The issue of water resources sharing and management has played an important role in the Sudan-South Sudan peace process. In the 2005-2011 interim period, the government in Khartoum was responsible for transboundary waters, including the Nile waters. Southern Sudan did not claim a more active role in water management, partly to avoid jeopardizing its prospects for self-determination. However, water resources officially ranked as one of the priority issues to be resolved before independence. Since no conclusive agreement could be reached, water has remained a key item on the bilateral post-independence agenda between Sudan and South Sudan.
Conceptual Model

Climate Change
- Gradual Change in Temperature and/or Precipitation

Environmental Change
- Increased Water Scarcity

Intermediary Mechanisms
- Change in Access / Availability of Natural Resources

Fragility and Conflict Risks
- Interstate Tensions

Social and Economic Drivers
- Migration patterns
- Demographic Change
- Economic Development
- Legal / Political Interference

Context Factors
- History of Conflict
- Low Level of Economic Development
- Political Transition
- Water
Conflict History

In 2005, the government of Sudan and the Sudan People’s Liberation Movement/Army (SPLM/A) signed the Comprehensive Peace Agreement (CPA). The CPA ended a devastating civil war in Sudan, and recognized the right to self-determination of the people of southern Sudan, to be exercised in a referendum in January 2011. The main provisions of the CPA were also reflected in the Interim National Constitution, which contained governance provisions for the 2005-2011 interim period. In July 2011, six months after the referendum, the new state of South Sudan formally came into existence (Salman, 2011b; Salman, 2014). During the interim period, water resources emerged as one of the key issues to be resolved between the north and the south. As water-related issues could not be settled before independence, they now need to be negotiated between two sovereign countries. Today, the most important of these issues concern Nile water allocation, the Jonglei Canal Project, and South Sudan’s role with respect to the Nile Basin Initiative (NBI) and the Cooperative Framework Agreement (CFA). The CFA can be described as an attempt to establish a permanent legal and institutional framework for governing the Nile River Basin. The agreement was opened for signature in 2010, but has not yet entered into force due to inter-riparian disagreements.

The role of water during the interim period, 2005-2011

Water under the CPA and the Interim National Constitution
The CPA’s Power Sharing Agreement and the Interim National Constitution granted the government in Khartoum exclusive jurisdiction over the Nile and other transboundary waters, while responsibility for local water resources management was transferred to the government in the south. Despite the fact that 98 percent of southern Sudan was located within the Nile Basin, the SPLM/A refrained from demanding a stronger role in Nile water management during the interim period. Two main reasons help explain this cautious stance (Salman, 2011b). First, the SPLM/A apparently feared that its hard-won right to self-determination could be endangered if it became too involved in Nile politics. Indeed, politics on the Nile had been highly controversial, and especially the Nile Basin Cooperative Framework Agreement (CFA), under negotiation since 1997, divided the riparian states (see: Dispute over Water in the Nile Basin). Egypt and Sudan defended previous agreements concluded in 1929 and 1959, which allocated almost all of the Nile’s total flow (84 billion cubic meters, or BCM) to Egypt (55.5 BCM) and Sudan (18.5 BCM). Other riparian states such as Ethiopia, Kenya, Rwanda and Tanzania rejected those agreements, and requested a more equitable sharing of Nile waters under the CFA. To avoid being perceived as a “...new competitor for the Nile River waters, or at least a complicating factor in an already complex situation” (Salman, 2011b, 161), the SPLM/A apparently chose to take a backseat on Nile water issues. Second, the SPLM/A might have assumed that Sudan’s annual share of 18.5 BCM could rather easily accommodate the south’s water needs, because Sudan had not exhausted its share (using only 14-15 BCM so far); because southern Sudan had no large-scale agricultural projects at the time; and because heavy rains in the south had always been sufficient for maintaining subsistence farming and community livestock herds.

The 2009 Southern Sudan Referendum Act
In 2009, the Southern Sudan Referendum Act was passed. It listed ten key issues that the north and the south needed to settle. Besides issues such as nationality, currency, public service, and oil contracts, the Act also mentioned water resources as a matter of priority, referring primarily to the sharing and
management of the Nile waters between Sudan and the new state of South Sudan. While negotiations on some of these complex outstanding issues had started a few months before the referendum, no agreements could be reached by the time of the referendum (January 2011) or independence (July 2011). Thus, after July 2011, all pending issues – including water resources – had to be negotiated and resolved between two sovereign countries (Salman, 2011b).

Unresolved water issues post-independence, 2011-present

Sharing the Nile waters

After independence, South Sudan started to demand a share of the annual 18.5 BCM of Nile waters allocated to Sudan under the 1959 water agreement. At first glance, Sudan should be able to accommodate these demands. As noted above, in the past, the country’s water use amounted to no more than 14-15 BCM per year. On closer examination, however, several factors are complicating this situation. Because of the south’s secession, Sudan lost a considerable share of its oil revenue, and now plans to compensate for this loss through irrigated agriculture. The government has also begun to lease large land areas to foreign investors and other countries for growing food crops. Construction of new hydroelectric dams and expansion of existing ones will likewise demand more water (Salman, 2011b; Salman, 2014). South Sudan, for its part, is also claiming a larger share of water in order to rehabilitate agricultural projects, move toward sufficiency in food production, implement plans for hydro-dams, and meet the needs of returning southern Sudanese and internally displaced persons (Mbaku & Smith, 2012; Ngor, 2012; Salman, 2011b; Salman, 2014). In addition to these developments, climate change in the region is expected to lead to decreasing rainfall and increasing air temperatures. These changes are likely to negatively affect water availability due to higher evapotranspiration rates and more droughts (Warner et al., 2015). In light of the growing water demands on both sides and the expected impacts of climate change, the current 18.5 BCM (which in any case are challenged by upstream riparians) may no longer suffice or be available in the future, and water allocation conflicts between Sudan and South Sudan could emerge. Given that water allocation is closely linked to broader Nile Basin politics, such conflicts might have basin-wide repercussions.

The Jonglei Canal Project

If the allocation of Sudan’s current share of Nile waters becomes more contentious, the government in Khartoum may bring up the issue of water loss in the swamps of South Sudan. Currently, a large amount of water is lost each year in the Sudd and other wetlands due to evaporation and seepage. Plans for a canal to circumvent these wetlands to increase the flow of the White Nile date back to the early 20th century. Although construction of the so-called Jonglei Canal began in 1978, it came to a complete halt in 1984 when the SPLM/A attacked the canal site. Its main criticism was that the project benefitted the north and Egypt, while neglecting or harming living conditions in the south (Salman, 2011b; Sullivan, 2010). From the beginning of the interim period, the SPLM/A asserted itself against reviving the Jonglei Canal or similar water conservation projects. Due to South Sudan’s sovereignty, any resumption or initiation of such projects “…would [now] need the full agreement and cooperation of both the government of South Sudan and the local communities in the area…” (Salman, 2011b, 164). The incentives presented to South Sudan, the positions of affected communities and NGOs, and the fact that the Sudd since 2006 has the status of a Ramsar wetland of international importance are likely to play a role in Juba’s decision-making on the Jonglei Canal. However, the current security situation in the swamps areas, characterized by inter-tribal
fighting, food shortages and military clashes, would appear to make a timely resumption of construction activities highly unlikely (Salman, 2011b; Salman, 2014).

**Relationship with the other Nile riparian states**
Beyond bilateral water disputes, it was expected that the new state of South Sudan would come to play a critical role in Nile Basin politics. With respect to the CFA, some predicted that both the CFA’s opponents (Sudan and Egypt) as well as its proponents (Ethiopia, Rwanda, Tanzania, Uganda, Kenya, and Burundi) would do their best to bring – or even pressure – South Sudan to their side (Salman, 2011b). The CFA needs a minimum of six instruments of ratification to enter into force. At the time of South Sudan’s independence, the agreement had been signed by the six proponent states. Between 2013 and 2015, Ethiopia, Rwanda and Tanzania also ratified the CFA (NBI, 2016b). South Sudan’s support for the CFA is seen as crucial by these states, since it “…would provide a cushion in case one of the other six changes its mind or delays its ratification” (Salman, 2011a).

**Resolution Efforts**

**UN Watercourses Convention**
As suggested by Salman (2011b; 2014), the *UN Watercourses Convention*, which entered into force in August 2014, could provide guidance for the allocation of Nile waters between Sudan and South Sudan. Neither country is a party to the Convention, with concerns stemming from the perception that the Convention may not be conducive to certain national interests (Salman, 2007). Nevertheless, many of its provisions, including those on equitable and reasonable utilization, are considered to be part of customary international law. Guided by the principles of international water law, factors to consider in water allocation might include Sudan’s current and planned uses; the expected future uses of South Sudan; the amount of Nile waters crossing from South Sudan into Sudan and Egypt; and rainfall in South Sudan as alternative water sources (Salman, 2014).

**Improvements in water efficiency and water conservation**
Improvements in water efficiency in Sudan, especially in irrigated agriculture, could significantly reduce the country’s present and future water uses. This, in turn, could decrease pressure on the Nile water resources, and possibly relieve tensions over water-sharing with South Sudan. Water conservation projects in South Sudan, especially in the Sudd area, have the potential to enlarge the amount of water to be shared between the two countries. However, such conservation projects have remained highly controversial, and under the current circumstances, their implementation appears relatively unlikely (see below).

**Egypt-South Sudan relations**
Due to its high stakes and dependence on Nile waters, Egypt has become increasingly concerned about post-independence tensions and instability in South Sudan. As long as the country remains politically volatile, resuming work on the Jonglei Canal or similar projects appears unrealistic. Increasing the flow of the White Nile is now a priority for Cairo, especially since Ethiopia has begun construction of its Grand Renaissance Dam on the Blue Nile (International Rivers, 2014; see: Disputes over the Grand Ethiopian Renaissance Dam (GERD)), thereby further intensifying water security concerns in Egypt (see: Security
Implications of Growing Water Scarcity in Egypt). Under these circumstances, for Egypt, South Sudan is currently “…the most important Nile Basin country because of the possibility of implementing projects to increase Egypt's share of the river's water by harnessing the water currently lost on South Sudanese territory to forests and swamps” (Al Monitor, 2014). As a result, Egypt has stepped up diplomatic efforts vis-à-vis South Sudan, and has also expressed its willingness to engage in bilateral military cooperation or U.N. peacekeeping to improve the security situation. Also, in a nod to South Sudan's long-standing criticism of the Jonglei Canal, there seems to be growing awareness in Egypt that any water conservation project “…should include developing local communities in South Sudan, not just harnessing lost Nile water for Egypt's benefit” (Al Monitor, 2014). As another step in a series of “strong political and technical moves [by Egypt] to earn the trust of South Sudan,” the two countries in November 2014 signed an agreement to increase cooperation on water resources management (Al Monitor, 2015; Sudan Tribune, 2014). Despite these measures, the government of South Sudan maintains its opposition to the Jonglei Canal project, at least until additional studies on environmental and social impacts have been carried out.

South Sudan’s NBI membership
In September 2011, only two months after independence, South Sudan announced its intention to join the NBI. According to Mbaku and Smith (2012, 11), “[t]his swift announcement indicates the priority granted to water, especially that from the Nile River, in the new country's development plans.” South Sudan was admitted to the NBI in July 2012 (NBI, 2016a), and the government subsequently expressed its intention to join the CFA (Al Jazeera, 2013). To date, South Sudan has not yet signed the agreement, and the recent rapprochement with Egypt (which rejects the CFA) might affect the political calculations of the Government of South Sudan. Whether or not South Sudan joins the CFA thus remains to be seen. What seems certain, however, is that this decision will greatly impact not only the domestic political and security situation in South Sudan, but also the broader power dynamics in the Nile Basin.
### Intensities & Influences

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>INTENSITIES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>International / Geopolitical Intensity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Human Suffering</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>INFLUENCES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environmental Influences</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Societal Influences</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Resolution Success

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Reduction in geographical scope</strong></td>
<td>There has been no reduction in geographical scope.</td>
</tr>
<tr>
<td><strong>Increased capacity to address grievance in the future</strong></td>
<td>There is no increased capacity to address grievances in the future.</td>
</tr>
<tr>
<td><strong>Grievance Resolution</strong></td>
<td>Grievances have been partially addressed.</td>
</tr>
<tr>
<td><strong>Causal Attribution of Decrease in Conflict Intensity</strong></td>
<td>There has been no reduction in intensity</td>
</tr>
</tbody>
</table>

---

**Diplomatic Crisis**
- No diplomatic crisis

**Violent Conflict**
- No

**Salience with nation**
- National
Entry Points for Resilience and Peace Building

### Peacekeeping
To stabilize the security situation in South Sudan, Egypt has offered closer military cooperation or peacekeeping assistance to South Sudan.

### Treaty/agreement
South Sudan and Egypt have signed an agreement to increase cooperation on water resources management. Furthermore, South Sudan's accession to the Nile Basin Initiative (NBI) offers prospects for joint management of the Nile water resources.

### Improving resource efficiency
Improvements in water efficiency and water conservation could relieve pressure on the Nile water resources, thereby facilitating water-sharing between Sudan and South Sudan. However, to date, adoption of new technologies and implementation of infrastructure projects are hampered by economic underdevelopment, instability, and political controversy.

Resources and Materials

Conflict References
- Disputes over the Grand Ethiopian Renaissance Dam (GERD)
- Dispute over Water in the Nile Basin
- Security Implications of Growing Water Scarcity in Egypt

References with URL
- Al Jazeera (2013). South Sudan set to sign new Nile agreement
- Al Monitor (2014). Egypt tries to woo South Sudan in Nile water dispute
- Al Monitor (2015). Egypt supports South Sudan to secure Nile share
- International Rivers (2014). The Grand Ethiopian Renaissance Dam Fact Sheet
- Nile Basin Initiative (NBI) (2016a). Member States – South Sudan
- Sudan Tribune (2014). Egypt, South Sudan Sign Water Cooperation Agreement
- Sullivan, P. J. (2010). Sudan – Land of Water and Thirst; War and Peace. Circle of Blue
Warner, K. et al. (2015). Climate Change Profile South Sudan. Netherlands Commission for Environmental Assessment / Dutch Sustainability Unit

Further information
https://factbook.ecc-platform.org/conflicts/role-water-resources-sudan-south-sudan-peace-process