

## TROUBLED WATERS

# Nile Dynamics JENNIFER VEILLEUX & SHLOMI DINAR

*The grand new dam on the Nile pits the downstream countries against the upstream. Will conflict ensue?*

**A**s of July 2017, Ethiopia commenced filling the Grand Ethiopian Renaissance Dam (GERD) reservoir on the Nile River. The GERD is the African continent's largest dam project, with more than 6,000 megawatts of hydroelectricity potential for domestic use and sale to the international market. Situated in one of the world's poorest regions, and home to 90 million people, Ethiopia is in the process of modernization and the GERD in particular has become nothing less than transformative. But the problems involved in its construction, both environmental and political, are considerable, and have become a priority in the ongoing negotiations between Egypt, Ethiopia, and Sudan—the three countries most affected by the dam. The world speculates and waits for favorable outcomes from these negotiations, as conflict in northeast Africa could destabilize the continent beyond the Nile River Basin.

There is no agreement on how development of shared Nile resources will be coordinated among the 11 Nile Basin countries, though institutional platforms for dialogue are established. Despite increased interest by upstream countries in developing Nile water resources for their growing populations and developing economies, the shared water resources are primarily—at more than 90 percent—used for domestic consumption and agriculture in downstream Sudan and Egypt. Meanwhile, the GERD has displaced close to 20,000 people in Ethiopia alone, and stands to create a host of unknown downstream effects on the environment and on riverine communities, especially in war-torn Sudan. Anticipated population increase in the Basin as well as the possibility of more frequent flooding and droughts due to climate change could aggravate the political challenges presented by the GERD. However, if the upstream and downstream countries can find a way to cooperate, coordinated water flow management through dam

infrastructure can mitigate these demographic, economic, and environmental challenges. The question is—can they?

### ***The Nile's Hydro-Political History***

**F**or millennia the Nile has been a source of food, water, and identity. The river's water and nutrient-laden sediment support agricultural civilizations even today. Historically, Ethiopian Kings threatened to divert Nile waters when downstream Muslim neighbors threatened their Orthodox populations. Yet the days of such upstream power did not last; all of the major treaties of the 20<sup>th</sup> century, some in force today, favored the downstream countries. The 1929 Agreement between Britain and Egypt was the first major colonial treaty to affect the Nile, privileging Egypt's water needs and compelling any upstream state under British rule (and exhorting those that were not) to acquiesce. The 1959 Nile Treaty was another important agreement that, unlike its 1929 predecessor, remains valid to date—at least between its signatories. Negotiated and signed by Egypt and Sudan as independent countries, it effectively divided the waters of the Nile between them. But demographic changes have rendered this old status quo especially unfair. Since 1959, the population in the Nile River Basin has tripled, especially in Egypt and Ethiopia, which each boasted a population of approximately 90 million in 2016.

For years, Egypt's and Sudan's hegemonic positions on the Nile were supported by both the Soviet Union and the United States. Demands by upstream states for a renegotiated 1959 Treaty and "a seat at the negotiating table" did not receive serious support from either superpower. Indeed, both the United States and the Soviet Union were attempting to court Egypt in the mid-1950s by promising to fund the Aswan High Dam—Egypt's mega reservoir project designed to control floods, provide water for irrigation, and produce hydroelectricity. Ultimately, the United States withdrew its offer of financial aid to the Egyptians, allowing the USSR to finance the project. While this may have brought Egypt closer to the Soviet camp at the time, the flow of great-power diplomacy, and later the collapse of the Soviet Union, paved the road to close U.S.-Egyptian ties. Ultimately, Egypt leveraged such backing to assert its position in the Basin. Claiming that it was 100

percent dependent on Nile waters, Egypt even threatened war in 1979 should Ethiopia or any upstream country challenge its use of the river.

The threatened war never materialized. Since then, additional agreements signed in the Basin have included upstream countries like Ethiopia. In December 1992 and July 1993, for example, Ethiopia signed agreements with Sudan and Egypt respectively. These agreements, however, were limited in scope and have not prescribed any specific action to achieve a more equitable distribution of the waters—a principal demand of the upstream countries. Thus, while these agreements stated that the use of the Nile waters would be worked out in detail on the basis of international law, they also seemed to affirm the 1959 Treaty. Furthermore, the agreements stated that the parties would refrain from engaging in any activity that could cause appreciable harm to any of the other parties. The status quo established by the 1959 agreement was therefore essentially maintained.

Only recently has the situation changed. Founded in 1999, the Nile Basin Initiative (NBI) was a successor to earlier efforts to bring the various Nile riparians together, focusing on the pursuit of long-term development and management of the Nile waters through the brokering of a new international agreement. The World Bank, the main backer of the NBI, demonstrated a willingness to further the equitable reallocation of the Nile waters. This was a significant milestone in Nile hydro-politics, since the World Bank effectively recognized the main positions of Ethiopia and other upstream riparians. While the proceedings of the NBI have not been made public, its Secretariat has claimed that the participating states have reached important compromises.

Despite these promising developments, the move toward a more equitable distribution has proved to be slow-going. In May 2010, nearly all of the Nile's riparians signed the Cooperative Framework Agreement (CFA). While part of the NBI, the motivation behind the CFA was to replace the previously negotiated treaties with an agreement based on the principle of equitable use. Furthermore, the CFA strives to transform the NBI into a permanent Nile Basin Commission, recognized both by the NBI member countries and by regional and international organizations. If ratified by all Nile Basin states, the CFA could end the near-monopoly Egypt and Sudan have enjoyed for decades. To date, six

countries have signed the CFA, but only three have ratified. Egypt and Sudan have both contested the CFA as a unilateral move by upstream states.

Into this contested political environment comes the GERD, which will transform it. Understandably, the three major competing powers have different reactions to its advent.

## ***Ethiopia***

**A**s economies in the region have improved over the past decade, Ethiopia has seen astonishing growth. Its consistent 8 to 11 percent GDP increase surpassed even Kenya's in 2016. As a nation increasing in economic prowess and population, its enthusiasm for the GERD is boundless. Ethiopians assert that the GERD will benefit all three countries by providing flood control during the rainy season, water storage during the dry season, regulated water flow in general, and energy generation for a future regional grid. The marketing campaign promoting the GERD in Ethiopia touts it as a means of alleviating poverty, and nothing less than the symbol of modern Ethiopia.

At 6,450 MW capacity, the GERD is the largest dam project under construction on the African continent. It is designed to triple the existing Ethiopian domestic power capacity, which at commencement in 2011 was under 2000 MW nationwide. The electricity generated will serve to increase the less than 42 percent coverage of the country, as well as produce revenue from energy sales to surrounding countries. The dam is scheduled for first commissioning before the end of the year and, depending on how tripartite talks conclude, its reservoir will fill over a period of several years before reaching total potential capacity production.

Though the GERD is not the first dam project that Ethiopia has constructed on shared waters, it is the first that will have major downstream impacts for Sudan and Egypt. Ethiopia made the decision to begin and continue construction of the GERD unilaterally; since the existing 1959 Nile Treaty does not include Ethiopia, Addis Ababa contends that it is not in violation of any international agreement.

However, it has since engaged with Sudan and Egypt in an evaluation of the project and in high-level diplomatic talks. As of this writing, Ethiopia is in a declared national state of emergency following internal violent conflict in 2015 and 2016, so the outcome of previous diplomatic progress is unknown.

## ***Egypt***

**T**he powerhouse of the Nile countries, Egypt has seen its position shaken by internal political upheaval. The Arab Spring engulfed the country on January 25, 2011. Eighteen days of protests followed, after which President Hosni Mubarak stepped down. Mubarak's ouster from power may have altered Nile hydro-politics. While he was in power, Mubarak regularly leveraged Egypt's military and geopolitical weight to resist any change to the country's dominance of the Basin. In March 2011, Ethiopia announced the construction of the GERD, right in the middle of this fragile political period for its downstream neighbor. Whether or not its internal upheaval had anything to do with it, Egypt's softer stance on the Nile was immediately apparent. In May and September 2011, Egyptian Prime Minister Essam Sharaf and Ethiopian Prime Minister Meles Zenawi met and agreed to establish a committee of technical experts to review the GERD. In an unprecedented change in Egypt's official position, Sharaf even proclaimed that the GERD project "could be a source of benefit" as well as "a path for development and construction between Ethiopia, Sudan, and Egypt."

With the exception of Muhammad Morsi's presidency in Egypt, which included official and unofficial threats to Ethiopia for damming the Nile, and the distraction of Ethiopia's recent civil war, the three countries have been engaged in closed-door discussions about the technical aspects of the GERD since 2013. On March 23, 2015, Egyptian President Abdel Fattah al-Sisi, Sudanese President Omar al-Bashir, and Ethiopian Prime Minister Hailemariam Desalegn signed a declaration of principles on the GERD.

Egypt's stance on the Nile has moderated over the years since the Egyptian Revolution. This moderation accompanied by increased cooperation, however, does not prove that Egypt has reversed its

position regarding its historic rights to Nile waters. Rather, Egypt sees its options as limited by the speed and determination with which Ethiopia is constructing the GERD, and the relative international support Addis Ababa is enjoying.

And though Egypt may consider itself boxed in, the GERD stands to offer it substantial benefits. Egypt's High Aswan Dam holds back an estimated two years' worth of water in Lake Nasser, but the lake has one of the world's highest evaporation rates at more than 85 percent. Through the GERD, Egypt and Ethiopia could cooperate on mechanized water storage further upstream, away from the high evaporation zone in the desert.

Yet Egypt remains concerned about several issues: 1) how its share of the Nile water will be affected, immediately or in the long term, 2) ensuring that the GERD is not used for any other purpose than to generate electricity, and 3) how the filling of the dam and the production of hydroelectricity will be managed and the dam administered once it begins operation. A team of French consultants is investigating these and other impacts of the dam, yet the final report is not likely to be ready until after the GERD is in operation.

## ***Sudan***

**T**he other major downstream actor, Sudan, also stands to benefit from the GERD—but only if its precarious and bloody politics don't get in the way. Close to 95 percent of the country depends on Nile water resources. Sediment and flood control from the dam would bolster development plans for expanding Sudan's agricultural sector, while the GERD could also provide Sudan with more hydropower for water pumping and electricity generation.

However, Sudan has been enveloped by civil war in various forms almost without respite since 1962. The population in the south of the country fought to gain independence from the north, which it finally achieved in 2011 with the influence and aid of the United States. South Sudan was born and, as a result, Sudan lost control of the southern water resources of the White Nile River and the Sudd, potentially

important places for development. In 2013, a civil war broke out in South Sudan that continues to this day, rendering both Sudan and South Sudan politically, socio-culturally, and economically unstable.

Despite the ongoing conflict, decisions about Nile River water resources remain a priority for both countries, as is exemplified by the language about Nile water in the peace agreements between Sudan and South Sudan. Sudan, for its part, is actively engaged in the tripartite talks with Egypt and Ethiopia. Given its strong interest in the benefits of the GERD and historical relationship with Egypt, the country might act as a bridge between Egypt and Ethiopia in these discussions.

### ***Local Communities***

**W**hile Ethiopia's frenetic promotional campaign dismisses the human costs of its construction as a small price to pay for prosperity, those costs are considerable. Local people and indigenous communities have been and continue to be displaced from ancestral lands and traditional water access points, often without adequate compensation or recourse. While payment may be calculated based on economic concepts, compensation for the removal of a people from their known environment and their ancestral identity presents a more difficult challenge. Even though Ethiopia itself was never colonized, the international donor community has emphasized the advantages of Western-style economic development, while ignoring the importance of solutions that fit the ethnically diverse fabric of Ethiopian society. One report estimates that Ethiopia alone will displace more than 1.5 million people through contracts with foreign investors for large-scale farming projects and related land-leases.<sup>1</sup> To take only one example, 20,000 people largely belonging to the ethnic minority groups of Gumuz and Berta have lost land, land rights, and water access due to displacement from the area that became the dam's reservoir. The numbers are higher, but not readily available, for development in the White Nile catchment of the Gambela region. No assessment has been made of the impact on river communities directly downstream in Sudan, where subsistence farmers live alongside large numbers of internally displaced people from the ongoing Sudanese conflict.

There is also little to no information available about the dam's likely environmental impacts. No adequate study of sediment or water modeling has been done, due to the lack of existing data. The Ethiopians in charge of the GERD's design have given little attention to the environmental and ecosystem impacts, as preservation of these systems is not as big a priority as addressing issues of poverty and the health of the country's GDP. Nor has anyone studied how downstream communities of subsistence will be affected by flow regulation. Subsistence farming on the Nile includes the use of seasonal fluctuations in the river to reach different tracts of land, flood recession agriculture, which the GERD could substantially alter.

The Nile River Basin is located in the heart of what many climate scientists deem to be a hotspot for climate change activity—a major threat to rural communities, which are numerous along the river. Such environmental threats, combined with the displacement of populations and political tensions, could lead to violence on a sub-national level. Yet local communities are left out of the talks between Egypt, Sudan, and Ethiopia, even though the decisions made therein will have lasting and sometimes irreversible impacts on their cultural, economic, and environmental well-being.

**T**he Nile Basin countries need a comprehensive water development plan for the entire Basin if the governments want to provide water, food, and energy for future generations. As foreign investment increases, regional economies grow, and populations expand, more pressure will be put upon existing natural resources. Co-management of natural resources is key to regional development.

International influence in the Nile Basin through treaty negotiation, direct investment, loans for development, or aid is very powerful. The United States has long supported Egypt financially. It receives the fourth-largest U.S. foreign aid package after Afghanistan, Iraq, and Israel. China has long supported Sudan in the development of oil and gas resources. The newest player on the international development front, China is also investing in nation-building by constructing electrical transformers and transmission towers, as well as supplying material for extending the grid to the boundaries of Ethiopia and Sudan, in exchange for raw materials.



Development in the Nile Basin is inevitable given the economic ascendancy of certain Basin countries, population pressures, and under-developed water resources. Such development potential requires coordination beyond the reactive cooperation that currently predominates, epitomized by the tripartite talks among Egypt, Ethiopia, and Sudan. Other large and complex river basins, such as the Mekong in Southeast Asia, benefit from a regional basin organization that acts as a platform for development discussions among the affected countries. While basin organizations are controversial and imperfect, the institutional presence adds a level of stability to fragile water-sharing systems.

While the Nile Basin Initiative is an attempt at achieving basin-wide institutional capacity, it has largely struggled given the intransigence of Egypt and Sudan toward any new institution that challenges their regional hegemony. Today, the NBI continues to suffer from several institutional and financial challenges, yet at the same time, a permanent arrangement for international basin management eludes the basin states. Any new regional organization would need to assuage Egypt's and Sudan's concerns regarding the GERD. This includes how it will be filled, and how it will be operated in the short and long term, particularly in times of drought. A successful basin-wide organization will also need to create benefits for all parties concerned, so cooperation becomes a win-win situation in a hydro-political context that historically has been considered win-lose by upstream basin countries.

Looking to the future, the Nile Basin countries could also create a regional organization that would serve local communities in water-resources development, rather than just the respective governments. The people impacted by Nile River Basin development today whose voices are left out of the meeting rooms, but whose stability and quality of life are just as important as those of the people who live in national capitals and benefit from development efforts. This regional organization could transcend political boundaries and serve to amplify those voices, thus adding a new and sustainable dimension to future Nile plans, increasing cooperation, and bolstering regional security.

The United States has a potential role to play as well. The 2012 National Intelligence Council Report titled *Global Water Security* analyzed seven

international river basins that included countries important to U.S. national security interests. The Nile was among the basins examined. The report found that the Nile Basin will likely see a decrease in per capita water, impeded water flows due to new dam construction (possibly referring to the GERD), and increased variability in water availability causing floods and droughts. These environmental consequences are likely exacerbated by inadequate water agreements and management structures. Consequently, water and food security will suffer, possibly leading to political and economic instability. As the United States contemplates its interests in North Africa and the Middle East, paying close attention to developments in the Nile River Basin, home to almost half the population of continental Africa, is fundamental.

The GERD offers a platform upon which the governments of the Nile Basin can revisit their diplomatic relationships, power positions, and future visions for economic development. Not only could hydropower produced in Ethiopia be sold, but the regulation of the Nile through the GERD could effectively eliminate the annual Nile flood, making the flow of water reaching Egypt and Sudan seasonably stable, and reduce evaporation rates, making more water available. Meanwhile, the basin countries continue to engage in discussions despite internal conflict and changes in leadership, setting the tone for cooperation that could bolster security and stability in an essential world region.

<sup>1</sup>Cassandra Herrman & Ben Hoffman, "Ethiopia: A Battle for Land and Water," Center for Investigative Reporting, February 28, 2012.

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