

Ethiopia, Egypt, and the Grand Ethiopian Renaissance Dam on the Nile

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The ambivalent history between Egypt and Ethiopia spans notably from antiquity to present-day negotiations over the Grand Ethiopian Renaissance Dam (GERD) project. The Nile River, a crucial resource in the region, rising in Ethiopia and flows into Egypt before emptying into the Mediterranean Sea. The relationship between the two states has always been precarious, with Ethiopia reliant on Egypt for religious authority and political legitimacy, and Egypt reliant on Ethiopia for its primary source of fresh water. Armed conflict has been a significant concern since Ethiopia's 2011 announcement that it would be building the GERD on the Blue Nile. However, the actual risk of war over the development in Ethiopia is rather low, regardless of drawn-out negotiations and worries that Egypt's water supply may be affected by the filling periods required for the hydroelectric dam to function. In fact, the development is predicted to benefit all parties in terms of economic power, climate change management, and improved international relations. Understanding why there is little to no threat of war between Egypt and Ethiopia over the construction of the hydroelectric dam on the Blue Nile requires delving into the aforementioned history between the two countries and the Nile River. The Nile River is the world's longest river, the countries surrounding the Nile

River and its main tributaries—Lake Victoria, Takeze River, Victoria River, the Blue Nile, White Nile, and Lake Tana—are referred to as the Nile Basin Region the Nile River come from a wide variety of geographic locations, spanning five climate zones, including the Mediterranean, Arid, Semiarid, Subtropical, and Tropical climates.¹ The two main tributaries of the Nile River, however, are typically known as the White Nile and the Blue Nile.

The White Nile originates from states as far away as the Democratic Republic of Congo through the form of a series of tributaries that eventually flow into the Blue Nile in Khartoum, the capital of Sudan, where the two rivers form the Nile River. The Blue Nile—named also the Abbay or Abbai River—originates from Ethiopia's Lake Tana, found in the highlands of the country. The Blue Nile flows through deep gorges and falls in the Ethiopian landscape prior to passing into Sudanese territory and becoming the Nile River. Ethiopia contributes to fifty-seven percent of the Nile's entire flow from the Blue Nile.² It contributes another thirteen through the Tekeze River—known also as the Atbara River elsewhere—which meets the Nile River prior to reaching the High Aswan Dam in Egypt.³ Further, while the remaining thirty percent of the natural flow into the Nile River comes from the White Nile, around fourteen percent of the White

Nile's flow comes from "the Sobat and its tributaries, most of which rise in Ethiopia and join the White Nile in Sudan."⁴ Overall, Ethiopia contributes around eighty-four percent of the natural flow of water in the Nile River as it passes through Sudan and into Egypt before reaching the Mediterranean Sea.⁵ There are multiple sources, though, which contribute up to eighty-six percent of the Nile's waters to Ethiopia.⁶

Interestingly, while Ethiopia contributes the majority of the Nile River's waters, Egypt is the leading consumer of the water. Egypt receives almost no rain,⁷ and has few other freshwater resources beyond imports, to rely on other than the Nile's waters. The trend of dependence on the Nile River for Egypt's fresh water is not a new one. The relationship between Ethiopia and Egypt dates back to around A.D. 300.⁸ To understand the history of the two countries and their relations with each other and the Nile River that flows between them, one must first understand the two nations' ties through religion.

Ethiopia adopted Christianity "in the fourth decade of the fourth century;"⁹ however, due to Ethiopia's unique geographical location, it is an African state which is bordered mainly by Middle Eastern States. Ethiopia's adoption of Christianity and its choice of national language divided it from the Middle East that it shares borders with. Leading to Egypt, a country with both Christian and Islamic roots, to become Ethiopia's leading religious authority and source of validation. Egypt had what was known as the Coptic Church, then just the Egyptian Church, run by its Patriarch located in

Alexandria.¹⁰ A monk the time, named Frumentius, was initially travelling with another monk, Aedesius, back to Syria from Yemen. The two briefly stopped in Ethiopia before continuing their journey to Syria. While there, they spread Egyptian religious practices that mostly aligned with Ethiopia's budding Christianity. The two monks went their separate ways after leaving Ethiopia; Frumentius went to Alexandria to inform the Patriarch in Egypt of Ethiopia's Christianity, while Aedesius returned home to Syria. Following the instructions of Patriarch Ahanasius, Frumentius returned to Ethiopia as an official bishop of the Coptic Church around A.D. 333.¹¹ The appointed bishops of Ethiopia from Egypt throughout history — starting with Frumentius, who changed his name to Salama upon appointment — are referred to as Abuns. Abun Salama "was welcomed by the royal court and recognized as the head of the church,"¹² and would additionally be known as Kassata Berhan, meaning the "revealer of light."¹³

Thus began the long-standing tradition of religious and political connection between Egypt and Ethiopia. Throughout this tradition, around one hundred and eleven Abuns were sent from Egypt to Ethiopia to serve as the head of the Ethiopian Christian Church.¹⁴ These Abuns were traditionally "Egyptian-born monks appointed to lead the Ethiopian Church by the Egyptian Coptic Patriarch."¹⁵ This means that whenever an Ethiopian leader would later try to appoint an Abun who was not sent by the Coptic Church,¹⁶ there would be civil unrest and an undermining of religious authority and thus the emperor's authority.¹⁷ In short, while Egypt

had strong Islamic practices during this time, its Coptic church would prove a powerful motivator for Ethiopia to maintain ties with the country downstream from it. Throughout their history there persisted a tradition of playing chicken between the two nations. Egypt, due to its location could geographically sever Ethiopia's connections to the outside world, which in turn cuts Ethiopia off from other Christian communities; keeping Ethiopia reliant on Egypt for religious authority. Meanwhile, Ethiopia consistently utilized the Blue Nile and its control over the fresh water to threaten to divert or halt the water's flow to punish Egypt if it crossed Ethiopia.¹⁸ These two positions meant that the countries had to work together at least somewhat if they both wanted to continue to receive the Abuns and the water from one another. The fear that Ethiopian rulers would halt the Nile River's flow was also known as the ancient fear, or Egyptian fear, in texts and from frequently appearing in the threats shared between the two nations.¹⁹ While the two countries relied on each other quite often prior to colonialism due to the nature of their geographic positions and civil needs, this did not stop conflict from occurring. Thus, there is a long history of Egypt fearing that Ethiopia would destroy them, whether through the Nile or through Christian expansion;²⁰ while Ethiopia feared the East invading and spreading Islam within their Christian state or keeping their Abuns away in Egypt.²¹ It is also worth noting that there was a tradition of migration between the two countries. When rulers in Egypt would persecute Christians and ruin their churches,

Christians would flee to Ethiopia for safety. Conversely, when rulers in Ethiopia would persecute Muslims and ruin their mosques, Muslims would flee to Egypt.²²

This circular pattern of interactions between Egypt and Ethiopia persisted until the Ottoman Empire took control of Egypt.²³ While acting as a province of the Ottoman Empire, former Egypt lost its interest in Ethiopia and the previous trends halted until Egypt, under Muhammed 'Ali, became an independent country once more.²⁴ In 1841, Muhammed 'Ali sent a new Abun to Ethiopia as a way to rebuild connections with the neighbouring country in an effort to better control Sudan, which Egypt had recently taken over to become less dependent on the Nile's waters.²⁵ It is here in history that Egypt's 'historical claims' to the Nile's waters originate.

Further along in history, following the inauguration of the Suez Canal in 1868,²⁶ Egypt captured and occupied all of the Somali coast along the Red Sea, followed by Egypt's expansion to control what is modern-day Eritrea.²⁷ These movements were an effort by Egypt to connect Sudan to the Red Sea to help stabilize Egypt's growth and, again, to help it become less reliant on the Nile River.²⁸ However, these actions by Egypt led to a war between Egyptian and Ethiopian forces on November 15 and 16, 1875 at Gundet.²⁹ Ethiopia, led by Emperor Yohannes at the time, "virtually wiped out,"³⁰ the Egyptian troops. Then, between the seventh and ninth of March in the following year, 1876, Ethiopia once more prevailed in battle with Egypt over the town of Gura.³¹ These two defeats on Egypt's part, followed by a revolt in Sudan, are relevant because they

weakened Egypt and led to Britain's imposition of control over Egypt in 1882 and the beginning of the colonial period.³²

During the colonial period, a variety of treaties regarding the use of the Nile River were signed with Britain acting on behalf of its colonies. The relevant treaties signed during this period of time are the 1902, 1929, and 1959, Nile Treaties. The 1902 Nile Treaty is an agreement which was signed during the height of Britain's control in the region, between Britain — on the behalf of Sudan— and independent Ethiopia.³³ The 1902 Treaty stipulated that Ethiopia “must not construct or allow to be constructed any work across the Blue Nile, Lake Tana or the Sobat, which could arrest the flow of their waters without consent from Britain and Sudan.”³⁴ The 1929 Nile Treaty was signed between Egypt and Britain to help protect Egypt's access to and usage of the Nile River, which benefited Britain's own agenda.³⁵ The two countries signed the 1929 Treaty, though Britain also signed on behalf of all its colonies in the Nile Basin Region. The 1929 Nile Treaty focused on giving Cairo—the capital of Egypt—the right to veto any decisions regarding the Nile River by any other riparian state to prevent the jeopardization of Egypt's own interests.³⁶ Lastly, the 1959 Nile Treaty acts as a usage agreement between Egypt and Sudan for the Nile's waters. Egypt was allotted 55.5 billion cubic meters per year, while Sudan was allocated 18.5 billion cubic meters per year of the average annual flow of the Nile River of eighty-four billion cubic meters.³⁷ The ten billion remaining cubic meters, not explicitly named as one country's or the other's, was the expected evaporation

which would occur at the High Aswan Dam located in Egypt per year.³⁸ This last Treaty completely ignores all the other nations in the Nile Basin Region and their own rights to the waters.³⁹

“Egypt is one of the most water-scarce countries in the world,”⁴⁰ and receives 98.3% of its water from outside the country,⁴¹ with ninety percent of this fresh water coming from the Nile River.⁴² According to Hagai Erlikh, eighty-six percent of those waters, as established earlier, come from Ethiopia specifically.⁴³ Ethiopia, in contrast, utilizes almost none of the water of the Nile River,⁴⁴ mostly due to the rough terrain and deep gorges—up to six hundred meters deep—surrounding the Blue Nile, which does not lend itself to farm settlements or other developments near the water source.⁴⁵ Additionally, the aforementioned Nile Treaties have created a significant political roadblock since their implementation during the colonial period, preventing Ethiopia's focus from shifting to developing its primary water sources that connect to the Nile River.⁴⁶

Agriculture has the largest use of fresh water in both Nile countries. In Egypt, the agricultural sector utilizes approximately sixty-five percent of the country's fresh water supply and, in general, is the largest sector of water consumption.⁴⁷ In Egypt, there is luckily a developed tourism industry that helps make the country less dependent on the agriculture sector, which strains its water supply. Agriculture still accounts for 11.4% of GDP and provides up to 23.3% of employment opportunities.⁴⁸ While agriculture is big in Ethiopia accounting “for 43% of GDP, 45% of export earnings

and 75% of employment,”⁴⁹ in the country, the majority of the crops are rain fed due to the country’s larger quantity of rainfall causing less strain to sustain this industry as far as water availability goes.⁵⁰ Additionally, while Ethiopia has ample water availability during the rainy seasons, the country lacks systems for water storage.⁵¹

Sudan and Egypt have both erected dams in their portions of the Nile River. Sudan’s dams include the Roseires Dam and the Merowe Dam.⁵² The two dams in Egypt are the Lake Nasser Dam—known as the High Aswan Dam outside of Egypt—and the Toshka Dam, which primarily serves as a floodwater channel for the High Aswan Dam.⁵³ It was during Gamal Nasser’s time as leader of Egypt in 1970 that the High Aswan Dam was completed,⁵⁴ and several years later, in 1978, the Toshka Dam was implemented.⁵⁵

The High Aswan Dam was a point of great contention between Egypt and Ethiopia, with the latter country publicly protesting against the large dam’s⁵⁶ construction and use.⁵⁷ Formally, in 1956, Ethiopia opposed Egypt and Sudan’s ability to build on the Nile River, while all other riparian states were prohibited under the 1959 Nile Treaty that was bilaterally imposed by the two downstream countries.⁵⁸ Following this, Ethiopia in the early 1990s began seeking ways to develop sustainably within its territory.⁵⁹ Thus, in April of 2011, construction for the GERD commenced.⁶⁰ The GERD is “one of the largest infrastructure projects in Africa”⁶¹ and is located approximately fifteen kilometers from the border between Ethiopia and Sudan.⁶² The GERD is a

hydroelectric dam, meaning that its entire purpose is to generate electricity for storage, use, or export to other countries; rather than for water consumption from the Nile Basin.⁶³ The dam is expected to generate up to six thousand megawatts,⁶⁴ or 5.15 gigawatts annually.⁶⁵

Construction of the GERD was estimated to cost four billion USD, with funding for the revolutionary project coming from Ethiopians themselves.⁶⁶ Construction of the dam was unilaterally commenced by Ethiopia and created a lot of tension with Egypt over the decision. However, the GERD is expected to deliver a range of benefits for both Ethiopia and other countries. As previously stated, Ethiopia depends on its agricultural sector for forty-three percent of the country’s GDP, but the sector is unsustainable for a country like Ethiopia, where the landscape, despite heavy rainfall, is relatively steep and inhospitable to large-scale agriculture. It is also unsustainable due to deforestation in Ethiopia. Ethiopia loses an estimated 160,000 to 200,000 hectares of forest each year.⁶⁷ Much of this deforestation occurs due to a need to expand the agricultural industry to keep up with population growth of three percent per year, compared to their economic growth of one percent per year.⁶⁸ These two growth rates are untenable, making population growth without infrastructure growth and economic diversification a significant threat to Ethiopia’s continued stability. Thankfully, the GERD presents the perfect opportunity to close the gap between the two growth rates and help prevent worsening environmental issues caused by extensive deforestation.

The dam offers a new market for Ethiopia to develop by selling electricity to Sudan and other African countries such as Kenya, Tanzania, and Djibouti.⁶⁹ The relationship between Ethiopia and Sudan has improved throughout the construction of the GERD as Sudan has plans “to build a [three thousand] megawatt power transmission line from the GERD’ to its cities.”⁷⁰ Further, the dam is anticipated to create a plethora of employment opportunities across the country, which will help stabilize the country and, hopefully, improve the quality of life in Ethiopia.⁷¹

Following the announcement of the dam’s construction in 2011, protests and continued negotiations amongst Egypt, Ethiopia, and Sudan on the technicalities of the GERD have persisted until today, September 2025. Initially, protests against the dam’s construction focused on the Nile Treaties introduced earlier. However, there are many studies in this area that debate the applicability of treaties which were signed by colonies that are now independent states. The legitimacy of treaties signed under duress, such as Ethiopia’s, is hypothesized to have been in the colonial period, as a non-colonized state surrounded by the colonies of Britain.⁷²

The Nile treaties are widely rejected as legitimate standing contracts by the countries of the Nile Basin Region on account of the Nyerere Doctrine, which presumes all contracts or agreements signed by a state prior to becoming independent are null and void unless re-negotiated and signed by the independent states within two years of gaining

independence.⁷³ Egypt and Sudan did not re-sign the 1902, 1929, or 1959 Nile Treaties following their independence from Great Britain within the allotted grace period. Thus, the rest of the Nile Basin Region countries presumed those treaties to be illegitimate on the part of the former colonies.

There is an argument that some of these treaties, specifically the 1959 Nile Treaty, are not colonial agreements and thus are exempt from the Nyerere Doctrine. However, due to the nature of the Treaty—which seeks to continue the object of Great Britain’s occupation and interest in Egypt—as well as the fact that many of the Nile Basin Region countries were still British colonies at the time of its signing, the Treaty is often still viewed as a colonial agreement.⁷⁴ Further, there are arguments that the 1902 Nile Treaty should be binding on Ethiopia; however, the Treaty was never ratified by Ethiopia. It was rejected by the country for its ambiguous language.⁷⁵ Thus, the Treaty is also procedurally unsound and illegitimate as a binding contract for either of the involved countries.

Finally, on the topic of colonial contracts regarding the use of the Nile River, there is the argument that these Nile treaties are void, at least in part, because the parties involved either no longer exist or are no longer bound by the contracts themselves. This line of thought follows a similar track to the Nyerere Doctrine. However, it focuses on the fact that Britain, which was signing the colonial contracts on behalf of its colonies, is no longer an actor in these treaties. Furthermore, the British colonies of Egypt and Sudan no longer

exist, having become independent countries and thus no longer parties to the Treaty. This means, in the case of Ethiopia, they should not be held to a contract that is no longer binding on all the other signatories.⁷⁶

While upon initial announcement of the GERD being built, Egypt and Sudan protested greatly and even reached out to the United Nations Security Council with protests to Ethiopia's unilateral decision-making,⁷⁷ there has been a relative agreement made between the countries regarding the continuation of the dam project.⁷⁸ However, there remain arguments and negotiations between the countries regarding the rate of filling the dam and how often it will be filled.⁷⁹

The three countries, to address the fears of the downstream states, came together to form the 'Declaration of Principles between The Arab Republic of Egypt, the Federal Democratic Republic of Ethiopia and the Republic of the Sudan on the GERD Project,' also known as DoPs, in March of 2015, as the result of painstaking negotiations between the nations following the commencement of the dam's construction.⁸⁰ Prior to the creation of the DoPs the three countries also formed the International Panel of Experts (IPoE) in 2012.⁸¹ The research group would consist of two experts from each of the three countries and four international experts.⁸² The research group focused on the initial effects of the dam's construction in Ethiopia. It helped build confidence in each country's willingness to work together and support one another through this process. The confidence built through this research aided the later creation of the DoPs and,

even later, the National Independent Scientific Research group. This second research group, which was a panel of experts, would help to study the effects of the dam further now that construction was complete and the first proper filling period had commenced.⁸³ The second research group only consisted of experts from each of the three countries and did not include any foreign actors as the first group did. In the early stages of negotiations between the countries, a variety of foreign actors served as middlemen or provided support to the involved countries. Toward the end of dam construction, there was much less foreign intervention. However, there was a case of foreign intervention in this negotiation process toward the end of construction, involving the United States presidency of Donald Trump in the winter of 2019 – 2020. This ended when Ethiopia claimed the Trump administration was only looking out for Egyptian interests and was overly aggressive before leaving the negotiation table, leading to renewed requests for foreign intervention from the United Nations Security Council to get Ethiopia back to the negotiating table.⁸⁴

Studies were conducted by both of the research groups introduced earlier to address Egypt's initial fear that the GERD would deprive Egypt of the opportunity to build its water reserves, that the country relies on in drought conditions. Neither group's findings were shared with the public. In the absence of their results, one must look to the study conducted by Mohamed Ahmed and his team, which used a series of monitors and previous data collected before the construction of the GERD to track changes in Egypt's

reservoirs due to the Ethiopian dam. The research findings are presented by monitoring the maximum and minimum water surface levels at each of the four dams in the downstream countries and comparing them with historical highs and lows. They found that the Roseires reservoir showed no significant changes in its maximum and minimum surface areas during the filling period of the GERD when compared to historical levels⁸⁵. The same can be said for the Merowe reservoir's surface area.⁸⁶ However, in Egypt, the High Aswan Dam was found to undergo significant changes in surface area during the filling period of the Ethiopian dam. These findings were not the ones Egypt feared they would be. Instead of a decrease in surface area due to the GERD, there was "a 5% to 15% increase in maximum (5,520 kilometers squared) and minimum (5,206 kilometers squared) areas during the GERD reservoir filling period compared to historical records."⁸⁷ In a similar trend, the Toshka reservoir in Egypt also increased in maximum surface area in the summers of 2020, 2021, and 2022, when the GERD was filling.⁸⁸

While these are all good signs, it can be presumed that similar findings were recorded by the research groups, since Egypt and Sudan have mostly dropped the worry that water levels at their dams will be automatically reduced by the GERD filling. There is continued concern about drought conditions and how the Ethiopian dam will operate during such dry periods. It must be remembered that Egypt receives almost no rain, while Ethiopia can go from periods of higher rainfall to drought. The research conducted by Mohamed Ahmed and his

team on the effects of filling the GERD occurred during a period when Ethiopia was experiencing increasing rainfall.⁸⁹ Egypt worries that, during drought conditions, especially prolonged drought, Ethiopia will continue to try to fill its dam regardless of how it affects the two downstream countries. Thus, negotiations have mainly turned to outlining filling times, conditions, and other relevant factors.⁹⁰

On the periphery of these more direct issues connected to the construction of the GERD are environmental concerns briefly touched upon previously. Deforestation in Ethiopia is a pressing issue that helped spark the construction of the dam on the Blue Nile. Ethiopians mostly burn wood for fuel, which is harmful, especially on larger scales, since it releases carbon into the environment.⁹¹ Since forests are overconsumed for fuel and construction, there has been a notable increase in soil erosion, desertification, temperatures and carbon emissions, and a decrease in water retention.⁹² Trees help secure the ground against erosion, especially in regions like Ethiopia, where the landscape is steeply varied. Further, trees help retain water in the soil by acting as a sort of storage system and help protect against desertification and mitigate the effects of drought. In Ethiopia, rising temperatures are also driven by reduced canopy coverage, as trees are often seen as ways to help absorb heat or prevent it from reaching the ground. Trees and plants in general help keep carbon emissions from rising into the atmosphere. By cutting down and burning their trees, Ethiopia is eliminating its ability to store carbon

emissions while releasing them into the atmosphere. Further, the majority of its trees are cut down to make room for farming, since, as iterated prior, agriculture accounts for half of the country's GDP and the majority of its employment opportunities.⁹³ Farming and deforestation contribute most to soil erosion and pose the biggest threats to Ethiopia; as without good topsoil, the agriculture sector is a losing game in the long term.⁹⁴ In light of these environmental threats, the country has had to find alternative ways to generate electricity to replace wood fuel and create new employment opportunities, which it did by building the GERD.

In Egypt the main environmental threats are drought, which experts propose can be further mitigated by inter-Nile Basin Region cooperation,⁹⁵ pollution going into the Nile River through Egyptian use,⁹⁶ and Mediterranean encroachment in the Egyptian Delta due to flow rates from the Nile River lessening caused by retention.⁹⁷

In both countries, population growth exacerbates the previously listed issues, putting economic strain on the countries and on the Nile River. It has already been noted that Ethiopia's one percent annual economic growth rate is insufficient to sustain its three percent annual population growth rate. Egypt has a population of approximately 118 million

people as of April 2025. However, it is projected to have a population of 160 million by 2050.⁹⁸ Ethiopia, in a similar boat, has a population of approximately 134 million people in 2025, but is projected to have a population of 213 million by 2050.⁹⁹ Highlighting its need to solve environmental issues threatening crucial resources and its GDP as soon as possible brings to light why Ethiopia has become so focused on Green Initiatives following its civil war which ended in the early 1990s.¹⁰⁰

Keeping these many factors in mind, including historic ties, the colonial Nile Treaties, research findings on the impacts of the hydroelectric dam, and current negotiations, it is unlikely that the construction of the GERD will spark a war between Egypt and Ethiopia. This is primarily due to Egypt's precarious position economically and environmentally, and its need to work with the riparian states to secure itself in the face of environmental threats. It is additionally due to Ethiopia's growing international stability from working with China in trade,¹⁰¹ and the fact that the two countries have a much better chance of weathering drought conditions by working together, rather than alone. Factors outside of the dam may lead to conflict or increased hostility but going to war over the GERD itself seems increasingly unlikely.

Endnotes

1. Mohamed Ahmed et al., "Impacts of the Grand Ethiopian Renaissance Dam on the Nile River's Downstream Reservoirs," in *Journal of Hydrology* 633

(2024),
<https://doi.org/10.1016/j.jhydrol.2024.130952>.

2. Greg Shapland, Kevin Wheeler, and Ana Elisa Cascao, *The Nile Basin: Climate Change, Water and Future*

Cooperation (Chatham House, 2025), 12, <https://www.cascades.eu.wp-content/uploads/2025/04/The-Nile-Basin-Climate-Change-Water-and-Future-Cooperation-Shapland-Wheeler-Cascao.pdf>.

3. Shapland, Wheeler, and Cascao, *The Nile Basin*, 12; Zeray Yihdego, *The Fairness 'Dilemma' in Sharing the Nile Waters: What Lessons from the Grand Ethiopian Renaissance Dam for International Law?*, (BRILL, 2017), 1, https://doi.org/10.1163/9789004351769_002.

4. Shapland, Wheeler, and Cascao, *The Nile Basin*, 12.

5. Ibid, 1.

6. Hagai Erlikh, *The Cross and the river: Ethiopia, Egypt, and the Nile*, Lynne Rienner Publishers, 2002, 1, https://research-ebsco-com.libproxy.mta.ca/c/7msomi/ebook-viewer/pdf/w3ply6icwf/page/pp_iv.; Yihdego, *The Fairness 'Dilemma' in Sharing the Nile Waters*, 2.

7. Shapland, Wheeler, and Cascao, *The Nile Basin*, 15.

8. Erlikh, *The Cross and the River*, 15; Yihdego, *The Fairness 'Dilemma' in Sharing the Nile Waters*, 2.

9. Ibid.

10. Ibid, 16.

11. Ibid, 16-17.

12. Ibid, 17.

13. Ibid.

14. Ibid.

15. Ibid.

16. Ibid, 20.

17. Ibid, 22.

18. Ibid, 9.

19. Ibid, 9, 22, 38, 43.

20. Ibid, 40, 45

21. Ibid, 19.

22. Ibid, 43.

23. Ibid, 59.

24. Ibid, 60.

25. Ibid, 61, 63.

26. Ibid, 66.

27. Ibid, 68-69.

28. Ibid, 69.

29. Ibid, 70.

30. Ibid.

31. Ibid.

32. Ibid, 71.

33. Yihdego, *The Fairness 'Dilemma' in Sharing the Nile Waters*, 22.

34. Ibid.

35. Erlikh, *The Cross and the River*, 2.

36. Yihdego, *The Fairness 'Dilemma' in Sharing the Nile Waters*, 22.

37. Shapland, Wheeler, and Cascao, *The Nile Basin*, 6.

38. Ibid.

39. John Mukum Mbaku, "Ethiopia's Mega Dam Has Taken 14 Years to Build: What It Means for the Nile's 11 River States and Why It's so Controversial," Last Modified September 8, 2025, [https://tehconversation.com/ethiopias-mega-dam-has-taken-14-years-to-build-what-it-means-for-the-niles-11-river-states-and-why-its-so-controversial-264665.;](https://tehconversation.com/ethiopias-mega-dam-has-taken-14-years-to-build-what-it-means-for-the-niles-11-river-states-and-why-its-so-controversial-264665.) Erlikh, *The Cross and the River*, 6.

40. IWMI, "Egypt," Accessed November 2025, <https://www.iwmi.org/where-we-work/egypt/>.

41. Worldometer, "Egypt Water," Accessed November 2025, <https://www.worldometers.info/water/egypt-water/>.

42. Mbaku, "Ethiopia's Mega Dam Has Taken 14 Years to Build."

43. Erlikh, *The Cross and the River*, 1.

44. Shapland, Wheeler, and Cascao, *The Nile Basin*, 15.

45. Erlikh, *The Cross and the River*, 1; Yihdego, *The Fairness 'Dilemma' in*

- Sharing the Nile Waters*, 2; Shapland, Wheeler, and Cascao, *The Nile Basin*, 13.
46. Yihdego, *The Fairness 'Dilemma' in Sharing the Nile Waters*, 2.
47. IWMI, "Egypt."
48. Shapland, Wheeler, and Cascao, *The Nile Basin*, 15.
49. Ibid, 15-16.
50. Ibid, 15.
51. Bushra Yusuf Ahmed et al., "Domestic Water Consumptions and Associated Factors in Rural Household of Harari Region, Eastern Ethiopia; A Cross Sectional Study," in *Frontiers in Public Health* 12, (2025), <https://www.frontiersin.org/journals/public-health/articles/10.3389/fpubh.2024.1395946/full>.
52. Ahmed et al., "Impacts of the Grand Ethiopian Renaissance Dam."
53. Ibid.
54. Shapland, Wheeler, and Cascao, *The Nile Basin*, 13.
55. Erlikh, *The Cross and the River*, 5.
56. Shapland, Wheeler, and Cascao, *The Nile Basin*, 13.
57. Ibid, 33.
58. Ibid.
59. Yihdego, *The Fairness 'Dilemma' in Sharing the Nile Waters*, 2, 26.
60. Ahmed et al., "Impacts of the Grand Ethiopian Renaissance Dam."
61. Ibid.
62. Ibid.
63. Shapland, Wheeler, and Cascao, *The Nile Basin*, 14.
64. Mbaku, "Ethiopia's Mega Dam Has Taken 14 Years to Build; Erlikh, *The Cross and the River*, 6; Ahmed et al., "Impacts of the Grand Ethiopian Renaissance Dam."
65. Shapland, Wheeler, and Cascao, *The Nile Basin*, 14.
66. Mbaku, "Ethiopia's Mega Dam Has Taken 14 Years to Build; Erlikh, *The Cross and the River*, 6.
67. Badege Bishaw, "Deforestation and Land Degredation in the Ethiopian Highlands: A Strategy for Physical Recovery," *Northeast African Studies* 8, no. 1 (2001): 1, <https://www.jstor.org/stable/41931353>.
68. Ibid, 4.
69. Shapland, Wheeler, and Cascao, *The Nile Basin*, 35.
70. Yihdego, *The Fairness 'Dilemma' in Sharing the Nile Waters*, 4.
71. Ahmed et al., "Impacts of the Grand Ethiopian Renaissance Dam."
72. Yihdego, *The Fairness 'Dilemma' in Sharing the Nile Waters*, 29.
73. Ibid, 26-27.
74. Ibid, 27.
75. Ibid, 28.
76. Ibid.
77. Shapland, Wheeler, and Cascao, *The Nile Basin*, 37.
78. Yihdego, *The Fairness 'Dilemma' in Sharing the Nile Waters*, 4.
79. Shapland, Wheeler, and Cascao, *The Nile Basin*, 14, 34.
80. Yihdego, *The Fairness 'Dilemma' in Sharing the Nile Waters*, 3.
81. Ibid.
82. Ibid.
83. Shapland, Wheeler, and Cascao, *The Nile Basin*, 34.
84. Ibid, 37.
85. Ahmed et al., "Impacts of the Grand Ethiopian Renaissance Dam."
86. Ibid.
87. Ibid.
88. Ibid.
89. Ibid.
90. Ahmed et al., "Impacts of the Grand Ethiopian Renaissance Dam;" Shapland, Wheeler, Cascao, *The Nile Basin*, 34.

91. Bishaw, "Deforestation and Land Degredation in the Ethiopian Highlands," 1; Hannah Ritchie and Pablo Rosado, "Ethiopia Country Profile: Energy," Last modified 2025, <https://ourworldindata.org/energy/country/ethiopia>; Mbaku, "Ethiopia's Mega Dam Has Taken 14 Years to Build."

92. Bishaw, "Deforestation and Land Degredation in the Ethiopian Highlands," 4, 12; Shapland, Wheeler, and Cascao, *The Nile Basin*, 21, 24.

93. Shapland, Wheeler, and Cascao, *The Nile Basin*, 15-16.

94. Bishaw, "Deforestation and Land Degredation in the Ethiopian Highlands," 4, 12.

95. Shapland, Wheeler, and Cascao, *The Nile Basin*, 23.

96. Ibid, 17.

97. Ibid, 20.

98. Ibid, 27.

99. Ibid, 28.

100. Yihdego, *The Fairness 'Dilemma' in Sharing the Nile Waters*, 2; Shapland, Wheeler, and Cascao, *The Nile Basin*, 24.

101. Shapland, Wheeler, and Cascao, *The Nile Basin*, 33.

