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Sudan: Negotiating water and hydraulic infrastructure to expand large-scale irrigation

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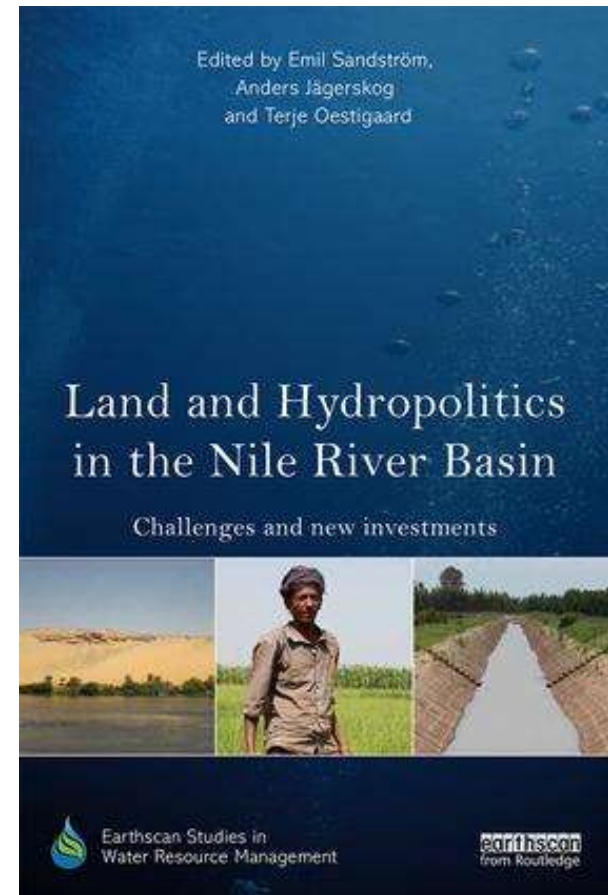
World Water Week 2016



Book Chapter:

Sudan, 'kingmaker' in a new Nile hydropolitics: Negotiating water and hydraulic infrastructure

(Ana Cascão, SIWI and Alan Nicol, IWMI)



Sudan: a key country in the Nile Basin



- Second main user of Nile waters, large potential to expand irrigation. Entitled to 18,5 bcm/year according to the 1959 bilateral Nile Waters Agreement
- Largest irrigation potential in Nile Basin, recognised long-time again. Colonial and post-independence expansion. 1980s breadbasket ambitions. And expansion of large-scale agriculture is now back!
- Sudan's arable land is estimated to be 105 million ha, of which only around 18 million ha are currently under cultivation (most is rainfed tough)
- Currently-reported irrigated area ranges from 1.2 million to 2.2 million ha, which is only around 1% of total arable land

Agriculture in the political agenda: past, present and future



- 1990s: agriculture/irrigation lost priority in the political agenda. Energy took over – oil and hydropower linkages
- Oil political economy – economic growth, expansion of Khartoum and light industries, expansion of hydropower capacity with Merowe Dam, heightening of Roseires Dam, but many other plans were in the pipeline
- Changes with independence of South Sudan and the end of the oil revenues to Sudan – diversification of economy, export-based strategies and agriculture commercial agriculture back to the agenda
- How relates to water and the Nile Basin?

Sudan's agriculture is transboundary in nature



- Most of the irrigation potential is in the Nile banks, in particular in Blue Nile Basin
- Potential depends on development of hydraulic infrastructure (and storage capacity)
- Irrigation expansion is embedded in Sudan's complex relations with both Egypt and Ethiopia
- Sudan's expansion is limited by commitments to the 1959 Agreement
- Sudan's further potential is dependent on storage upstream of its national borders
- In brief: key role of Sudan in Eastern Nile hydropolitics – including cooperation and negotiation processes

The ‘new’ Sudan in the 21st century: changing approaches to Nile waters



Global

- 2008: changes in global political economy
- Increased foreign direct investment in agriculture – Sudan as main hosting country
- Several different investors and business-models

National

- 2006 Green Mobilization Programme
- 2008 Agricultural Revival Programme
- “Green gold”: Sudan aspires to become one of the top producers of sugarcane

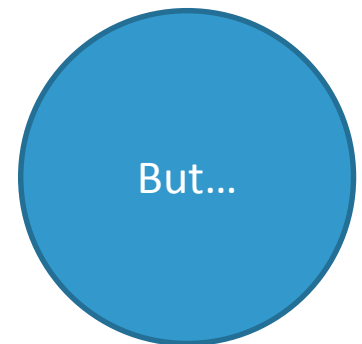
Regional (Nile/Eastern Nile)

- Engagement and support to NBI and ENTRO
- Sudan’s cooperation strategy to get more energy and water
- Benefits for Sudan were substantial (flood control, sedimentation control, access to Ethiopia’s electricity, flow regulation, etc), and widely documented

Benefits of cooperation to Sudan



Upstream infrastructure (namely cascade of dams in the Blue Nile) expected to regularise timing of flows, increasing water availability during dry months allowing Sudan to irrigate during these months, strengthening Sudan's agricultural production and output



Damming the Blue Nile: Roseires and GERD - the possible cascade?



“Heightening of Roseires Dam is Sudan’s real oil” (President al-Bashir, 2008)

2008-2012: Heightening of Roseires Dam by 10m

Outcomes:

- Additional hydropower capacity (from 280 to 400MW)
- Additional reservoir storage capacity (from 3.3bcm to 7.4bcm)
- It makes possible the extension of planned irrigation schemes – but only partially

Water demands of the Blue Nile irrigation schemes



- Until recently Sudan has been irrigating around 1.3 million ha of land in the Blue Nile sub-basin with water stored behind the old Roseires and Sennar Dams, i.e. around 3 bcm/year;
- If Sudan's masterplans for the Blue Nile irrigation schemes – extensions and new schemes – are fully developed this would add another 0.9 million ha of land to the existing area under cultivation;
- If Sudan develops all these additional schemes, at least an additional 10 bcm/year would be needed for full expansion;
- The additional 4bcm/year of water now stored behind the heightened Roseires would allow Sudan to expand only part of the new schemes;
- The full-expansion scenario is only possible if storage infrastructure is developed upstream, underscoring the logic of Sudan's support to the GERD as part of a wider agricultural development strategy

Regional hydropolitical implications of the Roseires heightening



- ***End of the ‘water loan’:*** Sudan’s irrigation expansion and increasing water consumption (beyond the 12/14 bcm currently used)
- ***Egypt’s water availability:*** Limited to the 55.5 bcm/year quota (as defined by the 1959 Agreement), once the water surplus is no longer available. Impacts in Toshka project and horizontal expansion plans in Nile Delta
- ***A new hydropolitical threshold:*** Reaching the 18,5bcm/year utilisation, what are the scenarios afterwards, and what impacts might have in agreements and negotiations

GERD: irrigation-related benefits for Sudan



“The GERD is for Sudan what the Aswan High Dam has been for Egypt in the 1970s: an amazing opportunity to increase almost twofold the land under irrigation”

(Interview with Sudanese official, 2013)

GERD:

irrigation-related benefits for Sudan



- An upstream dam can contribute to increase storage and capacity to regulate the flow, thereby making more water available for irrigation schemes in Sudan;
- This increased water availability will assist Sudan in optimizing irrigation, including in its decisions on specific water withdrawals and distribution for improvement and expansion of existing and/or new schemes;
- Significantly, it also provides reliable water supplies during the seasonal low-flows periods, which makes possible or increases summer irrigation;
- It allows Sudan to change the current operating rules of its reservoirs in order to boost irrigation (as well as hydropower) production;
- In brief, it can provide a more constant flow over the whole year, reduce the uncertainty inherent to periods of low flow and ensure a more continuous irrigation supply

Sudan: at the hub of a changing hydropolitical landscape



- Key positionality in the Nile Basin – in terms of development potential, namely agriculture potential with national, regional and global impacts
- Key role in the different layers of cooperation processes – Nile Basin (NBI), Eastern Nile Basin (ENTRO), trilateral (GERD/TNC), and bilateral (with both Egypt and Ethiopia)
- New, more powerful role as a midstream riparian with kingmaker capacities and not only broker or mediator role

Thank you!

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