makes man and cattle to live.

The Nile's seasonal flooding is a central theme in Egyptian history. The river flow follows regular patterns, increasing between May 17 and July 6, peaking in September, and then receding until the next year. But the river volume is very unpredictable, as documented by nilometers (multi-storied structures built in the river to measure water heights). Successive empires of Pharaohs, Greeks, Romans, Christian Copts, and Muslims celebrated the rising waters of the Nile and dreaded floods or droughts.

Five millennia of Nile history show how years with high water have produced ample food, population growth, and magnificent monuments, as during the first five dynasties from 3050 B.C.E.

to 2480 B.C.E. Periods with low water have brought famine and disorder. The Book of *Genesis* describes seven years of famine that historians associate with the drought of 1740 B.C.E. From the time of the Pharaohs until 1800 C.E., Egypt's population rose and fell between 2 to 5 million, due to food availability and epidemics. The irrigation projects of the 19th century Ottoman ruler Mohammad Ali allowed year-around cultivation, causing population growth from 4 to 10 million. Since the opening of the Aswan High Dam in 1971, Egypt's population has increased from about 30 to 83 million.

The Sources of the Nile

Despite the extraordinary importance of the Nile to people downstream, the origin of the great river was a mystery until the middle twentieth century. Herodotus speculated that the Nile arose between the peaks of Crophi and Mophi, south of the first cataract. In 140 C.E. Ptolemy suggested the source was the Mountains of the Moon, in what are now called the Ruwenzori Mountains in Uganda.

The 11th century Arab geographer al-Bakri postulated West African origins, confusing the Niger River, which empties into the Atlantic Ocean, with the Nile River. In 1770 the Scottish explorer James Bruce claimed his discovery of the source in Ethiopia, while in 1862 John Hanning Speke thought he found it in Lake Victoria and the equatorial lakes.

The river's limited navigability only increased its mystery. The Blue Nile River descends 4501 feet in 560 miles from Lake Tana in the Ethiopian highlands through a deep gorge with crocodiles, hippopotamuses, and bandits to the Sudan border and the savannah. Despite the efforts of scores of intrepid adventurers, the Blue Nile in Ethiopia was not successfully navigated until 1968 by a team of British and Ethiopian soldiers and civilians equipped by the Royal Military College of Science.

Further south up the White Nile in the lakes and rivers of Burundi, Rwanda, Kenya, Tanzania, and Uganda, the Egyptian cultural influence is less pronounced, due to the Sudd, a gigantic and impassable swamp which absorbs waters from the equatorial lake tributaries. The Nile River historian Robert O. Collins reports that "no one passed through this primordial bog" until 1841.

Not until the 20th century did it become clear that the Nile is part of a vast river system with dozens of tributaries, streams, and lakes, stretching from the Mediterranean Sea to the remote mountains of Burundi, in tropical central Africa, and to the highlands of Ethiopia, in the Horn of Africa. Spanning more than 4,200 miles, it is the longest river in the world. It has also become clear that the volume of water which flows through the Nile is relatively small—a mere two percent in volume of the Amazon's and fifteen percent of the Mississippi—and mostly (86%) from Ethiopia.

Ethiopia, Egypt, and the Historical Struggle for the Nile's Waters

Ethiopia and Egypt have had a long relationship of both harmony and discord, the latter the result of religious issues and access to Nile water, among other factors.

Ethiopia's first well documented government was in Aksum, a city-state that controlled a large empire from the Ethiopian highlands across the Red Sea to Yemen. From 100 until 800 C.E. Aksumites participated in Mediterranean and Indian Ocean trade.

The cultural relationship between Egypt and Ethiopia was institutionalized when the Aksumite King Ezana converted to Christianity in 330 C.E. For 16 centuries (until 1959) the Egyptian bishop of the Ethiopian Orthodox Church was appointed by the Egyptian patriarch in Alexandria, often under the influence of the Egyptian government.

Ethiopians were profoundly influenced by the Middle East, even writing their state and geography into Bible stories. The source of the Blue Nile became the Gihon, one of the four rivers that flowed from the Garden of Eden. The 14th century C.E. myth of national origins connected Ethiopia's rulers to the Old Testament. In this legend the Queen of Sheba (*Mekedda*), journeyed north from Ethiopia to Jerusalem to meet King Solomon in 900 B.C.E. A romantic relationship produced a child, Menelik I, the first in Ethiopia's Solomonic Dynasty.

When Menelik became an adult, despite his father's wish that he become the next King of Israel, he escaped to Ethiopia with the Ark of the Covenant—the cabinet which contained the tablets of the ten commandments given by God to Moses on Mount Sinai. Menelik stored the Ark on an island in Lake Tana—into which the Gihon flows—before it was moved to Aksum, where many Ethiopians believe the Ark remains to this day. Another Ethiopian legend is that Mary and Jesus stayed a night on that same island (Tana Cherquos) during their flight from the Holy Land to Egypt.

The Muslim conquest of Egypt in 640 C.E. put Christian Ethiopia in a defensive position. Because the Ethiopian Orthodox Church remained subordinate to the Orthodox Church in Alexandria, and Egypt had become a Muslim country, Ethiopians became suspicious and resentful of the control Egypt had on the appointment of their Christian bishop (*abun*). Muslim Egyptians also controlled Jerusalem and had the power to expel Ethiopian pilgrims to their holiest of cities.

So Ethiopians began to claim power over Egypt through control of the Nile. During the Crusades the Ethiopian emperor Lalibela (1190-1225)—who built a new Jerusalem in Ethiopia, safe from Muslim occupation in magnificent, underground rock-hewn churches—threatened retribution by diverting the

Tekeze River from its pathway north into Sudan (where it becomes the Atbara and then joins the Nile).

The first Egyptian to write about the potential for an Ethiopian diversion of the Nile was the 13th century Coptic scholar Jurjis al-Makin (d. 1273).

Stories about Ethiopia's power over the Nile inspired the 14th century European legend of Prester John, a wealthy Christian Ethiopian priest king. In 1510 the legend returned to Ethiopia with Portuguese explorer Alfonso d' Albuquerque, who considered the possibility of destroying Egypt by diverting the Nile to the Red Sea. In 1513 d'Albuquerque even asked the Portuguese king for workers skilled in digging tunnels. Nothing came of the plan.

But conflict between Egypt and Ethiopia continued, often as proxy wars between Christians and Muslims on Ethiopia's northern or southeastern borderlands. The sixteenth century invasion of Ethiopia by Ahmad Gragn, the Muslim imam from the Adal Sultante, was seen as an Egyptian conflict.

In the nineteenth century Egypt and Ethiopia fought over control of the Red Sea and upper Nile Basin. The climax came in 1876 at the Battle of Gura in present day Eritrea where the Ethiopians delivered a humiliating defeat to the Egyptian army.

Colonial-Era Conflicts over the Nile

The European partition of Africa in the 1880s added huge complexity to this conflict.

Egypt was colonized by England in 1882. Ethiopia defeated the Italians at the Battle of Adwa in 1896 becoming the only African country to retain its independence during the "scramble for Africa." But colonization created many new states in the Nile Basin (Eritrea, Uganda, Rwanda, Burundi, Kenya, and Tanganika) and set off new competition for resources and territory.

Egypt was prized for the Nile Delta, a region of unsurpassed agricultural productivity. After the completion of the Suez Canal in 1869, Egypt also offered access to the Red Sea and the Indian Ocean. For the British control of Egypt meant more profitable trade with India, its richest colony. For the French, the canal offered quicker access to Indochina, its most lucrative colony.

In the late nineteenth century, since controlling Egypt was the key to Asian wealth, and since Egypt depended on the Nile, controlling the source of the Nile became a major colonial goal.

The French-English competition for control of the Nile Basin climaxed in 1898 at Fashoda.

The French conceived of the idea of building a dam on the White Nile, so as to undermine British influence further downriver and establish east-west control of the continent. They organized a

stupendous pincer movement with one group of soldiers traveling from East Africa across Ethiopia and the other from West Africa across the Congo.

The British heard of the French expedition, and, having just captured Khartoum ordered a fleet of gun boats and steamers with soldiers under the leadership of General Horatio Herbert Kitchener upriver to Fashoda, the site of the proposed dam. With fewer than 200 men, the French were embarrassed. In 1899 the two colonial powers reached an agreement which designated to France the frontiers of the Congo River and to England the frontiers of the White Nile.

The Fashoda Incident revealed how little Europeans understood about the Nile River. Thinking that most of the Nile waters came from the equatorial lakes (Victoria, Albert, Kyoga, and Edward), the English spent enormous energy on plans to increase White Nile water flows.

First called the Garstin Cut and later the Jonglei Canal, the British intended to create a channel that would maximize water transfer through the great swamp (where half of it evaporated).

One of the most expensive engineering projects in Africa, it was terminated in 1984 by the Sudan People's Liberation Army, because of the severe disruption it brought to the lives of the indigenous upper Nile peoples. If the 300 mile-long Jonglei Canal had been completed, it would have increased water flows by nearly 4 billion cubic meters into the White Nile.

Negotiating the Nile: Treaties and Agreements over the Nile Waters

Treaty negotiations about Nile waters started during the colonial era as England tried to maximize agricultural productivity in the delta.

In 1902 the British secured from the Ethiopian Emperor Menelik II an agreement to consult with them on any Blue Nile water projects, especially on Lake Tana. As the controlling imperial power in East Africa, agreements with Kenya, Tanganika, Sudan, and Uganda were *pro forma*, internal colonial matters.

After achieving its independence in 1922, Egypt negotiated the Nile Waters Agreement of 1929 with the East African British colonies. This accord established Egypt's right to 48 billion cubic meters of water flow, all dry season waters, and veto-power over any upriver water management projects; newly independent Sudan (1956) was accorded rights to 4 billion cubic meters of water. The Ethiopian monarch was not consulted—at least in part because no one understood how much Nile water actually came from Ethiopia.

The 1959 Nile Waters Agreement between Egypt and Sudan was completed before all the upriver states achieved independence: Tanganika (1961), Uganda (1962), Rwanda (1962), Burundi (1962), and Kenya (1963).

The signatories of the 1959 Agreement allocated Egypt 55.5 billion cubic meters of water annually while Sudan was allowed 18.5 billion cubic meters. These 79 billion cubic meters represented 99% of the calculated average annual river flow.

The treaty also allowed for the construction of the Aswan High Dam (completed in 1971), the Roseires Dam (completed 1966 on the Blue Nile in Sudan), and the Khashm al-Girba Dam (completed in 1964 on the Atbara River in Sudan).

The treaty so negatively affected the upriver states that it provided the inspiration for the Nyerere Doctrine, named after independent Tanzania's first president, which asserted that former colonies had no obligation to abide by treaties signed for them by Great Britain.

Emperor Haile Selassie was offended by President Nasser's exclusion of Ethiopia in the Nile Waters Agreement and in planning for building the Aswan Dam. He negotiated the 1959 divorce of the Ethiopian Orthodox Church from the Orthodox Church in Alexandria, ending 1600 years of institutional marriage.

He also began planning for several dams on the Blue Nile and its tributaries, contributing $10 million dollars from the Ethiopian treasury towards a study by the U.S. Department of Reclamation resulting in a seventeen volume report completed in 1964 and titled *Land and Water Resources of the Blue Nile Basin: Ethiopia*.

Nasser responded by encouraging Muslims in Eritrea (reunified with Ethiopia after World War II) to secede from Ethiopia. He also encouraged Muslim Somalis to fight for the liberation of Ethiopia's Ogaden region.

Ethiopia won the war with Somalia in 1977-78 and retained the Ogaden. Its 30 year war with Eritrea, an Egyptian ally, came at a tremendous cost. Haile Selassie was overthrown in 1974, and after 1993 Eritrea won independence and Ethiopia became a landlocked country—although it still possessed the headwaters of the Blue Nile.

In the middle of the 1980s, rains failed in the Ethiopian highlands, causing a serious water crisis upriver and downriver. One million Ethiopians died as a result of drought and famine—made worse by Civil War with Eritrea. Egypt averted disaster but Aswan's turbines were nearly shut down,

creating an electric power nightmare; and crops failed in the delta, bringing the real prospect of famine.

As a result, Egyptians came to understand that their great Aswan Dam had not solved their historic dependency on upriver Nile water. In 1987, after years of hostile rhetoric, the Egyptian President Hosni Mubarak and the Ethiopian President Haile Mariam Mengistu replaced the language of threat and confrontation with words of conciliation and cooperation.

Then in the 1990s the Ethiopian rains returned and, remarkably, Hosni Mubarak redoubled efforts begun during the Sadat administration to build the Toshka Canal, one of the world's most expensive and ambitious irrigation projects. This plan would take 10% of waters in Lake Nasser to irrigate Egypt's sandy Western Desert, increasing Egypt's need for Nile water even if they maintained their 1959 treaty share of 55 billion cubic meters.

In anger and disbelief, the Ethiopian Prime Minister Meles Zenawi protested: "While Egypt is taking the Nile water to transform the Sahara Desert into something green, we in Ethiopia—who are the source of 85% of that water—are denied the possibility of using it to feed ourselves."

He then began plans for the Grand Renaissance Dam.

International water law has not resolved differences about ownership of Nile Waters. The Helsinki Agreement of 1966 proposed the idea of "equitable shares"—and the idea was taken up again in the 1997 United Nations Convention on the Law of Non-Navigational Uses of International Watercourses.

A proposal for "equitable shares" was again put forward in the 1999 Nile Basin Initiative, which included all the affected countries. Unfortunately the initiative did not resolve the conflict between Egypt and Sudan's claims of historic rights and the upper river states' claims for equitable shares.

In 2010, six upstream countries (Ethiopia, Kenya, Uganda, Rwanda, Burundi, and Tanzania) signed a Cooperative Framework Agreement seeking more water shares. Egypt and Sudan rejected the agreement because it challenged their historic water rights.

Ethiopia and the Lessons of Dam Building

One lesson from the last century of mega-dam building is that upriver countries have the most power when negotiating water rights. The first of the mega-dams, the Hoover Dam on the Colorado River in the United States, cost Mexico water. The Ataturk Dam in Turkey has had a devastating impact on downriver Syria and Iraq. China and Tibet control waters on multiple rivers flowing downstream to India, Pakistan, Myanmar, Bangladesh, and Vietnam.

Another lesson is that mega-dams have enormous and unanticipated environmental impacts. The Aswan High Dam has disrupted the ecosystems of the river, the delta, and the Mediterranean with results of reduced agricultural productivity and fish stocks. It also caused a series of seismic events due to the extreme weight of the water in Lake Nasser, one of the world's largest reservoirs.

Although late to mega-dam building, Ethiopia is now making up for lost time. One of the tallest dams in the world was completed in 2009 on the Tekeze River in northern Ethiopia. Three major dams on the Omo and Gibe Rivers in southern Ethiopia are either completed or nearly so.

The biggest of Ethiopia's water projects, the Grand Renaissance Dam, will have a reservoir holding 67 billion cubic meters of water—twice the water held in Lake Tana, Ethiopia's largest lake—and is expected to generate 6000 megawatts of electricity.

Ethiopians hope these water projects—which extend to 2035 with other Nile tributaries and river systems—will lift their country out of poverty. Similar large dams have produced economic miracles in the United States, Canada, China, Turkey, India, Brazil, and, of course, Egypt.

Ethiopia's options for economic development are limited. With nearly 90 million people it is the most populous landlocked country in the world. It is also one of the world's poorest countries—174 on the list of 187 countries in the United Nations Human Development Index for 2012. (Sudan is 169 and Egypt 113.) This index rates countries based on life expectancy, education, and income, among other criteria.

Part of Ethiopia's challenge is that 85 percent of the workforce is in agricultural commodities that bring low profits. Ethiopia is already leasing land in its southern regions to Saudi Arabia, India, and China for large irrigated water projects—despite severe land shortage in its northern regions—because it does not have the funds to develop this land on its own.

If Ethiopia cannot use its elevation and seasonal rains for hydro-electric power and irrigation, what is it to do?

The Grand Renaissance Dam

The state-owned Ethiopian Electric Power Corporation optimistically reports that the Grand Renaissance Dam will be completed in 2015 at a cost of nearly 5 billion dollars. As of 2013, the project is 13% complete, suggesting that it may be many years and billions of dollars before the dam is finished. The Tekeze dam was well over its predicted budget and years behind schedule.

The major obstacle to completion is financing.

The World Bank, the European Investment Bank, the Chinese Import-Export Bank, and the African Development Bank provided financing for some of the other dams; but concerns about the environmental and political impact of this latest dam have discouraged lenders.
The International Monetary Fund suggested that Ethiopia put the dam on a slow track, arguing that the project will absorb 10% of Ethiopia's Gross Domestic Product, thus displacing other necessary infrastructure development.

Nevertheless the Ethiopian government insists that it will stick with its schedule and finance the project domestically. It probably will secure more help from China, a loyal ally and the world's major developer of hydroelectric power.
The Ethiopians argue that the Grand Renaissance Dam could be good for everyone. They contend that storing water in the deep Blue Nile Gorge would reduce evaporation, increasing water flows downstream.

The Ethiopians also argue that the new dam will be a source of hydroelectric power for the entire region and will manage flood control at a critical juncture where the Nile Gorge descends from the Ethiopian highlands to the Sahel, thus reducing risk of flooding and siltation, extending the life of the dams below stream.

Egypt and Sudan are understandably concerned about Ethiopia's power over Nile waters. What happens while the reservoir behind the Grand Renaissance Dam is filling up, when water flow may be reduced 25 % for three years or more? After the reservoir is filled what will happen when rains fail in the Ethiopian highlands? Who will get the water first?
If the question of Nile waters was sensitive in the centuries before 1900, when Ethiopia and Egypt each had populations of 10 million or less, what will happen over the next twenty years, as their populations each surpass 100 million and the collective population of the Nile River Basin countries reaches 600 million?

The Grand Renaissance Dam poses a question as basic as water itself: Who owns the Nile? When the Grand Renaissance Dam closes its gates on the Blue Nile River, whether it is in 2015 or 2025, the time for a final reckoning will have arrived.

Ethiopia will then have the power to claim its water shares, with the backing of all the upriver states. Egypt and Sudan's claims to historic water rights will have become merely hypothetical. In the context of a difficult history, violence is a possibility, but good solutions for all can be achieved through diplomacy and leadership.

"Who Owns the Nile? Egypt, Sudan, and Ethiopia's History-Changing Dam", 07/06/2013, online at: http://cyberethiopia.com/2013/?p=411

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❖ Egypt, Ethiopia and the new dam

The Ethiopian dam project could constitute a threat to Egypt, but only if Ethiopia is pushed into going it alone, instead of being coaxed onto a different path by genuine cooperative aid, writes**Adel Amer**

Ethiopia has begun operations to divert a portion of the Blue Nile preparatory to the construction of a major dam. Although this project had been anticipated for many years and in spite of repeated assurances from Addis Ababa that it would not affect Egypt, the Ethiopian decision to commence operations triggered anger and alarm among Egyptian public opinion, reactions reminiscent of the Iraqi and Syrian responses to the Ataturk Dam project many years ago.

The crisis over the diversion of the course of the Nile dates back to May 2010, when six upper riparian countries in the Nile Basin, meeting in Entebbe, signed a new Nile Waters Treaty, giving Cairo and Khartoum a year's grace period to join. The Entebbe Treaty states that cooperation between the countries of the Nile Basin initiative is founded on the principle of fair and reasonable use on the part of the state parties. Recently, the signatory states began ratification procedures through their parliaments. Once the treaty goes into effect, it will bring an end to Egypt and Sudan's historic quotas under the 1929 and 1959 Nile Waters Agreements, in accordance with which Egypt obtained 55.5 billion cubic metres a year and Sudan 18.5 billion. The six countries that have signed the new treaty are Ethiopia, Uganda, Kenya, Tanzania, Rwanda and Burundi. The Democratic Congo joined Egypt and Sudan's refusal to sign. In March 2013, the newly independent South Sudan announced that it would join the treaty.

Cairo and Khartoum have charged that the Entebbe Treaty "violates all international agreements" and vowed to alert donor nations to the illegality of funding any water projects on the Nile or its tributaries. They added that they would lobby against the Ethiopian dam project, in particular, which will cost an estimated $4.8 billion, according to the late Ethiopian Prime Minister Meles Zenawi. Ethiopia and the other signatory countries were unfazed by such protests and warnings, and on 1 April 2011, Ethiopia formally inaugurated the Great Millennium Dam project, or the Renaissance Dam, for the production of hydroelectric power for the Benishangul-Gumuz region, which is adjacent to the Sudanese border. The dam, which is due to be completed in 2015, will create a reservoir of approximately 63 billion cubic metres of water.

Following the 25 January 2011 revolution, Egyptian popular leaders pressed the need to address this vital issue, stressing that it had to be handled objectively and in a spirit untainted by the "arrogance that had characterised the approach of the governments of former president Hosni Mubarak". On 29 April 2011, a "people's delegation", consisting of representatives of the revolutionary youth, political parties and other public figures, set off to Addis to discuss the Millennium Dam project. Such actions inaugurated a new climate for handling dam initiatives and other issues related to the Nile waters. Perhaps because of this, Egyptians were all the more shocked by the Ethiopian announcement of its decision to press ahead with the diversion of the Blue Nile within hours of President Morsi's visit to Addis Ababa to attend the African Summit. On the sidelines of this summit, Morsi met with Ethiopian Prime Minister Hailemariam Desalegn and raised Egyptian concerns with respect to the dam. Experts on the joint Egyptian-Ethiopian-Sudanese committee on this project found that "the studies that the Ethiopian side had submitted with respect to the dam were insufficient to prove that its construction would not be harmful to Egypt." In light of this, the tripartite committee will ask for additional studies, which will be undertaken by international experts on the committee. The committee is made up of six local members (two each from Egypt, Sudan and Ethiopia) and four international experts on dam engineering and hydrology, water resource management and the social, economic and environmental impact of dams.

The construction of the dam on the upper reaches of the Nile poses an enormous challenge to Egyptian agriculture. The consequent water shortage could lead to reduced domestic food production as well as to a reduction by approximately 500 kilowatts per year in the electricity generated by the High Dam and the Aswan Dam. Such a spectre induced the Sudan and Nile Basin Studies Unit of Al-Ahram Centre for Political and Strategic Studies to convene a seminar on this question. It hosted Mohamed Allam, former minister of irrigation and water resources, who had been responsible for this issue during one of the tensest periods in Egyptian-Ethiopian relations over a number of essential differences regarding the dam. Allam presented a paper to the forum discussing the various phases of this question, from the Egyptian perspective in particular.

By way of background, Allam underscored a number of weaknesses on the Egyptian side: the scientific and technological lag, the spread of corruption, the deterioration in public services, and economic, social and cultural underdevelopment. He also mentioned the decline in Egypt's regional and international status and influence. At the same time, important political changes were taking place elsewhere in the Nile Basin. Ethiopia and Uganda were experiencing periods of economic

growth and growing international support. In addition, Israeli influence in countries of the upper Nile Basin was increasing, while Egyptian influence remained minimal. Such factors contributed to augmenting the pressures on Egypt on one of its most crucial concerns, namely issues related to the Nile Basin initiative.

Water projects on the Blue Nile, whether in Ethiopian highlands or in Sudan, would have a major impact on Egypt, as the Blue Nile accounts for around 90 per cent of the water that reaches Egypt.

Egypt is heavily dependent on the Nile for its water needs. As Allam pointed out in his paper, the Nile furnishes 55.5 billion cubic metres a year of water (under the current quota), while Egypt receives only a billion cubic metres a year in rainfall, which falls primarily on the Mediterranean and Red Sea coasts and parts of the Sinai. There are subterranean water sources, but these are non-renewable. The subterranean reserve in the Western Desert permits for the extraction of no more than three to five billion cubic metres per year over the next 50 to 100 years. Meanwhile, the costs of desalinisation are very high, and the quantities that this method supplies come to only 200 million cubic metres a year.

According to Allam, Egypt's current water needs amount to over 75 billion cubic metres a year, which is about 30 per cent higher than the available resources. The deficit is made up for by recycling. The per capita share of water is only 700 cubic metres a year. However, by 2050, and given current population growth figures, per capita share of water will decline to 350 cubic metres per year.

Water projects on the upper Nile would further imperil the situation. Large tracts of agricultural land would be lost. Hydroelectric power production would drop sharply and compel increasing reliance on gas-powered generators. Water purification plants and a number of other industries along the Nile would be severely affected, and the quality of irrigation water would deteriorate. In addition, there would be greater seepage of sea water into the northern coastal areas and the quality of the water in the northern freshwater lakes would decline.

TOWARDS A ROADMAP: Sudan and South Sudan are Egypt's most important partners in the foreseeable future, said Allam. Both need Egyptian support, expertise and investment. They also have water resources that could increase the yield of the Nile, large tracts of land suitable for cultivation and livestock, and mineral wealth. In addition, they offer promising markets for emergent Egyptian industries and skilled Egyptian labour. Politically, their unification would undermine regional and

international designs to set the two countries against each other to the detriment of them both. Clearly, they would be well advised to create a joint technical body to examine the potential effects of the Ethiopian barrages on them both and to review the results of the Egyptian-Sudanese studies that had been conducted on this matter in the interest of formulating a unified vision on the dams on the basis of the bilateral agreement of 1959 that governs the Egyptian-Sudanese relationship with respect to the Nile waters.

In his paper, Allam also discussed why Ethiopia attaches such importance to the dam project. It has long been an Ethiopian dream to control the headwaters of the Blue Nile, he said. Ethiopia would reap huge profits from the export of hydroelectric power to neighbouring countries, generating a major source of national revenue that would stimulate a qualitative leap in economic and social development, and enhance Addis Ababa's influence in the Horn of Africa and elsewhere in the continent. The net profit from the production and export of the electricity from the Mandaya Dam alone exceeds $7 billion a year. The power — and hence income — generating capacity of the Renaissance Dam could be considerably greater. However, Addis also realised that these dams would not have this anticipated economic value unless they received the blessings of Egypt and Sudan, which would translate into the purchase of large quantities of the electricity they produce. Currently, Ethiopia, itself, does not have the domestic infrastructure or market capable of consuming a major portion of the amount of electricity that could be generated, while the only two other major consumers would be Egypt and Sudan. Therefore, Egypt and Sudan's refusal to participate in a network would delay Ethiopia's ability to benefit economically from the dams, at least until it develops a sufficient infrastructure and market locally, which would take several decades.

Egypt's regional and international drives concerning the Renaissance Dam project began in earnest in the middle of last year. Egypt rejected the feasibility studies for their failure to take into consideration the detrimental effects of this project on Sudan and Egypt. It sent its comments in this regard to the secretariat of the Nile Basin Initiative, to the technical bureau of the Eastern Nile Basin Commission, to the World Bank, to the European Market, to the Canadian Advisory Bureau, and to the Norwegian Consultancy Bureau that performed the feasibility and design studies for the project. It has also sustained talks with donor agencies and with China in order to drive home the severe detrimental repercussions of the dam on both Egypt and Sudan. In the course of these talks, Egyptian officials stressed that they are not opposed to the development drive in Ethiopia, but that they are determined to safeguard Egypt's water rights and their country's future.

The fact remains that Ethiopia suffers a major water shortage. Indeed, it has the greatest deficiency in water of all the Nile Basin countries in spite of the fact that it is the major contributor to the Nile waters. At the same time, the Ethiopian highlands are not naturally suited to the construction of large dams and water reservoirs, regardless of the technology brought to bear, and even less to the transport of reserved water across its rugged terrain. Therefore, there is little need for the excessive alarm that has been stirred by some segments of the media recently. Still, the problem is not insignificant and there is a rift in Egypt's relations with other countries of the Nile Basin. In view of these considerations, Egypt needs to sustain a policy towards those countries based on the spirit of African brotherhood and cooperation, as opposed to confrontation and political blackmail. In this spirit, it must continue to offer aid and assistance to African countries, especially those in the Nile Basin, and not just in the realm of water resource development but also in a range of other fields, from agriculture to trade and industry and education.

The key to resolving the current crisis begins with Ethiopia, which should be given priority among the Nile Basin countries, in the construction of water projects. Ethiopia has the lowest rate of electricity consumption in the world — less than 1,000 megawatts (80 per cent of Ethiopians live without electricity). Nor will it affect Egypt and Sudan's share of Nile water if Ethiopia undertakes small water projects commensurate with its topography, such as electricity generating plants that capitalise on steep inclines or agricultural projects, whether dependent on precipitation or irrigation, which in any case would be relatively limited in view of the ruggedness of the Ethiopian terrain.

However, "Ethiopia can not divert a tributary of an international river shared by nine other nations. This is not just about Egypt and Sudan. International rivers are governed by laws and conventions, in accordance with which any action that affects water quotas requires advanced notice and guarantees against possible harm," said Allam. Experts predict that by 2050, Egypt will require 21 billion cubic metres of water above its current quota in order meet the needs of its population, which is expected to climb to 150 million by then.

"Egypt, Ethiopia and the new dam", 05/06/2013, online at: http://weekly.ahram.org.eg/News/2878/21/Egypt,-Ethiopia-and-the-new-dam.aspx

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❖ A story of intrigue and hostility

The history of Egypt's relations with the River Nile's upstream countries has been marked by misunderstandings and missed opportunities, writes **Atiya Essawi**

Two factors loom large over the water dispute between Egypt and the River Nile's upstream countries, especially Ethiopia, from which Egypt gets 85 per cent of its water.

One factor is the Egyptian government's exaggerated attachment to agreements on water-sharing that date back to colonial times. The other is the increasing need of upstream countries to launch development plans for their impoverished nations.

After years of war and domestic disturbances, some of the upstream countries are finally in a position to divert their resources from military expenditure to development projects. And with agriculture and electricity being their obvious choices for development, hydraulic projects involving the Nile are now at the top of their priorities.

Regarding the first factor, successive Egyptian governments have cited the agreements of 1891, 1902, 1906, 1929 and 1959 on the Nile, while insisting that none of the upstream countries can start a hydraulic project that may impede the supply of water to Egypt and Sudan.

However, the above agreements are unfortunately hard to enforce unless all those involved benefit from them, which is obviously not the case. This brings us to the second factor, which is that the upstream countries need to cultivate more land and generate more electricity in order to raise the standards of living of their people.

It is not that Egypt wasn't aware of all that, or that it was averse to reason, as some of the upstream countries now claim. But by the time Cairo finally came up with the Nile Basin Initiative (NBI) in 1999, things had already got out of hand.

The upstream countries were not in a mood to recognise any of the aforementioned agreements, and they questioned the logic behind Egypt being assigned a quota of 55.5 billion cubic metres of the Nile's water.

The upstream countries were also opposed to two conditions that Egypt saw as essential. One was prior notification concerning water projects, and the other was the manner of making decisions within the Nile riparian countries. Egypt and Sudan, the most vulnerable users of the Nile, wanted decisions to pass by unanimous vote, while the upstream countries maintained that a majority vote would be preferable.

Differences over such matters eventually led to the collapse of the NBI, an otherwise valid and mutually advantageous agreement. Things came to a head when, in May 2010, six upstream nations signed the Entebbe Agreement at a ceremony attended neither by Egypt nor Sudan.

An opportunity was then lost. Over the previous months, the Nile riparian countries had agreed on 43 articles out of the 44 the NBI contained, according to Mahmoud Abu Zeid, Egypt's former minister of water resources and irrigation.

After years of talks, Egypt and Khartoum failed to persuade the upstream countries to respect their quotas. They failed even to find an alternative formula that may have had the same effect while showing some consideration for the sensitivities of the upstream countries, many of which were already making noises about colonialism and the haughtiness of their downstream neighbours.

At this point, two matters of no minor importance were decided upon by the signatories of the Entebbe Agreement. One was to ditch the prior notification upstream countries must give downstream countries before any water project, which, by the way, is a standard feature of all international water agreements. The other was to ignore the unanimous voting procedure that Egypt and Sudan so desperately demanded.

But Egyptian diplomacy failed in more even than that. It failed to take international action and to draw attention to a situation that was about to become intolerable. Egypt could have put pressure on countries not to engage in projects that would have been detrimental to its water supplies. It was entitled under international law to demand sanctions be put on countries taking steps harmful to its national security. But none of this happened.

As it turned out, Ethiopia and other countries began building projects that directly interfered with the flow of water to Egypt, the present Renaissance Dam being a case in point. They did so without waiting for the Nile Tripartite Committee to issue its report on the matter.

One cannot ignore the underlying hostility in such conduct.

It may be recalled that the late Ethiopian prime minister Meles Zenawi, speaking in November 2011, accused Egypt of assisting rebel groups in destabilising his country, while hinting that Egypt could not win a war with Ethiopia if push came to shove.

Sounding no less adamant, the Ethiopian foreign minister at the time spoke of conspiracies made by Egypt to stop donor countries from financing the projects. The paranoid statements by the Ethiopians were rather surprising, considering that Egypt was reassuring all the riparian countries that it supported any development projects they might engage in, so long as these did not reduce the supply of water downstream.

To be fair, the Egyptians could have been blamed for at least some of the paranoia the upstream countries felt at the time. The Egyptian media was far from kind to the Ethiopians, often voicing the opinion that the Renaissance Dam was bound to collapse in the future, or even calling for war to stop it from being built.

Some writers even recalled the threats once made by the late president Anwar Al-Sadat to this effect. But times have changed since then. It is now utterly out of the question to go to war over a matter of this sort. Any benefit from war would be outweighed by the sanctions and isolation Egypt would have to face as a result.

Ethiopia has a lot of powerful friends. The US and Europe rely on it for the protection of shipping in the Indian Ocean, for keeping at bay Islamist extremists and Iran, and for generally looking after their interests in East Africa.

Egypt's support of Khartoum during its conflict with South Sudan is also coming back to haunt it. The government of South Sudan, if only to spite Khartoum and Cairo, decided to join the Entebbe Agreement. In fact, the South Sudan government went a step further by stopping work on the Jonglei Canal, even though the latter is almost 75 per cent finished.

The Canal, if completed, would have saved nearly nine billion square metres of water lost annually in Bahr Al-Jabal in Sudan. This, too, is ironic knowing how much Egypt has spent on helping South Sudan with education, electricity, water, and other aspects of its infrastructure. Indeed, Egypt has spent nearly LE300 million providing clean drinking water for the South Sudanese people, but none of this has been enough to reverse the resentment felt in South Sudan toward Egypt over its ties with Khartoum.

As a matter of fact, Egypt is entitled to some resentment of its own. It had in the past agreed without hesitation to every single hydraulic project that might have benefited the upstream countries.

It made no objection when Uganda announced plans to build the Bujagali Dam, just as many decades ago it consented to the building of the Owen Falls Dam in the same country.

Egypt also approved the building of several small dams to gather rainwater in Kenya, Ethiopia, and Tanzania. And it financed the digging of dozens of artesian wells in upstream countries suffering from drought.

Moreover, Egypt cleans extensive waterways every year in Uganda and South Sudan from the weed and sediment that block them. Egypt has also offered to fund various projects to improve water usage and agriculture in the upstream countries.

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Egyptian experts who helped formulate the NBI say that the water supply to the Nile riparian countries could more than double if measures are taken to channel swamp water and minimise evaporation and seepage.

Politics, however, have got in the way. To be fair, it is difficult for a government such as that of Ethiopia to overlook the fact that nearly 70 per cent of its people have no access to electricity, while 99 per cent of Egyptians have such access.

Since the civil and regional wars ended in East Africa, foreign investors have come up with serious ideas for developing various countries in the region. International investors, including Arab companies, have offered billions of dollars to produce food and grain for export and then share the proceeds with the host nation.

Faced with such offers, the various Nile riparian countries have felt the urge to build dams to set the stage for such projects that are usually dependent on water and an electricity supply. According to experts, each billion cubic metres of water can provide enough food for five million people. One can hardly blame countries in which the per capita income is as low as $1 a day for wanting to improve the lots of their citizens.

So all the help Egypt was prepared to offer these countries seemed to pale in comparison with the offers they were receiving from various investors. Had our investors matched these offers, could things have been different? It is hard to tell, considering the immense resentment felt towards Egypt that has been bubbling upstream.

This is unfortunate, for the NBI could have offered these countries at least as much benefit as anything they hoped to get under the current situation. Indeed, if the riparian countries had agreed, in one form or another, to the NBI, considerable amounts of investment would have flown into their economies.

Donors had already set aside $20 billion for 34 project if the NBI had gone through. These projects would have improved irrigation in Ethiopia and Egypt, linked electricity grids in the region, and increased food production along the Nile basin.

Still, investors have not given up on East Africa. The Saudis want to invest $2.6 billion to produce wheat in Ethiopia. Qatari and UAE companies have similar plans. China and South Korea wish to cultivate 20 million acres in Ethiopia for the purpose of producing bio-fuel.

The Israelis, let us not forget, have had their eyes on the Horn of Africa since the 1980s. Eager to encircle Egypt's southern front, the Israelis have been whispering in the ears of upstream countries about the presumed unfairness of their situation.

It was Israel that urged these countries to demand a redistribution of the Nile water according to population and needs. It was Israel that told them that they could rely on Western sympathies if Cairo and Khartoum tried to force their hand. And it was Israel that assured them that there was no lack of funding from donor organisations, especially those controlled by the US.

The aim was to pressure the two Arab countries to stay away from Iran and prevent the latter from helping Hizbullah in Lebanon, Hamas in Gaza and the Palestinian Jihad and other adversaries of Israel.

"A story of intrigue and hostility", 04/06/2013, online at: http://weekly.ahram.org.eg/News/2842/17/A-story-of-intrigue-and-hostility.aspx

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❖ Ethiopia Dams the Blue Nile

Ethiopia has diverted the course of the Blue Nile to allow construction to continue on the Grand Ethiopia Dam, sending new waves of concern throughout the nations that rely on the Nile for water.

The concern is that, with 85 percent of the Nile's water originating in Ethiopia, the dam could be used as a political or military tool by the Ethiopians. When the 6,000-megawatt hydroelectric plant being built by Ethiopia is completed, it could effectively become a giant spigot, capable of severely limiting water to the Sudan and Egypt at will.

The lack of water would be a shock to Egypt, which has long enjoyed rights to the majority of the water from the Nile, with Sudan and South Sudan receiving smaller portions. The reason that Ethiopia is not allowed to access much of the water that feeds the Nile is because of a colonial-age agreement signed by Ethiopia's Emperor Manelik II, who agreed "not to construct or allow to be constructed, any works across the Blue Nile…" Today, however, Ethiopia argues that the colonial agreement is not only unfair, but is no longer binding, therefore allowing it to do as it pleases with the water.
Right now, the nations downstream from Ethiopia are concerned that while Ethiopia diverts the water while the dam is under construction, there will be inadequate amounts flowing downstream for the nations to the north.

The people that will feel the effects most acutely are the Egyptians. The nation has a population of over 82 million people, of which the majority live along the banks of the Nile. The regular flooding of the river has ensured Egyptian survival over the decades, under numerous empires, in an otherwise inhospitable location.

The duration of Ethiopia's building project will be the deciding factor in regards to how much and for how long Egypt will be low on water. There are, however, greater long-term dangers that the Grand Ethiopia Dam poses.

Simply speaking, if Ethiopia dams the river, there may not be enough water for everyone. While Ethiopian officials claim the dam will benefit all the nations downstream, Egypt is crying foul, saying

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that the dam will divert 18 billion cubic meters of water—approximately the total amount of water Sudan and South Sudan are allowed to use under the current agreement. But that is if Ethiopia only uses the water for hydro-electricity. If the Ethiopians use the water for irrigation, estimates suggest they could cut water flow by as much as 25 percent (over 21 billion cubic meters).

The Egyptians dammed the Nile themselves with the construction of the Aswan Dam. The lake that was formed by the creation of the dam helped transform vast sections of desert into irrigated farmland. To cut off the water upstream would be to revert much of the farmland created by the Aswan Dam back to desert. No water means no farms, and this would decrease the production of staple commodities such as wheat. Egypt would soon become desperate.

The relationship between Egypt and Ethiopia couldn't be described as close, nor is it currently seen as hostile. But cut off a nation's water and see how long that relationship remains the same. The two countries have had a rocky past, with Egypt supporting Eritrea in its war for independence against Ethiopia, beginning in 1961. The construction of the Grand Ethiopia Dam could once again flare up tensions, this time directly between the Egypt and Ethiopia.

Whatever the construction of the dam triggers, dramatic change is coming to Ethiopia. On Aug. 22, 2012, *Trumpet* editor in chief Gerald Flurry said on a *Key of David* program that Daniel 11:43 shows that Egypt is about to have a "major impact on other nations in the Middle East, and in Libya and Ethiopia, in particular." He went on to say that *Egypt*will play a critical role in turning Ethiopia into an Egypt/Iran-allied state.

If Ethiopia starts taking large amounts of water from the Nile, it will undoubtedly anger the nations to the north. Water, or the lack thereof, could prove a critical factor in bringing about dramatic change in Ethiopia—religiously, politically and possibly even militarily. For more on why the Nile will play a critical role in Ethiopian-Egyptian relations, read "War Over the Nile River." ▪

"Ethiopia Dams the Blue Nile", 03/06/2013, online at:
http://www.thetrumpet.com/article/10661.19.0.0/world/energy/ethiopia-dams-the-blue-nile

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❖ Egypt-Ethiopia: a Looming Water War

Ethiopia's project to construct the Grand Renaissance Dam, a $4.2 billion hydroelectric project that will divert the Blue Nile from its natural course, has flared up passions downstream in Egypt. Although some experts deem that Ethiopia's move is largely technical and will not alter the water flow that is vital for both downstream states, Egypt and Sudan, Egyptian officials, religious leaders and politicians, including President Mohamed Morsi, his advisers and cabinet, expressed opposition to the project that they describe as a "national security" issue for Egypt.

President Mohamed Morsi on Monday held a meeting with political and religious leaders to discuss the findings of a report drafted by a tripartite Egypt-Sudan-Ethiopia commission on the Ethiopian project and the potential impact it may have on Egypt and Sudan.

During the meeting, the presidency claimed that the project designers did not take into account its possible impact on downstream states.

"It appears that Ethiopia did not deeply study the social and environmental impact of the dam on the downstream countries of Egypt and Sudan, such as possible effects on…crops and the fishing industry," Morsi told the meeting, insisting that Egypt cannot let "even one drop of Nile water be affected."

The political and religious leaders attending the meeting who were not aware that it was broadcast live on public TV candidly unleashed their strategies to foil the Ethiopian project, deemed "strategically dangerous" for Egypt.

Some analysts who watched the broadcast likened the meeting to that of war strategists devising plans to stop an enemy's progression and noted that President Morsi did not condemn the sabotage acts or attacks against Ethiopia suggested by the participants in the meeting but was smiling in silence while listening to these war strategies.

One of the participants, an Islamist party leader, actually proposed to exploit the tribal and ethnic divisions in Ethiopia and arm rebels that Egypt can use as a trump card in any later negotiations with the Ethiopian government. If these attempts fail, Egypt will have no other choice than use its intelligence services to destroy the dam, said the member of the Nour Party, which won about 25 percent of seats in the latest Parliamentary elections.

One of the participants suggested concluding agreements with Somalia, Eritrea and Djibouti so that Egypt can use these countries as bases against Ethiopia, while another one stressed the necessity for Cairo to purchase long-range missiles, in case attacks against the dam become necessary.

Some of those who spoke at the meeting brought up wider concerns about the dam project, hinting that Ethiopia might use the project to export Nile water to Israel, or that the project would provide the US and Ethiopia with a bargaining card against Egypt and Sudan.

The arguments brought up during the Morsi-chaired debate hint that a battle with the US and Israel underlies the water war between Egypt and Ethiopia.

"Egypt-Ethiopia: a Looming Water War", 06/06/2013, online at: http://northafricapost.com/3798-egypt-ethiopia-a-looming-water-war.html

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❖ Egypt-Ethiopia water dispute escalates after threatening remarks

Egyptian politicians are caught on camera suggesting sabotage or a bombing to stop Ethiopia's Nile dam project.

CAIRO — A battle over water has turned into a war of colorful rhetoric between Ethiopia and Egypt over the flow of the Nile, which begins in the African highlands but keeps Egypt from being swallowed entirely by desert.

An ambitious Ethiopian dam project is diverting Nile waters that Cairo says will reduce the river's northward flow. The Egyptians have stumbled into crisis mode: At a meeting hosted by President Mohamed Morsi this week, several politicians, unaware TV cameras were rolling, suggested sabotaging or threatening to bomb the dam.

Egypt can coordinate with Ethiopian rebels and "use them as a bargaining chip with the Ethiopian government," mused Younis Makhyoun, leader of an ultraconservative Islamist party. "If all this fails, then there is no choice left for Egypt but to play the final card, which is using the intelligence service to destroy the dam."

Ethiopia on Thursday summoned the Egyptian ambassador to explain such "hostile remarks."

An embarrassed Morsi has reassured Ethiopian Prime Minister Hailemariam Desalegn that he preferred diplomacy to fighter jets and intrigue. But the matter — Egypt has indicated that it would demand the dam not be built — illustrates Cairo's reliance on the Nile and how swiftly passions can be riled in a nation that receives 95% of its water from the river.

"Egyptians are peaceful by nature, but they have a historical entitlement to Nile water," Saad Katatni, head of the ruling Muslim Brotherhood's political party told Al Ahram newspaper. "And it is their right to defend it by any means necessary.

"The first option is the diplomatic approach. If this doesn't succeed, we can resort to international arbitration."

The project in question is the $4.2-billion Grand Ethiopian Renaissance Dam and hydroelectric plant, which is 20% complete. Ethiopia says that the plant will spur development in one of Africa's poorest countries and that during construction over the next three to five years the dam will not "significantly affect" the flow of water into Egypt. Ethiopia says the flow will not be affected after the dam is built.

"We do not have any plan to harm downstream countries," said Alemayehu Tegenu, Ethiopia's minister for water resources. "If Egypt has some issues to discuss with Ethiopia, we are very ready to discuss them."

He added, "River diversion does not stop the flow of water to the downstream countries. River diversion means it is the rerouting of the river flow to facilitate the construction in the riverbed, nothing else."

Under colonial-era agreements, Egypt and neighboring Sudan were granted the bulk of the Nile's flow. But in recent years upstream African countries, including Ethiopia and Uganda, have made it clear that they are not bound to old treaties and pacts. Growing populations and demands for jobs and agriculture in East Africa have changed the dynamics.

Much of what is unfolding is a tale of poor nations in a new era, desperately trying to meet demographic and economic demands by drawing from a river that has sustained civilizations for millenniums. Egyptians say their fate

is more reliant on the Nile compared with Ethiopia. Although about 85% of the Nile's water originates in Ethiopia, which has an annual rainy season, the country gets only 3% of its water supply from the river.

Ethiopia, which has endured drought and famine, says it is entitled to larger shares and suggests Cairo has exaggerated the impact of the dam. Egypt alleges it may lose as much as 20% of its Nile flow during the dam's construction.

That prospect is expected to force stricter conservation efforts in the fertile Nile Delta, which for generations has practiced less than efficient irrigation. Unlike his predecessor, Hosni Mubarak, who was aloof toward much of Africa, Morsi has stepped up diplomacy with nations along the river to avoid a deepening crisis.

"Every 4 billion cubic meters of water that Egypt loses will lead to the waste of 1 million acres of agricultural land and this will in turn lead 2 million families to lose their jobs," said Hani Raslan, an expert on the Nile basin for Al Ahram Center for Political and Strategic Studies in Cairo. "This will widen the nutrition gap in Egypt and increase imports because the land will no longer produce."

Egypt is straining amid two years of political unrest after the overthrow of Mubarak. Water and gas shortages are common, foreign currency holdings have dwindled, and the economy is in severe straits. A disruption of water to the delta could jeopardize farms, crops and further imperil the economy.

"Egypt will never surrender its right to Nile water and all options [to safeguard it] are being considered," Morsi's office said this week.

“Egypt-Ethiopia water dispute escalates after threatening remarks”, 06/06/2013, online at: http://www.latimes.com/news/nationworld/world/middleeast/la-fg-egypt-ethiopia-20130607,0,979581.story?utm_source=Circle+of+Blue+WaterNews+%26+Alerts&utm_campaign=563295bc3e-RSS_EMAIL_CAMPAIGN&utm_medium=email&utm_term=0_c1265b6ed7-563295bc3e-250657169

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❖ 'Popular Diplomacy' initiative to form body to deal with Ethiopian dam

At a press conference held by the "Popular Diplomacy" initiative set up by independent politicians to resolve water disputes between Egypt and Ethiopia, opposition leader George Ishaq said the initiative plans to establish a high-level body that will include experts from Ethiopia and Uganda to resolve Egypt's current crisis with Ethiopia over the latter's plans to build a new dam.
Tensions between Egypt and Ethiopria were stoked after the latter abruptly started diverting waters of the Blue Nile — one of two major tributaries of the Nile River — in preparation for building its Renaissance Dam. Egypt had expressed fears over possible diminished water share as a result of the dam project.

Many Egyptian officials and politicians worry the dam would adversely affect Egypt's water allotment, most of which comes from the Blue Nile.

Egyptian Popular Current founder and leading opposition figure Hamdeen Sabbahi said that the correct path to resolving the issue is acknowledging the right to development of Nile Basin countries.

Sabbahi said the initiative aims to unify popular and official stances regarding the planned dam. He also implored Nile Basin countries, especially Ethiopia, to "acknowledge Egypt's historical rights to Nile River waters."

Member of the Popular Current Amr Helmy, speaking at the press conference, attacked the Egyptian government for not signing the Entebbe Agreement between Nile Basin countries.

The agreement was signed by six African countries, including Ethiopia, and aims to amend quotas stipulated in a colonial-era agreements that gave Egypt the lion's share of Nile waters.

Helmy said that the Renaissance Dam's effect on Egyptian water quotas — which still hasn't been fully assessed — "isn't as frightening as some make it out to be," saying that Egypt and Sudan (the second largest recipient of Nile water) may benefit from the dam.

The initiative decided to hold the press conference after a meeting Monday between Egyptian President Mohamed Morsi and opposition politicians was marred with hostile suggestions by attendees, some of whom proposed plans to sabotage the dam. The attendees weren't aware that the meeting was aired live on television.

The meeting wasn't attended by Egypt's main non-Islamist opposition.

Former MP and vice-president of the Pan-African Parliament, Mostafa El-Guindy, who is a founding member of the "Popular Diplomacy" initiative described Monday's meeting as a "disaster."
El-Guindy insisted on holding the press conference, believing the Monday meeting with the president was sure to turn African nations against Egypt.

"'Popular Diplomacy' initiative to form body to deal with Ethiopian dam", 05/06/2013, online at: http://english.ahram.org.eg/NewsContent/1/64/73258/Egypt/Politics-/Popular-Diplomacy-initiative-to-form-body-to-deal-.aspx

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❖ Egypt demands Ethiopia halt Nile dam, upping stakes

* Egypt fears project will affect main water source

* Leaders filmed urging hostile action against Ethiopia

* Analysts have warned Nile disputes could trigger war

CAIRO, June 5 (Reuters) - Egypt will demand Ethiopia stop building a dam on one of the main tributaries of the Nile, a senior government aide said on Wednesday, ramping up a confrontation over the project that Egypt fears will affect its main source of water.

Ethiopia set off alarm bells in Cairo last week when it began diverting a stretch of the river to make way for the $4.7 billion hydroelectric plant.

Countries that share the river have argued over the use of its waters for decades - and analysts have repeatedly warned that the disputes could eventually boil over into war.

The high stakes involved were underlined on Monday when senior Egyptian politicians were caught on camera advising President Mohamed Mursi to take hostile action to stop the project, and one went as far as suggesting Cairo destroy the dam.

Egypt, which has been involved in years of troubled diplomacy with Ethiopia and other upstream countries, said Ethiopia must now halt work on the dam.

"Demanding that Ethiopia stop construction of the dam it plans to build on the Blue Nile will be our first step," said Pakinam el-Sharkawy, the presidential aide for political affairs, in comments carried on the state news agency MENA.

"The national committee that will be formed to deal with this issue will determine the steps that Egypt has to take."

No one from the Ethiopian government was immediately available to comment.

CAUGHT ON CAMERA

Senior Egyptian politicians called in to discuss the crisis with Mursi on Monday were apparently unaware their meeting was being broadcast live on television.

The leader of Egypt's Ghad party, Ayman Nour, suggested spreading false reports that Egypt was building up its air power.

"We can 'leak' news information claiming that Egypt plans to buy advanced aircraft to increase its aerial presence etc., to put pressure, even if not realistic, on diplomatic discourse," he said.

Younis Makhyoun, leader of the Salafi Islamist al-Nour party, was filmed saying Egypt should back rebels in Ethiopia or, as a last resort, destroy the dam.

The broadcast triggered widespread ridicule, particularly among Egypt's vast army of users of social networks.

"Among Mursi's achievements: the first 'secret' meeting in the world to be aired live," read one joke that made the rounds.

Egypt has so far not apologised to Ethiopia for the broadcast - el-Sharkawy's main response on Twitter was to say she was sorry members of the meeting did not know they were being broadcast.

The most prominent expression of regret came from leading opposition figure Mohamed ElBaradei, who was invited to the meeting but did not attend.

"Sincere apologies to the people and governments of Ethiopia and Sudan for the irresponsible utterances at the president's national dialogue," he tweeted.

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

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

Cairo argues that Ethiopia has not properly considered the dam's impact on the river, saying that a report put together by experts from Egypt, Sudan and Ethiopia is insufficient. (Reporting by Shaimaa Fayed; additional reporting by Ahmed Tolba; Editing by Andrew Heavens)

"Egypt demands Ethiopia halt Nile dam, upping stakes", 05/06/2013, online at: http://www.trust.org/item/20130605200415-1pvxs/?source=hptop

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❖ Arab World: Is Egypt losing the Nile?

Egyptian politicians are enraged by Ethiopia's plans to divert the waters of the Nile and some have gone as far as calling for military action.

Egypt is still in shock over Ethiopia's May 28 announcement, in which it said it was diverting the flow of the Nile River to facilitate the building of a dam on the Blue Nile.

In the fourth century BCE, Greek historian Herodotus proclaimed Egypt the gift of the Nile – and this still resonates today. The mighty river surging from the depths of Africa to the Mediterranean, with its more than 4,000-mile course, is the lifeblood of Egypt and has made a flourishing civilization possible since the dawn of history.

Ninety-five percent of the country is relentless desert, the continuation of the Sahara, and the Nile not only water the lands it passes through, it carries loose soil taken from Africa and deposits it along its banks. In this way, it turns them into a narrow strip of fertile land – inhabiting a mere 40,000 square kilometers, or 4% of a country of 1 million square kilometers.

North of Cairo the river divides into two branches running to the sea, thus creating a delta in which most of Egypt's agriculture is concentrated.

Altogether, 96% of a population numbering an estimated 85 million people lives in the Nile Valley.

For untold generations, Egypt has been accustomed to seeing the Nile as its own property, only grudgingly allowing Sudan – which was long under Egyptian rule and considered a sister Arab country contributing to its security – to have a small part of the river's flow.

According to the treaty signed in 1929, at a time when both countries and part of Africa were under British rule, out of the 85 billion cubic meters flowing annually in the river, Egypt received 48 billion and Sudan 4 billion.

Egypt was given full control of the Nile, while African countries were forbidden to build dams on the river or its tributaries; Egypt also had the right to carry out checks to make sure that the treaty was

respected. In accordance with the treaty, Egypt still maintains today a permanent delegation of engineers stationed near Lake Victoria, source of the White Nile, to supervise the activities of the countries along the river.

In 1959, the treaty was amended so that Egypt received 55.5 billion cubic meters and Sudan 18.5, for a total of 87% of the annual flow accrued through the rains – leaving a mere 13% to the Upper Nile countries of Ethiopia, Tanzania, Uganda, Burundi, Rwanda, Kenya and Congo.

The amended treaty gave Egypt the right to build the Aswan Dam, and its Lake Nasser reservoir holds 168 billion cubic meters of water. The dam made it possible for Egypt to boost its production of electricity to 2,100 megawatts and to regulate the flow of the river, putting an end to the annual flooding that impacted Cairo and other areas. Lake Nasser is used to provide water for drinking and irrigation, thus increasing usable lands.

In this way, Egypt has remained an agricultural land and cannot envision a future with no free and steady supply of water from the Nile for its multipurpose uses. However, the past 50 years have seen changes in Africa. The growing populations of newly independent states need more and more water – drinking water, water for agriculture and for industry, water to produce electricity. For the past 10 years they have had talks on the subject with Egypt, which stubbornly refused to see the problem and forbade them from taking advantage of the river flowing through their countries. Egypt even exerted pressure on the World Bank to refrain from financing projects along the Nile, and resorted to thinly veiled threats against the countries that were considering such projects.

But the problem would not go away.

In May 2010 at Sharm el-Sheikh, proposals for a new treaty were presented to Egypt by the upstream countries.

The Entebbe Agreement they drafted created a blueprint for cooperation between all Nile River countries, which would supersede all previous agreements and provide for a new partition of the water, to answer the needs of all countries in a more equitable way.

Egypt rejected the agreement on the basis of the treaties of 1929 and 1959.

Upper Nile countries then decided to submit the Entebbe Agreement for signature to all river states so that it could be implemented within a year. Angry debates have been raging ever since.

Neither the Hosni Mubarak regime nor the army regime that followed were ready to enter into discussions with the relevant African states – which nevertheless kept on planning the dams they needed to develop their countries.

The Blue Nile, which provides 85% of the river's water, has its source in Ethiopia. The country, the largest in the region with a population set to overtake that of Egypt in the coming decades, has begun to build several dams. The best-known is the Grand Renaissance Dam, which is scheduled to hold 200 billion cubic meters in its reservoir and provide 6,000 megawatts of electricity.

Intense pressure from Egypt has not deterred Ethiopia, which insists upon developing its water resources, as Egypt clings to the position that the two treaties granted it the right to control what goes on in the river.

Suddenly, last week – following meetings between Egyptian President Mohamed Morsi and Ethiopian Prime Minister Hailemariam Desalegn – Ethiopia published the communiqué announcing that the river would be diverted to facilitate the completion of the Grand Renaissance Dam. Egyptians are offended at what they perceive as an insult, since Morsi knew nothing of the communiqué. However, on a deeper level, they feel that the very basis of their existence is being threatened.

They have yet to come to terms with the new reality in the region and the needs of other countries.

So far, Ethiopia says that there will be no change to the amount of water reaching Egypt, and that the reservoir will not start functioning until next year and will not be full before 2017.

The Egyptians do not quite believe it and are afraid that their share will be affected, since the Ethiopians will slow the flow of the river in order to fill the dam. This at a time when the individual consumption of water in Egypt has dropped to 759 cubic meters, well below the 1,000 mark recommended by the UN. Cairo is worried. While the president and sundry officials repeat that they will not tolerate attempts on their water, they say it is too early to come to the conclusion that the

Grand Renaissance Dam will affect Egypt. Instead, they want to wait for the conclusions of the tripartite commission of experts from Egypt, Sudan and Ethiopia. The commission submitted its findings last week and they are still being reviewed; further studies may be needed.

Politicians, on the other hand, are not waiting. There have issued calls for a stronger stand against Ethiopia and other Upper Nile countries; some would even want to see military action such as blasting the dam, and Islamist groups are calling for jihad against Ethiopia. Hamdeen Sabahi, leader of the Nasserist movement and a former presidential candidate, wants Ethiopia punished – by, for instance, barring its vessels from crossing the Suez Canal. Furthermore, says Sabahi, a similar measure should be extended to Italy, the US and Israel, since according to him these countries are providing the financing for the dam. It was left to the daughter of Gamal Abdel Nasser, a professor of political science, to point out that according to the Constantinople Convention of 1888, there must be free passage in the canal in times of both war and peace – and any one-sided move by Egypt would harm it and endanger the course of world navigation.

The minister in charge of irrigation has been at pains to stress that Egypt should not resort to force and that there is still time for negotiation. However, he added that there is today a deficit of 7 billion cubic meters of water, which is expected to grow – with an estimated 150 million people living in Egypt by the year 2050, and the deficit reaching 21 billion cubic meters of water. In essence, an agriculture minister would see the building of the dam as akin to using armed force against Egypt.

To make matters worse, Sudan, which Egypt considered its staunchest ally on the Nile issue, has apparently come to the conclusion that it would not be harmed by the dam – though some argue that Sudan wants to take advantage of the situation, to force Egypt to be more accommodating regarding the vast, disputed Halayeb and Shalatan territories on the Red Sea. (While ruled by Egypt, Sudan claims them for its own.) Ultimately, however, the fact is that due to its copious rainfall, Sudan does not lack water, while Egypt is entirely dependent on the Nile.

As is always the case with Egypt, Israel is accused of a variety of sins: inciting Ethiopia against Egypt, and even granting agricultural assistance to Ethiopia and thus increasing that country's need for water. Of course, Egyptians are conveniently forgetting that they themselves were the recipients of Israel's technology in the '80s and '90s, and that it was thanks to that help that they were able to

grow crops in the light desert soil. Egyptian agriculture today is based on such Israeli techniques as drip irrigation, and on Israeli varieties of fruits and vegetables. Thousands of young Egyptians trained at Kibbutz Bror Hayil, where they learned how to cultivate the soil and save precious water.

The fact is that the writing was on the wall. Egypt had years and years during the Mubarak regime to enter into discussions with Upper Nile states with a view toward reaching an agreement. Both Egypt and the Nile states needed increasing amounts of water for their development, and cooperation and a change in the existing treaties were needed. Unfortunately, the press was not free to publish studies on the subject, which would have been considered detrimental to Egypt.

Yet, while some 1,600 billion cubic meters of rain fall annually on the Nile Basin area, a mere 85 billion eventually reach the river; some of the water evaporates as swampy areas appear and slow the flow. A concerted effort of all neighboring countries financed by the World Bank would considerably increase the amount of water in the river. Thus far, however, nothing has been done and Egypt is still in a state of denial, with Egyptian diplomacy suffering a serious blow.

The questions remain: Can the troubled country, threatened by a potential agricultural disaster and widespread famine, understand that now is the time to enter into serious negotiations? Has it understood that only a fair and equitable solution, taking into consideration the legitimate needs of all Nile countries, will end the crisis in time?

"Arab World: Is Egypt losing the Nile?", 06/06/2013, online at: http://www.jpost.com/Features/Front-Lines/Arab-World-Is-Egypt-losing-the-Nile-315765

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❖ Experts claim govt committee over Ethiopia dam flawed

Water resources experts accused, on Thursday, Prime Minister Hesham Qandil of excluding certain experts from a government-formed committee which studied the consequences of constructing the Ethiopian Renaissance Dam.

Nader Nour Eddin, a professor of Water Resources at Cairo University's Faculty of Agriculture, said that the government excluded irrigation experts, who warned against Ethiopian dams, from the committee.

Nour Eddin accused Qandil of failing to address the dam issue. Nour Eddin added that Qandil was a member of the former Irrigation Minister Mahmoud Abou Zaid's team when Ethiopia built its first dam over the Tekeze River, which joins the Atbarah River in Sudan. The Atbarah River is a tributary of the Nile.

Water resources management expert Hesham Abdel Ghani, claimed that the Prime Minister excluded some national experts in the committee because they hold different points of view. He said that the committee does not include any expert in the field of dams.

A source at the Irrigation Ministry said that Qandil refused to seek the help of certain experts, who gave lectures a month ago at Cairo University, and who gave TV interviews warning of the negative effect of the dam.

The list of experts excluded from participating in the committee, according to the source, includes Alaa al-Zawahiri, Nasr Allam, Nader Nour Eddin and Mohamed Shawky Abdel Aal.

"Experts claim govt committee over Ethiopia dam flawed", 06/06/2013, online at:
http://www.egyptindependent.com/news/experts-claim-govt-committee-over-ethiopia-dam-flawed

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❖ Egypt escalates war of words with Ethiopia

Islamic parties call for unity, dialogue in face of 'Ethiopian threat' while Cairo warns that all options are on the table

Thirteen Islamist political parties in Egypt convened Wednesday at the Muslim Brotherhood's Freedom and Justice Party headquarters in Cairo to reduce the broad political polarization plaguing the country and plan a course of action to deal with Ethiopia's Grand Renaissance Dam project, Arab dailies lead off.

The Doha-based media network **Al-Jazeera** reports that the parties agreed that there is a "real need for coordination between all national forces, and especially within the Islamic forces" in order to assume responsibility for the threats the country faces. The Islamic parties apparently vowed to cooperate with all political forces and partners at home, stressing that dialogue among all factions and institutions of the state is the only way to settle any differences of opinion.

The leadership of the National Salvation Front, the leading opposition movement in Egypt that comprises mostly left-wing and secular parties, was not invited to the meeting.

Regarding the Nile water crisis, the Islamic parties confirmed their full support for the state "to use all options to safeguard Egyptian rights." Since Ethiopia began construction on the dam a week ago, Egypt has become ablaze with hostility.

"Egypt should not even consider entering into negotiations with Ethiopia until the Ethiopians halt all construction on the dam," says Dr. Amr Hamzawy, a political science professor at Cairo University, in an interview with the Doha-based media channel **Al-Arabiya**. "Egypt should not be forced to sacrifice even one drop of water. Ethiopia must respect Egypt's interests."

Dr. Hamzawy stresses that over the past few years, when active negotiations were under way between the two countries to determine the future effects of the Grand Renaissance Dam, Ethiopian negotiators deliberately misled their Egyptian counterparts.

As a result, Egypt is refusing to sign the Cooperation Agreement Framework, a formal understanding between the 10 Nile Basin countries to re-work the allocation of the Nile River's resources. In addition to Egypt, Sudan, South Sudan, and the Democratic Republic of Congo have also refused to sign the agreement.

"Egypt will not tolerate any drop in its existing Nile resources," asserts Egypt's Minister of Irrigation Mohammed Bahaa El Din to the London-based pan-Arab daily **Al-Hayat**.

According to the minister, Egypt's argument rests on the fact that since 1959, Egypt has not demanded access to any additional Nile River resources, despite the fact that its population has more than tripled. Mr. El Din did not mention that the populations of many of the other Nile Basin countries have also grown dramatically.

In an op-ed in the London-based **Al-Quds Al-Arabi** entitled "Egypt threatens Ethiopia with war," the outspoken Abdel Bari Atwan writes that Egyptian military action against the Ethiopian dam would be perfectly reasonable if the Ethiopians refuse to cease construction on their own.
"This is a matter of life and death (for Egypt)," says Atwan. "The Egyptian public unanimously supports the Egyptian government's orientation on this issue of whether to declare war because it knows that a reduction of their Nile resources would mean death."

However, help may actually be on the way. The Saudi-owned **Al-Sharq Al-Awsat** states that on Tuesday a group of Saudi businessmen met with Egyptian Prime Minister Hisham Qandil to discuss investing in desalination and treatment plants. Saudi Arabia is known for being cautious in its dealings with the Morsi administration, which it looks at with suspicion.
Still, any potential investment by Saudi businessmen would be welcome in debt-ridden Egypt. The crisis over Ethiopia's dam notwithstanding, Egyptians frequently experience severe power outages and fuel shortages due to the sheer consumption needs of Egypt's population of 80 million.

What threatens to derail any potential investment though is the continuing decline of Egypt's capital market. The Egyptian Stock Exchange remains in free fall, having reached its lowest level in two months.

While President Morsi may be able to distract the public for the time being from the country's economic woes by propagating impending doom due to Ethiopia, his grip on power may be further threatened if the economy continues to sputter.

"Egypt escalates war of words with Ethiopia", 06/06/2013, online at: http://www.timesofisrael.com/egypt-escalates-war-of-words-with-ethiopia/

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❖ Internal Divide Distracts Egypt From Protecting Its Share of Nile

Months before the Egyptian revolution, former President Hosni Mubarak's regime began to feel the effects of Egypt's absence from Africa and the outcome of the marginalization of its role in the Nile Basin.

In May 2010, the Nile countries signed a new treaty in Entebbe, Uganda, about sharing the Nile river's resources. This treaty indirectly aimed at reassessing the Nile water shares allocated to the river's two downstream countries, Egypt and Sudan.

Back then, Egypt described this treaty as "a violation of international law and the rules in force on the part of donor parties," and confirmed that it will address the other donating parties and alert them to the illegality of financing water projects — be they on the course of the Nile or its sources — that would adversely affect the water security of the two downstream countries.

The Egyptian revolution, however, surprised everyone, and it moved the Egyptian state and society to a state of revolution, chaos and cultural and political division. The transitional phase of the military failed, and the president-elect failed to take the country from revolutionary to constitutional legitimacy. He failed to establish institutions to support the effectiveness of the state and enable it to perform its functions both at home and abroad.

In this context, Ethiopia hastened to build the Renaissance Dam before Egypt recovers and acquires effective tools at the political and security levels in Africa. Meanwhile, the dam was marketed politically and in the media to achieve internal political integration in a multi-ethnic country. Thus, the project was put forth as a national challenge and a necessary means to modernize and develop Ethiopia.

The truth is that the construction of the Renaissance Dam on the Blue Nile raises geopolitical issues rather than water, economic or geological issues. Ethiopia is not in real need for the establishment of four dams, including the Renaissance Dam, whose planned capacity was once 14.5 billion cubic meters [124 billion US barrels] and has risen to 74 billion cubic meters. Moreover, the electrical energy generated from the dam surpasses Ethiopia's electricity needs.

More importantly, there are no available resources to finance the dam. The cost of the Renaissance Dam is estimated at around $4.8 billion, and may reach $7 billion. In addition, and supposing that the construction of the dam is completed, it will transfer the storage capacity of Lake Nasser in Aswan to

Ethiopia, which practically puts Ethiopia — according to water experts — in control of Egypt's share of the Nile water, estimated at 55.5 billion cubic meters. Moreover, this would stop the electricity generators of the High Dam from working and would keep Egypt from planting 2 million acres (about a fifth of the agricultural area) of its best agricultural land.

There is no doubt that this situation threatens Egypt's national security and could put vast areas of Sudan under water in the event of the collapse of the dam, due to the presence of geological hazards specific to the nature of the land upon which the dam will be constructed. Additionally there is an absence of feasibility studies, which puts it at risk of collapse.

The risks of the Renaissance Dam are greater than its benefits for Egypt and Sudan. Yet, Egypt, which is divided between those supporting the authorities and others supporting the opposition, does not have a new vision for its policy in Africa, nor the ability to move and act effectively in order to regain its role and prestige — which were built by late President Gamal Abdel Nasser in the 1950s and 60s — by providing all types of support to movements for national liberation, combating racism and seeking to unify and develop the continent.

Paradoxically, under the rule of former presidents Anwar Sadat and Mubarak, Egypt turned away from this role. Over the years, Egypt's moral and material balance among African countries was depleted. Unfortunately, the post-revolution authorities did not consider the dangers of this, the risks of the Ethiopian Renaissance Dam, or [the issue] of South Sudan joining the Entebbe Agreement.

The Egyptian opposition and authorities also did not make any serious attempts last year to overcome the severe polarization and political conflict, preserve Egypt's higher interests or proceed with joint action that brings together all parties in the conflict in order to face the first political crisis threatening Egypt's national interests abroad.

In my estimation, the regime played the biggest role in this failure. It has inherited a heavy legacy of internal and external problems. Yet, it sought to monopolize, dominate and distance the civil forces from participation, despite its electoral promises, and despite the fact that the experience of countries throughout the world that have shifted toward democracy illuminates the importance of joint political action to achieve success. On the other hand, the new regime's incompetence and concerns with other priorities linked to ideological illusions about "empowerment" and "Islamization" have pushed it away from fast action, which made its movements slow and ineffective. Addis Ababa announced the decision to divert the course of the Blue Nile two days after President Mohammed Morsi visited

Ethiopia, and after he listened to verbal, non-written or binding promises of adhering to the interests of Egypt and ensuring the inviolability of Egypt's share of the Nile waters.

Threatening Egypt's water security has multiplied Egyptian fears and anger for the future and the competence of the rule. The opposition succeeded in exploiting the Ethiopian escalation and the government's confusion and poor performance in transforming the crisis into a public opinion issue. This means that the water crisis has become an issue in the conflict and polarization between the government and opposition, which is a very negative indicator. On Sunday [June 2], the president called on Islamist parties and figures to meet in order to discuss the Renaissance Dam crisis, the constitutional court's decision and the situation in the Sinai peninsula and Syria. Then, last Monday [June 1], he called on the opposition, Islamist parties, and representatives of Al-Azhar and the Coptic Church to discuss the crisis. This showed the discrimination in the way the president deals with Islamist force — his allies in government — and the civil and opposition forces.

Consequently, most leaders of the National Salvation Front refused to participate in the meeting, which turned into a television show broadcast live without informing the participants. The meeting did not result in any decision, though, despite the numerous demands to form a crisis team that includes specialists to study the crisis and the legal and political escalation methods, and despite the presence of highly qualified experts and technicians from the Egyptian Irrigation and Water Faculty. It is noteworthy that the political identity of those experts must not be regarded, and nobody should be singled out due to their being *fuloul* — remnants of the Mubarak regime. Instead, knowledge and experience should be prioritized over political history or ideological inclinations, since the issue at stake is one of national security. Morsi had and still has the chance to effectively unite the people to face the water crisis from which Egypt has been suffering. The water deficit is estimated around 7 billion square meters yearly, and it is expected to rise by 2050, when the population reaches around 140 million.

However, the president's meeting with some parties was disappointing and reflected doubt and an inability to manage the crisis. It also revealed two things:

- First is the superficiality and ridiculousness of some of the ideas and suggestions put forth in the meeting, unveiling the lack of experience of the new political elite supporting the president and their miscalculation regarding the gravity of the crisis and its relation to Egyptian national security.
- Second is the president's inefficiency in building real national unity regarding national security issues in the Sinai or water security. The president met with the representatives of political

parties, Al Azhar and the Coptic Church several times in the past to face the crises, the last being the abduction of soldiers in the Sinai, followed by the water crisis. Yet, the adopted strategies never hung on long enough. Thus, the trust gap between the presidency and the opposition widened, and many saw this as an indication that the president is prioritizing festivals and speeches over public interest. Egypt's role and position continue to wane. The cultural division and the political and legal conflicts are blinding both the regime and the opposition and impeding them from looking out for the best interests of the country. Equally, they are not able to foresee the near future of the political regime, which stepped into a labyrinth that resulted from the decisions of the Supreme Constitutional Court in regard to the legality of the Shura council, the Constituent Assembly charged with drafting the constitution and the parliamentary elections.

Contrary to this clouded constitutional approach, the Tamarrud youth movement is on the rise to withdraw confidence from the president and call for new presidential elections.

In all cases, we can shed light on three phenomena. The first is the nonchalance of the masses toward the political elites in the government and the opposition, their rebellion against all forms of authority and their engagement in chaotic behavior. The second is the responsibility of those elites for the failure that turned the revolution into chaos, thus weakening the Egyptian state, its power and its international, Arab and African influence. The third is the increased nostalgia for Mubarak's era and the desire to bring the army back to power.

"Internal Divide Distracts Egypt From Protecting Its Share of Nile", 06/06/2013, online at: http://www.al-monitor.com/pulse/politics/2013/06/egypt-water-security-regional-issues.html

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❖ Water, the Nile and war

A drop of water may these days result in military confrontations especially if there is a failure of diplomatic negotiations in various regions of the world. The surprising thing is that the conflict is taking place in areas which are rich in water resources while you do not hear a whisper from the countries that have a poor supply of this precious liquid. However, I do not totally dismiss the possibility of revolutions in these regions if there is a long period of drought.

According to water experts, the amount of rain falling inside the Nile Basin is about 1,660 cubic meters annually of which only about four percent are exploited including Egypt's quota which has remained unchanged for more than 50 years. The remaining rainwater is either evaporated, lost in the jungle or goes to the sea.

A report issued by the Center of Information and Decision Support of the Egyptian Council of Ministers said the country's need for water will exceed its water resources by 2017 due to population growth and the expansion of development projects. The report said Egypt's annual water needs that year will rise to 86.2 billion cubic meters from the current 71.4 billion cubic meters.

According to the report, Egypt is now below the water poverty line. The quota of water for an individual is now 860 cubic meters every year while the poverty line starts from 1,000 cubic meters annually.

The vein of life

Egypt is also one of the countries which is poor in rainwater, and its underground water is also limited. This is in addition to the evaporation of water from Nasser Lake which has been formed from the excess of Sudan's water quota. The strategic water storage in Nasser Lake may dwindle as a result of Sudan's expansion in the establishments of dams, the latest of which is the Marawi Dam which has been constructed in the Nuba region in the north.

The Nile which is the vein of life for Egypt has been at the top of the country's strategic priorities since Egypt and Sudan were one country under British colonial rule. Egypt and Sudan have tried to establish distinctive ties with the countries of the Great Lakes, which represent the source of the Nile, through technical assistance, field services, agreements and bilateral or group accords.

Britain signed an agreement on behalf of Egypt in 1929 with the source countries and in 1959, independent Egypt signed an agreement with the Nile Basin countries which included an article about water security forbidding all the source countries from establishing projects on the Nile without consulting Egypt and Sudan.

Egypt's quota of Nile water was decided by a number of agreements and accords including the Addis Ababa Accord of 1902, the London Agreement of 1906, the 1925 Agreement between Britain and Italy and the 1959 Agreement between Egypt and Sudan.

An Israeli-African attack?

Ethiopia is the most important source country for Egypt due to the amount of water pouring from it into the Blue Nile. Regardless, Egypt has no binding agreement with Ethiopia on Nile water except the one signed in 1902 between Britain (which was in charge of both Egypt and Sudan at the time) and Italy which was responsible for Abyssinia. This agreement made it clear that Abyssinia should not undertake any works on Lake Tana or the Blue Nile that might adversely affect the water quota of Egypt or Sudan. In 1993, Egypt signed a cooperation agreement with Ethiopia stipulating the fair sharing of Nile water and the respect of the quotas of all the Nile Basin countries.

However, Ethiopia is now unilaterally undertaking some works that might adversely affect the water quotas of both Egypt and Sudan. Ethiopia is currently constructing the Grand Ethiopian Renaissance Dam with the support of Israel which has been given the right to market the electricity generated from the dam. Ethiopia said when Egypt and Sudan signed a bilateral agreement in 1959 to organize their water quotas, they did not consult it or any other Nile Basin country. Under this pretext, Ethiopia built a number of dams including the Tekeze Dam on River Tekeze which holds more than nine billion cubic meters of water and generates about 300 megawatts of electricity. This dam may reduce the water quotas of both Egypt and Sudan. Furthermore, it is always possible that Ethiopia may construct more dams and projects that might affect the water quotas of Egypt and Sudan.

It is obvious that Egypt is being subjected to an Israeli-African attack aimed at reducing its water resources. Israel's machinations whether in the open or behind closed doors may drag the countries of the Great Lakes into a devastating war.

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Serious diplomatic efforts are underway to contain the differences between Egypt and Ethiopia over the water of the Nile. If these efforts fail, Egypt might go to the International Court of Justice. In a ruling issued in 1989, the court considered the water agreements to be similar to border agreements which could not be altered or amended. Egypt and Ethiopia must respect their bilateral agreements and come to a mutual understanding on the use of Nile water otherwise the alternative will be war which no one wants.

"Water, the Nile and war", 08/06/2013, online at: http://english.alarabiya.net/en/views/news/middle-east/2013/06/07/Water-the-Nile-and-war-.html

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❖ Egypt: Fears Grow Over Ethiopia Dam Plans

Ethiopia begins diverting a stretch of the Nile River, as Egypt suggests it is prepared to fight to keep its water flowing.

Egypt is not ruling out military action against a controversial dam being built along the Nile River in Ethiopia, but says it wants to explore diplomatic channels to resolve the dispute.

On Monday, senior Egyptian politicians were caught on camera discussing whether to destroy the dam which, they say, could threaten Egypt's existence.

Now, President Mohammed Morsi's foreign policy adviser, Essam Al Haddad, has told Sky News: "It would not be totally acceptable to talk about the military option if you did not explore other options."

However, Dr Haddad went on to say: "It is a matter of life for Egypt. We cannot live without the Nile, it is a bloodline for us … there is no right for one society to develop something which harms another society."

Ethiopia set the alarm bells ringing in Cairo last week when it began diverting a stretch of the river to make way for a $7bn (£4.5bn) hydroelectric plant.

The waters of the Nile have been argued over for decades and analysts have repeatedly warned that the disputes could result in war.

This week, several high level Egyptian politicians, unaware that TV cameras were still broadcasting their comments live, discussed what to do about the Ethiopian action.

The leader of Egypt's Ghad party, Ayman Nour, suggested leaking false reports that Egypt was building up its air power; the leader of the Salafist party even suggested bombing the dam.

Now, Dr Haddad has told Sky News: "No official (from government) has been saying this. You are talking about a meeting of political figures from all the spectrum of Egyptian politics. This does not mean it is an official stance; to the contrary, we go through the legal proceedings and the political and diplomatic channels.

"We are willing to share our burden of building the dam, provided the studies are robust enough to make sure they are not affecting the environment or the water resources, the quality and quantity of water reaching our territory."

Earlier, Mr Morsi's political adviser told the state news agency Mena: "Demanding that Ethiopia stop construction of the dam in plans to build in the Blue Nile will be our first step." Another adviser said: "All options are open."

The centrepiece of Ethiopia's plan to dominate control of the Nile waters is the Grand Renaissance Dam in the region bordering Sudan.

It is 21% completed and, when finished, the Ethiopian government says it should have a 6,000 megawatt capacity, equivalent to six nuclear power stations.

"Egypt: Fears Grow Over Ethiopia Dam Plans", 06/06/2013, online at: http://news.sky.com/story/1100287/egypt-fears-grow-over-ethiopia-dam-plans

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❖ Ethiopia summons Egypt's envoy

Demands explanation after comments from politicians suggesting attack on dam

Addis Ababa: Ethiopia's Ministry of Foreign Affairs said on Thursday it is demanding an official explanation from Egypt after comments from politicians suggesting Egypt attack or sabotage a Nile River dam Ethiopia is building.

Dina Mufti, a spokesman for the ministry, said that Egypt's ambassador to Ethiopia has been summoned to explain the "hostile remarks." The spokesman said Ethiopia is awaiting a response.

Ethiopia a week ago started diverting the flow of the Nile River to make way for its $4.2 billion (Dh15.4 billion) hydroelectric plant, dubbed the Grand Ethiopian Renaissance Dam. Egypt fears the dam will mean a diminished share of the Nile River.

Egyptian political leaders who met their president on Monday proposed aiding rebels against the Addis Ababa government. Sabotaging the dam itself was also mentioned by politicians who appeared not to know their meeting was being televised.

"Ethiopia summons Egypt's envoy", 08/06/2013, online at: http://gulfnews.com/news/region/egypt/ethiopia-summons-egypt-s-envoy-1.1194317

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❖ Ethiopia, Egypt argue about dam project

ADDIS ABABA, Ethiopia, June 7 (UPI) -- Ethiopia caused tensions with Egypt by diverting water from a Nile River tributary to build a hydroelectric power plant and dam, observers said.

Ethiopia began rerouting water from the Blue Nile last week for the $4.7 billion project, the Great Ethiopian Renaissance Dam.

The project is expected to be completed by 2017.

Although the construction started two years ago, tensions between Egypt and Ethiopia over the dam are just now becoming public, Voice of America reported.

Last week, Egypt's government said it did not approve of the building of the dam.

A spokesman for the Ethiopian Ministry of Foreign Affairs, Dina Mufti, said the country will not consider halting the construction.

Egyptian politicians were overheard on a live broadcast discussing ways to sabotage the project, Voice of America said.

Ethiopia demanded an explanation from the Egyptian ambassador this week.

"We are caught by surprise because some government officials, party leaders and civil society leaders, they were talking about Ethiopia violently and we were surprised. We are waiting for this tone to be watered down very soon," Mufti said.

"Ethiopia, Egypt argue about dam project", 07/06/2013, online at: http://www.upi.com/Top_News/World-News/2013/06/07/Ethiopia-Egypt-argue-about-dam-project/UPI-19101370612531/

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❖ Panel report: Nile dam won't affect Egypt

Egypt in the past has threatened to go to war over its 'historic rights' to Nile River water

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

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

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

A week ago, Ethiopia started diverting the flow of the Nile to make way for its $4.2 billion (Dh15 billion) hydroelectric plant dubbed the Grand Ethiopian Renaissance Dam. The project is currently about 21 per cent complete, he said.

The experts' report was submitted to the three countries on Friday, the official said.

The experts, especially from Egypt, expressed concerns on the possible environmental impacts of the dam, recommending a further extensive environmental impact assessment study, he said.

Another concern is the safety of the dam, the official said, though the major concern remains whether the flow of the river will be affected to by filling the dam's reservoir

The Ethiopian Ministry of Water and Energy said it will carefully consider recommendations of additional assessments and proposals "that would help the basin countries benefit better from the dam."

The dam has been under construction for over two years on the Blue Nile River in Ethiopia's Benishangul-Gumuz region near a Sudanese border.

On completion it is expected to produce 6,000 megawatts which will make it Africa's largest hydroelectric power plant. It is also expected to have a large reservoir of around 70 billion cubic metres which is scheduled to start filling next year.

Ethiopian Minister of Water and Energy Alemayehu Tegenu told the Associated Press that Egypt should not worry about a diminished water share from the Nile.

"We don't have any irrigation projects around the dam. The dam is solely intended for electricity production ... So there should not be any concerns about a diminished water flow," Alemayehu said.

"Even during the period when we would be filling the reservoir, we are going to employ a careful and scientific water impounding technique to make sure the normal flow is not significantly affected," the minister added.

Eighty-five per cent of Nile waters originate in Ethiopia yet the East African nation thus far utilises very little of those waters and the country has become synonymous with famine.

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

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

Ethiopia is leading six nations threatening to sign a new cooperation agreement without Egypt and Sudan, effectively taking control from Egypt of the Nile, which serves some 238 million people. Ethiopia says it is funding the massive project on its own, urging citizens to buy bonds that earn five or six per cent interest. Norway's *Development Today*magazine quoted Kjetil Tronvoll of Oslo's International Law and Policy Institute as saying that government employees are being pressed to donate one month's salary to the dam and, when people protested, they were arrested.

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

Ethiopian authorities have detained another reporter for covering evictions near the construction of a massive hydroelectric, the CPJ said on Thursday.

"Panel report: Nile dam won't affect Egypt", 03/06/2013, online at: http://gulfnews.com/news/region/sudan/panel-report-nile-dam-won-t-affect-egypt-1.1191990

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❖ Morsi to Al-Ahram: Egypt will not risk losing 'single drop' of Nile water

In exclusive statements to Al-Ahram, President Morsi stresses Egypt's insistence on maintaining traditional share of Nile water while also stressing country's interest in maintaining friendly relations with African states

In an interview with state daily Al-Ahram published late Thursday evening, Egyptian President Mohamed Morsi said that, while Egypt had a "keen interest" in maintaining friendly relations with African states – especially Sudan and Ethiopia – it was also keen not to risk losing a "single drop of Nile water."

The president's statements came following last week's move by the Ethiopian government to divert the waters of the Blue Nile in advance of building its planned Renaissance Dam, the prospect of which has worried Egyptian officials and politicians regarding the dam's possible effect on Egypt's share of Nile water.

"The operational strategy is to communicate with Ethiopia, its government and its people, to prevent any harm from befalling Egypt's share of Nile water or that of our Sudanese brothers," Morsi stated in the interview.

When the president was asked if current negotiations only aimed to reduce possible harm to Egypt, Morsi asserted ("angrily," according to Al-Ahram) that Egypt's position on the subject emanated from the desire to ensure that Egypt's allotment of Nile water wasn't affected and that no harm whatsoever occurs.

Morsi hinted at the complicated nature of the issue, saying that "a lot of details are involved" and that information regarding the dam from the Ethiopian government remained "insufficient."

A trilateral technical committee – consisting of experts from Egypt, Sudan and Ethiopia – announced this week that its long-awaited report was "inconclusive" as to the planned dam's effects on Egypt and Sudan.

The Ethiopian government nevertheless issued a statement saying the dam would not impact Egypt's traditional share of Nile water, which – according to a colonial-era agreement and another 1959 treaty – currently stands at an annual 55 million cubic metres.

The Ethiopians are "Egypt's friends," who should look after its interests, said Morsi, stressing that Egypt in turn "will not allow itself to harm a friend, and therefore we don't speak of thwarting the development of a friendly state."

He concluded with the assertion: "The Nile is the lifeline and the axis of development for coming generations."

On Thursday, an Egyptian presidential aide told state news agency MENA that Egypt was planning to officially demand a halt to the Ethiopian dam project.

However, an Ethiopian government spokesman told AFP Thursday that construction of the dam would go on, adding that Ethiopia had invited Morsi for talks, which would not include the option of halting the project.

Downstream Egypt enjoys the lion's share of Nile water compared to upstream countries. Nile water treaties signed by Egypt allow it to veto any upstream projects planned by Nile Basin states.

Egypt's traditional allotment of Nile water was challenged in 2010 when a new water-sharing agreement was signed between six upstream states, including Ethiopia.

"Morsi to Al-Ahram: Egypt will not risk losing 'single drop' of Nile water", 06/06/2013, online at: http://english.ahram.org.eg/NewsContent/1/64/73387/Egypt/Politics-/President-Morsi-to-AlAhram-Egypt-will-not-risk-los.aspx

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❖ Ethiopia: Halting Dam's Construction Unthinkable

ADDIS ABABA — Tensions between Egypt and Ethiopia are rising after Ethiopia began diverting the water of a Nile River tributary to build the continent's biggest hydroelectric power plant. Despite criticism from Egypt, Ethiopia says construction of the dam will proceed.

Ethiopia summoned the Egyptian ambassador this week to demand an explanation after Egyptian politicians were overheard on a live broadcast discussing ways to sabotage the Great Ethiopian Renaissance Dam.

The spokesperson of the Ethiopian Ministry of Foreign Affairs, Dina Mufti, says Ethiopia is surprised by the tone of Egyptian officials.

"Whether those propaganda that are coming from that corner are the government's position or not, we have asked for verification. We are caught by surprise because some government officials, party leaders and civil society leaders, they were talking about Ethiopia violently and we were surprised. We are waiting for this tone to be watered down very soon," said Dina Mufti.

Egyptian concerns

Ethiopia started diverting a part of the Blue Nile last week for the construction of the $4.7 billion dam. The dam, scheduled to be completed by 2017, will transform Ethiopia into Africa's biggest power producer.
While the construction started almost two years ago, it was not until last week's diversion that tension between Egypt and Ethiopia broke into public view. The government in Cairo said it has not approved the building of the dam, and vowed to prevent the dam from reducing Egypt's water supply.

Dina says Ethiopia will not consider halting the construction of the dam.

"The halting of the construction is unthinkable. We hear two voices; one is a very backward voice of the 19th century. And there is another voice, with sanity, also a voice that is looking for corporation, for good relationship. So we hope the sane voice will prevail," said Dina.

Both Egypt and Ethiopia are part of the Nile Basin Initiative, a group of nine countries that have agreed to "develop the river in a cooperative manner."

An international panel of experts released a report last weekend, concluding that construction of Ethiopia's dam will not harm downstream countries such as Sudan and Egypt. But the conclusions of the report did not convince Egypt.

Fear of military action

The words of some Egyptian leaders and the media sparked fears about possible military actions. Nile expert Wondwosen Michago says other scenarios are more likely to happen before any type of army intervention will take place:

“The first scenario for me is resorting to the Nile Basin Initiative, coming to the roundtable and discussing under the umbrella of the Nile Basin Initiative. The other scenario is accepting the international panel of experts' reports. The other one is, as some people say, going to the international courts and putting that on the table," said Wondwosen Michago.

Mehari Taddele Maru, an international consultant based in Ethiopia, says military action is highly unlikely. But he believes the dam would be the first target if the situation were to escalate.

"If bombing happens, basically Egypt would bomb the dam. That is probably the clear target they may have. Or send a commando, some Wikileaks stuff has indicated, to try to destabilize the area where the dam is. And the response from Ethiopian side would also similarly be to use air force and to inflict as many attacks as possible on Egyptian interests," he said.

Ethiopian officials would not say whether the country has increased security around the dam. They said only that they are following the rising tensions with Egypt closely and carefully.

“Ethiopia: Halting Dam's Construction Unthinkable”, 06/06/2013, onlnie at: http://www.voanews.com/content/ethiopia-halting-dam-construction-is-unthinkable/1676585.html

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❖ French water companies keen on engaging with Middle East's decision makers during IWS 2014

International Water Summit (IWS) team highlighted opportunities for French water companies as it took its international road show to France. French water companies keen on engaging with Middle East's decision makers during IWS 2014

In light of the rising water demand of arid regions including the Middle East, the IWS road show seeks global collaboration to promote sustainable water resource management solutions to tackle water scarcity problems in the region.

The second stop of the road show was held at the headquarters of UBIFRANCE, the French Agency for international business development. It was well-attended by representatives of 14 top French companies and officials from the French embassy in the UAE, who came together to explore opportunities for developing the water-scare region's water infrastructure.

Keen on engaging with the Middle East region's decision makers, French water technology providers also expressed interest in strengthening its market-hold in the UAE through IWS 2014.

International Water Summit 2014 will be held in Abu Dhabi from 20-22 January, co-located with World Future Energy Summit, hosted by Masdar, as a part of Abu Dhabi Sustainability Week (ADSW), a global platform that addresses the interconnected challenges that affect the widespread acceleration and adoption of sustainable development and renewable energy.
The largest gathering on sustainability in the history of the Middle East, ADSW encourages actionable outcomes to carve a pathway toward sustainability worldwide.

After a successful participation in the first edition of IWS, UBFRANCE has confirmed its participation at IWS 2014. Highlighting the significance of IWS 2014, Jean-Francois GOUMY, Head of Department - Environment, Energy and Chemical Industries at UBFRANCE, said, "The UAE and its capital city - Abu Dhabi, share a successful and long-standing history of trade, business and investment ties with French water companies. IWS provides French water technology companies

with an ideal platform to steadily build upon this relationship and explore additional opportunities in the UAE and GCC."

France leads the world in water quality management and water treatment technologies and systems, an area of opportunity in the Middle East for French water solution providers. Ara Fernezian, Divisional Managing Director - UAE at Reed Exhibitions, said, "The GCC is a thriving economy that is investing to meet its growing water demands. The water and waste-water infrastructure market alone is valued at USD 9 billion , a lucrative business opportunity for French companies to establish in Abu Dhabi and cater to the region's needs."

Outlining opportunities for French water experts to partake in Abu Dhabi's groundwater management and agricultural water conservation efforts, Fernezian added, "Abu Dhabi aims to improve irrigational efficiency to reduce water consumption in Abu Dhabi's farms by 40%. To tackle water-shortage problems, the city is also investing in groundwater monitoring, protection and recharge schemes as well as conservation campaigns for end consumers. To help achieve these objectives, we welcome French experts to IWS 2014 to share their learning and best-practice in drought prevention."

To encourage dialogue and international cooperation at the International Water Summit 2014, the road show that began in Japan last month, will now travel to Switzerland, Germany, Netherlands, Singapore, USA and UK.

The 2nd IWS in 2014 will continue to garner strong local support from partners such as the Ministry of Environment and Water, Abu Dhabi Water and Electricity Authority (ADWEA), Environment Agency-Abu Dhabi (EAD), Abu Dhabi Sewerage Services Company (ADSSC) and Regulation and Studies Bureau (RSB).

“French water companies keen on engaging with Middle East's decision makers during IWS 2014”, 03/06/2013, online at: http://www.ameinfo.com/french-water-companies-keen-engaging-middle-344140

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❖ Two countries, two droughts, two outcomes — how Israel wins

Conquering Mother Nature, not each other.

A study in contrasts.

A parched Syria turned to war, scholar says, and Egypt may be next

In 2007, after years of population growth and institutional economic stagnation, several dry years descended on Syria. Farmers began to leave their villages and head toward the capital. From 2007-2008, Sofer said, over 160 villages in Syria were abandoned and some 250,000 farmers – Sofer calls them "climate refugees" – relocated to Damascus, Aleppo and other cities.

The capital, like many of its peer cities in the Middle East, was unable to handle that influx of people. Residents dug 25,000 illegal wells in and around Damascus, pushing the water table ever lower and the salinity of the water ever higher.

This, along with over one million refugees from the Iraq war and, among other challenges, borders that contain a dizzying array of religions and ethnicities, set the stage for the civil war.

Tellingly, it broke out in the regions most parched — "in Daraa [in the south] and in Kamishli in the northeast," Sofer said. "Those are two of the driest places in the country."

Professor Eyal Zisser, one of Israel's top scholars of Syria, agreed that the drought played a significant role in the onset of the war. "Without doubt it is part of the issue," he said. Zisser did not believe that water was the central issue that inflamed Syria but rather "the match that set the field of thorns on fire."

Not through violence and conquest, but through innovation, **How Israel beat the drought**:

Until a couple of years ago, Israeli radio and TV regularly featured commercials warning that the country was "drying out."

In one of the most powerful TV ad campaigns, celebrities including singer Ninet Tayeb, model Bar Refaeli and actor Moshe Ivgy **highlighted the "years of drought"**and the "falling level of the Kinneret." As they spoke plaintively to camera, their features started to crack and peel — like the country — for lack of moisture….

But for Israel, for the foreseeable future, [Israel Water Authority head Alexander] Kushnir says, the water crisis is over. And not because this happens to have been one of the wettest winters in years. Rather, he says, an insistent refusal to let the country be constrained by insufficient natural water sources — a refusal that dates back to David Ben-Gurion's decision to build the National Water Carrier in the 1950s, the most significant infrastructure investment of Israel's early years — led Israel first into large-scale water recycling, and over the past decade into major desalination projects. The result, as of early 2013, is that the Water Authority feels it can say with confidence that Israel has beaten the drought….

"Use any superlatives you like," urges Kushnir, to describe the fact that, today, "over 80% of our purified sewage goes back into agricultural use. The next best in the OECD is Spain with 17-18%. It's so justified energy-wise, and environmentally as well."…

The solution was desalination, on a major scale — the third phase in a water revolution that had begun with the water carrier and continued with recycling….

"We're not the world's biggest desalinators," notes Kushnir, "but no one has made the shift so fast to a situation where half of its water needs are filled from 'artificial' sources. And it means we are now ready for the next decade, without dramatic dependence on rainfall fluctuations."

Israel now is on the verge of **becoming a water exporter**:

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

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

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

Too much water in the Middle East? That's a good problem to have.

And it is a problem brought about by a culture of innovation, which is one of the reasons why Israel wins.

"Two countries, two droughts, two outcomes — how Israel wins", 06/06/2013, online at: http://legalinsurrection.com/2013/06/two-countries-two-droughts-two-outcomes-how-israel-wins/

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❖ WATCH: Israeli company harnesses the sun to purify water

Israeli technology that relies on the sun to distil water for drinking and agriculture targets populations in developing countries.

An Israeli company is hoping its solar-powered water distiller will help solve two of the world's most pressing problems – water scarcity and water pollution.

A prototype in the desert near the Dead Sea is turning dirty and salty water into water you can drink, and it's making Dr. Ronald Silver from SunDwater very proud.

"We feel we have a, really a world-changing, revolutionary invention," he says. "Our solution is completely green, requires no infrastructure, is run on solar power and has the ability, through our proprietary design changes, to create distilled, pure water in yields that heretofore have never been achieved, to make it an economically feasible model."

And with water shortages affecting every continent in the world, it's little surprise there is strong international interest in this solar-powered solution.

"WATCH: Israeli company harnesses the sun to purify water", Haaretz, 06/06/2013, online at: http://mideastenvironment.apps01.yorku.ca/?p=7267

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❖ OECD report: Global demands for food, water to rise

Integrating green growth strategies into their economic policies will be critical to developing countries going forward as they work to secure a more prosperous and comfortable quality of life for their citizens, a new OECD report has determined.

The report, called "Putting Green Growth at the Heart of Development," was released on Wednesday by the OECD in honor of the United Nations World Environment Day occurring that day. Although only 7 billion people inhabit the world today, by 2050, this number will jump to about 9 billion, instigating soaring demands for resources like food, water and energy, OECD Secretary-General Angel Gurria wrote in the report's introduction. Only economic growth policies that take such resources under consideration can ensure that the world's citizens will be able to continue to thrive within a healthy environment, the report says.

Ultimately, the authors propose a "twin-track approach to guide national and international action to help achieve green growth in developing countries," the report authors explain. While embracing green strategies is also crucial to the governance of developed nations, far fewer developing nations have yet to embark on this path, which galvanize prosperity among their people, according to the report.

"The pursuit of green growth by developing countries is vital for their future and can lead to large economic and social benefits over time, including for the poorest citizens," Gurria wrote.

Green taxes, which the report says are a concept "largely untapped in developing countries," can be a great source of economic growth, as can be reforms of fossil fuel subsidies, Gurria explained. Funds created and freed up by these steps cannot only encourage the development of clean energy sources but can also finance other public priorities like education and health care, the report says. As the global population continues to expand rapidly, however, Gurria warned that countries must "waste not time" in adopting green growth economic policies.

Without embracing green growth strategies, short-term national prosperity risks being "undermined by insecurity and vulnerability," the authors explain.

The benefits of employing green growth are strategies are many and can lead to the development of more secure livelihoods for all citizens, the report says. Green growth polices take into account the interests of vulnerable groups by design and thereby can have "profound impacts son poverty reduction and social equity," the authors write. Meanwhile, the new economic growth opportunities that surface through sustainable resource management can provide new job opportunities for new markets.

Green growth policies likewise can lead to a more resilient infrastructure for the country at large, one that is not locked into the vulnerable and insecure track of using emission-intensive resources, the report explains. Meanwhile, the population of countries adopting such strategies will have greater access to clean water and sanitation services, diverse and more secure energy supplies and less pollution in the air they breathe.

Government adoption of green growth strategies will by no means be simple, as officials will need to mobilize a wide array of ministries to adopt green objectives as mainstream elements of their offices, as well as integrate such policies into national budgets, the report says. The authors suggest embarking upon a three-step path to accomplish these goals. First, the government must establish leaders to oversee green growth strategy implementation into the existing planning process and budgetary systems. Second, the leaders must design, reform, and implement policies that take natural resources into account and incentivize green behavior. Third, they must strengthen the government's commitment to monitoring and enforcing the policies effectively, the authors write.

For optimal implementation of green growth policies, the authors suggest that developing countries depend on the international community for assistance particularly in the often expensive upfront costs of "going green," the report says. Going forward, development assistance should include targeted green finance and investment, and there should be more cooperation on promoting green technology innovation across borders, the authors argue.

Once countries adopt green growth strategies it will be crucial for them to be able to monitor their progress toward meeting their objectives, the authors stress. The OECD recommends measuring statistics according to four strategic indicators – resource use and energy generation, the status of the

country's natural resource reserves, environmental quality of life and economic opportunities such as environmental goods production or resultant international cash-flow.

"With the world gearing up to pursue sustainable development goals in the context of the post-2015 development agenda, now is the time to seize the opportunity offered by green growth," the authors write at the beginning of their final chapter.

As for Israel, green growth is currently a work in progress. In October 2011, the cabinet ordered the preparation a national plan toward promoting green growth for the years 2012 to 2020, pursuant to Israel's responsibilities as an OECD member state. The Environmental Protection Ministry and the then Industry, Trade and Labor Ministry were jointly responsible for drafting such a plan within six months.

By September 2012, the cabinet approved their plan, which aims to increase the country's gross domestic product by NIS 76 billion within five years. The program, which requires a NIS 850 million investment over the course of five years, will likely generate thousands of new jobs for Israelis, the two ministries said at the time.

Crucial to the program is the elimination of "greenwashing" – false claims of green behaviors – as well as curbing the complicated bureaucracy involved with receiving environmental approvals in a business license. In addition, the program calls for expanded green ratings for electrical appliances, training for green jobs and the promotion of green industrial areas that both save money and pollution. Upon submitting the program to the cabinet, environmental protection minister Gilad Erdan said that "green growth engines are the basis for leapfrogging to the next economic rung."

"OECD report: Global demands for food, water to rise", Jerusalem Post, 05/06/2013, online at: http://mideastenvironment.apps01.yorku.ca/?p=7279

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❖ With desalination, once unthinkable is possible in Israel

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

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

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

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

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

Until the winter of 2011-'12, water shortages were a dire problem for Israel; the country had experienced seven straight years of drought beginning in 2004. The Sea of Galilee (also known as Lake Kinneret), a major freshwater source and barometer of sorts for Israel's water supply, fell to

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

Even as the Sea of Galilee has returned almost to full volume this year, Israeli planners are looking to desalination as a possible permanent solution to the problem of drought. Some even anticipate an event that was once unthinkable: a water surplus in Israel.

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

In Israel, desalination provides 300 million cubic meters of water per year—about 40 percent of the country's total water needs. That number will jump to 450 million when Sorek opens, and will hit nearly 600 million as plants expand in 2014, providing up to 80 percent of Israel's potable water.

Like Israel's other plants, Sorek will work through a process called Seawater Reverse Osmosis that removes salt and waste from the Mediterranean's water. A prefiltration cleansing process clears waste out of the flow before the water enters a series of smaller filters to remove virtually all the salt. After moving through another set of filters that remove boron, the water passes through a limestone filter that adds in minerals. Then, it enters Israel's water pipes.

Semiat says desalination is a virtually harmless process that can help address the water needs prompted by the world's growing population and rising standard of living. "You take water from the deep sea, from a place that doesn't bother anyone," he said.

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

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

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

Fredi Lokiec, an executive vice president at the Sorek plant, says the risks are greater without major desalination efforts. Israel is perennially short on rainfall, and depending on freshwater could further deplete Israel's rivers. "We'll always be in the shadow of the drought," Lokiec said, but drawing from the Mediterranean is like taking "a drop from the ocean."

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

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

"With desalination, once unthinkable is possible in Israel", 07/06/2013, online at:
http://www.heritagefl.com/story/2013/06/07/news/with-desalination-once-unthinkable-is-possible-in-israel/824.html

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❖ Israeli 'bubble tech' to help keep UK's water clean

In wastewater treatment, reducing energy costs is key, and the aeration system from Mapal does just that

For some people, the term "bubbly" evokes images of a fine champagne. But for those in the wastewater treatment business, bubbles — water infused with air — are considered one of the more effective ways of treating sewage and water suffering from industrial pollution.

Bubbles are used to clean water as part of aeration systems and are considered very effective in removing pollutants and separating sludge from water, which can then be treated and released back into the environment.

Although effective, aeration systems are not without their problems, including being limited for use in smaller, man-made pools and lagoons. In addition, they often require a lot of energy to run. But new technology from Israel's Mapal Green Energy allows far wider deployment of aeration systems at a lower cost.

The use of bubbles to clean water has been around since the 1920s. The idea is to pump oxygen (hence the bubbles) into wastewater to enhance "aerobic digestion," a process occurring in the presence of oxygen in which bacteria consume organic matter and convert it into carbon dioxide, which is then released into the atmosphere. The system has additional benefits, such as creating larger waste biomass in sewage, making it easier to filter water and sludge.

The problem in using aeration for water purification has been getting the oxygen into all parts of the wastewater. Traditionally, many water utilities have used mechanical aeration systems to spread the bubbles around, but these consume a great deal of energy and have high maintenance costs.

Diffusive aeration systems — in which jets push oxygen into the water — are more effective and cheaper to run but still use a lot of energy, and they can be used be used only in concrete-lined pools or lagoons no more than a few meters deep; the range of the jets is limited, and there's little point in

aerating only part of the wastewater. For the same reason, aeration cannot be used effectively on larger bodies of water, like lakes or reservoirs.

Mapal's system solves all these problems, according to company CEO Ze'ev Fisher. Mapal's idea is to use floating aerators that "travel" across the surface of the water, diffusing oxygen throughout the pool (up to a depth of six meters). Unlike with floating mechanical diffusers, the Mapal version has a series of tubes that extend into the water, requiring far less energy to push the oxygen into the lower depths of the water. Thus, the oxygen gets to all parts of the wastewater, ensuring that aerobic digestion can occur equally in all parts of the pool. Because the tubes can get to all parts of the wastewater, the system doesn't need as much energy to push the oxygen out. According to studies cited by the company, its system can save as much as 70% of the energy used in other diffusion systems, as well as 80% of maintenance costs.

Mapal's system can also dive underwater and float at different levels. This, according to Fisher, makes the system just the antidote needed for environmental emergencies, when the level of pollutants in a sewage pool, or even a lake or river, gets out of hand. The system can be deployed to attack the highest concentration of pollutants, preventing them from spreading and creating even more damage.

Mapal systems have been installed in Israel, as well as in Brazil, South Africaand India for a total of 30 locations worldwide. Now, the company has its first European contract, closing a deal with the UK's Anglian Water to deploy its solution for a water company serving 4 million customers. Mapal's bubble-spreaders will be installed in as many as 400 of Anglian's 1,100 wastewater treatment facilities, the company said, adding that it is in "advanced talks" with other UK water treatment companies.

Britain is a good "test case" for using Mapal's technology on a mass basis, because the water business there was privatized some 15 years ago. Since then, some 20 private companies have been struggling to keep costs down while complying with strict regulations on treating wastewater, said Fisher. "Water prices are regulated in Britain, and operators cannot raise prices because of increased energy use. Thus they are very motivated to find technologies that can save energy, and hence their interest in our systems."

The company reported several weeks ago that it had recently raised about $2 million from Charles Street Securities (CSS) Europe to expand its business in Britain. This is the second time CSS has invested in Mapal, with a similar amount advanced in 2010.

Mapal Green Energy operates in the UK under the British Foreign Office's TouchDown program, which assists foreign companies launch operations in the country. The company has also been aided by the UK-Israel Tech Hub program, a program sponsored by the British Embassy in Israel.

"Israeli 'bubble tech' to help keep UK's water clean", 05/06/2013, online at: **http://www.timesofisrael.com/israeli-bubble-tech-to-help-keep-uks-water-clean/**

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❖ Water Symposium discusses impact of global warming on Jordan

Amman, June 5 (Petra) -- HRH Princess Sumaya bint El Hassan, President of the Royal Scientific Society (RSS), called on Wednesday for urgent action to tackle the potential impact of climate change on rain-fed agriculture of the semi-arid basin in Jordan.

Speaking at a symposium entitled "This is Water!", organized jointly by the RSS and the Institute Francais, HRH said that urgent action was required to deal with this most essential and most endangered natural resource. This was followed by presentations and a lively discussion of the audience, which consisted of Jordanian and French water experts as well as farmers.

"Water is life and livelihood, it is growth and development, it is peace and prosperity," said the Princess, in presence of French Ambassador to Jordan, Caroline Dumas, Secretary General of the Ministry of Water and Irrigation, Bassem Telfah.

"The absence of abundant water does not bear thinking about. For without adequate water, we face a bleak, hungry and uncertain future," she added.

The Princess added that water was the very essence of lives, livelihoods and survival in Jordan. She noted that the society was very much aware of the need for Jordan to increase its preparedness for, and its resilience to, anticipated climate change impacts by strengthening and supporting the adaptive capacity of Jordan's agricultural sector.

"Farmers, manufacturers and every citizen who consumes water must be educated in the effect and efficiency of usage," she added. "This effort must be led through comprehensive and targeted programmes of education and by encouraging public involvement in the decision making process."

The French Ambassador in Amman, Caroline Dumas said that the Symposium is a continuation of the 6th World Water Forum – "Time for Solutions", which was held in France, in March 2012. She highlighted that symposiums aim at the exchange of expertise, experiences and know-how on water demand management in the agricultural sector, and demonstrate that a combination of adequate technology and best practices can significantly improve water use efficiency, without deteriorating the livelihood of individuals.

Local experts and policymakers were joined by French water experts for the event, which runs until Thursday.

"Water Symposium discusses impact of global warming on Jordan", 05/06/2013, online at: http://www.petra.gov.jo/Public_News/Nws_NewsDetails.aspx?Site_Id=1&lang=2&NewsID=113519&CatID=13&Type=Home&GType=1

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❖ Netafim wins Stockholm water prize

Israel-based world leader in drip irrigation technology to be receive prestigious award in Swedish capital for its contribution to sustainable water management

Israel-based Netafim, a world leader in drip irrigation technology, has won the 2013 Stockholm Industry Water Award.

The company, owned by British investment fund Permira, will receive the prestigious prize at a ceremony in September as part of the annual World Water Week Conference in the Swedish capital. The award was given to Netafim for its contribution to sustainable water management, improved performance in production processes, new products and innovative approaches in water and wastewater technologies.

Netafim was founded in 1965 in Kibbutz Hatzerim. More than 10 million hectares of farmland around the world are irrigated with the drip irrigation technology it developed.

"Netafim wins Stockholm water prize", 04/06/2013, online at: http://www.ynetnews.com/articles/0,7340,L-4387943,00.html

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❖ China's mega water diversion project begins testing

South-north diversion project aimed at preventing water shortages has had no shortage of problems and criticism

When it is completed, it will be one of the world's biggest feats of engineering. China's South-North Water Diversion Project, initially a vision of Mao's, will take water from the south of the country to the arid northern region, including the capital Beijing, which suffers from water shortages.

The ambitious project has been under construction since 2002 and it is expected to take almost 50 years for all sections to be complete. It aims to pump almost 45 billion cubic metres of water a year to the north, equivalent to the water flow in the Yellow River in northern China. The water will be pumped from the Yangtze river and its basin.

Testing started last week on the first phase of the eastern part of the project and according to the state-controlled newspaper China Daily, this part of the project will start operation later this year. This phase will transfer water from Jiangdu in Jiangsu Province which is located on the Yangtze River to Shandong Province along the Beijing-Hangzhou Grand Canal.
It is also planned that there will be a middle route and a western route. The middle route is expected to begin operating next year and will supply water from Hubei province to cities in the north including Beijing and Tianjin. The western route, which is supposed to use water diverted from the upper reaches of the Yangtze to replenish the Yellow River, has been besieged with problems and is still at planning stages.

Water shortages have become a huge problem for the world's second largest economy. China has 20% of the world's population but only an estimated 7% of its freshwater water reserves. Experts project thatChina's water supply will not be able to meet with demand by 2030 if it continues with water use at current levels. Some parts of China are comparable to the Middle East in terms of water resources and water scarcity could have a massive impact on the economy as these regions also contribute up to 45% of China's Gross Domestic Product.
The south of the country has 77% of China's total water resources, according to Debra Tan of China Water Risk, a Hong Kong based non-profit initiative. "The south also has more surface water than the

north," she said. "There are less rivers in the north so you have no choice but to use groundwater, which takes a longer time to recharge."
In this environment such a project would appear to make sense, but it has run into delays and setbacks and has been criticised because of its environmental and social impacts.

Ma Jun, the director of the Institute of Public and Environmental Affairsand one of China's most well-known environmentalists was quoted by China Daily newspaper recently as saying that the project will have an impact on the ecosystem of the Yangtze River and will result in lower water quality.
"Though the water diversion will enrich the water supply in the north, its impact on the ecosystem is irreversible," he said.

Chinese officials have admitted that the project will have an environmental impact and that pollution has caused problems. Zhang Jinsong, the deputy director of the Jiangsu office of the project where last week's testing took place told China Daily that pollution is a concern in the lower reaches of the Yangtze river and that 17.4 billion yuan (£1.85 billion) has been spent on pollution prevention projects. But he said "what we pay is much less than what we gain".

"I think the traditional thinking was that let's just shift the water from the rivers that we have in the south to the north so we don't have to use up the groundwater. Which makes sense on a broader level. But of course it brings about environmental concerns about whether if rivers shifted will it damage the ecosystem of the river and so on," said Tan.

Drought in the south of the country is likely to cause problems too and the Yangtze river has been suffering from water shortages as well. In 2011, the Yangtze suffered its worst drought in 50 years. It was caused by a shortage of rainfall and environmentalists claimed the massive Three Gorges Dam also had a negative impact on later levels in the river.
Changing weather patterns is something that may be having an impact on the project. "The weather in China has been changing, so it has been raining more in the north and less in the south due to climate change and this is something that is beyond everyone's control," said Tan.

"Unfortunately it's been raining more in the north and the south has experienced a drought, especially over the last year or so. So a lot of people in the south because they are experiencing drought are

wondering why you would then want to divert water from the south to the north, which is a sensible question to be asked," she said.

The project has social implications as hundreds of thousands of people have been resettled so far to make way for the project. In Hubei and Henan provinces, almost 350,000 people were resettled from around the Danjiangkou Reservoir where water is to come for the middle route. But the resettlement has faced many problems with many residents complaining their new homes are shoddily built and they have suffered a loss of their livelihoods.

Another issue for the project, and one which is widespread in China, is corruption. One case was highlighted earlier this year when a former village head was sentenced to 11 years in jail for identity fraud to get compensation related to the project.

In 2008, prior to the Beijing olypmics, US diplomatic cables released under Wikileaks, slammed the project saying that if the Chinese government was serious about dealing with its water crisis, "water conservation and improved agricultural practices need to be pursued rather than a costly water diversion solution.".

The project has been described as a "white elephant" but commentators have said that despite the massive financial overruns, there is no way the government can row back on the ambitious plans.

And despite criticisms and setbacks, the the Chinese government appears determined to continue with the project, claiming it will benefit up to 500 million people.

While it is unlikely to be a silver bullet to solve China's water problems, Tan points out that the government are also working to implement a number of other water saving solutions. "China is also pushing relatively aggressively desalination targets for its coastal cities. It has indicated that it also wants to put water recycling and water reuse in cities. I think you have to look at all of these in combination," she said.

But she added: "I think you have to see it as a whole, at all the options that they are proposing. But it doesn't account for environmental impacts of diverting this water."

"China's mega water diversion project begins testing", 05/06/2013, online at:
http://www.guardian.co.uk/environment/chinas-choice/2013/jun/05/chinas-water-diversion-project-south-north

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❖ Singapore's water companies aim to quench China's $850 billion thirst

SINGAPORE (Reuters) - Water companies in Singapore are attracting big-name investors as they profit from exporting their expertise to China, which plans to spend $850 billion over the next decade to improve its scarce and polluted water supplies.

Singapore is a hub for water technology because of its own concerns about water security. With few domestic freshwater resources of its own, the city-state has been trying to reduce its reliance on imports from neighbouring Malaysia, where politicians have in the past threatened to turn off the taps.

Since 2006, the number of companies in Singapore's water sector has doubled to about 100 and S$470 million ($371.2 million) has been committed to fund water research, government data shows. Over the same period, Singapore-based water companies secured more than 100 international projects worth close to S$9 billion.

Singapore has been experimenting with reservoirs, recycled water known as NEWater, and desalination as it aims to become self-sufficient in water by 2061, when a water supply agreement with Malaysia expires.

"Singapore should be one of the world's dominant players in water. It should be the Silicon Valley of water," said Jim Rogers, who co-founded the Quantum Fund with George Soros and owns shares of Singapore's biggest listed water treatment company, Hyflux Ltd .

Hyflux, which has a market capitalisation of S$1.2 billion, signed two agreements in April for projects in China. The company is known for its membrane technology used for ultrafiltration, a process to separate certain dirty or harmful particles in water.

Hyflux's chief executive, Olivia Lum, is the biggest shareholder with 32.4 percent as of March, while Matthews International Capital Management LLC and Mondrian Investment Partners Ltd have a combined 14.2 percent of deemed interest, according to its latest annual report.

U.S. private equity firm KKR & Co LP invested $40 million in United Envirotech Ltd earlier this year after subscribing to $113.8 million of its convertible bonds in 2011.

The company is listed and based in Singapore, but most of its operations are in China, where it derives more than 90 percent of its revenue. It designs and builds water treatment plants, on top of providing services to China's chemical, petrochemical and industrial park sectors, all of which are heavy water users.

United Envirotech, whose "membrane bioreactor technology" combines membrane separation with biological wastewater treatment, said on May 28 its net profit for the full year ended March 2013 had nearly tripled from a year earlier.

The company is in talks with some investors who have expressed interest in buying a stake, a spokeswoman said, adding that Singapore is attractive to the firm because of its status as a financial centre and its ongoing growth as a "global hydrohub".

"The root of the whole commitment to grow the water industry lies with the Singapore water story," said Goh Chee Kiong, executive director of cleantech at Singapore's Economic Development Board. "Singapore has been very vulnerable when it comes to water for many decades, therefore we view water as a strategic resource and asset."

ON THE RADAR

With the world's population hovering at around 7 billion, investors are betting on soaring demand for clean water not just for people, but also to help fuel industries ranging from semiconductors and pharmaceuticals to petrochemicals and agriculture.

"Water treatment companies have not been on the radar for a while, but now investors are increasingly looking at companies that are undervalued or have yet to realize their potential," said Carey Wong, an analyst at OCBC Investment Research.

In the last 12 months, the Thomson Reuters Global Water and Other Utilities Index <.TRXFLDGLPUWATR> has jumped around 20 percent.

In Singapore, shares of United Envirotech have surged more than 170 percent over the same period, outperforming the 19 percent gain in the benchmark Straits Times Index <.FTSTI>. SIIC Environment Holdings Ltd, Memstar Technology Ltd and HanKore Environment Tech Group Ltdhave risen in the range of 33-67 percent.

However, Hyflux shares have underperformed the index in the past year. CIMB Research said in a report that the company's project win rate has to accelerate so its share price can pick up. Its valuation also appears "fairly priced" compared to its major Asian peers, CIMB said.

Moya Asia Ltd and Sound Global Ltd , both of which reported weak quarterly earnings recently, have lagged the index too.

Conglomerates Sembcorp Industries Ltd and Keppel Corp Ltd also have some water-related businesses.

CHINA BOUND

Many companies have their sights set on China where, despite spending 700 billion yuan ($114 billion) on water infrastructure over the five years to 2010, much of the water remains undrinkable, a situation that has led to mounting discontent across the country.

China's environment ministry said 43 percent of the locations it was monitoring in 2011 contained water not fit even for human contact.

United Envirotech said stricter discharge limits imposed by the Chinese government and water shortages in various parts of the country are pushing up demand for water treatment services.

Chinese players like China Everbright International Ltd <0257.HK> and Beijing Enterprises Water Group Ltd <0371.HK> may put up a tough fight, especially for the lower-end water treatment projects, due to their ability to keep costs down and their local network, said DBS Vickers analyst Tan Ai Teng.

Scinor Water Ltd recently received financing from CLSA Capital Partners' Clean Resources Asia Growth Fund and venture capital firm Kleiner Perkins Caufield & Byers to expand the Chinese company's membrane manufacturing capacity and products.

"There are going to be huge fortunes made in China on water because China has a staggering water problem and they know it. They are spending a lot of money to solve it," said Rogers.

($1 = 1.2663 Singapore dollars)

($1 = 6.1267 Chinese yuan)

"Singapore's water companies aim to quench China's $850 billion thirst", 02/06/2013, online at: http://www.guardian.co.uk/business/feedarticle/10820775?utm_source=Circle+of+Blue+WaterNews+%26+Alerts&utm_campaign=041e6026ab-RSS_EMAIL_CAMPAIGN&utm_medium=email&utm_term=0_c1265b6ed7-041e6026ab-250657169

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❖ Now Cauvery water is more needed for drinking than for crop

As monsoon has set in over Kerala, government urged to release water

"With the southwest monsoon setting in over Kerala on time, the time is ideal for the State to release water in the Cauvery to meet the drinking water needs of several parched districts," observes M. Natarajan, former superintending engineer, PWD, and author of two books on the Cauvery.

Presently an advisor to the 'Cauvery Family', an inter-State forum of farmers in the river basin areas, he says there is every possibility that the Mettur dam will start getting some inflows soon. "The State government should release at least, 2,000 cusecs to quench the thirst of the population served by about 50 drinking water schemes between Mettur and Grand Anicut. This quantum need not be from the Mettur Reservoir alone. It could be from Bhavanisagar and Amaravati also and the rains, especially in Krishnagiri and Dharmapuri regions, are likely to be of considerable help in this regard."

According to official sources, more than 500 million litres a day (MLD) is drawn from the Cauvery for these combined water schemes, major ones being Ramanathapuram, Tiruchi, Salem, and Pudukottai.

Mahadanapuram V. Rajaram, working president of the Cauvery Delta Farmers' Welfare Association, and a resident of the village on the banks of the Cauvery, laments that he has never witnessed a situation as bad as the current one in his more than seven decades of living there. "Even the borewells sunk along the banks of the Cauvery are not much of help. Our priority now is not kuruvai or samba, but drinking water," he asserts.

Official sources said even the functioning of the Tamil Nadu Newsprints and Papers Ltd., Pugalur, is affected because of the very poor flow in the Cauvery. The company has been drawing substantial water from the Cauvery.

Mr. Natarajan, who admits that the storage in the Mettur Dam is extraordinarily poor now (about 18 ft against the full level of 120 ft and the storage is less than four thousand million cubic feet (tmcft) against the total 93.4 tmcft). "All that the Mettur reservoir now has is only silt."

He also admits that storage in Karnataka reservoirs is equally poor. At the same time, he points out that the Kabini reservoir, whose catchment is in Kerala, used to be the first among Karnataka reservoirs to become full because its capacity is just 16 tmcft.

"But its total annual inflow is 97 tmcft. Thus the reservoir would be able to store only one sixth of the total inflow. However, Karnataka has chosen to pump as much as 28 tmcft to two tanks – Sagare and Dhoddagare – and it has already expanded its ayacut to 4.47 lakh acres.

In case of heavy rains in catchment areas of the Kabini, it would be impossible for Karnataka to tap the entire quantum which will be beneficial to Tamil Nadu," he adds. Besides, the seepage from the ayacut of Krishnaraja Sagar Dam, which is calculated as 15 per cent of its capacity of 45 tmcft, and rains in other places in the 64 km stretch between Billigundulu and Palar, near the Mettur Reservoir, would be very helpful to Tamil Nadu.

Mr. Natarajan says that If 2,000 cusecs were to be released in the Cauvery, apart from quenching the thirst of several lakhs of people, that could also help the TNPL.

It could fill the trenches created by the indiscriminate sand quarrying and help replenish the aquifers all along the Cauvery bank.

At the same time, it might be able to save the standing banana crop, especially in the 17-channel area.

"Now Cauvery water is more needed for drinking than for crop", 03/06/2013, online at: http://www.thehindu.com/news/national/tamil-nadu/now-cauvery-water-is-more-needed-for-drinking-than-for-crop/article4775729.ece?utm_source=Circle+of+Blue+WaterNews+%26+Alerts&utm_campaign=041e6026ab-RSS_EMAIL_CAMPAIGN&utm_medium=email&utm_term=0_c1265b6ed7-041e6026ab-250657169

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❖ Tapping new water connections gets tougher

BANGALORE: The Bangalore Water Supply and Sewerage Board (BWSSB) recently unveiled the Cauvery Water Supply Scheme Stage IV Phase II to supply drinking water to people on the outskirts of the city. But getting a new water and sanitary connection just got tougher due to conditions imposed by the BWSSB.

The board recently amended its regulation empowering residents to directly approach it for new connections. Applicants have been told to submit necessary documents to its sub-divisional office and get the water connection within 15 days. But residents flocking to these offices are subject to some conditions which makes it difficult to get the new connection.

Sudarshan M, a resident of Mallathalli, was taken by surprise when he received a circular from the co-operative society which formed the layout where his house is located. The circular mentioned details about the new regulation and asked him to apply directly to the board for a water connection. But when he approached BWSSB, officials there said his house would get a water connection only after at least 20 of the 30 houses in the locality also apply for connections.

Sudarshan wondered why he should wait till other residents apply. "The co-operative society has washed its hand off the issue. Who will co-ordinate with residents to form teams and then approach the board for connections?" he said.

Residents of areas like Yelahanka, Byatarayanapura, Bommanahalli, Mahadevpura, K R Puram, Rajarajeshwarinagar, Dasarahalli and Kengeri have had similar experiences. A Raghunath of VR Layout Site Owners' Association near Marathahalli said, "Many residents are fed up with shelling out large amounts of money for packaged water. Now, when there is a chance to get a water connection, there are new hurdles," he said.

Ratnamma K of Dasarahalli said she was told to wait for 30 days to get a water connection as the board is waiting for more applications from her layout.

BWSSBspeak

BWSSB has its reasons to insist on bulk applications for new connections. T Venkataraju, engineer-in-chief, BWSSB, said it would give water connections to a road or a locality only after 80% of residents there apply it. "If we give water connections to one or two persons in the locality, it gives room for unauthorized connections as those who haven't applied may also draw water from the pipeline in front of their houses," he said.

Venkataraju said since the utility began new water connection drive early this year, it found 80,000 unauthorized connections in Greater Bangalore. "It's tough to monitor such connections as residents use the illegal route to get water," he said.

Expertspeak

BWSSB should not harass residents seeking water connections. The board's approach makes it clear it doesn't have a proper monitoring mechanism. Using technology would go a long way to tackle unauthorized connections.

"Tapping new water connections gets tougher", 03/06/2013, online at: http://articles.timesofindia.indiatimes.com/2013-06-03/bangalore/39714087_1_connections-sewerage-board-t-venkataraju

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❖ Water supply in Accra expected to expanded

A number of areas within the Greater Accra and Eastern Regions are soon to receive treated water.
This follows the near completion of a water treatment plant at Kpong within the Eastern Region, under the Accra-Tema Municipal Area (ATMA) Rural Water Supply Project.
The project, which is estimated at 20,000,000 dollars, is being undertaken by Tahal, an international engineering company.
It is facilitated by ASHRA, an Israeli Foreign Trade Risks Insurance Corporation company.
Key areas to benefit from the completion of the plant are Ningo-Prampram, Ashaiman, Gbetseley, Adjei-KoJo and Dodowa, all within the Greater Accra region, and the Krobo Akuapim range, within the Eastern Region.
During a visit to the plant by Mrs Sharon Bar-Li, Israeli Ambassador to Ghana, Mr David Robinson, Operations Manager of the project, said when completed, the plant would produce 42,000 liters of water a day.
He said raw water is drawn from the Volta River, after which it is processed for the plant.
Mr Robinson said the project which begun in May 2012, was expected to be completed by the end of this year, 2013.
Mrs Bar-Li said the project was an excellent example of Ghana-Israeli cooperation.
She said Tahal had been in Ghana since the 1950s and had designed the original sewage system in Accra adding that access to portable water was at the heart of development.
Prior to a conference on water technology that would be held in Israel in October, some activities on water usage would also take place in Ghana in September, she said.
The Israeli Ambassador said during the event in Ghana, stakeholder companies in water production and management would be invited to participate, in order to share ideas on the better management and use of water.
Mr David Klein, Vice President, Marketing and Business Development-ASHRA, said the company guaranteed projects adding that ASHRA had approved over 300,000,000 dollars worth of projects in the country.
He said the company hoped to work on many more projects in the Ghana as a result of the pertaining stable political, social and economic situation.

"Water supply in Accra expected to expanded", 07/06/2013, online at:

http://www.ghanabusinessnews.com/2013/06/07/water-supply-in-accra-expected-to-expanded/

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❖ Indian firm to construct hydroelectric plants in Kano, Nigeria

Kano (Nigeria), June 8 — The Nigerian state of Kano has signed a memorandum of understanding with the Skipper Group of India for the construction of hydroelectricity plants at Tiga and Challawa dams in the state, Indian High Commissioner in Abuja, Mahesh Sachdev has said.

The total value of the project was not disclosed. Sachdev said: "When completed, in two years, these two projects would not only contribute 35 MW of power to Kano state, they would also play the intended role in water management and irrigation."

Once complete, the two dams would become the largest-capacity hydropower project in northern Nigeria, he said. "We would soon see substantive movement in other sectors, such as urban light railway, solid waste management, education and healthcare," the high commissioner said.

Sachdev added that India's ties with Kano dated to at least the 17th century, when Baba Gaur of Kano settled in Rattanpur in western India, where he is still revered and venerated. "Kano is the Nigerian state physically as well as emotionally the closest to India," he said

He recalled Kano state governor Rabiu Kwankwaso's "consistent and constructive engagement" with India which included a visit there in February 2013. "This visit led to the identification of specific Indian partners in such priority sectors as power, urban renewal, vocational training, education, film, healthcare, textiles and garments," he added.

The project is dear to Governor Kwandwaso because, as a young engineer, he started his career at the Tiga dam and ended at Challawa, before entering politics. Sachdev said the project has been assigned to the Skipper Group to take the governor's two noble initiatives to their respective logical conclusions.

"We wish to assure you that it will be our privilege to connect the young builder's dream with a senior statesman's vision. As Your Excellency is aware, I do hope that by engaging in this productive work in his first home, we would be able to pay back some of historic debt we Indians owe to Kano and her illustrious son."

Skipper Group operates in other African countries including South Africa, Kenya, Egypt, Ghana, Congo, Tanzania, Uganda and Burkina Faso.

"Indian firm to construct hydroelectric plants in Kano, Nigeria", 08/06/2013, online at: http://india.nydailynews.com/business/649ad87c50a61ce796688018a5b65c60/indian-firm-to-construct-hydroelectric-plants-in-kano-nigeria

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❖ Tanzania Courts Chinese, Indian Investors for Water Projects

Tanzania is in talks with Chinese, Indian and Israeli companies to provide water services in partnership with the government after a previous attempt at privatization failed, the Water Ministry said.

China Machinery Engineering Corp. (1829) signed a memorandum of understanding with the state for water-supply and sewage projects worth about $500 million in the commercial capital, Dar es Salaam, and the northern city of Arusha, said Yohana Monjesa, director of urban water supply. Discussions have also been held with Wapcos Ltd. and Overseas Infrastructure Alliance Ltd. of India and other companies, he said.

The ministry has been in talks since March with Kadima, Israel-based IDE Technologies Ltd., one of the world's three largest manufacturers of desalination plants, about a potential project in Dar es Salaam, Monjesa said. A pilot program is planned, though there are no estimates on the costs, he said.

"The Ministry of Water is currently not working with the private sector on providing water but these projects could change that," Monjesa said in an interview in Dar es Salaam on June 5. "We are trying to promote public-private partnerships because we haven't seen much interest from the private sector."

Tanzania, about a third of which is either arid or semi-arid, provides water to 86 percent of its urban population and 57 percent of its rural residents, according to the ministry.

Water Plans

The East African nation plans to increase the provision in rural areas to 90 percent by 2025, according to a plan announced by President Jakaya Kikwete on May 24. More than half the illnesses contracted by Tanzanians are from water-borne diseases, according to the government.

The main challenges the country faces in providing water include the scarcity of the resource, which has been diminishing with climate change, and providing water to regions of the country that don't have access to surface groundwater or where water is unfit for human consumption, Monjesa said.

The government has no plans to privatize water supply in the near future, he said, following a dispute in 2005 with a British company over a contract to run Dar es Salaam's water utility.

City Water Services, a joint venture led by Dorking, England-based Biwater Plc and a group of investors, was awarded a 10-year management deal to run the system in 2003. Tanzania terminated

the deal two years later, saying City Water failed to address water shortages, expand the distribution network, or increase revenue collection as agreed in the contract.

Case Dismissed

The International Centre for the Settlement of Investment Disputes in 2008 dismissed Biwater's request for $20 million from Tanzania. The company said at the time that the tribunal found the country violated some aspects of a bilateral investment treaty with the U.K., which meant the company deserved compensation.

"It is currently the obligation of the country to invest in its water supply," Monjesa said. "In my opinion, it is not appropriate to privatize the water supply at this time."

Tanzania will receive 71.3 million euros ($95 million) in funding from the European Union and German for sewage and water projects in the country, the EU said in December.

"Tanzania Courts Chinese, Indian Investors for Water Projects", 07/06/2013, online at: http://www.bloomberg.com/news/2013-06-06/tanzania-courts-chinese-indian-investors-for-water-projects.html

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❖ When You Waste Food, You're Wasting Tons Of Water, Too

Tossing out food is clearly a waste of money — and maybe even immoral, according to Pope Francis, who on Wednesday likened food waste to "stealing from the table of those who are poor and hungry." And as we've reported, you also may be creating extra greenhouse gas emissions by sending food to a landfill.

Now comes yet another reason not to waste food: It also wastes a heck of a lot of water, a new report says.

According to the World Resources Institute, an environmental think tank, inside the 1.3 billion tons of food wasted every year worldwide is 45 trillion gallons of water. This represents a staggering 24 percent of all water used for agriculture.

And agriculture is already the world's biggest user of freshwater: The sector accounts for 70 percent of all use around the world, according to the World Water Assessment Program. Those freshwater resources are diminishing fast, just as demand for them rises from millions of hungry and thirsty people joining the global population.

However, when it comes to water, not all food products are created equal. As WRI notes in its new working paper on food waste, a pound of wheat flour on average contains 12 percent water and 1,639 calories, whereas a pound of apples, on average, contains 81 percent water and 766 calories. Fruits and vegetables are the largest source of loss and waste on a weight basis — in part, because they contain more water than other foods.

Meat, of course, requires more water in its production than any other food, because animals devour so much feed that in turn has to be grown with water. Meat production requires between 8 and 10 times more water than grain production, according to the WWAP. Fortunately, we're better about eating the meat we produce. It represents only 4 percent of the total food wasted by weight, and 7 percent of the calories wasted, according to WRI.

If you'd like to know how your favorite foods stack up in terms of how much water they require, this chart from the Water Footprint Network is pretty handy.

As for all the water in wasted food, we wondered where it goes.

"It depends on where people dispose of the lost or wasted food," says Craig Hansen, director of WRI's People & Ecosystems program and a co-author of the report, in an email to The Salt.

"For instance," he says, "the moisture in food lost immediately post-harvest or during open storage will likely evaporate."

In other words, that water ends up back in the atmosphere. But that doesn't mean it'll return to the place from whence it came. Now that food is crisscrossing the globe, the water-stressed regions that produce fruits and vegetables aren't necessarily going to get their water back.

As for food that goes to a dump, the water could be locked in — so it's not available — if the dump is closed, Hansen says, or it could evaporate over time if the dump is open.

As Brian Lipinski, the lead author of the World Resources Institute report, notes, in arid North Africa and West and Central Asia, more than half of the fruits and vegetables in the food supply end up being lost or wasted. It works out to about 63 pounds of produce per capita in these regions, he writes.

In the developing world, farmers struggle with food loss long before it gets to the consumer. But greater access to simple equipment, like silos for airtight food storage and crates for delicate fruits and vegetables, would help a lot, WRI says.

In rich countries, by contrast, most food waste happens further along the food distribution chain — in homes and restaurants, for example. We need to do a better job of redistributing food we can't eat, and serving and ordering smaller portions, according to the report.

"When You Waste Food, You're Wasting Tons Of Water, Too", 06/06/2013, online at: http://www.npr.org/blogs/thesalt/2013/06/06/189192870/when-you-waste-food-youre-wasting-tons-of-water-too?utm_source=Circle+of+Blue+WaterNews+%26+Alerts&utm_campaign=563295bc3e-RSS_EMAIL_CAMPAIGN&utm_medium=email&utm_term=0_c1265b6ed7-563295bc3e-250657169

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❖ From Water Wars to Water Scarcity: Bolivia's Cautionary Tale

When Bolivian President Evo Morales arrived at the new Uyuni airport last August and found no water running from the tap, he publicly reprimanded and promptly dismissed his Minister of Water. As it happened, the pipes were merely frozen. The incident underscores the critical—and highly symbolic—role of water in the politics of this landlocked Andean nation.

Water Wars

In April 2000, a popular struggle against water privatization in Cochabamba, Bolivia's third largest city, ignited a chain of events that profoundly altered the nation's political landscape. The Water War was precipitated when SEMAPA, Cochabamba's municipal water company, was sold to a transnational consortium controlled by U.S.-based Bechtel in exchange for debt relief for the Bolivian government and new World Bank loans to expand the water system.

A new law allowed Bechtel to administer water resources that SEMAPA did not even control, including the communal water systems prevalent in the ever-expanding southern periphery and in the countryside, which had never been hooked into the grid. Local farmer-irrigators feared that "even the rain" collected and distributed for centuries by their associations would fall within Bechtel's grasp.

These concerns, along with a 50% average increase in water rates for SEMAPA customers, prompted the formation of a broad alliance of farmers, factory workers, rural and urban water committees, neighborhood organizations, students, and middleclass professionals in opposition to water privatization. They were joined by the militant federation of coca growers from the Chapare, led by then labor leader Evo Morales, who lent his considerable expertise in organizing civic strikes, road blockades, and massive popular assemblies. Eventually, Bechtel was forced to abrogate its contract, return SEMAPA to public control, and withdraw its legal claim against the Bolivian government for $50 million in compensation.

This iconic struggle crystallized a growing demand for popular control of Bolivia's natural resources, leading to the Gas Wars of 2003 and 2005, the overthrow of two neoliberal presidents, and the subsequent election of Evo Morales and the MAS (Movement Towards Socialism) party as a "government of the social movements." A second water revolt—this time by neighborhood organizations in the sprawling indigenous city of El Alto—ousted the French multinational Suez company from the recently-privatized La Paz-El Alto water district. Bolivia's new constitution, enacted in 2009, proclaims that access to water is a human right and bans its privatization.

Outside Bolivia, the Water War helped to inspire a worldwide anti-globalization movement and provided a model for water-justice struggles throughout the Americas and beyond. The Bolivian government led the successful drive for UN recognition of water and sanitation as a human right in 2010 and is in the forefront of a new international campaign for a UN declaration against water privatization.

On the domestic front, as water-justice advocates look to Bolivia for successful alternative models to privatization, the implementation of these hard-won water rights has proved to be a significant challenge.

Water Rights

The Morales government has sought to develop a new institutional framework that positions the state as a direct protagonist in providing and regulating water and sanitation services.[1] The Water Ministry, created in 2006 to integrate the functions of water supply and sanitation, water resource management, and environmental protection, is the first of its kind in Latin America. It has a mandate to end water privatization, including the creation of a public water company to replace the temporary utility established for La Paz-El Alto after the exit of Suez.

The Water Ministry has been plagued by frequent reorganizations and institutional instability, with six changes in leadership since its creation. Critics charge that it operates more like a loose federation of sub-ministry fiefdoms than a coherent organization and suffers from overlapping jurisdictions with other cabinet ministries. Its functions also sometimes conflict with those of the departmental and municipal governments, which have significant water management responsibilities under Bolivia's decentralized administrative structure.

Almost six years after the final ouster of Suez, the Water Ministry is still negotiating the design of the La Paz–El Alto public water company, with divergent visions held by combative El Alto neighborhood groups, the City of La Paz, and the Morales government. La Paz has periodically threatened to withdraw and establish its own municipal water utility.

While the Water Ministry has taken over the functions of the formerly privatized water regulatory system, controlling and monitoring the activities of Bolivia's approximately 28,000 local water and sanitation providers has proved to be a challenge. The sector encompasses a diverse range of organizations, from sophisticated utilities like SAGUAPAC in Santa Cruz—the largest urban water cooperative in the world—to thousands of independent water committees in rural and peripheral areas, who manage artisanal wells and antiquated distribution systems based on traditional uses and customs.

These small providers are burdened with poorly constructed and deteriorated systems, operating deficiencies, and community conflicts. An estimated 35% of their water is lost to leaks and clandestine hook-ups. While only a fraction of independent providers are even registered with the government, efforts to curb their traditional rights can become an explosive political issue—as evidenced by the Cochabamba Water War.

In the absence of a comprehensive regulatory framework, tensions between these traditional methods of water provision and the new system of formal water rights are far from being resolved. Still, the Morales government has made significant efforts to strengthen the capacity of independent water

providers through technical assistance and financing, recognizing their role as a critical partner in the government's water development agenda.

Twelve years after the Water War, the challenge of developing alternative models to privatization is readily apparent in Cochabamba. While the re-municipalized SEMAPA has more than tripled the size of its service area since 2000, at least 40% of the city's residents—mostly in the southern hillside districts, which were the chief protagonists of the Water War—still lack piped water and sanitation services. Those remaining outside the grid are forced to pay five to 10 times more than SEMAPA consumers for trucked-in water of dubious quality. Even on the grid, water service is intermittent.

Although the reconstituted SEMAPA includes elected community representatives on its board of directors, problems of mismanagement, corruption, and inefficiency continue to plague the organization. In 2010, the company was forced to lay off 150 workers to overcome a $3 million cash deficit, due to alleged irregularities such as payroll padding, materials thefts, and continued diversion of the system's water.

Frustrated with both the private and public water management models, residents of Cochabamba's southern zones are increasingly relying on traditional community-run water systems as an alternative. Many of these neighborhoods have established autonomous and participatory water distribution systems managed by elected water committees, cooperatives, or community councils that are seeking to collaborate to varying degrees with SEMAPA. The local water committees have affiliated through ASICA-Sur (the Association of Community Water Systems of the South) to receive technical assistance and, in some cases, direct EU financing for their systems. They hope to buy water at bulk rates from SEMAPA while remaining under community control.

Water Scarcity

The model of decentralized social-public water management may prove to be more viable than either the private or the state-centric model for countries like Bolivia, with major geographic barriers to centralized service provision, a weak state sector, and a strong culture of community participation. Still, regardless of the management model, the major challenge facing Bolivia's water sector today is the need for significant resources to upgrade and expand the existing infrastructure and develop new water sources.

While the Morales government has made significant progress in this area, a great deal remains to be accomplished. Recently, the government announced that Bolivia will meet its overall Millennium Development Goal for access to safe drinking water three years ahead of schedule, with 88% overall coverage achieved in 2010. But potable water access rates in Bolivia's rural and peri-urban zones (71%) lag far behind those for urban areas (96%), and are among the lowest in Latin America. And only 27% of Bolivians have adequate sanitation facilities—the second-worst record in the region, after Haiti.

Climate change and extreme weather events have added a new and urgent dimension to Bolivia's water challenges, both urban and rural. In recent years, droughts have increasingly undermined the water systems and agricultural economies of rural communities, while displacing their populations to precarious urban zones where torrential rains and floods overwhelm existing water and sanitation infrastructure. Retreating tropical glaciers are diminishing freshwater resources not only for small highland communities, but for the urban populations of El Alto and La Paz, who rely on glacial melt as a major source of drinking water. Water levels in Lake Titicaca, which some 2.6 million people depend on, are reportedly at their lowest levels since 1949.

The national development plan calls for a $700 million investment between 2010 and 2015 to upgrade Bolivia's water and sanitation infrastructure, including climate change adaptations. Like its neoliberal predecessors, the Morales government continues to rely on foreign donors (principally the Inter-American Development Bank, the Venezuela-dominated Latin American Development Bank, Spain, Italy, and Japan) for as much as 80% of this funding. Most of the balance is expected to come from the departmental and municipal governments, whose revenues—derived principally from hydrocarbons royalties—have increased substantially under Morales. Water researcher Susan Spronk points out that only 1.5% of the national budget (from direct Treasury revenues) is dedicated to water and sanitation improvements, while 80% is allocated to mining, hydrocarbons, hydroelectricity, and transportation infrastructure.

The reliance on foreign investment reinforces the concept of a "climate debt" owed by industrialized countries to developing nations, which Morales has justifiably promoted. Still, it keeps Bolivia's rate of water and sanitation infrastructure expansion dependent on external priorities, introducing a level of risk and unpredictability that could be problematic in the context of today's worldwide financial crisis.

Critics argue that the Morales government's budget priorities reflect its continued commitment to a "neo-extractivist" development model, at the expense of meeting popular needs through investment in sectors that are considered "unproductive." As well, the destructive impact of government-supported mining operations on local water supplies has been a growing source of tension with indigenous communities.

Once again, Bolivia is at the epicenter of a struggle over water—this time, over water scarcity—with worldwide implications. Given the combative nature of Bolivia's social movements, popular and regional conflicts over water shortages, and their impact on Bolivia's water politics, could be far more explosive than the Cochabamba Water War.

"From Water Wars to Water Scarcity: Bolivia's Cautionary Tale", 06/06/2013, online at: http://nacla.org/blog/2013/6/5/water-wars-water-scarcity-bolivia%E2%80%99s-cautionary-tale

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❖ Victoria signs Murray-Darling basin plan

VICTORIA is the first state to sign up to a funding model which underpins the Murray-Darling Basin plan.

The plan aims to boost water levels in the extensive river network, thus improving its ailing ecosystem.

Federal Water Minister Tony Burke on Thursday confirmed Victoria had committed to an intergovernmental agreement (IGA) which outlines state and commonwealth financial contributions and management cooperation.

"Once the IGA is concluded with all states, there is nothing left but implementation," he said in a statement.

His Victorian counterpart Peter Walsh said it took months of negotiations, but the state's key concerns had been met in the agreement.

"Victoria has always maintained that a healthy basin can be achieved alongside sustainable, productive and modern irrigation," he said.

Under the agreement Victoria will receive $47 million over eight years to implement the plan, which includes the removal of key river constraints such as bridges and weirs.

There will be $14 million over three years for the state to develop offset projects and ease water demands on the basin.

The overall plan will provide the Murray-Darling Basin with an extra 450 gigalitres of water, in part by way of government buyback.

The agreement has yet to be signed by NSW, the ACT, Queensland and South Australia.

"Victoria signs Murray-Darling basin plan", 06/06/2013, online at: http://www.heraldsun.com.au/news/breaking-news/victoria-signs-murray-darling-basin-plan/story-fni0xqi4-1226658605015

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