

ORSAM WATER BULLETIN

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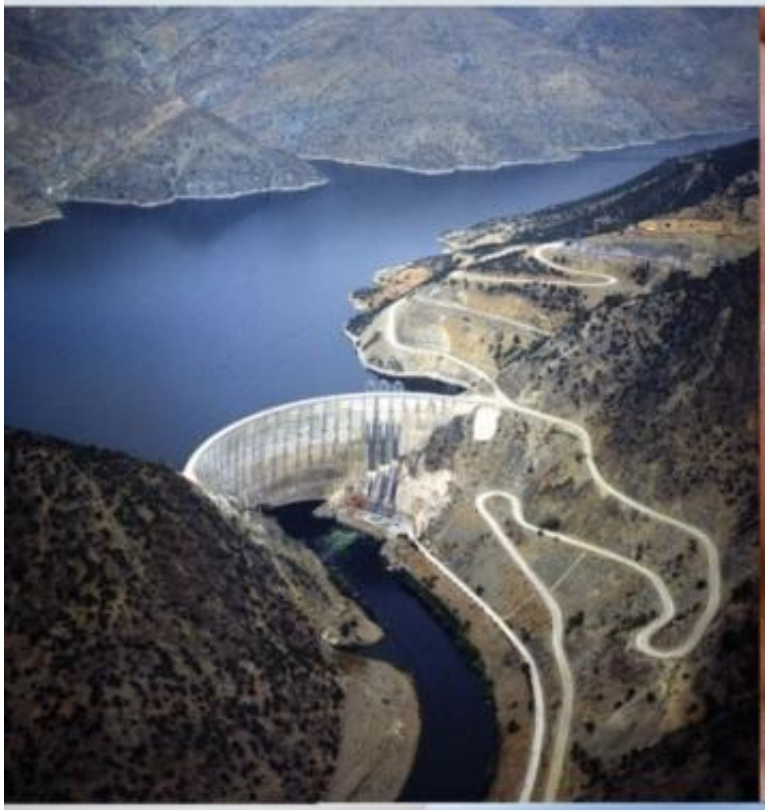



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❖ Water Wars: the Islamic State and the Mosul Dam

Water has become a central focus for both the Islamic State and its combatants in the current struggle being waged over the large geographic area of northern Iraq and southern Syria. Previously overshadowed by the conflicts in Gaza and Crimea, the rapid emergence and expansion of the Islamic State (IS) has recently become the focus of international media attention, accelerated by the release and dissemination of a video depicting the execution of American journalist Steven Foley, allegedly by the IS.

This is an area that has historically been arid, but is also experiencing one of the most severe and prolonged droughts of the last fifty years. Fundamentally, whoever controls the water controls the region. As the IS has rampaged through Iraq, hydro-infrastructure has been one of their main targets. Most significantly, in early August, IS forces took control over the vital Mosul Dam which provides power and irrigation to a large swath of Iraqi land. On August 14, Obama ordered strategic airstrikes specifically to "retake and establish control of this critical infrastructure site."
The Mosul Dam is the fourth largest dam in the Middle East and a significant character in its own right, regarding recent events and the region's greater history. For many, the news that the IS had secured the Mosul Dam signaled both their increasing power as well as their strategic intentions. US Defense Secretary Chuck Hagel asserted that, with the IS, "the sophistication of terrorism and ideology married with resources now poses a whole new dynamic and a new paradigm of threats to [Iraq]." Formerly called the Islamic State of Iraq and Syria (ISIS), this group of Sunni jihadists renamed itself after declaring its leader Abu Bakr al-Baghdadi caliph, and thereby announcing its ambitions to claim religious authority over the entirety of the Islamic world.

The IS has been noted for its violent imposition of a strict and particular interpretation of Shari'a Law, exhibited in public executions and genocidal attacks on Yazidis and other ethnic minorities like the Kurds as well as Shia Muslims, the majority group in Iraq that has historically persecuted the Sunni minority. But, as Hagel stated, the extreme violence of their expansion has been accompanied by sophisticated strategies largely unprecedented in jihadist groups. In addition to their focus on water infrastructure, the IS has been noted to target oil fields and experts estimate that the IS

currently generates around $3 million a day in selling off oil, making it "the richest terror group in the world."

Potentially, the IS hoped to used to Mosul Dam to generate revenue, extorting money in exchange for water and power. But the dam could also become a weapon itself, according to Stuart W. Bowen Jr., the former US special inspector general for Iraq reconstruction. This is not unprecedented: in April of this year, the IS captured the Fallujah barrage and flooded vast areas, forcing thousands to flee in some areas and simultaneously restricting water access to others, adding thirst to their arsenal (http://english.al-akhbar.com/node/19385). Moreover, the Fallujah dam played a vital role in the area's agricultural irrigation, so sabotaging it will undoubtedly produce future dramatic food shortages. If the IS were to have destroyed the Mosul Dam, a 65-foot wave would have been unleashed across areas of northern Iraq, reaching the city of Mosul and its 1.8 million inhabitants in just two hours.

This is not, however, the first time that the Mosul Dam has become the center of military conflict. A 2003 report documents how after the US invaded Iraq in that same year, American military intelligence feared that Iraqi forces loyal to Saddam Hussein had rigged the dam with explosives. While ultimately untrue, the large Kurdish population in the area could have been targeted victims of militaristic flooding. Actually, it was members of Kurdish militias that had provided security for the dam throughout the early days of the war, in extremely distressed conditions. American inspectors at the site noted that the workers – nearly 500 in number – had been operating the dam since the beginning of the war without pay. More incredible still, the computerized controls had failed and operators had been running the facility manually.

The selflessness of these workers is particularly commendable because even without sabotage, the Mosul Dam constantly wavers on the edge of failing, due to its lack of structural integrity. The earthen embankment dam was constructed on soft gypsum, a mineral that dissolves when in contact with water. A complicated grouting system stabilizes the precarious facility but requires constant maintenance, which entails constantly filling in cracks as they surface. If, even for a short period, the dam is not maintained, it would collapse and have devastating effects. A 2006 report by the US Army Corp of Engineers stated, "In terms of internal erosion potential of the foundation, Mosul Dam is the

most dangerous dam in the world." If the dam were to fail, the city of Mosul would be under 65 feet of water and Baghdad would see up to 15 feet. Half a million people would die.

Initially referred to as the "Saddam Dam", construction on the Mosul Dam began in 1980, at the beginning of the Iran-Iraq war. The project was important to bolster support for Saddam Hussein during the conflict and promoting Ba'athism, an Arab nationalist ideology that combines socialist modernisation efforts with a secular, single-party government. The dam was built by a German-Italian consortium led by Hochtief Aktiengesellschaft, the same company that had engineered the Aswan Dam in Egypt some twenty years earlier, only for it to be similarly used by the then-Egyptian President Gamal Abdel Nasser to promote his own pan-Arab ideology. While Nasser's construction was intended to promote Arab nationalism in opposition to the monarchies of the time, the political situation in the Middle East and North Africa (MENA) changed dramatically by the time Hussein began work on the Mosul Dam. Hussein was threatened most, both politically and ideologically, by the Islamic Republic of Iran, led by the Grand Ayatollah Ruhollah Khomeini after the 1979 Iranian Revolution. While the Iran-Iraq war was, at the time, significantly dominated by the differences in these competing ideologies, in retrospect it was just as driven by resources as today's conflict with the IS, with resource infrastructure playing a similar military role. For example, on November 22, 1980, Iranian forces bombed the Dokan Dam in northern Iraq. The region's fragile system of allocating scarce resources has made water the ghost lurking behind its war-plagued history.

Even before the rise of Hussein's regime, the area of the Mosul Dam was scouted as a potential site for a dam despite its precarious geography. A *New York Times* article from 1957, states that a British company had been awarded the contract for initial drilling to test the viability of the site, revealing that the ruling Hashemite Kingdom of the time also eyed hydro-infrastructure as a means to shore up support. Even earlier, a 1919 *New York Times* article entitled "Remaking the Garden of Eden," (steeped in the fraught colonialist rhetoric of the time) describes British plans for the then-mandate of Iraq to "restore [the mandate's] fabulous fertility," through an extensive series of dams and canals. But even then, the technical and economic infeasibility of this was noted, long before water scarcity surfaced as perhaps the defining issue of the contemporary era.

Michael Stephen, deputy director of the Royal United Services Institute think-tank in Qatar, is quoted

in a recent article for *The Guardian*, stating, "We are seeing a battle for control of water. Water is now the major strategic objective of all groups in Iraq. It's life or death. If you control water in Iraq you have a grip on Baghdad, and you can cause major problems. Water is essential in this conflict." While the pivotal role of water is obviously not new for the region, the long-standing drought as well as rising temperatures intensifies its importance. Syrian forces loyal to Bashar al-Assad, the dictatorial ruler of the country before and during its prolonged civil war, have been documented using water, or the lack of it, as a military weapon — just like the IS.

While evidently not new, the militaristic use of water and its infrastructure significantly exacerbates an already pressing problem for the region. Coupled with a changing climate, the effects of the IS and other attacks on hydro-infrastructure will create an unprecedented humanitarian crisis, one that is already becoming visible. Additionally, current and planned water management in the greater region poses a significant threat to Iraq. Both Turkey and Iran already capture large amounts of water for their own agriculture and energy before it enters Iraq. The Kurdistan regional government plans to complete the Bekhme Dam along the border of Iraq and Syria on a major tributary of the Tigris. And by 2018, Iran plansto create a new dam that would divert even more water that normally flows into Iraq. Such water diversions, coupled with the lack of rainfall, will exacerbate drought conditions in region between the Tigris and Euphrates rivers, the key agricultural region of the country. As Akio Kitoh of Japan's Meteorological Research Institute put it in an article for *The New Scientist*: "The ancient Fertile Crescent will disappear in this century." While riparian rights have long been a contentious issue between nation-states, contemporary ecological crises have the potential to provoke countless wars in the region, with perhaps the current conflicts serving as just the beginning.

In light of this, contemporary water management practices must be critically and urgently re-evaluated. Thayer Scudder, described as "the world's leading authority on the impact of dams on poor people," recently asserted that while long-touted as a major boon for developing countries, dams have more negative repercussions than positive. They often require their creators to assume crippling debt for their construction and are, obviously, ecologically destructive. Moreover, Scudder found that the displacement of populations caused by dam construction largely produces poverty and social disintegration. Plus, they require enormous resources to construct but with pay-offs that are normally much below predicted levels. He finds dams "ineffective in resolving urgent energy crises."

And regarding cases like the Mosul Dam, their potential to be used by the militarily is just another detracting factor that must be taken into account before new dams are constructed.

"Water Wars: the Islamic State and the Mosul Dam", 27/08/2014, online at:
http://archinect.com/features/article/107492865/water-wars-the-islamic-state-and-the-mosul-dam

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❖ Vital Role of Water in Iraq

Water can put out political fires in the Mideast. Courageous indigenous warriors are making that possible, but the United States must lead.

Kurd forces have retaken the vital Mosul Dam in Iraq from ISIS (Islamic State of Iraq and Greater Syria). They have done so with acknowledged air support from U.S., and probably also Special Forces on the ground.

ISIS has so far earned a frightening reputation for brutality and fanaticism. Even extremist al Qaeda groups reject their inherently self-defeating murderous tactics.

Events highlight the importance of conflicts in the Mideast over both ethnic identity and essential water. There is nothing new about either element; each can trace roots to ancient times.

The Kurds are a distinctive and often persecuted minority. Their traditional territory of Kurdistan spans national boundaries of Iran, Iraq, Syria and Turkey.

Turkey until recent years was a reliable friend as well as formal ally of the United States. The election in 2002 of the Justice and Development Party, which is strongly rooted in the Islamic religion, has greatly complicated relations with the U.S. and also Israel. Prime Minister and Recep Tayyip Erdoğan has been given to inflammatory rhetoric regarding Israel and other topics, and autocratic moves. Controversy continually swirls around him and his associates.

Violent Kurd separatists have threatened Turkey's national unity since long before the current government came to power. The Bush administration's 2003 invasion of Iraq was strongly opposed by Turkey, in part due to concern about instability related to the Kurds.

Turkish government officials in Ankara have proven quite willing to use the leverage provided by water resources. This includes but reaches beyond the Strait of Hormuz, which controls access between the Black Sea and the Mediterranean.

Water leverage was dramatically demonstrated in the fall of 1998 during a four-week standoff with Syria, where Kurd separatist leader Abdullah Ocalan of the PKK sought sanctuary. After an

extended confrontation, Syria in late October expelled him, and went further to publicly ban him and label his PKK a 'terrorist organization.'

Expulsion of Ocalan from Syria was a major victory for Turkey, reflecting a strong strategic position. Specific leverage was provided by Ankara's control of Euphrates River water vital to Damascus.

Mideast water has steadily become more important, reinforcing the traditional role of tool for strategic leverage. Since the 1970s, water supplies in various countries have regularly fallen short of demand. This in turn is part of an expanding global problem. The fundamental challenge is not lack of water, but rather that much of the available supply is not fit to drink.

Desalination is a solution, especially applicable to the Mideast. Abu Dhabi is a leader in fueling plants with renewable energy. Enormous new investments are underway in the region, including in particular in Abu Dhabi, Dubai and other Emirates, Kuwait, Qatar and Saudi Arabia.

By contrast, the United States draws only about five per cent of water consumed from desalination plants. However, the U.S. along with Israel possess major centers of research and development.

The Obama administration could lead in pressing applied research to lower the relatively high cost of desalination. Even small amounts of publicized financial support could create major leverage in world markets, where the promise of significant profits from meeting expanding demand provides strong natural incentives.

Essential to this, however, is focused executive discipline and determination. That is unlikely from this White House, especially in an election year.

"Vital role of water in Iraq", Arthur Cyr, 26/08/2014, online at: http://www.crescent-news.com/opinion/2014/08/26/arthur-cyr-vital-role-of-water-in-iraq

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❖ Recapture of Iraq dam highlights vital roles of water

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"Recapture of Iraq dam highlights vital roles of water", 24/08/2014, online at: http://www.kenoshanews.com/opinion/recapture_of_iraq_dam__highlights_vital_roles_of_water_478558926.html

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❖ What can Iraq's Fight over the Mosul Dam Tell Us about Water Security?

Does the ongoing struggle between ISIS, the Iraqi government and Kurdish fighters qualify as a 'water war'? Not exactly, argue Cameron Harrington and Schuyler Null. Water remains a key security variable in the region, but calling clashes over resources such as the Mosul Dam a water war is misleading.

By Cameron Harrington and Schuyler Null for Environmental Change and Security Program (ECSP)

This article was originally published on 20 August 2014 by New Security Beat, the blog of the Environmental Change and Security Program (ECSP) at the Wilson Center.

The fight for control over "the most dangerous dam in the world" is raging.

Since its capture by Islamic State (IS) militants on August 7 and subsequent attempts by Iraqi government and Kurdish forces to take it back, Iraq's Mosul Dam has been one of the central components of the government's surprising and rapid collapse in the country's northern and western provinces. In fact, one might see the capture of the Mosul Dam as the moment IS ascended from a dangerous insurgent group to an existential threat to Iraq as a state.

Is the fight for Mosul Dam a "water war?" Has the scarcity-induced chaos that many have predicted finally arrived? Not exactly.

The dynamics of the conflict and water's role in it are multifaceted. It cannot be characterized as a simple fight over dwindling water resources. However, the military struggle between IS, the Iraqi government, and Iraqi Kurdish fighters does vividly demonstrate the numerous ways water intersects with violent conflict. From the plainly illustrated strategic value of dams, to its use as a weapon of war, a spoil, driver, and potential peacebuilding tool, water factors into conflict in ways that defy easy classification.

Critical, But Vulnerable, Infrastructure

The Mosul Dam is located on the Tigris River in a valley about 30 miles north of the city of Mosul, Iraq's second largest and home to 1.8 million people. In operation since 1986, the dam generates upwards of 310 MW of electricity a day; holds back over 11 billion cubic meters of water; and is used for flood control, municipal water supplies, and irrigation, a crucial lifeline for thousands of farmers in Iraq's northern Ninevah province.

Despite its significance to national infrastructure and the well-being of millions, concerns over poor security have been voiced for years. The dam was constructed on highly soluble soil, meaning it requires constant repairs. During the 2003 invasion, U.S. forces identified the protection of the dam

as a primary objective, and, in 2006, it was described by the U.S. Army Corps of Engineers as "the most dangerous dam in the world."

Between 2006 and 2010, $30 million was poured into upgrades, but the dam remains critically vulnerable thanks to its perpetual structural problems and the tenuous security environment surrounding it.

In early August, as the fall of the dam became increasingly evident, many news storiesand analyses emphasized the incredible destructive potential then controlled by the Islamic State. Some of these reports relied on data from a 2009 article by two Iraqi academics that simulated the effects of a Mosul Dam break. Their findings make for terrifying reading: In the case of a severe dam failure, Mosul would be buried beneath an 80-foot wave crashing down at a velocity of over 3.5 meters a second, and the resulting flood would be so strong that a 15-foot high wave would carry on to Baghdad, over 270 miles away.

The Tipping Point

Judging by reports of extreme brutality, as well as their genocidal rhetoric, there is ample reason to fear the Islamic State's control of Iraq's largest dam. The U.S. government and its allies evidently agree. It was a confluence of factors, including theviolent persecution of the Yazidi religious minority, the continued advance on the Kurdish capital of Irbil, and the fall of the dam, which likely tipped the balance and prompted the start of U.S. airstrikes on August 8.

Initial targets seem to have been militant positions around Mount Sinjar to help establish a safe corridor for many of the trapped Yazidi. But soon the U.S. turned its attention to dislodging IS fighters from around the dam, which was explicitly cited by the White House on August 17 in its justification for more air strikes:

The failure of the Mosul dam could threaten the lives of large numbers of civilians, endanger U.S. personnel and facilities, including the U.S. Embassy in Baghdad, and prevent the Iraqi government from providing critical services to the Iraqi populace.

According to the latest reports, it appears these strikes have made a difference as Iraqi Kurdish forces have regained control of the dam, hopefully easing fears of IS using it as a catastrophic weapon against the Iraqi populace.

Water as a Weapon

The battle over control of the Mosul Dam provides a dramatic centerpiece that has captured the public imagination, but it is not the first time water has played an important role in this war.

In April, reports emerged of attempts by IS to manufacture a drought by closing the floodgates of the small Nuaimiyah Dam on the Euphrates River near Islamic State-controlled Fallujah. The resulting water crisis affected millions of people in the predominantly Shia cities of Karbala and Najaf and was partly responsible for two-thirds of the polling stations in Anbar province being closed during recent parliamentary elections.

There are conflicting reports about what happened next – IS claims the Iraqi government decided to open the floodgates further upstream, thereby flooding Fallujah and surrounding regions, while the Iraqi government says IS caused the flooding themselvesby mismanaging the Nuaimiyah Dam. Regardless, water levels in the area rose significantly and overflowed the Euphrates banks into irrigation canals. Some 60,000 people lost their homes, schools were destroyed, and almost 50,000 acres of agricultural land were flooded.

Water has sparked regional tensions as well. In May, there were accusations that Turkey (or Syria, or IS, depending on the source) reduced the flow of the Euphrates into certain parts of Syria and Iraq, with millions of people being left without adequate drinking water as a result.

And hanging above it all is the fact that the Middle East is in the midst of its worst drought in at least 60 years.

Beyond Water Wars

The crisis in Iraq demonstrates how water can play a number of pivotal roles in conflict and peace, without being the primary causal factor – and why that distinction is important.

Traditionally understood, a "water war" reflects a zero-sum game arising from scarcity. This approach emphasizes Malthusian concerns of growing populations, which lead to high resource consumption, water degradation and scarcity, furthering competition between states and finally leading to the outbreak of violence and war. This calculus reflects a rather simplistic reduction of the variety of reasons why conflict breaks out, as well as the different ways water factors into conflict other than as a lootable resource.

The Islamic State appears to be primarily interested in using water as a strategic leverage point or component in its project to establish a long-lasting Caliphate rather than as a tactical weapon. According to one report, once they took control of the Mosul Dam, IS officials told workers their salaries would be paid, provided the dam remained in operation and electricity was generated for the region under its control. This would seem to adhere to other reports that detail how IS uses its control of oil fields, oil revenues, and petroleum products primarily as income generating projects.

The distinction is important because it can frame how we anticipate and respond to water problems. Labeling a conflict a "water war" reduces the complexity of water to a single conflict variable. But water intersects with society in all its forms and is also important for peacebuilding and establishing government legitimacy.

Water provision is a crucial component of the state. The failure to provide adequate water supplies reflects a failure to provide basic security and justice, core functions of the state. In this regard, improvements to water infrastructure and management should be seen as key peacebuilding interventions in places like Iraq.

Conflict Is Never Simple

It is clear water has ascended as a key security variable for the Islamic State, for Iraq, and for the wider international community. And it's understandable that in the rush to portray the existential threat posed by the Islamic State controlling vast water resources, officials and journalists have focused on the struggle over scarce resources and the potential for catastrophic damage. A careful reading of the situation, however, reveals multiple layers of complexity and interaction between water and security that suggest more calculated motives.

In Iraq, water is being used as a weapon, for covert diplomacy, blackmail, economic development, and as a discourse justifying armed intervention – but none of these things make the conflict a water war.

Labeling it as such overlooks more complex dynamics and reduces causality to a single variable. This is a dangerous trend which leaves violent conflict as a product of geography rather than human decisions and obscures important interventions that can build lasting peace.

For more information on issues and events that shape our world, please visit the ISN Blog or browse our resources.

Sources: Al-Taiee and Rasheed (2009), The Atlantic, BBC News, Bloomberg, Foreign Policy, The Independent, International Water Power and Dam Construction, Keith Johnson, The New York Times, Organization for Economic Cooperation and Development, Pacific Institute, Qantara, Reuters, RT, U.S. Army Corps of Engineers, The Wall Street Journal, The Washington Post.

"What can Iraq's Fight over the Mosul Dam Tell Us about Water Security?",29/08/2014, online at: http://www.isn.ethz.ch/Digital-Library/Articles/Detail/?lng=en&id=183283

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❖ The World's Most Dangerous Dams

Hydroelectric dams are a nifty way of producing a huge amount of power, but they do not last forever. This is a tale of two dams that will fail unless they are urgently repaired, and if they fail, catastrophic suffering and loss of life will be the result.

The first is the Mosul Dam, which stretches across the Tigris River in a valley north of Mosul, Iraq. As dams go, this one is a civil engineering horror. The dam was captured on Aug. 7 by the Islamic State, and retaken 10 days later by Iraqi and Kurdish forces, with American air support.

Should the two-mile-wide dam fail, which is likely, Mosul would be wiped out and the damage would extend to Baghdad. Loss of life could reach 500,000, and millions could be deprived of water and power: an immense catastrophe piled on the daily pain of Iraq.

The second dam, in southern Africa on the Zambezi River, is the Kariba. This 55-year-old dam, by some measures, is the world's second largest. It was a civil engineering masterpiece and has held up well, given the spotty maintenance by its owners – Zambia, on the north bank and Zimbabwe, on the south bank.

But the Kariba Dam is predicted to fail within three years unless it undergoes massive repair. If it does, surging water would rip a vast trench down the length of the Zambezi River on its route to the Indian Ocean. The wall of water would take out another giant dam, Cahora Bassa, in Mozambique.

Loss of life could reach 3.5 million, with untold damage to wildlife. South central Africa would lose 40 percent of its electric supply.

While the Mosul and Kariba dams share the same potential lethality, they are very different structures.

The Mosul Dam was a rush job, ordered by Saddam Hussein in the 1980s without regard to the engineering realities of the site. It is anchored in gypsum, which dissolves in water. Daily, leaks in the foundation have to be plugged with grout -- a mixture of cement and sand. The U.S. Army Corps of Engineers said the Mosul Dam is fundamentally the wrong structure for the location, and called it the "most dangerous dam in the world."

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Even with careful tending, the Mosul Dam is in danger. According to a report in The Wall Street Journal, many of the workers who have kept the dam operating fled when fighters from the Islamic State arrived on the scene. Only one dedicated manager is known to have stayed.

The United States has spent $33 million trying to stabilize the Mosul Dam, but the money, according an inspector general's report, was largely wasted. Now, the U.S. bombing campaign is threatening to further destabilize an already fragile structure.

Apart from general maintenance issues, the Kariba Dam's problems are a little simpler. When the dam was built between 1955 and 1959, the plan was to control the river's flow though six sluice gates set in the wall. The water travels through the sluices and empties into a plunge pool before flowing downstream.

The trouble is that the plunge pool has grown from an indentation in the riverbed to a vast 285-foot-deep crater. The water, which swirls around inside it with great force, is eroding the basalt rock on which the dam is anchored. In other words, the dam is eating itself alive. Engineers dare not open all the sluice gates at once – the last time they did was in 1966.

The necessary fix is a combination of blasting an enlarged plunge pool so the water moves along without creating a whirlpool, and injecting grout -- in the form of underwater concrete -- to shore up the foundation.

A consortium of the World Bank, the European Union and the African Development Bank this month agreed to provide $250 million to save Kariba. Engineers say the work must be done in the next three years or it will be too late.

If Zimbabwe and Zambia can agree on the contracts, work should begin next year. But in that part of the world, the only thing that moves fast is the Zambezi River.

Considering the chaos that has befallen Iraq, the outlook for the Mosul Dam is anyone's guess.

"The World's Most Dangerous Dams", 25/08/2014, online at: http://oilprice.com/Alternative-Energy/Hydroelectric/The-Worlds-Most-Dangerous-Dams.html

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❖ Middle East Staggers Under Weight of 3 Million Syrian Refugees

PORTLAND, Ore., Aug. 29, 2014 /PRNewswire-USNewswire/ -- According to the United Nations, there are now 3 million registered Syrian refugees spread across the Middle East, with the majority living in Lebanon, Jordan, Turkey and Iraq. The global humanitarian organization Mercy Corps works closely with these refugees and the neighboring countries hosting them to stretch scarce resources and strengthen communities' ability to peacefully resolve urgent issues.

Economic insecurity, skyrocketing rents, and competition over scarce jobs are potential flashpoints for host communities and Syrian refugees, particularly in Turkey, whose unofficial refugee population is estimated at more than 1 million.

Mercy Corps is conducting extensive labor market research in Gaziantep, an industrial city in southeast Turkey that has been a magnet for thousands of Syrians who fled the war in Syria, to better understand how the private sector can help alleviate the current situation.

"Syrians in Turkey are exceptionally challenged by the language barrier and cross-cultural differences, which increase tensions dramatically," says Neal Keny-Guyer, chief executive officer of Mercy Corps. "Our assessment should allow us to design market-responsive programs that directly benefit both vulnerable Syrian and Turkish households in a way that reduces strain between the communities."

Water is yet another issue that has sparked confrontation between Syrian refugees and host communities.

"Eighty liters of water per person per day are required to satisfy basic needs," says Dina Sabbagh, deputy chief of party for Mercy Corps' water demand management in Jordan. "We were seeing communities in Jordan with large numbers of refugees where the average supply of water had

dropped to as low as 30 liters per person per day. We must continue to find ways to both increase the overall supply of water, while managing the increasing demand."

The third driest country in the world, Jordan's water shortages have hit emergency levels in many areas. Mercy Corps and its partners have moved quickly to renovate municipal water systems across the country, providing enough water for hundreds of thousands of additional residents. Working with community based organizations across the country, Mercy Corps has also helped reduce overall demand for water and improved water management practices.

"Middle East Staggers Under Weight of 3 Million Syrian Refugees", 29/08/2014, online at: http://www.prnewswire.com/news-releases/273215971.html

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❖ New 'State of the World's Rivers' Project Documents Decline in Rivers From Dams

Berkeley, US--(ENEWSPF)--August 26, 2014. Today, International Rivers launched "**The State of the World's Rivers**," a first-of-its-kind interactive online database that illustrates the role that dams have played in impoverishing the health of the world's river basins. The database shows how river fragmentation due to decades of dam-building is highly correlated with poor water quality and low biodiversity. Many of the world's great river basins have been dammed to the point of serious decline, including the Mississippi, Yangtze, Paraná and Danube.

"The evidence we've compiled of planetary-scale impacts from river change is strong enough to warrant a major international focus on understanding the thresholds for 'river change' in the world's major basins, and for the planet as a whole system," said Jason Rainey, Executive Director of International Rivers.

For example, in the Middle East, decades of dam building in the Tigris-Euphrates basin have made it one of the most fragmented basins in the world. As a result, the basin's flooded grassland marshes have significantly decreased, leading to the disappearance of salt-tolerant vegetation that helped protect coastal areas, and a reduction in the plankton-rich waters that fertilize surrounding soils. Habitat has decreased for 52 native fish species, migratory bird species, and mammals such as the water buffalo, antelopes and gazelles, and the jerboa.

Meanwhile, some of the lesser-dammed basins, which are still relatively healthy at this point, are being targeted for major damming. For example, the most biodiverse basin in the world, the Amazon, still provides habitat for roughly 14,000 species of mammals, 2,200 fish species, 1,500 bird species, and more than 1,000 amphibian species, like the Amazon River Dolphin, the Amazonian Manatee, and the Giant Otter.

When all dam sizes are counted, Brazil plans to build or is currently building an astonishing 412 dams in the Paraná and 254 in the Amazon basins. In Asia, China plans to continue to dam the Yangtze basin with at least another 94 planned large dams, while an additional 73 are under construction. At least 153 more dams are planned or already being built in the Mekong basin.

Other basins that are high in biodiversity and water quality which are also targets for dam-building include the Tocantins, the Irrawaddy, the Congo, and the Zambezi.

Zachary Hurwitz, the coordinator of the project, said: "Basins that have been highly fragmented by dams provide important lessons for managing the relatively un-dammed basins that remain. Governments should turn their attention to river preservation to protect these basins' valuable ecosystem services."

In addition to calling for an inter-governmental panel of experts to assess the State of the World's Rivers, International Rivers recommends that no more dams be built on the mainstems of rivers, and that damming rivers becomes an option of last resort.

Created using Google Earth, the State of the World's Rivers website maps nearly 6,000 dams in the world's 50 major river basins, and ranks their ecological health according to indicators of river fragmentation, water quality and biodiversity. The dams mapped are a small percentage of the more than 50,000 large dams that clog the arteries of our planet.

Users of the site can compare how each individual basin ranks in fragmentation, biodiversity, and water quality, and explore ten of the most significant river basins in more depth. Each focus basin describes the threats from dam building, and allows users to see how dams can impact Ramsar Sites of Wetlands of International Importance and UNESCO World Heritage Sites.

"New 'State of the World's Rivers' Project Documents Decline in Rivers From Dams", 26/08/2014, online at: http://www.enewspf.com/latest-news/science/science-a-environmental/55018-new-state-of-the-world-s-rivers-project-documents-decline-in-rivers-from-dams.html

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❖ Dams versus rivers - the global battle

A new 'State of the World's Rivers' database shows how the world's rivers have been impoverished by dams and their ecosystems devastated - and provides a valuable resource to help save river basins that remain in good health.

International Rivers has launched 'The State of the World's Rivers', an interactive online database that illustrates the role that dams have played in impoverishing the health of the world's river basins.
The database shows how river fragmentation due to decades of dam-building is highly correlated with poor water quality and low biodiversity. Many of the world's great river basins have been dammed to the point of serious decline, including the Mississippi, Yangtze, Paraná and Danube.

"The evidence we've compiled of planetary-scale impacts from river change is strong enough to warrant a major international focus on understanding the thresholds for 'river change' in the world's major basins, and for the planet as a whole system", said Jason Rainey, Executive Director of International Rivers.
For example, in the Middle East, decades of dam building in the Tigris-Euphrates basin have made it one of the most fragmented basins in the world.

As a result, the basin's flooded grassland marshes have significantly decreased, leading to the disappearance of salt-tolerant vegetation that helped protect coastal areas, and a reduction in the plankton-rich waters that fertilize surrounding soils.

Habitat has decreased for 52 native fish species, migratory bird species, and mammals such as the water buffalo, antelopes and gazelles, and the jerboa.

Largely intact river basins now at risk

Meanwhile, some of the lesser-dammed basins, which are still relatively healthy at this point, are being targeted for major damming.

For example, the most biodiverse basin in the world, the Amazon, still provides habitat for roughly 14,000 species of mammals, 2,200 fish species, 1,500 bird species, and more than 1,000 amphibian species, like the Amazon River Dolphin, the Amazonian Manatee, and the Giant Otter.

When all dam sizes are counted, South American countries plan to build an astonishing 412 dams in the Paraná basin, while 254 dams are planned or under construction in the Amazon basin.

In Asia, China plans to continue to dam the Yangtze basin with at least another 94 planned large dams. At least 153 more dams are planned for the Mekong basin.

Other basins that are high in biodiversity and water quality which are also targets for dam-building include the Tocantins, the Irrawaddy, the Congo, and the Zambezi.

Zachary Hurwitz, the coordinator of the project, said: *"Basins that have been highly fragmented by dams provide important lessons for managing the relatively un-dammed basins that remain. Governments should turn their attention to river preservation to protect these basins' valuable ecosystem services."*

Make damming 'an option of last resort'

In addition to calling for an inter-governmental panel of experts to assess the State of the World's Rivers, International Rivers recommends that no more dams be built on the mainstems of rivers, and that damming rivers becomes an option of last resort.

Created using Google Earth, the State of the World's Rivers website maps nearly 6,000 dams in the world's 50 major river basins, and ranks their ecological health according to indicators of river fragmentation, water quality and biodiversity.

The dams mapped are a small percentage of the more than 50,000 large dams that clog the arteries of our planet.

Users of the site can compare how each individual basin ranks in fragmentation, biodiversity, and water quality, and explore ten of the most significant river basins in more depth.

Each focus basin describes the threats from dam building, and allows users to see how dams can impact Ramsar Sites of Wetlands of International Importance and UNESCO World Heritage Sites.

"Dams versus rivers - the global battle", 26/08/2014, online at:
http://www.theecologist.org/News/news_round_up/2531188/dams_versus_rivers_the_global_battle.html

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❖ Large Dams "Highly Correlated" with Poor Water Quality

WASHINGTON, Aug 29 2014 (IPS) - Large-scale dams are likely having a detrimental impact on water quality and biodiversity around the world, according to a new study that tracks and correlates data from thousands of projects.

Focusing on the 50 most substantial river basins, researchers with International Rivers, a watchdog group, compiled and compared available data from some 6,000 of the world's estimated 50,000 large dams. Eighty percent of the time, they found, the presence of large dams, typically those over 15 metres high, came along with findings of poor water quality, including high levels of mercury and trapped sedimentation.

While the investigators are careful to note that the correlations do not necessarily indicate causal relationships, the say the data suggest a clear, global pattern. They are now calling for an intergovernmental panel of experts tasked with coming up with a systemic method by which to assess and monitor the health of the world's river basins.

"[R]iver fragmentation due to decades of dam-building is highly correlated with poor water quality and low biodiversity," International Rivers said Tuesday in unveiling the State of the World's Rivers, an online database detailing the findings. "Many of the world's great river basins have been dammed to the point of serious decline."

The group points to the Tigris-Euphrates basin, today home to 39 dams and one of the systems that has been most "fragmented" as a result. The effect appears to have been a vast decrease in the region's traditional marshes, including the salt-tolerant flora that helped sustain the coastal areas, as well as a drop in soil fertility.

The State of the World project tracks the spread of dam-building alongside data on biodiversity and water-quality metrics in the river basins affected. While the project is using only previously published data, organisers say the effort is the first time that these disparate data sets have been overlaid in order to find broader trends.

"By and large most governments, particularly in the developing world, do not have the capacity to track this type of data, so in that sense they're flying blind in setting policy around dam construction," Zachary Hurwitz, the project's coordinator, told IPS.

"We can do a much better job at observing [dam-affected] resettled populations, but most governments don't have the capacity to do continuous biodiversity monitoring. Yet from our perspective, those data are what you really need in order to have a conversation around energy planning."

Dam-building boom

Today, four of the five most fragmented river systems are in South and East Asia, according to the new data. But four others in the top 10 are in Europe and North America, home to some of the most extensive dam systems, especially the United States.

For all the debate in development circles in recent years about dam-building in developing countries, the new data suggests that two of the world's poorest continents, Africa and South America, remain relatively less affected by large-scale damming than other parts of the world.

Of course, both Africa and South America have enormous hydropower potential and increasingly problematic power crunches, and many of the countries in these continents are moving quickly to capitalise on their river energy.

According to estimates from International Rivers, Brazil alone is currently planning to build more than 650 dams of all sizes. The country is also home to some of the highest numbers of species that would be threatened by such moves.

Not only are Brazil, China and India busy building dams at home, but companies from these countries are also increasingly selling such services to other developing countries.

"Precisely those basins that are least fragmented are currently being targeted for a great expansion of dam-building," Hurwitz says. "But if we look at the experience and data from areas of high historical dam-building – the Mississippi basin the United States, the Danube basin in Europe – those worrying trends are likely to be repeated in the least-fragmented basins if this proliferation of dam-building continues."

Advocates are expressing particularly concern over the confluence of the new strengthened focus on dam-building and the potential impact of climate change on freshwater biodiversity. International Rivers is calling for an intergovernmental panel to assess the state of the world's river basins, aimed at developing metrics for systemic assessment and best practices for river preservation.

"The evidence we've compiled of planetary-scale impacts from river change is strong enough to warrant a major international focus on understanding the thresholds for river change in the world's major basins, and for the planet as a whole system," Jason Rainey, the group's executive director, said in a statement.

Economic burden

Particularly for increasingly energy-starved developing countries, concerns around large-scale dam-building go beyond environmental or even social considerations.

Energy access remains a central consideration in any set of development metrics, and lack of energy is an inherent drag on issues as disparate as education and industry. Further, concerns around climate change have re-energised what had been flagging interest in large dam projects, epitomised by last year's decision by the World Bank to refocus on such projects.

Yet there remains fervent debate around whether this is the best way to go, particularly for developing countries. Large dams typically cost several billion dollars and require extensive planning to complete, and in the past these plans have been blamed for overwhelming fragile economies.

A new touchstone in this debate came out earlier this year, in a widely cited study from researchers at Oxford University. Looking at nearly 250 large dams dating back as far as the 1920s, they found pervasive cost and time overruns.

"We find overwhelming evidence that budgets are systematically biased below actual costs of large hydropower dams," the authors wrote in the paper's abstract.

"The outside view suggests that in most countries large hydropower dams will be too costly … and take too long to build to deliver a positive risk-adjusted return unless suitable risk management measures … can be affordably provided."

Instead, the researchers encouraged policymakers in developing countries to focus on "agile energy alternatives" that can be built more quickly.

On the other side of this debate, the findings were attacked by the International Commission on Large Dams, a Paris-based NGO, for focusing on an unrepresentative set of extremely large dams. The group's president, Adama Nombre, also questioned the climate impact of the researchers' preferred alternative options.

"What would be those alternatives?" Nombre asked. "Fossil fuel plants consuming coal or gas. Without explicitly saying it, the authors use a purely financial reasoning to bring us toward a carbon-emitting electric system."

"Large Dams "Highly Correlated" with Poor Water Quality",29/08/2014, online at: http://www.ipsnews.net/2014/08/large-dams-highly-correlated-with-poor-water-quality/

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❖ New Palestinian Town in West Bank Awaits Israel's Approval for Water

RAWABI, West Bank — The Roman-style amphitheater with seating for 12,000 is taking shape against a stunning backdrop of rolling hills. Off to one side, a small soccer stadium is under construction. On the slopes below, there are plans for a water park, and in the town center, a piazza lined with arcades and cafes. A movie theater is being built with seven screens, one of them 4-D.

"This will be a major destination for Palestinians who have no destinations," Bashar Masri, the Palestinian businessman and driving force behind this ambitious project to build a new city here, said as he toured the site in his jeep last week.

The first 600 apartments in Rawabi, a short commute from Ramallah, the Palestinian Authority's administrative capital in the West Bank, were sold over a year ago and should have been turned over to their new owners in the spring.

President Mahmoud Abbas of the Palestinian Authority arrived in Amman for a meeting with King Abdullah last week.Abbas Is Seen as Ready to Seek Pact on His OwnAUG. 25, 2014

The distance runner Nader al-Masri with his father beside what remained of their family home in Beit Hanoun, Gaza Strip.Reporter's Notebook: For a Gaza Athlete, There Is Nowhere to RunAUG. 25, 2014

Israel Says Missile Strike Killed Hamas Official Handling 'Terror Funds'AUG. 24, 2014

Map showing the destruction in Gaza. See all » interactive Assessing the Damage and Destruction in GazaAUG. 3, 2014

But there are no people living in Rawabi, because there is no water here. Connecting the new city to a nearby water main depends on long-awaited approval from Israel. As a result, the future of the whole enterprise is hanging in the balance.

Bashar Masri, a Palestinian businessman and the driving force behind the ambitious project to build the city of Rawabi in the West Bank. Credit Rina Castelnuovo for The New York Times

While Israeli officials say the water issue will be resolved soon, possibly within a week, Rawabi has already turned from a symbol of Palestinian entrepreneurship and state building into a cautionary tale of the perils of investing in the Israeli-occupied West Bank.

Aside from the water issue, Rawabi has still not received a permit to build a permanent road to the city, a small Palestinian enclave surrounded by Israeli-controlled territory.

"If we cannot achieve such a little request as getting water and a road for Rawabi, how can anyone speak of a massive economic plan for the West Bank?" Mr. Masri asked. He was referring to an investment plan of up to $4 billion that Secretary of State John Kerry announced last year as part of an effort to revive moribund peace talks.

Mr. Masri is facing a major cash flow crisis because he cannot collect the $70 million due from homeowners and mortgage banks for the first 600 apartments until they are delivered. Contracts for further construction have been frozen, and up to 700 of the 4,000 people working on the project could lose their jobs by the end of September.

Once the water issue is resolved, Mr. Masri said, it would take about four more months to complete construction, which began in 2011. In the meantime, he is urgently seeking additional funds from his partner in the project, Qatar, which has already put in more than $400 million, and from other financiers. But if that money does not come through and the project continues to slow down, "we will be totally shut down by early next year," he said.

The current war in the Gaza Strip, now in its seventh week, also led Mr. Masri to suspend marketing of the new apartments.

"You cannot tell people to come and buy a beautiful apartment when so many of the rest of your people just became homeless," he said, referring to the tens of thousands of Gaza residents whose homes have been destroyed in Israeli bombings.

Continue reading the main storyContinue reading the main storyContinue reading the main story

Getting his shoes dusty as he hopped in and out of the jeep to discuss construction details with workmen in hard hats, Mr. Masri swung between his signature enthusiasm, excitedly pointing out his own almost-complete penthouse above the town center, and despair. There is an inherent

contradiction in sounding an alarm and trying to inspire confidence in order to sell more apartments — the master plan allows for 6,000 units, for a total population of 40,000.

The owners waiting to move in have generally been "very sympathetic," Mr. Masri said. When they ask about the water problem, he tells them it is a force majeure — an unforeseen event that obstructs the fulfillment of a transaction.

"Water is essential for life," said Amal Kaabi, who was supposed to move into a three-bedroom apartment here this summer with her husband, Adel, and their four children. A year ago the family, from Ramallah, told reporters at the site that they had bought into Rawabi because there would be an orderly system, public amenities and "no chaos."

Asked in a telephone interview recently who was to blame for the delay, Ms. Kaabi replied without hesitation, "the occupation."

The murky explanations for the delay reflect the current state of Israeli-Palestinian relations. Guy Inbar, a spokesman for the Israeli agency that coordinates civilian affairs with the Palestinian Authority, said that while both sides were sensitive to the international attention Rawabi had received as a flagship Palestinian enterprise, the delay was caused by the Palestinians' refusal to sign on to projects in the Joint Water Committee, a body established under the Oslo peace accords of the 1990s to oversee water issues.

The committee has hardly met for two years because the sides cannot agree on an agenda. The previous head of the Palestinian Water Authority, Shaddad Attili, refused to approve projects that would benefit the Jewish settlements in the West Bank, and Israel responded by refusing to approve Palestinian projects.

The water authority's new head, Mazen Ghnaim, was appointed on Thursday. In a telephone interview hours after taking up the post, Mr. Ghnaim said that he had not gotten into the finer details of the issues yet, but that the Joint Water Committee "should convene soon."

"Rawabi is a priority case for me," he added.

But people familiar with the case say that Rawabi could have been dealt with separately, outside the framework of the committee. Mr. Masri and his lawyer for all matters relating to Israel, Dov

Weissglas, said that approval for the water connection had been expected in March. Both said they believed the delay was political — part of the sanctions imposed by Israel on the Palestinian Authority and its umbrella, the Palestine Liberation Organization, for the reconciliation pact reached in April with Hamas, the Islamic militant group that dominates Gaza.

"The sad fact is that Rawabi as a project has nothing to do with the Palestinian Authority," Mr. Weissglas said. "It was initiated by the private sector for the private sector with private money. I cannot understand why such a positive initiative is hostage to a political dispute between two governments."

The Israeli prime minister's office denied that was the case. "We support the project," an official there said of Rawabi.

Either way, there have been indications that the water problem may be on its way to resolution after recent exposure in the popular Hebrew newspaper Yediot Aharonot and on Israel's Channel 2 News.

Advertising for the new apartments, which sell for $60,000 to $200,000, resumed last week on news of another cease-fire — which later collapsed — between Israel and Palestinian militants in Gaza.

But, with more than 2,000 Palestinians killed in Gaza in the current conflict, plans for an inaugural celebration at the Rawabi amphitheater in October, featuring popular singers, have been canceled.

"This is not party time," Mr. Masri said. "Far from it."

"New Palestinian Town in West Bank Awaits Israel's Approval for Water", 27/08/2014, online at: http://www.nytimes.com/2014/08/27/world/middleeast/rawabi-west-bank-palestinians-israel.html?_r=0

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❖ Water delivery drivers dice with death in war-torn Gaza

GAZA CITY: Mohammed al-Khatib fears for his life every time he gets behind the wheel. In wartime, providing drinking water to homes and schools in Gaza means dicing with death.

At 23, Khatib is a veteran of two previous wars between Hamas and Israel, in 2008 and 2012, but nothing prepared him for the bombings, shredded nerves and death toll this time around. "When I'm driving, I always feel frightened, upset and nervous," he said in the small warehouse where he loads up his truck with drinking water, as Israeli air strikes boom in the distance.

It's an essential job in Gaza, where at least 90 per cent of municipal running water is not fit to drink and war damage means that for many people the only water comes from private vendors or desalination plants. But at his boss Hossam Huneif's desalination plant, down a sandy track in Gaza City, Khatib is one of the few drivers who turn up. Many of the regulars have stayed away since war broke out in July.

Khatib says he is exhausted by over-working, and lack of security, fuel and electricity. Then there are the horrors he has encountered.

"Perhaps I'll go to fill a house with water and find that house has been targeted by an Israeli air strike. For example, the Mata family - I always filled their tank, then one day we went and their house wasn't there anymore. It was bombed."

Three of his friends have been killed and others have been injured. At home his family of eight has swollen to 30, as they welcome in refugees escaping the worst fighting in eastern Gaza.

"Mohammed has a brave heart," smiles Huneif, the plant owner. Pointing at another driver who has just sauntered into the warehouse, he adds: "when he hears a bomb going off, he stays at home."

"If there is bombing after 3pm, his wife calls him all the time saying 'come home,' 'come home'," Huneif chuckles. "There's another driver who's only been to work one day since the war started. His family locked the door and said you can't work!"

Huneif owns the plant, a smart title for the small warehouse on a corner block where donkey carts rumble past. Trucks are parked around the corner. In the morning, they fill up with water and set off to supply schools and homes across north and central Gaza, navigating craters and rumbling past bombed-out wrecks.

The charity Oxfam estimates at least 600,000 people - a third of Gaza's 1.8 million population - are without running water. Many others get running water as little as one or two hours every two days, such as in the badly destroyed neighbourhood of Shejaiya, and repairs have been on hold since air strikes resumed.

'FEAR. DEATH. THAT'S WHAT I FEEL'

Before the war Huneif was fending off growing competition from other desalination plants. In wartime, his 24-year-old son Mahmud, fresh out of university and an IT specialist, has had to take on shifts to replace drivers too nervous to work.

"At the beginning of the war, I didn't have a problem distributing water but after the tanks and soldiers came in and people evacuated to the centre I faced many difficulties," Mahmud says. "People would stop the truck in the middle of the street, saying 'please, my child doesn't have water to drink,' and people would climb onto of the vehicle in their rush to get water," he adds.

Wearing cut-off green trousers and with gelled hair, he fishes out his smart phone to show a short video of the incident that perhaps scared him the most. One day when he was handing out water, there was an air strike right in the street in front of him. People fled the truck in panic as ambulances, sirens wailing, rushed to the spot.

The jumpy footage shows paramedics pulling a blanket over a dead body in the road. But it wasn't his only close shave. "Fear. Death. That's what I feel," he says.

Then there was the time he took water to a regular customer and the neighbouring house was bombed. Mahmud says he happened to be in the next street when a series of Israeli bombs targeted Hamas's military commander Mohammed Deif, flattening a building and killing Deif's wife and two children.

But it's not safe back at the warehouse either. "Yesterday open land was bombed just 100 metres from here," says his father. "But we have to keep working. This is a humanitarian job. It's not just a private company to earn money."

"Water delivery drivers dice with death in war-torn Gaza", 25/08/2014, online at: http://www.channelnewsasia.com/news/world/water-delivery-drivers/1328510.html

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❖ Israel's Mekorot to Develop Kazakhstan's Water Resources in $20M Project

Israel's Mekorot National Water Company has signed a Memorandum of Understanding with the government of Kazakhstan to operate a program that will develop the country's water resources, a vital project since geographic constraints have been causing a water shortage in Kazakhstan. The signing ceremony took place three weeks ago in Kazakhstan with the Kazakhstan prime minister and Mekorot CEO Shimon Ben Hamo in attendance, according to a report by Globes.

The program is projected to cost an estimated $20 billion by 2020, and it will initially focus on three areas: the establishment of a water studies center for the purpose of training a new generation of water professionals in Kazahkstan, providing advice about the founding of a national water company for Kazakhstan that would be based on the Mekorot model and would correspond to Kazakhstan's needs, and implementation of pioneering water projects for developing Kazakhstan's water system and improving water supplies to its people.

"As part of the Mekorot group's international business, Mekorot will assist the Kazakhstan government in developing the local water system and establishing a national water company for the republic," stated Ben Hamo. And Minister of National Infrastructures Silvan Shalom declared, "Israel is helping to solve the global water crisis."

Cooperation with Mekorot in regard to development of water resources is part of a series of cooperative activities by the Israeli company with various countries around the world, including Azerbaijan, Cyprus, and Mexico.

"Israel's Mekorot to Develop Kazakhstan's Water Resources in $20M Project", 27/08/2014, online at: http://jpupdates.com/2014/08/27/israels-mekorot-develop-kazakhstans-water-resources-20m-project/

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❖ Veolia targets the Middle East water market

Veolia Environnement intends to focus on high growth markets such as the Middle East, the company said after reporting a surge in first half profit.

Europe's biggest water company booked net income of EUR 151.1mn ($200mn), almost double the restated EUR 800,000 seen during the same period last year.

An improvement in water and waste operations countered a decline in demand for energy services, the Paris-based firm said in a statement.

"Our results improved significantly in the second quarter," chief executive Antoine Frerot said in the earnings statement. "The unfavourable first-quarter weather impacts have already been absorbed."

Frerot aims to increase Veolia's reliance on industrial contracts, narrow its global spread and focus on "high growth" markets such as the Middle East and China.

The company already has a large footprint in the GCC and surrounding area through participation in desalination projects and wastewater facilities.

Reduced debt, improved profitability on municipal contracts and a move into new markets such as water-treatment works for the mining, oil and gas and food industries, is also on the cards, Frerot said.

" Veolia targets the Middle East water market", 28/08/2014, online at: http://www.utilities-me.com/article-3056-veolia-targets-the-middle-east-water-market/

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❖ Egypt wants Sudan to mediate in Nile water tripartite meeting

August 24, 2014 (KHARTOUM) – The Egyptian minister of irrigation, Hussam Maghazi, said that his country is looking forward to seeing Sudan play an intermediary role in the tripartite meeting which will be held in Khartoum on Monday in a bid to arrive at a satisfactory agreement on the controversial Grand Ethiopian Renaissance Dam (GERD).

Khartoum will host a new round of talks on Monday and Tuesday which have been going on for the last two years between Sudan, Egypt, and Ethiopia on the Renaissance Dam. The previous three rounds had fallen short of achieving full agreement on the issue.

Maghazi said in press statements on Sunday that his delegation had received political instructions to engage in talks with Ethiopia with an open heart, saying Egypt sees that negotiations is the only available option to arrive at an agreement on the issue.

Khartoum's meeting seeks to achieve an agreement on a joint mechanism for implementing the recommendations of the International Panel of Experts (IPoE) regarding the GERD.

The IPoE is composed of six representatives each drawn from Ethiopia, Egypt and Sudan, and four other international experts and was established to assess the impact of the dam project on downstream countries.

The Egyptian minister also said his ministry is still considering the project to link the River Nile to the Congo River, but stressed the project would not be a substitute for negotiations on the GERD.

He said the Egyptian side will raise a question in the meeting on whether the Ethiopian side would submit the additional studies requested previously by the IPoE, predicting the latter would make the studies ready in the coming period.

Sudan's undersecretary of the ministry of water resources and electricity, Musa Omer Abu al-Gasim, said the meeting comes within the framework of his country's positive and pivotal role towards the Nile basin countries.

He stressed Sudan's keeness on coordination among partners to utilise water resources to achieve sustainable development for the benefit of the peoples of the region.

Abu al-Gasim further pointed that development in Sudan, Egypt and Ethiopia would largely participate to development of the East and North African region.

Sudan's minister of water resources and electricity, Mutaz Musa, told the official news agency SUNA on Sunday that the meeting represents a good opportunity for convergence and agreement among the three countries, pointing it would put them into the right track regarding the agenda put forward on the negotiations table.

Tripartite meetings had stopped six months ago.

Egypt argues the multi-billion dollars project, which Ethiopia is building along the Nile River near the Sudanese border, would eventually diminish its water share. It further asserts that the dam, which is the largest along the Nile river would reduce the amount of electricity generated by the Aswan Dam and adversely impact its agricultural production.

The IPoE in their final report said Ethiopia's dam project would not result in any significant harm to the two downstream countries, Sudan and Egypt.

"Egypt wants Sudan to mediate in Nile water tripartite meeting", 25/08/2014, online at: http://www.sudantribune.com/spip.php?article52155

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❖ Nile dam row at heart of talks in Sudan

KHARTOUM - Sudan, Egypt and Ethiopia opened talks Monday to try to resolve a dispute over a hydro-electric dam being built by Addis Ababa on the Nile.

Cairo fears that Ethiopia's Grand Renaissance dam project could diminish its water supply.

"This will be a crucial and definitive meeting on a global solution to this issue about the dam," said Sudanese Water Resources and Electricity Minister Muattaz Musa Abdallah Salim, hosting the Khartoum talks.

Despite two previous tripartite meetings late last year ending without agreement, Ethiopian Water Minister Alemayehu Tegenu said Monday the dam project would not have major consequences for Egypt and Sudan downstream.

His Egyptian counterpart, Hussein Mohamed al-Mughazi, stressed his country's "special situation because it depends totally on the waters of the Nile", a river that it also vital to Sudan.

Egypt has constantly expressed its opposition to any project that might disrupt the flow of the Nile.

The Blue Nile joins the White Nile at Khartoum to form the Nile, which flows through Sudan and Egypt before emptying into the Mediterranean.

Ethiopia began diverting the Blue Nile in May last year to build the 6,000 MW dam which will be Africa's largest when completed in 2017.

Ethiopian officials have said the project to construct the 1,780-metre-long and 145-metre high dam will cost $4.2 billion (3.2 billion euros).

Egypt believes its "historic rights" to the Nile are guaranteed by two treaties from 1929 and 1959 which allow it 87 percent of the Nile's flow and give it veto power over upstream projects.

Most other Nile Basin countries contest this.

A new deal signed in 2010 by other Nile Basin countries, including Ethiopia, allows them to work on river projects without Cairo's prior agreement.

In protest against the 2010 pact, Cairo withdrew from the Nile Basin Initiative (NBI), a forum for riparian countries to discuss joint management and development of the region's resources.

"Nile dam row at heart of talks in Sudan", 25/08/2014, online at: http://www.middle-east-online.com/english/?id=67793

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❖ Nile Basin Tension Mounts as Waters Decline

Today, nearly a billion people in the developing world don't have access to clean, safe drinking water. In sub-Saharan Africa, people's true potential is restricted by time lost trying to gather water and energy spent suffering from water-borne diseases. Education is lost to sickness. Economic development fails when people have to fight for survival.

As water supplies get tighter, conflicts will inevitably emerge, warns Lester Brown, the president of the Earth Policy Institute in Washington, D.C.

"Not only could it get worse, but it *will* get worse," Brown said. "Africa has two water problems: water safety – getting water that is safe to drink- and getting enough water to produce food."

Brown cited Egypt as one of the countries severely constricted by the loss of water as other Nile River countries upstream such as Ethiopia and Sudan take more of the Nile's water. As a result, he said, Egypt is now importing over half of its wheat consumption.

Predictions of an economic crisis

Brown predicted an economic crisis as water losses make it more difficult for countries to grow enough grain which leads to the rise in internal food prices.

"This is one of the problems that Africa is going to be facing for a long time," he said. "Egypt is probably the most vulnerable of all the countries in Africa because it is dependent on the River Nile water."

The Nile River basin is not well managed, he said. "I don't think there has been a serious effort at improving the efficiency of irrigation water use, or efforts by governments' to shift to less water intensive crops."

Brown said a lot of rice is grown in Egypt and rice takes about twice as much water per ton of grain as wheat does. "But there is room for restructuring agriculture to substantially reduce water use," he added.

Need for policies on population

Brown decried the lack of effort in coordinating water policy and population policy.

"There is no effort to coordinate population policies and water policies and yet in the end the amount of water available will determine the size of the population that can be supported."

The Nile is the world's longest river. It flows 6,700 kilometers through eleven countries in northeastern Africa. Egypt and Ethiopia are members of the Nile Basin Initiative, a partnership among those countries in Nile Riparian states. The initiative "seeks to develop the river in a cooperative manner, share substantial socioeconomic benefits, and promote regional peace and security."

Another effort to reach agreement

On Wednesday, the water and irrigation ministers of Egypt, Ethiopia, and Sudan meeting in Khartoum reached an agreement to create a committee of experts to study the impact of the Ethiopia's Grand Renaissance Dam. The committee will be supervised by an international consultancy firm.

The *Sudan Tribune* newspaper reports that the committee would bring four experts from each country together to produce a report by March 1, 2015. The newspaper reports that Egyptian Irrigation Minister Hussam El-Maghazi said the agreement is a mechanism for implementing the panel's findings on Egypt's share of the Nile and the structural integrity of Ethiopia's dam design.

Egypt argues that Ethiopia's multi-billion dollar hydro-electric dam project near the Sudanese border would eventually diminish Egypt's share of the Nile's water flow. It further asserts that the dam,

which is the largest along the Nile River, would reduce the amount of electricity generated by the Aswan Dam and adversely impact its agricultural production.

"Nile Basin Tension Mounts as Waters Decline", 27/08/2014, online at:

http://www.voanews.com/content/nile-basin-tension-mounts-as-waters-decline/2430205.html

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❖ Ethiopia excludes three dams from Khartoum talks with Egypt

CAIRO, Egypt — The fourth round of talks on the Grand Renaissance Dam between Cairo and Addis Ababa, held in Khartoum on Aug. 25-26, focused on the procedures to implement the recommendations of the International Panel of Experts. The panel had reviewed the studies of the Renaissance Dam, which is under construction on the Blue Nile in Ethiopia, and worked to assess the damage that may be inflicted on Egypt.

However, a number of files related to the Renaissance Dam and three other complementary dams were excluded from the talks, although the Egyptian delegation insisted on discussing them, as an informed source who took part in the meeting told Al-Monitor in an exclusive interview.

The same source explained that the Egyptian delegation had prepared documents on contentious issues with the Ethiopian side regarding Egypt's share of the Nile waters. The documents included concerns about the damage Ethiopian policy causes by building dams without giving prior notice to downstream countries, as stipulated by international law. The Egyptian side's most important file was on future coordination regarding the Mendaia, Beko Abo and Kara Dodi dams. Ethiopia is preparing to construct these dams once the Renaissance Dam is operational, yet the dams may provoke future crises between Cairo and Addis Ababa. Ethiopia will likely rely on this system of dams to achieve its development goals and monopolize hydropower exports to African countries.

According to official information from Cairo authorities, the three dams will present a real disaster to the lives of the Egyptians. The source said the storage capacities of the Kara Dodi, Mendaia and Beko Abo dams are, respectively: 49 billion cubic meters, 40 billion cubic meters and 42 billion cubic meters of water.

From the start, the Ethiopian side was keen to determine in advance the points to be addressed at the Khartoum meetings, including the formation of a new committee to complete the recommendations of the tripartite committee, whose work was suspended since the withdrawal of the Egyptian side last January. According to the same source, among the files excluded from the talks were: the cessation of the construction of the Renaissance Dam until the completion of the assessment of its negative impact on Egypt, and the Egyptian initiative to reduce the storage capacity and height of the Renaissance Dam, which reduces the amount of produced power.

Sameh Kantoush, a dam expert at the German University in Cairo, gave Al-Monitor details of his research paper on the risks of the so-called black hole dams, i.e., the new Ethiopian dams that are under construction. Cairo has so far been unable to open a dialogue on these dams with Ethiopia.

Kantoush said that the three Ethiopian dams and the Renaissance Dam will have a negative impact on the Egyptian share of the waters and will also negatively impact the quality of water reaching the Aswan Dam, given the low quantities of water and the size of the lake. The dams will also affect the drinking water installations on the Nile in Egypt. The current method of water treatment will become ineffective on the existing pollutants, especially after Sudan comes to rely on chemicals in agriculture in the next few years.

Kantoush said the Egyptian side was mistaken when it agreed to talk about the Renaissance Dam separately from the other dams. The issue is serious. The presence of these dams on the Nile must be included in a single operating system with the Aswan Dam and the Sudanese Roseires, Sennar and Khashm el-Girba dams, or else there will be serious damage to the dams closest to the river mouth.

Kantoush said the Egyptian negotiator in the fourth round of talks made five mistakes, as he was supposed to make progress, not concessions.

First, the negotiator waived Egypt's right to stop Ethiopian construction on the Renaissance Dam until new studies are completed.

Second, he made a mistake related to the current designs of the dam and the issuance of the final statement without referring to a dialogue on the amendments. All studies conducted by international consulting offices have noted the lack of economic benefits of the Renaissance Dam with the current designs.

Third, the negotiator agreed to resort to international consulting offices to develop two new studies on the effects and cross-border risks of the dam. The damage was already made clear by the previous tripartite committee's report; it is time to talk about avoiding the damage before, not after, the dam's construction.

Fourth, this mistake is related to the declared visit by the Egyptian minister of irrigation and water resources to the dam site. The minister was not accompanied by a delegation of experts to take samples from the dam site to dispel concerns regarding cracks, landslides and potential collapse.

Fifth, the Egyptian negotiator failed to open dialogue on the rest of the declared Ethiopian dams as a supplement to the Renaissance Dam.

With the exclusion of the Ethiopian dams from the recent talks, the Ethiopian negotiator limited dialogue with Cairo to just the Renaissance Dam. Crises between Ethiopia and Egypt will surely erupt during the flood season in 2015 with the operation of the Renaissance Dam.

Egyptian diplomats are well aware of this, yet they continue to postpone solutions. Egypt is avoiding new battles in the face of its current wider regional battles, including restoring its regional role in the Middle East.

"Ethiopia excludes three dams from Khartoum talks with Egypt", 29/08/2014, online at:

http://www.al-monitor.com/pulse/originals/2014/08/egypt-ethiopia-dam-renaissance-negotiations.html

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❖ Sharing the Nile Waters According to Needs

A ministerial-level meeting in Khartoum including Egypt, Ethiopia, and Sudan to establish mechanisms for further investigations of the consequences of the Grand Ethiopian Renaissance Dam (GERD) downstream has concluded, on Tuesday 26 August. The gathering took place two months after Egypt and Ethiopia had issued ajoint communique that stressed the importance of the contested water of the Nile River for the two countries and outlined general principles for future moves to resolve disagreements. The statement was a result of an encounter between Egypt's President Abdel Fattah al-Sisi and Ethiopia's Prime Minister Hailemariam Desalegn, during the African summit in Malabo, Equatorial Guinea.

The conveners in Tuesday's meeting put together a procedure for follow-up on a preliminary report by an international panel of experts that had rung alarm bells in Cairo about the potential damage the GERD could inflict on Egypt's water supply. Cairo's position on the dam is not entirely clear; officials have reportedly said that they wanted the GERD scaled down considerably, while Irrigation Minister Hossam al-Moghazi himself was cited as saying that Egypt regarded it with a new "vision," without further clarification. Egyptian officials seem to be banking on Ethiopia's purported inability to finance the project, whereas their Ethiopian counterparts insist the project will be completed regardless of whether it wins Egypt's approval or not.

The standoff over the GERD is fundamentally a conflict over who gets how much of the Nile's water. Future talks among the three states of the Eastern Nile's eastern basin-–which provides eighty five percent of the river's total flow–-therefore have to grapple first and foremost with the question of water apportionment. Although it would be partial, a resolution to the conflict in this part of the basin would serve as a model for a comprehensive pact that includes the other eight co-riparians.

Both Egypt and Ethiopia face severe political and economic problems too numerous to elaborate, and their governments might be eager to show the citizenry progress on a major issue. That the ministerial meeting in the Sudanese capital was successful may be a sign of such eagerness.

Sudan's midstream location between Ethiopia and Egypt has accorded it a pivotal place in the Nile dispute, which is also a dilemma. The choice of Khartoum as the site for the talks rather than Addis Ababa or Cairo is perhaps a nod to Sudan's standpoint. Traditionally, Sudan made bilateral

arrangements with Egypt over the Nile's water. Recently though, it has come to favor the GERD, which it reasons will provide it with electric power at low cost and release a steady supply of silt-free water to its own already-silted dams. It is bound, on the other hand, to Egypt by the 1959 treaty which permitted the construction of the Aswan High Dam and fashioned their present water rights and joint management regime.

It would be hard for Sudan to alienate either neighbor: Ethiopia is upstream of the river, and Egypt could create difficulties for a country plagued by ethnic and political strife. Keeping in mind the vehemence with which Egypt and Sudan sparred in the past over the border area of Halayeb, wrangling over the Nile water could escalate in unpredictable ways. Sudan may reckon that securing its own interest lies in trying to bridge the gap between the two rivals.

But on what basis would the Nile's water be divided? The Malabo communiqué highlighted the need for cooperation and reciprocity: Ethiopia pledged to avoid any possible harm from the dam to Egypt's water usage, and Egypt to take into consideration Ethiopia's development needs. Put together these commitments echo the core provisions of international water law.

Up until this month, there was only customary international water law. But as of 17 August 2014, the 1997 UN General Assembly's Convention on the Law of Non-Navigational Uses of International Watercourses ("1997 UN Convention") entered into force after being ratified by the requisite number of states. The law basically has two main components: equitable utilization and joint management. Egypt, Ethiopia, and Sudan, however, all abstained from the 1997 vote. Egypt and Sudan stayed away as they feared that "equitable utilization" would mean reduction of their current water quotas, and Ethiopia because it did not want joint management of its infrastructure, which entails systematic cooperation with the two downstream states.

The three countries subsequently accepted the equitable utilization principle in the Nile Basin Initiative (NBI), a cooperative venture of all the Nilotic nations. Unfortunately, Ethiopia swerved when it co-issued in 2010 with other upstream nations a Cooperative Framework agreement which replaced the legal concept of equitable utilization with the language of "water security." Both Egypt and Sudan challenged this formulation, and the Framework has yet to enter into force. The three states can get around this hurdle by taking a pragmatic, good-will step and endorse the 1997 UN

Convention, which will be the legal frame of reference for international water tribunals or arbitration, irrespective of their stance.

The equitable utilization principle in the UN Convention can be a start for negotiations, although not a bad one, since mutual consent to work within the frame of the law confers legitimacy on states' demands and signals initial willingness for compromise. The rest of the negotiations are likely to be more politics and economics than law. Why? Because the criteria enumerated for utilization to be equitable are too elastic for forging agreements.

The principle itself competes also with a second historic principle—prior use or appropriation—which it appears to subsume in the UN Convention. Prior appropriation was the reigning doctrine in the United States and Europe before the Industrial Revolution which, together with capitalism, created opportunities for large scale tapping of water resources as well as new uses and users. The more flexible equitable utilization doctrine was the legal scaffold that emerged from and facilitated the new opportunities and, not surprisingly, was transplanted to international water law. Implementation of the doctrine, however, is more feasible in countries with federal systems where courts are able to adjudicate water disputes than in a world of sovereign states lacking such venues and the associated enforcement mechanisms.

Equitable utilization signifies not equal shares, but equality of right to uses and benefits. It assigns water quotas according to what amounts to a maze of factors, none of which is paramount: geography and hydrology of the watercourse, avoidance of significant harm, social and economic needs, size of population in the basin, and alternative water sources. Yet many water specialists who have grappled with these criteria found them unwieldy, not least because no weights---or hierarchy of importance---are ascribed to the factors, and they often ended up with subjective weighting preferences or even eschewing the doctrine altogether. In negotiations, the elasticity of the factors opens the door for each co-riparian party to stress the factor(s) that it deems more advantageous. And we are back to power politics.

In the Nile basin, Egypt highlights its current intake of 55.5 billion cubic meters, its lack of alternative water resources, and how the Nile is the sole lifeline of its existence. At the same time it points to Ethiopia's other rivers and untapped rainfall. Ethiopia builds its case on the preponderant contribution of its territory to the Nile flow, its poor economy, need to irrigate large areas to feed the

rapidly growing population, and on what it regards as Egypt's wasteful water exploitation practices. Egypt refers also to historical accords and understandings that granted it veto power over altering the flow of the river by Ethiopia, which it says carry over to the present era in accordance with the legal principle of state succession. Ethiopia, on the other hand, dismisses past accords as vestiges of the colonial era.

There may be a way out of these conundrums, and that is to ground the bargaining over water division in the factors of social, economic, and environmental needs. These needs necessarily account for the size of population and alternative water resources that can meet a portion of the needs. They are the bases on which countries justify their demand for re-apportionment or for maintaining existing allotments, as evident in the Egypt-Ethiopia communiqué: Ethiopia's pledge not to cause harm to Egypt's water uses, and Egypt's recognition of Ethiopia's development needs. Finally, a needs-based division is in the utilitarian spirit of equitable utilization which revolves around use, and has prevailed in most international watercourse agreements.

Needs are not easy to determine and require a consensus on a time frame. Still, it is possible to estimate the water required for the various uses in each nation: domestic, municipal, industrial, food production, and ecosystem maintenance. The chief water consumer is irrigated agriculture, and guaranteeing food production is also paramount in the minds of people and politicians. Hydroelectric power is usually a major need early on, and its relative contribution declines in subsequent years as the country industrializes and develops more power sources.

By assigning roughly the same water needs for each person in the Nile basin, and agreeing on population sizes, it is possible to quantify needs. Likewise, there is enough information to estimate the alternative resources in each co-riparian state—other rivers, groundwater, and rainfall that produces crops and animal feed. Egypt could also present plans for using irrigation water more efficiently, which is the equivalent of alternative resources. Egyptian experts often speak of the rainwater that is untapped in Ethiopia, but have yet to produce studies that indicate how and how much of this lost water can be harnessed and at what cost.

Making needs paramount as an equitable utilization criterion might sound like an easy technocratic way out. It may be so, but to accept it at as a principle is a question for politics. What does Ethiopia mean when it commits not to harm Egypt's water usage? Would Ethiopia entertain Egypt's demand

to scale down the GERD, after it has turned it, as states are wont on doing with such megaprojects, into a grandiose nationalist symbol and bringer of progress? Would it put aside the claim to the Nile's water based on its preponderant contribution to the river's flow? What does Egypt propose when it pledges to recognize Ethiopia's "development needs?" Would it be willing to reconsider its current share of 55.5 billion cubic meters, which Ethiopia finds excessive but which successive Egyptian governments have treated as sacrosanct? Which one of the two states possesses greater power resources to tilt the negotiations in its favor?

Such questions underline the fact that there may not be enough water for everybody to get all they want from the Nile's waters, and so must share the burdens as well as the benefits, something states are usually reluctant to do.

"Sharing the Nile Waters According to Needs", 30/08/2014, online at:

http://reviews.jadaliyya.com/pages/index/19045/sharing-the-nile-waters-according-to-needs

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❖ Rwanda: Egyptian Envoy Bids Farewell to Kagame

After four years serving as Egyptian Ambassador to Rwanda, Khaled Adbel-Salam, yesterday bade farewell to President Paul Kagame at Village Urugwiro.

Speaking to The New Times after meeting the President, Adbel-Salam said during his tenure, relations between Rwanda and Egypt grew tremendously.

"I spoke to the President about our relations with Rwanda. President Kagame also affirmed the importance of Egyptian relations with Rwanda," said the outgoing envoy.

He said he also briefed the President about the situation in Egypt and the efforts by his country to broker a peace deal between Israel and Palestine.

The ambassador pointed out that bilateral relations between Rwanda and Egypt manifest in different domains including capacity building, security, energy and health.

"We also received a delegation of Egyptian businesses who wanted to explore investment opportunities in Rwanda," Adbel-Salam said.

Meanwhile the envoy briefed President Kagame about the security of the Nile waters, noting that his President, Gen. Abdel Fattah el-Sisi, had been holding several meetings regarding water security with some countries that share resources of River Nile.

Countries sharing the Nile River, including Rwanda and Egypt have for long been embroiled in a disagreement on the cooperative framework agreement that seeks to see all countries have an equal say on the Nile water usage.

Since 1999, countries sharing River Nile have been negotiating an agreement that would enable equal usage of the Nile waters, but Egypt, and to some extent, Sudan, have rejected the move.

The agreement seeks the establishment of a permanent Nile River Basin Commission through which member states will come together to manage and develop resources of the Nile.

"Rwanda: Egyptian Envoy Bids Farewell to Kagame", 28/08/2014, online at: http://allafrica.com/stories/201408290159.html

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❖ Cambodia, US Share Concerns Over Lao Dam

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"Cambodia, US Share Concerns Over Lao Dam", 28/08/2014, online at:

http://www.cambodiadaily.com/news/cambodia-us-share-concerns-over-lao-dam-67238/

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❖ Hydroelectric plant in Laos puts local farmers under tenterhooks

At a conference discussing the development of hydroelectric dam Donsahong, set to be built on the mainstream Mekong River in Laos, held in Can Tho City last week, a farmer named Nguyen Van Hiep in Dong Thap Province cited emerging upheavals. He said that before hydroelectric plants were built on the river, farmers in the delta could deal with annual flooding in an easy way because natural floodwater flow is predictable.

Now with those plants, they find themselves helpless in dealing with flooding as its flow has changed and gets stronger, he said, adding that with many dams being developed on the river, people in the downstream areas will suffer.

During the rainy season, a huge amount of water will likely be released from those dams, aggravating flooding, while in the dry season, the river water flow in the area will dwindle as dam operators store water for power generation, causing more severse saltwater intrusion in the delta, Hiep said.

According to researchers, Donsahong dam will cause downstream areas to lose half of the water amount in the dry season because water from 17 tributaries of the Mekong River at those areas will flow into the Housahong branch, which is blocked by the dam.

Studies also revealed that 75% of fish resources in the river will move to Housahong branch, and therefore, aquatic resource depletion will occur.

Le Anh Tuan, head of the Research Institute for Climate Change of Can Tho University, said Donsahong is the second hydroelectric project on the mainstream of the Mekong River to be constructed in Laos.

The 32-meter-high dam has no water reservoir and has a designed output of 260 MW.

He said 19 hydroelectric projects have either been operational or are planned to be constructed on the river mainstream, including eight projects in China, nine projects in Laos and two others in Cambodia.

Hydropower plants on the Mekong River have potential to generate 54,000 MW but the development of those plants on the river mainstream has been warned to put many species of fish at high risk of extinction.

Tuan said hydroelectric plants will cause an imbalance in the supply of water, fish reproduction and alluvium, and degrade the ecosystem in the Mekong Delta.

Duong Van Ni from the university said under the affect of climate change, hydroelectric projects will open the way for saltwater to intrude deeper into the delta.

"Hydroelectric plant in Laos puts local farmers under tenterhooks",27/08/2014, online at: http://english.vietnamnet.vn/fms/environment/110686/hydroelectric-plant-in-laos-puts-local-farmers-under-tenterhooks.html

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❖ Threat of Hydropower Dams Still Looms in Chile's Patagonia

COYHAIQUE, Chile , Aug 26 2014 (IPS) - After its victory in a nearly decade-long struggle against HidroAysén, a project that would have built five large hydroelectric dams on wilderness rivers, Chile's Patagonia region is gearing up for a new battle: blocking a quiet attempt to build a dam on the Cuervo River.

The dam would be constructed in an unpopulated area near Yulton lake, in Aysén, Chile's water-rich region in the south. The aim is to ease the energy shortage that has plagued this country for decades and has prompted an accelerated effort to diversify the energy mix and boost the electricity supply.

However, the Cuervo River project is "much less viable than HidroAysén, because of environmental and technical reasons and risks," Peter Hartmann, coordinator of the Aysén Life Reserve citizen coalition, told Tierramérica, expressing the view widely shared by environmentalists in the region.

The big concern of opponents to the new hydroelectric initiative is that it could be approved as a sort of bargaining chip, after the government of socialist President Michelle Bachelet cancelled HidroAysén on Jun. 10.

Endorsement of the Cuervo River dam will also be favoured by an Aug. 21 court ruling that gave the project a boost.

The Cuervo Hydroelectric Plant Project is being developed by Energía Austral, a joint venture of the Swiss firm Glencore and Australia's Origin Energy. It would be built at the headwaters of the Cuervo River, some 45 km from the city of Puerto Aysén, the second-largest city in the region after Coyhaique, the capital.

It would generate a total of approximately 640 MW, with the potential to reduce the annual emissions of the Sistema Interconectado Central de Chile (SIC) – the central power grid – by around 1.5 million tons of carbon dioxide.

Energía Austral is studying the possibility of a submarine power cable or an aerial submarine power line.

In 2007, the regional commission on the environment rejected an initial environmental impact study presented by the company.

Two years later, Energía Austral introduced a new environmental impact study, for the construction of a hydropower complex that would include two more dams: a 360-MW plant on the Blanco River and a 54-MW plant on Lake Cóndor, to be built after the Cuervo River plant.

"Cuervo appeared when HidroAysén was at its zenith, and the Cuervo River dam was a second priority for thePatagonia Without Dams campaign," said Hartmann, who is also the regional director of the National Committee for the Defence of Flora and Fauna (CODEFF).

"In the beginning there was diligent monitoring of the project, from the legal sphere, but we ran out of funds and the entire focus shifted to HidroAysén as the top priority, and not Cuervo," he added.

According to the experts, the Cuervo River plant would pose more than just an environmental risk, because it would be built on the Liquiñe-Ofqui geological fault zone, an area of active volcanoes.

For example, a minor eruption of the Hudson volcano in October 2011 prompted a red alert and mass evacuation of the surrounding areas. Mount Hudson is located "right behind the area where the Blanco River plant would be built," Hartmann said.

"Energía Austral is doing everything possible not to mention the Hudson volcano, because it knows what it's getting involved in," he added.

In response to such concerns, the company has insisted that the plant "will be safe with regard to natural phenomena like earthquakes and volcanic eruptions." It adds that "the presence of geological fault lines is not exclusive to the Cuervo River."

It also argues that in Chile and around the world many plants have been built on geological fault lines or near volcanoes, and have operated normally even after a seismic event.

The national authorities approved the construction of the Cuervo dam in 2013. But shortly afterwards the Supreme Court accepted a plea presented by environmental and citizen organisations to protect the area where it is to be built, and ordered a thorough study of the risks posed by construction of the plant.

However, on Aug. 21 the Court ratified, in a unanimous ruling, the environmental permits that the authorities had granted for construction of the dam. The verdict paves the way for final approval by the government, which would balance out its rejection of HidroAysén.

"The state is not neutral with respect to energy production; we are interested in seeing projects go forward that would help us overcome our infrastructure deficit," Energy Minister Máximo Pacheco said in June.

And in July he stated that "Chile cannot feel comfortable while hydroelectricity makes up such a small share of our energy mix, given that it is a clean source of energy that is abundant in our country."

Chile has an installed capacity of approximately 17,000 MW, 74 percent in the SIC central grid, 25 percent in the northern grid – the Sistema Interconectado Norte Grande – and less than one percent in the medium-sized grids of the Aysén and Magallanes regions in the south.

According to the Energy Ministry, demand for electricity in Chile will climb to 100,000 MW by 2020. An additional 8,000 MW of installed capacity will be needed to meet that demand. Chile imports 60 percent of the primary energy that it consumes. Hydropower makes up 40 percent of the energy mix, which is dependent on highly polluting fossil fuels that drive thermal power stations for the rest.

Currently, 62 percent of the new energy plants under construction are thermal power stations. And 92 percent of those will be coal-fired.

Regional Energy Secretary Juan Antonio Bijit told Tierramérica that independently of Aysén's enormous hydropower potential, "if we analyse the energy mix, it is highly dependent on thermal power, so the most logical thing would appear to be to increase supply in the area of hydroelectricity."

He said the Aysén region "currently produces around 40 MW of energy, which only covers domestic consumption."

But, he said, "we have significant potential" in terms of hydroelectricity as well as wind and solar power.

"The region's capacity for electricity generation is quite strong," he said. "However, we have to study how we will generate power, and for what uses."

Bijit said the region's contribution of energy to the rest of the country "should be analysed together with the community."

"We can't do things behind closed doors; we have to talk to the people," he said. "That was done in a workshop prior to the decision reached on HidroAysén and now we are doing it with the Energía Austral project and others," he said.

"The idea is that the people should be participants in what is being done or should be done in the field of energy," he added.

"Threat of Hydropower Dams Still Looms in Chile's Patagonia",26/08/2014, online at:
http://www.ipsnews.net/2014/08/threat-of-hydropower-dams-still-looms-in-chiles-patagonia/

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❖ German economy vulnerable to global water scarcity, WWF warns

Water is scarce but it continues to be wasted excessively in many industrial states, warns a new study by the World Wide Fund for Nature (WWF), predicting that a global conflict over water resources could bring billions in losses for the German market. EurActiv Germany reports.

Tomatoes from Spain, textiles from India, metals from South Africa, roses from Kenya; every year, Germany imports massive amounts of goods from around the world that would not be available without considerable water resources.

But water is becoming an increasingly scarce global resource. In many countries, it has become more and more difficult to supply the population with adequate drinking water and irrigation for crops.

Besides export-reliant countries with critical water resources, the effects of the shortage can be devastating for others as well.

According to the World Wide Fund for Nature (WWF), the worldwide water shortage will also impact industrialised European countries like Germany.

If German imports are cut off due to water shortages in producer states, German companies would be hard hit, said a WWF study released on Wednesday (27 August).

Philip Wagnitz, one of the authors of the study, said many German economic sectors are both responsible for and affected by the international water crisis, from the food sector to the auto and fashion industries.

In Germany itself, the Federal Environment Agency (UBA) has indicated sufficient water resources. The country's annual water supply is estimated around 188 billion cubic metres.

But Wagnitz explained that the third largest importing country in the world is extremely dependent on foreign goods, which often require large quantities of water during production.

9,000 litres of water for one kilogram of cotton

WWF reported that annual cotton and textile imports from Pakistan to Germany, require twice as much water as the volume of Germany's fifth largest lake, the Starnberger See, which holds three billion cubic metres of water.

Almost 9,000 litres of water are needed to produce one kilogram of cotton in Pakistan, primarily drawn from rivers in eastern parts of the country.

But even so, only around one third of the water even reaches the fields, the WWF study indicated. The rest evaporates or leaks out along the way in decrepit irrigation canals. As a result, many areas pump the water they need directly from the groundwater.

The effects of this type of water abstraction can be observed in areas such as the Aral Sea in Uzbekistan, WWF warned. There, the sea's tributaries have been dried up by cotton production, causing the sea to shrink by almost 90%.

Companies slow to recognise risks

In extreme cases, growing water risks being brought on by these developments could create billions in losses for German companies, Wagnitz said. The affected firms would have to deal with image problems and site closures, he stated.

Still, many do not even realise their own exposure to hidden water scarcity risks, the WWF expert warned. They will only become aware of the issue once shortages start to materialise, Wagnitz explained.

This is precisely what happened in India recently, he said, when Coca-Cola was forced to close one of its bottling sites. Farmers in the area complained that water they needed was being wasted on soft drink production.

Wagnitz mentioned the apparel manufacturer H&M as another example: When cotton harvests in many parts of Pakistan were desolated by monsoon rains four years ago, prices for raw materials grew painfully high. In the worst case, the WWF expert said, flooding or droughts could cause billions in losses on the local market.

Water scarcity also affects Europe

And scarcities in local water resources are no longer a concern reserved for developing countries and desert regions.

A study by the European Environment Agency (EEA) in southern Europe, where water shortages are increasingly critical, showed 80% of water is used for agriculture.

In Spain, WWF warned that the threat of drought is particularly high, exacerbated by illegal irrigation. In 2013 alone, Germany imported about 180,000 tons of tomatoes valued at €250 million from Spain. Because the groundwater can no longer supply enough to irrigate fields, farmers have turned to desalinated seawater for several years now.

Nevertheless, worldwide water usage is on the rise. According to estimates in the latest UN World Water Development Report from 2012, the shortage threatens all Millennium Development Goals (MDGs) agreed on by the UN General Assembly in 2000.

Growing demand for water can mostly be traced to climate change and an increasing demand for food in a rapidly urbanising world, according to UNESCO secretary general Irina Bokova and the head of UN Water Michel Jarraud.

Industry and economy must be involved

To avoid escalating conflicts over water resources in the future, states must urgently develop plans and mechanisms for sustainable, cross-border water management, the authors of the WWF study wrote. They are convinced that such initiatives must involve both the economy and industry to be effective.

The agricultural sector, in particular, which accounts for 70% of the global demand for water, is obligated to do so, the authors argued. Still, the agricultural industry contributes significantly to pollution through its use of pesticides and fertilizers.

"German economy vulnerable to global water scarcity, WWF warns", 29/08/2014, online at: http://www.euractiv.com/sections/development-policy/german-economy-vulnerable-global-water-scarcity-wwf-warns-308082

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❖ Climate Policy Goes Hand-in-Hand with Water Policy

PORT OF SPAIN, Trinidad, Aug 27 (IPS) - Concerned that climate change could lead to an intensification of the global hydrological cycle, Caribbean stakeholders are working to ensure it is included in the region's plans for Integrated Water Resources Management (IWRM).

The basis of IWRM is that the many different uses of finite water resources are interdependent. High irrigation demands and polluted drainage flows from agriculture mean less freshwater for drinking or industrial use.

Contaminated municipal and industrial wastewater pollutes rivers and threatens ecosystems. If water has to be left in a river to protect fisheries and ecosystems, less can be diverted to grow crops.[pullquote]3[/pullquote]

Meanwhile, around the world, variability in climate conditions, coupled with new socioeconomic and environmental developments, have already started having major impacts.

The Global Water Partnership-Caribbean (GWP-C), which recently brought international and regional stakeholders together for a conference in Trinidad, is aimed at better understanding the climate system and the hydrological cycle and how they are changing; boosting awareness of the impacts of climate change on society, as well as the risk and uncertainty in the context of water and climate change and especially variability; and examining adaptation options in relation to water and climate change.

â€œBasically weâ€™re looking to integrate aspects of climate change and climate variability and adaptation into the Caribbean water sector,â€ Natalie Boodram, programme manager of the Water, Climate and Development Programme (WACDEP), told IPS.

â€œAnd this is a very big deal for us because under predicted climate change scenarios weâ€™re looking at things like drier dry seasons, more intense hurricanes, when we do get rain we are going to get more intense rain events, flooding.

â€œAll of that presents a substantial challenge for managing our water resources. So under the GWP-C WACDEP, weâ€™re doing a number of things to help the region adapt to this,â€ she added.

Current variability and long-term climate change impacts are most severe in a large part of the developing world, and particularly affect the poorest.

Through its workshops, GWP-C provides an opportunity for partners and stakeholders to assess the stage of the IWRM process that various countries have reached and work together to operationalise IWRM in their respective countries.

Integrated Water Resources Management is a process which promotes the coordinated development and management of water, land and related resources in order to maximise economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems.

IWRM helps to protect the worldâ€™s environment, foster economic growth and sustainable

"Climate Policy Goes Hand-in-Hand with Water Policy", 27/08/2014, online at:
http://www.iede.co.uk/news/2014_5178/climate-policy-goes-hand-hand-water-policy

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