

Case Study of Transboundary Dispute Resolution: the Nile waters Agreement

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1. Case summary

<i>River basin:</i>	Nile River (Figure 1, table 1)
<i>Dates of negotiation:</i>	1920-1959—Treaties signed in 1929 and 1959
<i>Relevant parties:</i>	Egypt, Sudan (directly); other Nile riparians (indirectly)
<i>Flashpoint:</i>	Plans for a storage facility on the Nile
<i>Issues:</i>	Stated objectives: negotiate an equitable allocation of the flow of the Nile River between Egypt and Sudan; develop a rational plan for integrated watershed development
<i>Additional issues:</i>	Water-related: upstream vs. downstream storage; Non-water: general Egypt-Sudan relations
<i>Excluded issues:</i>	Water quality; other Nile riparians
<i>Criteria for water allocations:</i>	Acquired rights plus even division of any additional water resulting from development projects
<i>Incentives/linkage:</i>	Financial: Funding for Aswan High Dam; Political: Fostered warm relations between Egypt and new government of Sudan
<i>Breakthroughs:</i>	1958 coup in Sudan by pro-Egypt leaders made agreement possible
<i>Status:</i>	Ratified in 1959. Allocations between Egypt and Sudan upheld till today. Other riparians, particularly Ethiopia, are planning development projects that may necessitate renegotiating a more inclusive treaty. Nile Basin Initiative established in 1999, includes all basin nations.

2. Background

In the early 1900s, a relative shortage of cotton on the world market put pressure on Egypt and the Sudan, then under a British-Egyptian condominium, to turn to this summer crop, requiring perennial irrigation over the traditional flood-fed methods. The need for summer water and flood control drove an intensive period of water development along the Nile, with proponents of Egyptian and Sudanese interests occasionally clashing within the British foreign office over whether the emphasis for development ought to be further up-stream or down.

With the end of World War I, it became clear that any regional development plans for the Nile Basin would have to be preceded by some sort of formal agreement on water allocations. In 1920, the Nile Projects Commission was formed, with representatives from India, the United Kingdom, and the United States. The Commission estimated that, of the river's average flow of 84 BCM/yr, Egyptian needs were estimated at 58 BCM/yr. Sudan, it was thought, would be able to meet irrigation needs from the Blue Nile alone. The Nile flow fluctuates greatly, with a standard deviation of about 25%. In recognition of this fact, an appendix was added which suggested that any gain or short-fall from the average be divided evenly between Egypt and Sudan. The Commission's findings were not acted upon.

The same year saw publication of the most extensive scheme for comprehensive water development along the Nile, now known as the Century Storage Scheme. The plan, put forth by the British, included a storage facility on the Uganda-Sudan border, a dam at Sennar to irrigate the Gezira region south of Khartoum, and a dam on the White Nile to hold summer flood water for Egypt.

The plan worried some Egyptians, and was criticized by nationalists, because all the major control structures would have been beyond Egyptian territory and authority. Some Egyptians saw the plan as a British means of controlling Egypt in the event of Egyptian independence.



Figure 1: Map of the Nile River Basin (TFDD, 2007).

Table 1: Features of the Nile watershed.

Name	Watershed features ^a					
	Riparian states (With % of national available water being utilized) b ^a	Riparian relations (with dates of most recent agreements)	Average annual flow (km ³ /yr.) ^c	Size (km ²)	Climate	Special features
Nile	Burundi (3.1), Congo, Democratic Republic of (Kinshasa), Egypt (111.5), Egypt, administered by Sudan (n/a), Eritrea (n/a), Ethiopia (7.5), Kenya (8.1), Rwanda (2.6), Sudan (37.3), Sudan, administered by Egypt, Tanzania, United Republic of (1.3), Uganda (0.6)	Cold to warm (1959 Nile Water Agreement only includes Egypt and Sudan)	84	3,038,100	Dry to tropical	Scheduled as complex model/ workshop

a Values for lakes under "Annual Flow" are for storage volumes.

b Source: Kulshreshtha (1993) created in January 1993.

*c Sources: Gleick ed. (1993); UN Register of International Rivers (1978).
Remaining data from TFDD, 2007.*

3. The problem

As the Nile riparians gained independence from Colonial powers, riparian disputes became international and consequently more contentious, particularly between Egypt and Sudan. The core question of historic versus sovereign water rights is complicated by the technical question of where the river ought best be controlled—upstream or down.

4. Attempts at conflict management

In 1925, a new water commission made recommendations based on the 1920 estimates which would lead finally to the Nile Waters Agreement between Egypt and Sudan on 7 May 1929. Four BCM/yr. was allocated to Sudan but the entire timely flow (from January 20 to July 15) and a total annual amount of 48 BCM/yr. was reserved for Egypt. Egypt, as the downstream state, had its interests guaranteed by

- Having a claim to the entire timely flow. This meant that any cotton cultivated in Sudan would have to be grown during the winter months.
- Having rights to on-site inspectors at the Sennar dam, outside of Egyptian territory.
- Being guaranteed that no works would be developed along the river or on any of its territory, which would threaten Egyptian interests.

In accord with this agreement, one dam was built and one reservoir raised, with Egyptian acquiescence.

The Aswan High Dam, with a projected storage capacity of 156 BCM/yr, was proposed in 1952 by the new Egyptian government, but debate over whether it was to be built as a unilateral Egyptian project or as a cooperative project with Sudan kept Sudan out of negotiations until 1954. The negotiations which ensued, and carried out with Sudan's struggle for independence as a back-drop, focused not only on what each country's legitimate allocation would be, but whether the dam was even the most efficient method of harnessing the waters of the Nile.

The first round of negotiations between Egypt and Sudan took place between September and December 1954, even as Sudan was preparing for its independence, scheduled for 1956. The positions of the two sides can be summarized as follows:

4.1. Egyptian Position

- Existing needs should take priority. These were described as being 51 BCM for Egypt and four BCM for Sudan, out of an average flow of 80 BCM as measured at Aswan.
- Any remainder from development projects should be divided as a percentage of each country's population after subtracting 10 BCM for evaporation losses. The respective population and growth rates led to an Egyptian formula for 22/30 of the remainder, or 11 BCM for Egypt, and 8/30, or four BCM for Sudan.
- There should be one large storage facility, a high dam at Aswan.
- Total allocations would therefore be 62 BCM for Egypt and 8 BCM for Sudan.

4.2. Sudanese Position

- Sudan insisted on using the standard value of 84 BCM for average Nile discharge, and insisted that Egypt's acquired rights were for 48 BCM, not 51 BCM that Egypt claimed.
- Sudan also suggested that their population was actually 50% larger than Egypt had estimated, and that resulting population-based allocations should be adjusted accordingly, giving Sudan at least one third of any additional water.
- Storage facilities should be smaller and upstream, as envisioned in the Century Storage Scheme. Consequently, if Egypt insisted on one large project, with comparatively high evaporation losses, these losses should be deducted from Egypt's share.
- Total allocations, therefore, should be approximately 59 BCM (69 BCM less evaporation) for Egypt and

15 BCM for Sudan.

Negotiations were broken off inconclusively, then briefly, and equally inconclusively, resumed in April 1955. Relations then threatened to degrade into military confrontation in 1958 when Egypt sent an unsuccessful expedition into territory in dispute between the two countries. In the summer of 1959, Sudan unilaterally raised the Sennar dam, effectively repudiating the 1929 agreement.

Sudan attained independence on 1 January 1956, but it was with the military regime which gained power in 1958 that Egypt adopted a more conciliatory tone in the negotiations which resumed in early 1959. Progress was speeded in part by the fact that any funding which would be forthcoming for the High Dam would depend on a riparian agreement. On 8 November 1959, the Agreement for the Full Utilization of the Nile Waters (Nile Waters Treaty) was signed (Table 2).

Table 2: Water allocations from Nile negotiations.

Position	Egypt (BCM/year)	Sudan (BCM/year)
Egyptian ¹	62.0	8.0
Sudanese ²	59.0	15.0
Nile Waters Treaty (1959) ³	55.5	18.5

¹ The Egyptian position assumed an average flow of 80 BCM/year and divided approximately 10 BCM/year in evaporation losses equally.

² The Sudanese position assumed an average flow of 84 BCM/year and deducted evaporation from the Egyptian allocations.

³ The Treaty allowed for an average flow of 84 BCM/year and divided evaporation losses equally.

5. Outcome

The Nile Waters Treaty had the following provisions:

- The average flow of the river is considered to be 84 BCM/yr. Evaporation and seepage were considered to be 10 BCM/yr, leaving 74 BCM/yr to be divided.
- Of this total, acquired rights have precedence, and are described as being 48 BCM for Egypt and 4 BCM for Sudan. The remaining benefits of approximately 22 BCM are divided by a ratio of 7 1/2 for Egypt (approx. 7.5 BCM/yr) and 14 1/2 for Sudan (approx. 14.5 BCM/yr). These allocations total 55.5 BCM/yr for Egypt and 18.5 BCM/yr for Sudan.
- If the average yield increases from these average figures, the increase would be divided equally. Significant decreases would be taken up by a technical committee, described below.
- Since Sudan could not absorb that much water at the time, the treaty also provided for a Sudanese water “loan” to Egypt of up to 1,500 MCM/yr through 1977.
- Funding for any project which increases Nile flow (after the High Dam) would be provided evenly, and the resulting additional water would be split evenly.
- A Permanent Joint Technical Committee to resolve disputes and jointly review claims by any other riparian would be established. The Committee would also determine allocations in the event of exceptional low flows.

- Egypt agreed to pay Sudan £E 15 million in compensation for flooding and relocations.

Egypt and Sudan agreed that the combined needs of other riparians would not exceed 1,000-2,000 MCM/yr., and that any claims would be met with one unified Egyptian-Sudanese position. The allocations of the Treaty have been held to until the present.

Ethiopia, which had not been a major player in Nile hydropolitics, served notice in 1957 that it would pursue unilateral development of the Nile water resources within its territory, estimated at 75% to 85% of the annual flow, and suggestions were made recently that Ethiopia may eventually claim up to 40,000 MCM/yr for its irrigation needs both within and outside of the Nile watershed. No other state riparian to the Nile has ever exercised a legal claim to the waters allocated in the 1959 treaty.

Ever since the signing of the Nile Basin Treaty of 1959, there have been various cooperative activities that have taken place between nations within the Nile River Basin. From 1967 to 1992, the United Nations Development Program (UNDP) supported HYDROMET, a project designed to collect hydrometeorologic information within the basin. In 1993, the Technical Cooperation Committee for the Promotion of the Development and Environmental Protection of the Nile Basin (TECCONILE) was formed at the same time as the first of ten Nile 2002 conferences were launched with the idea to create informal dialogue between riparian nations.

Nile-COM, the Council of Ministers of Water Affairs of the Nile Basin States, in 1997 was allowed by the World Bank to direct and coordinate donor activities within the basin, which led the Council to work in cooperation with organizations such as the UNDP, the World Bank and the Canadian International Development Agency (CIDA). In May of 1999, the Nile Basin Initiative (NBI) was launched with the understanding that a cooperative effort in the development and management of Nile waters will bring the greatest level of mutual benefit on the region. All nations of the basin, Burundi, D.R. Congo, Egypt, Eritrea, Ethiopia, Kenya, Rwanda, Sudan, Tanzania and Uganda, joined the organization. The objectives for the NBI (see <http://www.nilebasin.org/Documents/TACPolicy.html>) include the following:

- To develop the water resources of the Nile in a sustainable and equitable way to ensure prosperity, security and peace for all its peoples.
- To ensure efficient water management and the optimal use of resources.
- To ensure cooperation and joint action between the riparian countries, seeking win-win gains.
- To target poverty eradication and promote economic integration.
- To ensure that the program results in a move from planning to action.

In May 2004, the “Nile Transboundary Environmental Action Project,” the first of eight basin-wide projects under the NBI, was launched in Sudan. Sudanese president, General Omar El-Bashir, declared, “Since environmental hazards are not restricted within geographical boundaries, local and international efforts are required to overcome the dangers and threats in the environmental arena. This project is providing solutions to these problems” (<http://www.sudantribune.com/spip.php?article3170>).

6. Lessons learned

- *Shifting political boundaries can turn intra-national disputes into international conflicts, exacerbating tensions over existing issues.*
Similar to the Indus, the disappearance of British colonialism turned national issues international, making agreement more difficult.
- *Downstream riparians are not necessarily at a political disadvantage to their upstream neighbors.*
While in many cases relative riparian positions results in comparable power relationships, with upper riparians having greater hydropolitical maneuverability, Egypt's geopolitical strength was able to forestall upstream attempts to sway its position.

- *The individuals or governments involved can make a difference in the pace of the negotiations.* Negotiations made little progress between 1954 and 1958, even given Sudan's independence in 1956. It was only after pro-Egyptian General Ibrahim Abboud took power in a coup in 1958 did negotiations move towards resolution, finally gaining for Sudan water allocations greater than those of their initial bargaining point.

7. Creative outcomes resulting from resolution process

The measure for water allocations is rather elegant, incorporating existing uses as well as providing a measure (population) for allocating additional sources.

Some financing arrangements were creative, with Egypt agreeing to finance water enhancement projects in Sudanese territory, in exchange for the water which would be made available. Provisions were made for Sudan to pick up responsibility for up to 50% of costs in exchange for up to 50% of the water, when their water needs required.

8. Timeline

- 1920 Nile Projects Commission formed, offers allocation scheme for Nile riparians. Findings were not acted upon.
- Century Storage Scheme put forward, emphasizing upstream, relatively small-scale projects. Plan is criticized by Egypt.
- 1925 New water commission is named.
- 7 May 1929 Commission study leads to Nile Waters Agreement between Egypt and Sudan.
- 1952 Aswan High Dam proposed by Egypt. Promise of additional water necessitates new agreement.
- Sep-Dec 1954 First round of negotiations between Egypt and Sudan. Negotiations end inconclusively.
- 1956 Sudan gains independence. Egypt is more conciliatory with government after 1958 coup.
- 8 Nov 1959 Agreement for the Full Utilization of the Nile Waters (Nile Waters Treaty) signed between Egypt and Sudan.
- 1967-1992 Launch of Hydromet regional project for collection and sharing of hydrometeorologic data, supported by UNDP.
- 1993 Formation of TECCONILE (Technical Cooperation Committee for the Promotion of the Development and Environmental Protection of the Nile Basin) to address development agenda for the Nile basin.
- 1993 First of ten Nile 2002 Conferences for dialogue and discussions between riparians and international community, supported by CIDA (Canadian International Development Agency.)
- 1995 Nile River Basin action plan created within TECCONILE framework, supported by CIDA.
- 1997-2000 Nile riparians create official forum for legal and institutional dialogue with UNDP support. Three representatives from each country (legal and water resource experts) and a panel of experts draft a "Cooperative Framework in 2000.
- 1997 Formation of Nile-COM, a council of the Ministers of Water from each of the riparian nations of the Nile Basin.
- 1998 First meeting of the Nile Technical Advisory Committee (Nile-TAC).
- May 1999 Nile Basin Initiative established as a cooperative framework between *all* riparians (excluding Eritrea) for the sustainable development and management of the Nile.
- May 2004 First basin-wide project under NBI, the "Nile Transboundary Environmental Action Project," launched in Sudan.

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