

Energy trades could help resolve Nile conflict

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Scientists have shed light on a new, transformative approach that could help resolve a dispute over the Nile river's water resources.

The Nile is one of the longest rivers globally and spreads over 11 countries in East Africa, supplying water, [energy production](#), environmental quality and cultural wealth. However, the use of Nile resources has been a long-standing source of tension, often

overshadowing opportunities for cooperation and [mutual benefit](#).

But as the demand for energy, water, and food in Africa is steadily increasing, the study, led by The University of Manchester in collaboration with regional organizations, offers a glimmer of hope at a resolution.

The research, published in the journal *Nature Water*, moves away from traditional water-centric agreements, and presents a detailed simulation of the combined energy-water system to reveal how different scenarios of international energy trades could help alleviate the Nile water conflict.

First author Dr. Mikiyas Etichia from The University of Manchester, said, "Traditionally, water disputes in transboundary river basins like the Nile have been approached through a water-centric viewpoint. However, sharing benefits of water resources, such as hydro-generated electricity, crops and fisheries can result in a win-win situation."

Co-author Dr. Mohammed Basheer, Assistant Professor at the University of Toronto, added, "In the Nile Basin, energy-river basin benefit-sharing projects have been implemented in the past at a small scale, but detailed tools like the one presented in the paper can help create actionable large-scale proposals."

At the heart of the dispute lies the Grand Ethiopian Renaissance Dam (GERD)—a large dam on the Blue Nile River in Ethiopia constructed to improve Ethiopia's electricity access and to export electricity to neighboring countries. The project sparked tensions between Ethiopia, Sudan and Egypt over [water rights](#) and access.

The [simulator](#), designed by the scientists using open-source technology, covers 13 East African countries, including those within the Nile Basin, to model potential energy trade agreements between Ethiopia, Sudan,

and Egypt.

By increasing electricity trade, countries can simultaneously address water deficits, boost hydropower generation, reduce energy curtailment, and cut greenhouse gas emissions.

Corresponding author Professor Julien Harou from The University of Manchester, said, "The energy trades tested in this study provide the countries a range of solutions that are likely in their national interest.

"The study highlights the value of detailed multisector simulation to unpick the complex interdependencies of large multi-country resource systems. Implementation of the arrangements proposed here would need to be further assessed from governance and legal perspectives to become viable proposals. If successful, they could contribute to sustainable resource management and regional stability.

"We are hopeful the new analytical tools or their results will be taken up by the negotiating parties."

More information: Energy trade tempers Nile water conflict, *Nature Water* (2024). [DOI: 10.1038/s44221-024-00222-9](https://doi.org/10.1038/s44221-024-00222-9)

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