

Strategic Analysis Paper

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Conflict on the Nile: The future of transboundary water disputes over the world's longest river

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Key Points

- The Nile River has had a major impact on the interstate politics of the region through the years, as it is the only reliable source for renewable water supplies in the area.
- The *Entebbe Agreement* has shifted control over the Nile away from Egypt and Sudan, who previously had a monopoly over the river's resources as a result of colonial agreements.
- The food and water security situation in Egypt is extremely vulnerable, due to population growth and environmental factors that have raised deep concerns amongst the nation's political leaders, already concerned about the geo-political shift in the Nile basin region.
- Multiple factors, including its deteriorating fiscal position, leave Egypt little choice but to engage in peaceful co-operation with other Nile nations to prevent future severe water scarcity.

Summary

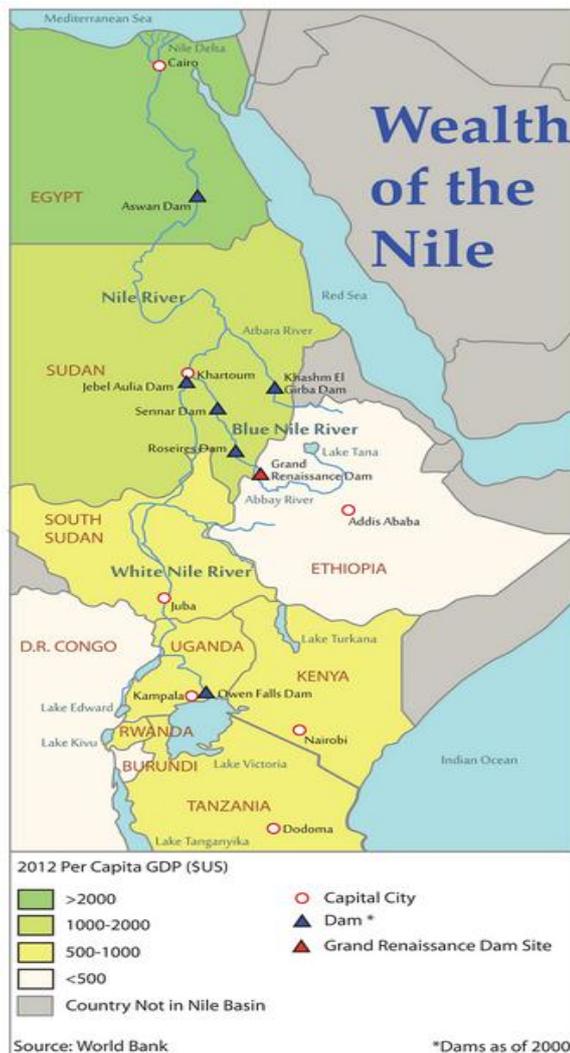
The impacts of the Nile on the politics of the North African region have been so significant that they threaten to spark an interstate conflict, which could potentially destabilise the whole area. The countries in the Basin depend heavily on the Nile, which is the only major renewable source of water in the area; consequently, it is essential to their food and water security.

The Egyptian and Sudanese monopoly over the water resources in previous years had served to exacerbate regional tensions. The signing of various agreements during colonial times allowed for this distribution; the two most prominent agreements were signed between Egypt and Britain (1929) and Egypt and Sudan (1959). Increased co-operation between upstream nations has resulted in the binding *Entebbe Agreement*, which is restructuring allocations and control over the Nile’s resources. The geo-political shift in the region has led to a proliferation of upstream developments, including dams and irrigation networks. These developments are often met with threats from Egypt, which is extremely protective over its decreasing share of the Nile’s water. Egypt, however, must engage in peaceful interstate co-operation to secure its water supplies. The Nile faces an uncertain future amid developmental and environmental pressures. Alternative water sources, in the form of desalination, aquifers and other such solutions, simply must be found to reduce the region’s dependency on the river.

Analysis

The Nile draws its water from three long rivers – the White Nile, Blue Nile and the Atbara, which flows from North-West Ethiopia to the Nile in East Sudan. The longest river in the world, the Nile stretches 6,650 kilometres and passes through eleven countries: Burundi, Egypt, Eritrea, Ethiopia, Kenya, Rwanda, Sudan, South Sudan, Tanzania, Uganda and the Democratic Republic of the Congo (DRC). The volume of the Nile’s annual flow is 84 billion cubic metres.

These Nile Basin nations have a combined population of over 450 million people and estimates indicate that over 200 million of them rely directly on the Nile for their food and water security. The Nile is the only major reliable source of renewable water supplies in the region. The Nile Basin’s population is expected to double in the next twenty-five years. Such an increase will further deplete the region’s already scarce water supplies as demands from agriculture, industry and domestic use rise. Water is a dangerously scarce commodity in North Eastern Africa and the regional water security situation is extremely precarious. In addition to pressures from climate change and the resulting continual threat of drought, water insecurity is also threatened by pollution from sprawling river bank communities.



The Nile River has a major impact on the interstate politics of the region. Prior to the *Entebbe Agreement* of 2010, two prominent agreements governed the allocation of the Nile's waters. These agreements gave Egypt and Sudan absolute rights over the river and have thus precipitated serious regional tensions. In 1929, the *Nile Water Agreement* was signed between Egypt and Britain, granting Egypt the right to inspect any upstream Nile-related water projects with the potential to compromise its river flow. The agreement was rationalised on the basis that Egypt is more dependent on the Nile than other Basin nations, which enjoy heavy rainfall, access to the sources of the Nile and other supply alternatives. The British decision was also motivated by Egypt's strategic importance to the Empire; Egypt controlled the Suez Canal and thus British access to India. Decades later, in 1959, Egypt and Sudan signed the *Nile Water Agreement*. Egypt was allocated three-quarters of the total water volume (55.5 billion cubic metres) and thereby the ability to construct the Aswan Dam, while Sudan was allocated a quarter of the volume (18.5 billion cubic meters). Other Basin nations vehemently criticised the legitimacy of the 1929 and 1959 Nile Water agreements; as they were not independent at the time, they claimed that they were prevented from fighting for a claim over the water.

A number of pre-1929 agreements provide context to the Egyptian and Sudanese monopoly over the Nile Basin. They include the agreements signed between Britain and Ethiopia (1902) and Britain and the Independent State of Congo (1906), the latter disallowing the construction of projects in the Congo along the Semliki or Isango Rivers. The 1902 agreement effectively sought to establish a border between Ethiopia and Sudan, while prohibiting construction along the Lake Tana shore, the Blue Nile and the Sobat Rivers, which could restrict the Nile's flow into Sudan. These agreements effectively granted Egypt and Sudan control over all upstream projects

The recent independence of South Sudan has changed the geopolitical balance in the Nile River Basin. Two months after its independence in July 2011, South Sudan began seeking to join the *Nile Basin Initiative* (NBI). The NBI, founded in 1999, is a permanent commission, involving participating nations and stakeholders, which manages water resources and works towards a fair allocation of water. South Sudan was admitted as a full member in July 2012, increasing the NBI's membership to ten. The eleventh riparian country, Eritrea, participates as an observer. The South Sudanese government currently controls 28 per cent of the Nile's flow; however, it is likely that this allocation will require renegotiation between South Sudan and Sudan. As the colonial treaties were arguably out-dated following the decline of European influence in the region and are disadvantageous to the interests of the other riparian nations, change and cooperation are still necessary in the present context.

The Nile Co-operative Framework

Upstream riparian nations have acquired a greater share of resources and control over the Nile in recent years. The regional realignment of powers along the Nile Basin is a result of the *Nile River Co-operative Framework* (NRCF). Initiated in 1997, the NRCF came into force as international law when the sixth riparian nation, Burundi, signed the *Entebbe Agreement* in March 2011. The *Entebbe Agreement* allows riparian countries to construct dams and undertake related projects, contrary to the restrictions of the colonial treaties. Currently, the

six nations that have signed the agreement are: Ethiopia, Rwanda, Uganda, Kenya, Tanzania and Burundi. South Sudan has pledged to sign soon and may be followed by the DRC. Sudan and Egypt have refused to sign the Framework agreement, suggesting that the wording of *Article 14 (b)*, on water security for other Nile nations, impinges on pre-existing water rights and usage allocations. Egypt and Sudan maintain that instead of such abrupt changes, the focus should be on refining the NBI. If this was done, a trust fund, supported by all the countries and institutions involved, could be utilised for developing the river's resources to implement various projects that would benefit all of the riparian nations. Egypt suggests that the *Cooperative Framework* will destroy the levels of cooperation forged since the NBI. Although not all of the riparian states have signed on as yet, the progress of change is already evident.

Future pressures on the Nile's water flow

Egyptian demand

Egypt's "historic rights" to the Nile have encouraged over-dependency on the river. Without the rainfall enjoyed by upstream riparian nations, Egypt relies on the Nile for 97 per cent of its water needs. In line with current trends of water overuse, population growth and the possible redistribution of the Nile's resources to other riparian nations, Egypt faces the challenge of coping with severe future water scarcity. The United Nations warn that Egypt could run out of water by 2025.

Water shortages and limited arable land mean that Egypt already relies heavily on food imports to feed its population. Egypt's agricultural sector currently uses 80 per cent of the nation's water supplies, yet domestic production levels are considerably short of demand. Half of the 18.8 million tonnes of grain that Egypt consumes annually is imported, making it the world's largest grain importer. In total, Egypt imports 60 per cent of its total food needs.

Egypt's current population of 85 million is growing at a rapid rate of 1.88 per cent per annum and is expected to rise to 140 million by 2050. As the population increases, water demands will grow for household and industrial use and to grow the food required to ensure the country's food security. Egypt's reliance on food imports makes it vulnerable to global food price hikes and supply shortages. To mitigate this security risk, Egypt has embarked on land reclamation schemes in desert areas, which require huge amounts of water and will place further strain on the shares of other agricultural, industrial and municipal water consumers.

Egypt's extreme reliance on the Nile for its electricity, water and food security is the major source of conflict in the river basin. A tenth of Egypt's electricity generation capacity comes from the Aswan Dam alone. Egypt already overdraws on its water allocation but is still extremely water scarce. As the population booms, the country will require more water than it currently has available; however, shifting geostrategic alliances among upstream nations mean that its allocation is likely to decrease. Unless it embarks on a large-scale overhaul of its inefficient water networks, Egypt could experience major water crises in coming years that could trigger conflicts with its neighbours.

Upstream development

Populations are expanding rapidly in other Nile countries also. Upstream, Uganda and Ethiopia are both experiencing extremely high population growth at 3.1 and 2.9 per cent per annum respectively. Population growth will increase demand for water due to rising consumption by households, agriculture and industry. Population growth in several upstream nations has been accompanied by strong economic growth. This is stimulating the development of infrastructure projects along the Nile, such as dams, irrigation networks and pipelines. Ethiopia, whose economic growth has averaged 7.5 per cent a year in the last three years, is one example. The construction of Ethiopia's US\$4.7 billion Grand Renaissance Dam (GERD) is a testament to its economic improvement, made possible through new provisions for development along the Nile for riparian nations. The hydro-electric dam, planned to be completed by 2017, will become the biggest in Africa, with a capacity of 62 to 74 billion cubic metres. It is expected to generate an annual output of 6000 megawatts (around three times Ethiopia's existing capacity). As a result, Ethiopia will become a net exporter of electricity to a host of potential buyers in the region, including: Djibouti, Kenya, Somalia, Sudan, Uganda and possibly Egypt. The construction of the dam has triggered considerable controversy, especially protests from Egypt. The concern is that it could cause the evaporation of 3 billion cubic metres of Nile water each year, but this evaporation loss is only a quarter of the 12 billion cubic metres lost via the Aswan Dam in Egypt each year. As more upstream nations experience economic growth, the demand for large water infrastructure projects will increase. This could lead to reduced flows for downstream countries and is a considerable source of controversy.

The emergence of newly independent South Sudan in the Nile Basin has forced a reallocation of Nile resources within the former Sudanese territory. In the wake of South Sudan's independence, 16 sites have been chosen along the Nile for the construction of dams. These infrastructure developments are an important way of boosting South Sudan's economy after a period of steep economic decline; South Sudan's oil production and national economy have recovered slowly since the abrupt closure of oil wells in January 2012, after pipeline fee disagreements with Sudan. However, South Sudan's new infrastructure developments along the Nile could have further detrimental downstream impacts on Egypt.

Large scale water infrastructure projects carry a dual security threat. As well as potentially sparking conflict with neighbouring countries, they can be a source of internal conflict. While dam building may stimulate national economic growth, it is also known to cause the displacement of large communities from fertile Nile bank areas to barren deserts. The Morowe Dam in Sudan, completed in 2009, forced 15,000 families along the Nile banks to relocate to desert areas, due to forced eviction and destructive high water levels. Insufficient government compensation sparked protests in Khartoum in 2011. The Roasaries Dam, whose future expansion will significantly improve Sudan's ability to irrigate its farmland, also forced around 22,000 families to relocate. While these infrastructure projects are carried out with national interests in mind, the direct impact on adjacent Nile communities can be destructive. Furthermore, 'trickle down' wealth generated from operational dams is not a certainty for the general population. Nile basin nations such as Ethiopia, Sudan and South Sudan must reinvest accrued royalties into the population, through effective governance, education and public health measures, to spur meaningful development, particularly the

reduction of food and water insecurity. Furthermore, new infrastructure projects along the Nile will inevitably impact downstream nations and must be monitored to optimise water flow and satisfy current agreements.

Environmental pressures

Demand pressures and potential conflict aside, the Nile is also threatened by many environmental pressures, ranging from climate change to pollution and degradation. Climate change will present serious challenges for the Nile, including reduced river flow, land degradation, the increased likelihood of droughts and floods, and rising rates of disease. Dam building on the Nile is responsible for watershed land degradation. Population growth patterns in Egypt and upstream Nile nations, such as Uganda and Ethiopia, will undoubtedly bring future environmental issues as increases in municipal, industrial and agricultural wastes can be expected.

In Egypt, these future projections will compound pre-existing issues, such as the salinisation of the Nile delta and water pollution issues. Egypt has depleted the Nile's water resources by overdrawing its allocation, through projects such as the desert reclamation in the Toshka Depression and the Al-Salam Canal system that reclaims land in the Sinai Desert. Current irrigation methods along the Nile feed fresh water through irrigation canals, only to recycle it back into the river channel with inputs of salt, agricultural chemicals and pesticides. This results in widespread salinization, which affects the fertility of soils; the process gradually worsens the quality of the soil further and further south of the river mouth, limiting crop selection in badly affected areas to salt-resistant crops such as rice.

Potential for interstate conflict

It is unclear whether regional disputes over the Nile's water may spark future conflict, or whether the costs of confrontation will prevent this outcome. In 1988, Egypt's Foreign minister, Boutros Boutros-Ghali, hypothesised that the Nile River would undoubtedly spark Egypt's next war. Historically, Egypt has imposed its control over the Nile, granted through the 1902, 1929 and 1959 colonial agreements, on other Nile Basin nations. In 1970, Egypt threatened war over the building of the Fincha Dam in Ethiopia and when Ethiopia tried to secure funding from the *World Bank*, Egypt and Sudan invoked *Article 3* of the 1902 treaty between Britain and Ethiopia. In 2004, Tanzania planned the construction of the Lake Victoria pipeline, which would have benefited approximately 400,000 of its north-western citizens. Egypt threatened to bomb the construction site, claiming that it needed that water to flow northward into the Aswan Dam. The 1929 agreement restricted Tanzania from blocking the Nile's waters without British permission.

More recently, Ethiopia's GERD, 50 kilometres from the Sudanese border, has drawn substantial criticism, largely due to Egypt's hostile response to its construction. Sudan, on the other hand, has been largely peripheral in the disputes over the GERD, downplaying the dam's potential negative effects and throwing its support behind Ethiopia. Egypt views the construction of Africa's largest dam as a threat to its national security, given the vulnerability of its declining water supplies. An email from 2010, recovered by Wikileaks and sourced originally from Stratfor, revealed a 'high-level' Egyptian source saying 'we are discussing military co-operation with Sudan' against Ethiopia, with plans to establish a base in Sudan

for Egyptian Special Forces to attack the Dam Project. However, a Stratfor article published this June argued that Egypt does not have the capacity to manage the physical and political logistics of a military attack of this magnitude. Also in June this year, a meeting involving top Egyptian politicians was mistakenly televised, revealing a brainstorming of ideas of how Egypt could 'absorb the shock' of the Renaissance Dam, including supporting proxy military groups within Ethiopia to destabilise its government. The temporary diversion of water flows along the Blue Nile tributary in May, allowing for a new phase of the GERD's construction, prompted Former Egyptian President Morsi to suggest that if Egypt's share of the Nile's water diminishes by one drop, that 'blood' would be the alternative. These remarks are indicative of Egypt's tendency to use military threats in Nile disputes, yet the aggressive rhetoric belies the fact that Egypt is not in a position, either domestically or internationally, for these threats to be feasible. The likelihood is that the recent wave of rhetoric following the Blue Nile diversion this May, was an attempt to deflect attention from deteriorating domestic conditions rather than a legitimate threat.

The prospects of conflict within the region are underlined by escalations of internal conflicts and civil unrest, particularly in Egypt. While Egypt possesses one of the strongest armed forces in Africa, the military is occupied with the responsibility of maintaining domestic stability in the turbulent environment, following the overthrow of Mohamed Morsi as President in July. Domestic instability and severe fiscal deterioration mean that international confrontation is beyond their current capacity. Egypt's economic crisis means that it is struggling to maintain the essential level of food imports; consequently, it could not justify costly military operations. The country currently relies on loans and aid from GCC states to remain solvent, which would most likely be lost if Egypt engaged in behaviour that earned it international condemnation. Despite Egypt's ongoing rhetoric about its determination to safeguard its Nile allocation, its ability to back its threats is limited.

Potential avenues for change

Greater co-operation between Egypt and other riparian nations is the best way forward for Egypt's water future and regional stability. Upstream riparian nations will continue to lay claim to their rights over the Nile. Egypt is increasingly backed into a corner, as military aid and US\$260 million in cash assistance from the United States has been suspended since October, in response to the July military coup d'état or 'ousting'. Furthermore, Washington offers significant military support to Ethiopia. A sturdy relationship with the US is indispensable for both countries, but is not assured. Thus Egyptian co-operation with other riparian nations, particularly Ethiopia, appears to be its only option at this stage; regional stability is important for the strategic and economic benefits of all the nations involved.

Egypt is therefore faced with no viable option except to cooperate and employ alternatives to the Nile's water supplies. Cairo's ultimatum that it would only sign the new agreement if the colonial treaties were recognised, has not gained regional support. The country's *Water Research Centre* has revealed that Egypt will most likely face serious water shortages in the next fifteen years and a devastating drought. Egypt and Sudan are outnumbered by the other riparian nations that have signed, or intend to sign, the *Entebbe Agreement*, which is internationally recognised despite Egypt and Sudan's renunciation. Although Egypt must co-

operate, it views the Nile as a source of national pride; its incessant posturing on riparian negotiations and claims to pre-existing water allocations will prevent immediate resolutions. Other solutions that Egypt and the other Nile countries must consider include the engagement of non-state actors, such as farmers, fishers, lobby groups and Non-Governmental Organisations (NGOs). It is through these mechanisms that they may find cooperative solutions to potential water conflicts and crises.

The outcome of the GERD Tripartite Commission's findings - involving Egyptian, Sudanese, Ethiopian and international experts - may prove to be the yardstick for future dialogue among the major Nile Basin nations. The Commission's assessment – that the GERD would not have a significant impact on Egypt or Sudan – was announced in May this year, to quell criticism of the potential effects of the dam. Meetings to discuss the findings between Ethiopia, Sudan and Egypt were postponed several times, until a recent meeting on 4 November revealed that Egypt seeks further studies on the GERD's impact, postponing the implementation of the report's recommendations. Despite these roadblocks, Ethiopia has welcomed the possible participation of Sudan and Egypt in the project, which would pave the way for future co-operation over the management of the Nile.

From the perspective of national security, it is strategically dangerous to become completely dependent on one resource alone. Even if the international conflicts surrounding the Nile are ignored, it is a fact that overdependence on the Nile Basin has caused the depletion of its water resources. The repercussions of this overdependence include a high rate of unemployment, diseases and hunger. Alternatives to the river, such as desalinisation, water recycling, educating the local community about the more economical usage of water, cooperation with the other countries in the Nile Basin and even the use of deep ground water, simply must be utilised. Already, groundwater has become a major source of drinking water in Africa. A UN backed plan to optimise the use of the Nubian Sandstone Aquifer, located underground in the Eastern part of the Sahara desert, has been agreed upon by Egypt, Sudan, Chad and Libya. Through the completion of Libya's Great Man Made River Project, water extraction from the aquifer has begun; this has the potential to keep the four countries supplied with water for up to 400 years. This projection, however, will change in accordance with the growing North African population.

Conclusion

Amid the North African region's booming population, the Nile River Basin acts as the area's major reliable source for renewable water supplies. The impact that the river has had on the international politics of the region is evident. It was the British decision to grant Egypt and Sudan absolute rights over the full use of the River's water supplies that sowed the seeds of the potential conflict. Legal frameworks that promoted cooperation, such as the 1999 Nile Basin Initiative, have followed, but have ultimately resulted in the other riparian nations wresting control over developments across their respective sections of the Nile. The *Nile River Cooperative Framework* codified this change in the regional political balance.

Though international conflict still presents a risk, several factors, including pre-existing domestic unrest in the region, leave the countries with little option other than co-operation and thus diminish its likelihood. The internationally recognised *Entebbe Agreement* leaves

Egypt and Sudan outnumbered, while other geo-strategic alliances severely limit Egypt's military options. It is in the interests of all the riparian nations to preserving regional stability. As already mentioned, even in the absence of international tensions over its distribution, the river's water resources would still be depleting; consequently, the ensuing situation will demand other alternatives, which could stabilise North Africa's water and food security. International cooperation is thus the only viable and peaceful solution to this growing problem.

Any opinions or views expressed in this paper are those of the individual author, unless stated to be those of Future Directions International.

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