



## Nile basin land and water acquisition research agenda: A policy brief

Bert Enserink<sup>a, †</sup>, Abeer Abazeed<sup>b\*</sup>, Lama Elhatow<sup>c</sup>, Abby Muricho Onencan<sup>d</sup>

<sup>a</sup>*Multi-Actor Systems Department, Faculty of Technology, Policy and Management,  
Delft University of Technology, The Netherlands*  
E-mail: b.enserink@tudelft.nl  
Bert Enserink (B.E.): 0000-0001-9182-3712

*\*Corresponding author*

<sup>b</sup>*Faculty of Economics and Political Science, Cairo University, Egypt*  
E-mail: abeer\_rabei@feps.edu.eg  
Abeer Abazeed (A.A.): 0000-0001-9358-6095

<sup>c</sup>*Erasmus University Rotterdam, Faculty of Social Science, School of Public Policy, the Netherlands*  
E-mail: lelhatow@gmail.com  
Lama Elhatow (L.E.): 0000-0002-9429-8922

<sup>d</sup>*Erasmus Initiative on Dynamics of Inclusive Prosperity, Law & Business Department,  
Erasmus School of Law, Erasmus University Rotterdam, The Netherlands*  
E-mail: onencan@law.eur.nl  
Abby Muricho Onencan (A.M.O.): 0000-0002-5465-4806

### Abstract

Land and water acquisitions exacerbate the complexity of the water allocation challenges in the Nile region and consequently have contributed to the growing tensions along the Nile River. Smallholders are especially negatively affected by the increase in water use by foreign investors, the loss of access to the commons, and disposition of ownership. This policy brief is a result of a scenario workshop organized in early 2020 in Leiden, the Netherlands, during which some 30 young scientists from a variety of disciplines joined forces to develop four plausible Nile-futures in 2050. The exercise revealed new challenges and potential knowledge gaps in four areas of policy-based research: local innovation and technology, institutional capacity, governance, and investment regulation. Most urgent was the recommendation to have a unified basin-wide university, which would support basin-wide legislation to promote sustainable farming and reduce the negative impacts of land and water acquisitions.

**Keywords:** Nile, futures, Foreign Direct Investment

Please cite as: B. Enserink et al., (2023). Nile basin land and water acquisition research agenda: A policy brief (IJWG 2.0). *International Journal of Water Governance*, 9, 47-58

“This work is licensed under a Creative Commons Attribution 4.0 International (CC BY 4.0) licence.”

Published in loving memory of Bert Enserink

## **1. Current Nile basin land acquisition status/trends**

The Nile Basin Initiative's Water Resources Atlas (2016) indicates that the Nile River has a volatile ecosystem: frequent and damaging floods and droughts, high soil erosion with the process of deforestation, polluted water due to increasing rates of urbanization and industrialization, and a lack of organized management of groundwater. All these ecological variabilities are paired with economic and social challenges including scarcity of available water for irrigation, degraded quality for fisheries which affect the livelihood of riparian communities, food production, as well as the labour market of these sectors.

In addition, in recent decades, it seems to have been the target of a new wave of large-scale land acquisition (often referred to as land grabbing) by foreign and national – both public and private – investors. Few countries in Africa have received more foreign interest in their farmland and agricultural mega-projects than those served by the Nile River. Especially the United States, China, India, and the Gulf States are leading appropriators in the Nile region (Grain, 2012).

This land grab, which can be defined as 'any attempt to acquire land through purchase, lease, or concession ... [that implies the] conversion of land from smallholder production, local community use or important ecosystem service provision to commercial use' (Nolte et al., 2016), occurs both upstream and downstream in the White Nile as well as the Blue Nile. Balehegn (2015), for instance, warns of what seems to be a colonial-like rush and scramble for farmlands in the global south and especially sub-Saharan countries by big multinational corporations as well as by governments of other nations. This is more often to meet their food security needs as well as to ensure a constant flow of resources to corporations. This leads to displacement of indigenous communities from their ancestral lands, implosion of local markets, and environmental degradation. Critical reviews focus on the social and economic impacts of land grabbing, but Balehegn (2015) rightfully argues that these sub-Saharan countries have been targeted because of the abundance not only of land but also of water to irrigate the land. Typically, with land grabs come water grabs as in most jurisdictions the access to water required to cultivate the acquired land is embedded within land leases. This provides further tension in a region that has historically competed over water allocation rights for the Nile's waters internally in the region. Now it appears there are external parties that may also be competing for the waters in the Nile basin.

## **2. Issues of particular concern**

The following are some of the major factors that need to be addressed to implement a sustainable land acquisition policy. These issues reveal the complex interactions in the basin across local, national, and regional scales where the interests of actors (e.g. indigenous communities, national governments, corporates, intergovernmental organizations) are contested.

## 2.1 Increase in water use intensity

Breu et al. (2016) show in their analysis that implementation of large-scale land acquisitions might even result in global water savings when considering virtual water trade. However, this can only be considered on the global level, whereas at the national level water use intensity would increase, particularly in 15 sub-Saharan states. This inevitable link between land and water grabs in the Nile basin is illustrated for instance in Ethiopia, which is the source of 80% of the Nile's waters (Box 1).

### **Box 1 The Grand Ethiopian Renaissance Dam and Feddan groundwater project**

At its border with Sudan in the expectation of the Grand Ethiopian Renaissance Dam (GERD), foreign corporations have been building irrigation channels to exploit the Blue Nile's waters, which will increase the use of the Blue Nile's freshwater resources for agriculture by a factor of nine. Here the GERD's reservoir, although initially designed to be used to support the generation of hydropower, will be utilized as a water basin for irrigation purposes to be used by foreign corporations. The Blue Nile's waters have been much contested and competed over regionally, and such land acquisitions in this area will only propagate the conflict further to include external parties. Downstream countries such as Egypt and Sudan have argued that the GERD's reservoir will decrease the water flow of the Nile to them considerably, ultimately affecting their domestic use. Downstream countries will now need to include these foreign actors in the negotiations as they also appear to have a stake in these waters. Ethiopia's intensive use of water for these deals will have much bigger ramifications regionally (Ayyad & Khalifa, 2021).

Another example can be shown in Egypt, the most downstream country of the Nile and the country with extreme water scarcity. Yet, although there is water scarcity, the country is embarking on a massive land reclamation project to reclaim the desert into fertile arable land for agricultural purposes. The 1.5 million Feddan Project will rely mostly on groundwater extraction; however, the ultimate goal is to transform nearly 4 million feddans of the Western Desert into fertile agricultural land, which will also need canals from the Nile. The intensive use of water for agriculture purposes in a country that is screaming from water scarcity can only lead to many upstream Nile basin countries asking questions on the appropriate use of water domestically (Sarant, 2017).

## 2.2 Loss of access to the commons

Loss of access to the commons becomes a prevalent problem with land and water acquisitions. Prior to the acquisitions, people normally have access to the land either to collect water from the river or firewood, as well as access to the forest resources and the green parks in the land. Once it is sold the land will be fenced off and will no longer be

public land, leading to loss of access to the commons. This is also true for the water resources as they no longer become a common pool resource fit for use as in many cases the waters become significantly polluted (Box 2).

### **Box 2 Loss of access to commons: Cotton production and Greening Ethiopia**

In several countries in Africa including Ethiopia and Tanzania, foreign textile companies, which have acquired land from the local area, consume large quantities of water for cotton production and leave the soils degraded. These water risks (overconsumption and degradation) in the supply chain not only have a high water footprint on the available water resources in the area but also end up leaving the waters polluted from letting industrial wastewater into the rivers, which has affected this common pool resource for all users in the area including local farmers and villagers alike. Loss of access to the commons has become prevalent as the foreign companies not only utilized these waters in abundance but end up leaving what's left of the rivers in poorer quality than before (Waterwitness, 2021).

More recently projects like Greening Ethiopia are generally positively considered for turning degraded land into forest for carbon credits compensation as well as CO<sub>2</sub> sequestration. However, at the same time it implies loss of access to the commons and dispossession of ownership for local farmers. This becomes problematic as often these lands become protected areas by the government where users are no longer able to utilize. It is important to consider both the social as well as environmental impacts of any initiative and how the stakeholders may be at risk of losing access to their commons (Kemerink-Seyoum et al., 2018).

### *2.3 Dispossession of ownership for small farmers*

Small farmers, dwellers in forests, small-scale fisheries, and pastoralists have been the weakest part in the process of leasing out land and water to foreign and national investors. The governments' development strategies have aimed to facilitate foreign investments with less legal and livelihood protection to local communities (InfoNile, 2020) (Box 3).

### **Box 3 Dispossession of forest and pastoral land**

In Lake Victoria part of Uganda, Bugala Island was deforested (6,500 ha) in pursuit of establishing a large-scale palm oil plantation. The Island was part of a protected forest reserve; however, the government with the investors argued that the plantation would improve the ecology and economy of the area. Local farmers were not consulted before expanding the plantation and they lost their crops. Furthermore, migrant workers inhabited the Island to work in the plantation factory, but social services have not been improved (Carmody & Taylor, 2016).

In the Gambella region in Ethiopia, the Baro-Akobo-Sobat Basin is the source of water. Major ethnicities such as Nuer (pastoralists) and Anuak (farmers) have been competing over the land and water. The government leased out the lands for agricultural investment (India is the main investor for cultivating cash crops). The large-scale schemes have regulated the flood, which in turn negatively affected grazing and moisture farming in the region. Additionally, the expansion of commercial production of crops has challenged small farmers, causing food insecurity (Seide, 2016).

#### 2.4 Increase of the Nile basin tensions

National governments, investors, and financial institutions consider land and water acquisition for development purposes that have positive advantages, that is, creation of new jobs, public service provision, and generation of foreign currency as well as calls to enhance regional cooperation through trade in electricity and crops (El Nour, 2018; Moreda & Spoor, 2015; World Bank Africa, 2009). Nevertheless, the process and impacts of land and water acquisition, as explained in the aforementioned stories, contribute to the challenges of poverty eradication, rapid population growth, urbanization, conflict, environmental degradation, climate change, and variability in the basin as it adds to the growing tensions between upstream and downstream countries (Omer, 2020) (Box 4).

#### **Box 4 Tensions in national and international policies**

The first narrative focuses on non-harmonized national water policies. National water policies of the riparian countries have been designed upon national interests and needs and are not bound to a basin-wide strategy. (Re)allocating water resources for hydro-power investments at the national level (i.e. GERD, which will excessively impact the flow of water to downstream countries: Sudan and Egypt) has deteriorated trust building, benefit sharing, and efficient cooperation in the Nile basin (Motlagh et al., 2017).

The second narrative concerns tensions regarding overfishing in Migingo Island. Fishing is a crucial economic activity for the riparian countries of Lake Victoria. Shores of Migingo Island have (in 2001) become a profitable place for Ugandan and Kenyan fishermen who trade in Nile perch species. The economic value of the Island created prolonged tension between Uganda and Kenya about sovereignty over the Island's offshores in order to attain gains in fish trade (Rossi, 2016).

### 3. Nile basin by 2050 land and water acquisition scenarios

From 20 to 21 February 2020, the Nile basin scenario development workshop was held as part of the 'Africa 2020' events. The workshop was hosted by the African Studies Centre in Leiden University (Netherlands).

A traditional scenario design methodology adapted from the well-known Shell scenario design approaches was chosen (van der Heijden, 1996; Schwartz, 1991). Scenarios in this respect should be considered possible and plausible futures, which follow logically from the combination of developments in the context of the field under study (Enserink et al., 2013), in this case the contextual factors influencing the Nile basin such as climate change and urbanization. This methodology has been employed in earlier Nile basin scenario workshops too (Onencan et al., 2016). The applied methodology leads to the determination of several megatrends or major driving factors for change. The latter are the basis for a story about possible futures (Onencan et al., 2016).

As our scenarios are about the long term (i.e. 2050), they explore an uncertain future. In the co-creation process four scenarios were designed and developed depicting plausible futures of land and water grab and cooperation in the Nile basin. After a round of presentations and extensive discussion, it was decided that population growth, urbanization, and climate change were selected as a given for any future image we developed. Next, we determined that the highest uncertainty and biggest impact on sustainable and equitable water provision would be whether the growth of population and economic activity in the basin would concentrate in the northern region or in the southern region of the basin. This centre of gravity of economic and population growth represented the vertical axis in Figure 1 to depict the labelling of north and south, respectively.

The second axis of the basis for construction of the scenario was whether agricultural production in the future would be local smallholder-based or industrialized/export/large-scale oriented, hence the labelling of small and large to depict the two, respectively. Taking these two axes to span our scenario space we constructed four stories: Group A (North, Small), Group B (North, Large), Group C (South, Small), Group D (South, Large). These were defined based on geographical scope on the Nile basin; North being Blue Nile, the dominant region, with South being Lake Victoria, the dominant region. Small and Large refer to the scale of the land acquisition in those lands and how those manifest into the factors stated above. Figure 1 demonstrates a schematic image of this representation.

The above scenarios revealed a plethora of challenges to policy makers and river basin managers and a series of potential knowledge gaps to researchers and academics. The four scenarios therefore were considered to be good indicators for setting research priorities, thus creating a research agenda for future Nile research: an agenda which will contribute to adaptive Nile basin policy making. Clearly whatever Nile scenario might become dominant, due to climate change and growing population pressure and urbanization, the Nile water resources will be stressed to the max. Integrated River basin management plans therefore need to be the basis to build on; developing such a policy will require intensive international cooperation between policy makers, researchers, water managers, and local stakeholders, while intensive exchange of data and much policy-based research will be needed.

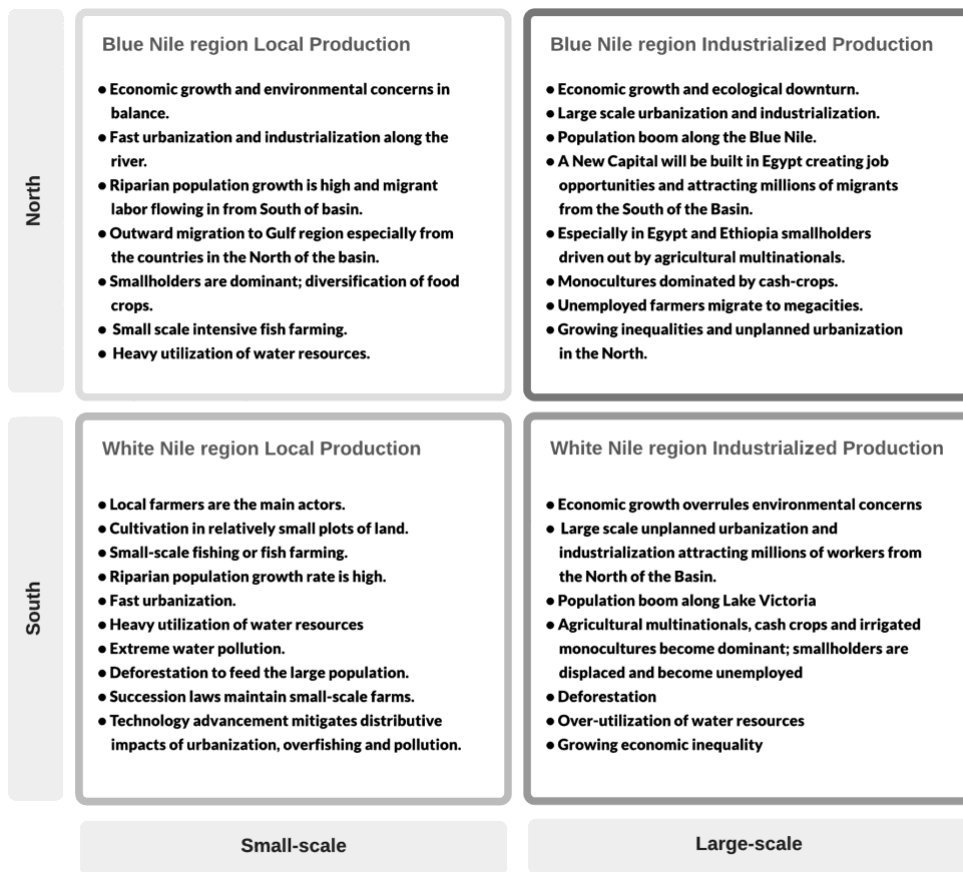


Figure 1. Possible futures (scenarios) based on the two axes developed (co-created by the workshop’s participants)

#### 4. Recommended areas for policy-based research

To ensure that the negative impacts of the identified scenarios are mitigated, and the identified opportunities are tapped, it is essential to support policy-based research in the following areas: the mapping of local innovation and technology, institutional capacity development, strengthening regulation and governance structures, and revision of investment regulation.

Some actions for each of these four areas are suggested below:

##### A. Mapping local innovation and technology

The growing pressure on limited water resources implies that research institutions should map local innovation and technology to mitigate environmental challenges in the Nile basin:

- Exchange local knowledge with universities, research centres, and regional organizations (Nile Equatorial Lakes Subsidiary Action Program, Lake Victoria Basin

Commission – NEL-SAP/LVBC) to find sustainable strategies to save Lake Victoria, Sudd, and Nile delta areas.

- Initiate and prepare an annual Nile basin report on Sustainable Farming that provides facts and figures on the state-of-the-art and promotes land investments based on sustainable farming.
- Conduct regular Nile Basin Climate Change Impact Assessments that reflect on the impact of land acquisitions and changes in land use.

## **B. Institutional capacity development**

Agricultural and water expertise should be anchored in the region; too often knowledge institutions are not based in the Nile basin, while educating the farmers who will be feeding the growing population will be of major concern. Hugely varying climatic conditions, changing precipitation patterns, and adaptation of crops to changing circumstances and seizing technical opportunities require a regional knowledge base:

- Conduct policy research on the establishment of a unified basin-wide university that will focus on several issues including land and water acquisitions in the Nile basin. The university will be a joint university with multiple (inter-)national branches.
- Conduct policy research on the establishment of a basin-wide ratified legislation on environment, sustainability, equality, and health.
- Conduct policy research on the negotiation of a basin-wide legislation to promote sustainable farming and reduce the negative impacts of land and water acquisitions.

## **C. Strengthen regulation and governance structures**

Unprecedented growth and scarce resources are challenges ahead; research on inclusive governance structures is needed to face these challenges:

- Conduct research to promote decentralized (green) smart cities and empowered independent regions.
- Assessment of the small farmers' associations in relation to land and water acquisitions. This research will mainly focus on insurance initiative for small farmers and business protection strategies.
- Conduct research to promote sustainable Nile basin socio-economic-ecologic transparent participatory framework. This framework may ensure checks and balances between small farmers and the national government.

## **D. Revision of investment regulations**

Large-scale economic investment need not be at odds with environmental and ecological concerns. Moreover, in a water-scarce situation, extra attention should be devoted to balancing investments:

- Conduct research to support sustainable land and water acquisition investment regulations. This will also include an assessment of the ongoing expansion of industrial and agricultural schemes.



- Invest in knowledge co-creation on water and energy.
- Conduct regular Nile basin sustainability assessments.

## **5. Summarizing**

Land and water grabbing and its social and economic impacts exacerbate the complexity of the water allocation challenges in the Nile region. The increase in water use by foreign investors, the loss of access to the commons, and disposition of ownership especially impact the smallholders. The already water-stressed Nile region therefore is negatively affected by land and water grabbing.

A scenario exercise facilitated by the authors resulted in four scenarios depicting plausible futures in 2050, which revealed a number of new challenges and a series of potential knowledge gaps for researchers and academics. The exercise built on the ideas that due to climate change, population pressure, and urbanization the Nile resources will be stressed to the max, but depending on the prevailing scenario (North versus South and small-scale versus large-scale production systems) different questions will rise to the fore. When discussing the research agenda resulting from this exercise four areas of policy-based research prevailed: local innovation and technology, institutional capacity, governance, and investment regulation.

Regular knowledge exchange on monitoring, reporting, and a Nile Basin Climate Change Impact Assessment will help to reflect on the social and economic impact of land acquisitions and changes in land use. A unified basin-wide university will support basin-wide legislation to promote sustainable farming and reduce the negative impacts of land and water acquisitions.

## **Acknowledgements**

This policy brief was developed based on the Report of Workshop titled ‘Nile: Inclusion and exclusion over a transboundary resource (water and land acquisition)’. The workshop was held from 20 to 21 February 2020 as part of the ‘Africa 2020’ events that were hosted by the African Studies Centre in Leiden University (Netherlands). The authors would like to thank all participants and presenters in the workshop who vigorously discussed the basin’s challenges, built the scenarios, and offered policy recommendations.

## **Funding**

This policy research was supported by Leiden African Studies Assembly (Leiden ASA) which was in turn supported financially by Leiden University. The workshop was part of Africa 2020 activities held from 20 to 21 February 2020.

## Author contribution

Conceptualization, B.E., A.A., A.M.O., and L.E.; methodology, B.E. and A.M.O.; validation, A.A. and L.E.; data collection, B.E., A.A., and L.E.; writing – original draft preparation, B.E. and A.A.; writing – review and editing, B.E., A.A., A.M.O., and L.E.; visualization, A.M.O.; project administration, A.A.; funding acquisition, A.A., A.M.O., and L.E.

## References

- Ayyad, S., & Khalifa, M. (2021). Will the Eastern Nile countries be able to sustain their crop production by 2050? An outlook from water and land perspectives. *Science of the Total Environment*, 775, 145769. <https://doi.org/10.1016/j.scitotenv.2021.145769>
- Balehegn, M. (2015). Unintended consequences: The ecological repercussions of land grabbing in Sub-Saharan Africa. *Environment: Science and Policy for Sustainable Development*, 57(2), 4–21. <https://doi.org/10.1080/00139157.2015.1001687>
- Breu, T., Bader, C., Messerli, P., Heinemann, A., Rist, S., & Eckert, S. (2016). Large-scale land acquisition and its effects on the water balance in investor and host countries. *PLoS one*, 11(3), e0150901. <https://doi.org/10.1371/journal.pone.0150901>
- Carmody, P., & Taylor, D. (2016). Globalization, land grabbing, and the present-day colonial state in Uganda: Ecolonization and its impacts. *The Journal of Environment & Development*, 25(1), 100–126. <https://doi.org/10.1177/1070496515622017>
- El Nour, S. (2018). Land, peasant and investor: A study in agriculture and peasantry issues in Egypt. Cairo: Al Maraya for Cultural Production (in Arabic).
- Enserink, B., Kwakkel, J. H., & Veenman, S. (2013). Coping with uncertainty in climate policy making: (Mis) understanding scenario studies. *Futures*, 53, 1–12. <https://doi.org/10.1016/j.futures.2013.09.006>
- Grain. (2012). *Squeezing Africa dry: Behind every land grab is a water grab*. Barcelona, Spain.
- InfoNile. (2020). *Sucked dry: Huge swaths of land acquired by foreign investors in Africa's Nile River Basin export profits, displace communities*. <https://infonile.org/sucked-dry.html>
- Kemerink-Seyoum, J., Tadesse, T., Mersha, W., Duker, A., & De Fraiture, C. (2018). Sharing benefits or fueling conflicts? The elusive quest for organizational blue-prints in climate financed forestry projects in Ethiopia. *Global Environmental Change*, 53, 265–272. <https://doi.org/10.1016/j.gloenvcha.2018.10.007>
- Moreda, T., & Spoor, M. (2015). The politics of large-scale land acquisitions in Ethiopia: State and corporate elites and subaltern villagers. *Canadian Journal of Development Studies/Revue canadienne d'études du développement*, 36(2), 224–240. <https://doi.org/10.1080/02255189.2015.1049133>
- Motlagh, M., Bhaduri, A., Bogardi, J. J., & Ribbe, L. (2017). The role of trust-building in fostering cooperation in the Eastern Nile Basin: A case of experimental game application. *JNRD-Journal of Natural Resources and Development*, 7, 73–83. <https://doi.org/10.5027/jnrd.v7i0.09>
- Nile Basin Initiative. (2016). *Nile Basin Water Resources Atlas*. Entebbe, Uganda: NBI
- Nolte, K., Chamberlain, W., & Giger, M. (2016). *International land deals for agriculture: Fresh Insights from the Land Matrix: Analytical Report II*. Bern Open Publishing.
- Omer, A. (2020, April 3). *The hydraulics development and future hydro-politics of the Nile Basin*. Presentation to the Africa 2020 Workshop at Leiden University, Leiden, The Netherlands.
- Onencan, A., Enserink, B., Wairugala, H., Chelang'a, J., Chirchir, W., & Kulei, F. (2016). *Coupling Nile Basin 2050 scenarios with the IPCC 2100 projections for climate-induced risk reduction*. Humanitarian Technology: Science, Systems and Global Impact 2016, HumTech2016, Boston.
- Rossi, C. R. (2016). The Migingo Island dispute between Kenya and Uganda. *Brooklyn Journal of International Law*, 42, 659.
- Sarant, L. (2017). Egypt: Space to grow. *Nature*, 544(7651), S14–S16. <https://doi.org/10.1038/544S14a>

- Schwartz, P. (1991). *The Art of the Long View*. New York: Doubleday.
- Seide, W. M. (2016). Lease the land, but use the water. In E. Sandstrom, Anders, J. and Oestigaard, T. (Eds.), *Land and hydropolitics in the Nile River Basin: Challenges and new investments* (pp. 182–204). London: Routledge.
- van der Heijden, K. (1996). *Scenarios; the art of strategic conversation*. New York: Wiley.
- Waterwitness. (2021). *How fair is fashion's water footprint? Tacking the global fashion industry's destructive impacts on Africa's water and workforce health*. Retrieved April 25, 2022 from <https://static1.squarespace.com/static/5baa3175bfba3e44386d68a5/t/611aa0c6db552e3a9e1def7b/1629135050543/How+fair+is+fashion%27s+water+footprint+-+FINAL+FULL+REPORT.pdf>
- World Bank Africa. (2009). *Eastern Nile First Joint Multipurpose Program Identification (JMP1ID) Project*. Retrieved May 12, 2022 from <http://documents.worldbank.org/curated/en/539701468008711383/Africa-Eastern-Nile-First-Joint-Multipurpose-Program-Identification-JMP1-ID-Project>

