The new state of South Sudan and the hydro-politics of the Nile Basin

Salman M.A. Salman*

Member, IWRA

As a result of the choice of the people of southern Sudan for secession during the January 2011 referendum, a number of difficult issues need to be addressed and resolved between the new state and the Sudan. Most of these issues are specified in the Southern Sudan Referendum Act 2009 and include water resources. The article identifies and discusses the sharing and management of the waters of the Nile River, the conservation and use of the waters of the huge swamps of southern Sudan, and the relationship with the other Nile riparians as the main issues that the new state of South Sudan faces in connection with water resources.

Keywords: Comprehensive Peace Agreement; Jonglei Canal; Nile River; Southern Sudan Referendum; 1959 Nile Agreement

Introduction

On 9 January 2011, the people of southern Sudan exercised the right of self-determination and voted overwhelmingly that day, and for the following six days until 15 January 2011, to secede from the Sudan and to establish their own independent state. That decision was a culmination of the peace process concluded on 9 January 2005, exactly six years earlier, when the Comprehensive Peace Agreement (CPA) was signed by the government of the Sudan, and the Sudan People’s Liberation Movement/Army (SPLM/A) (Comprehensive Peace Agreement 2005). The CPA, signed in Naivasha, Kenya, and also referred to as the Naivasha Agreement, consisted of six protocols and agreements that were incrementally and painstakingly negotiated between 2002 and 2004. Those protocols and agreements dealt with a number of issues including: the right of self-determination for the people of southern Sudan (stipulated and elaborated in the Machakos Protocol); power sharing; wealth sharing; security arrangements; resolution of the Abyei conflict; and resolution of the conflict in the two states of Southern Kordofan and Blue Nile. The main provisions of the CPA were reflected in the Interim National Constitution of the Republic of the Sudan issued in July 2005. The Constitution set forth detailed governance principles and institutions for the six-year interim period that started on 9 July 2005, six months after the conclusion of the CPA on 9 January 2005, and would end on 8 July 2011, six months after the undertaking of the referendum on self-determination on 9 January 2011. On 9 July 2011, the new state of South Sudan, by whatever name its people and leaders choose, will formally come into existence as the 193rd member of the global family of nations, and as

*Email: salmanmasalman@gmail.com
the 54th African state. As a result, the Sudan will lose, among many other things, one of its main defining characteristics as the largest country in Africa.

The Machakos Protocol of the CPA stated that there shall be an internationally monitored referendum, organized jointly by the government of the Sudan and the SPLM/A, for the people of the south Sudan to confirm the unity of the Sudan by voting to adopt the system of government established under the CPA, or to vote for secession. Despite the emphasis on unity in the CPA, the movement towards secession gradually started to gain momentum, and was eventually the option exercised by the vast majority of the southern Sudanese. The final results of the referendum announced on 7 February 2011 showed that close to 99% of the southern Sudanese voters opted for secession (Southern Sudan Referendum Commission 2011). The Southern Sudan Referendum Act 2009 required a voter turnout of 60% and a simple majority (50% of the 60%, plus one vote) for southern Sudan to secede. Clearly the results of the referendum far exceeded those requirements. The government of Sudan formally accepted the results on the same day of their announcement.

This article provides a brief profile of the new state of South Sudan, and analyzes the issues the state is facing in connection with the water resources of the Nile Basin, both with the Sudan, as well as with the other Nile riparian states (Figure 1).

**Political geography of the state of South Sudan**

The new state of South Sudan encompasses an area of about 640,000 square kilometres, or about 26% of the total area of the Sudan of 2.5 million square kilometres. It should be added in this respect that a number of areas in the borders between northern Sudan and southern Sudan, which extend for more than 2,000 kilometres, are still in dispute. The population of southern Sudan, according to the 2009 census, is 8.2 million, or 21% of the total population of the Sudan of 39.1 million. However, the census figure representing the population of southern Sudan is contested by the SPLM/A, who argue that the southern Sudanese were grossly undercounted during this census, and that refugees were still steadily returning to southern Sudan.

Southern Sudan has been devastated by the civil war that erupted in August 1955, a few months before Sudan gained independence in January 1956. The war took the lives of more than two million people and sent a similar number as refugees to the neighbouring countries as well as to northern Sudan. A decade of relative peace emerged following the conclusion of the Addis Ababa Agreement between the north and the south in 1972, which granted the south regional autonomy. However, the civil war erupted again in 1983, following a series of breaches of the Addis Ababa Agreement by the north, and the civil war continued until the conclusion of the CPA in 2005 (Alier 1990). Not much development took place in southern Sudan during the six-year interim period, and it remains a poor country with little or no infrastructure, and with serious security problems in many areas. The new state of South Sudan is bordered by Ethiopia to the east; Kenya, Uganda and the Democratic Republic of Congo to the south; the Central African Republic to the west; and the Sudan to the north. It is a landlocked state, bordering three other landlocked states. For administrative purposes, southern Sudan is divided into 10 states, replacing the long-known division of the south into the three provinces of Upper Nile, Equatoria and Bahr el Ghazal.

The government of southern Sudan relies heavily on oil that was discovered in 1999, and which was shared with the north in equal percentages under the CPA during the interim period. About 75% of Sudan’s proven oil reserves are now located in southern Sudan,
Figure 1. Map of Sudan.

with some in the hitherto disputed border areas. Oil revenue provides an estimated 95% of the total income of the government of southern Sudan. With the oil infrastructure of the pipeline, the refineries, the export facilities, as well as the ports themselves all situated in northern Sudan, the two parties are poised for intricate and difficult negotiations on this matter. Indeed, there are a number of other equally complex issues that the two parties need to discuss and reach agreement on. The Southern Sudan Referendum Act listed 10 such issues, which include: nationality; currency; public service; position of joint integrated
units; international agreements and treaties; debts and assets; oil fields, production and transport; oil contracts; water resources; and property. These issues are in addition to the borders between the two states on which a joint committee had started working some time before the Referendum Act was adopted. However, as indicated earlier, large border areas still remain disputed by the two parties.

As per the Interim National Constitution, the referendum was conducted on 9 January 2011, six months before the end of the interim period on 8 July 2011. This transitional period is intended to provide time for resolving the outstanding issues between Khartoum and Juba, and for paving the way for the emergence of the new state with established institutions. Negotiations on the outstanding issues had actually started a few months before the referendum, but no agreement was reached on any of them by the time the referendum was conducted. Thus, it remains to be seen whether the transitional period ending on 8 July 2011 would really be sufficient to reach agreement on all or most of those complex issues. It is worth noting that the list of the issues to be resolved include water resources, which are primarily the water resources of the Nile Basin: their sharing and management between the Sudan and the new state of South Sudan.

**Southern Sudan and the Nile Basin**

Southern Sudan dominates, and is dominated by, the White Nile. It is the area of confluence of most of the tributaries of the White Nile. Indeed, about 90% of southern Sudan falls in the Nile Basin, and about 20% of the Nile Basin falls in southern Sudan: that is, about one third of the size of the Nile Basin in all the Sudan before secession of the south. About 28% of the flow of the Nile River, representing about 23 billion cubic metres (BCM) of the total flow of the Nile of 84 BCM measured at Aswan, crosses southern Sudan into northern Sudan and eventually into Egypt. It should also be added that close to 50% of the waters of the White Nile are lost to evaporation and seepage in the three large swamps of southern Sudan, namely the Sudd (the Arabic word for barrier) of Bahr el Jebel and Bahr el Zaraf, the Bahr el Ghazal swamps, and the Sobat/Machar swamps. Plans for conservation of about 20 BCM of these waters by the digging of canals to convey such waters past the swamps to the main river have been under study for some time (Collins 2002, p. 196). The Jonglei Canal, as discussed later, was supposed to be the first of such projects. The importance of the White Nile to southern Sudan is also manifested in the fact that the three largest and most important cities in southern Sudan – Juba, Wau and Malakal – are situated on the river or one of its main tributaries.

After exiting Lake Victoria in Uganda, and passing through Lake Kyoga and Lake Albert, the Albert Nile enters southern Sudan at Nimule, where it is called Bahr el Jebel. The city of Juba, the capital of southern Sudan, is located next to this river. After passing through the city of Bor, the river spreads into the large swamps of the Sudd, and branches into Bahr el Jebel and Bahr el Zaraf, and is joined by a number of tributaries flowing from the west and the southwest. The River Bahr el Arab originates in the border areas between the Sudan and the Central African Republic and flows eastward. It is fed by a number of tributaries including the Lol, Yei, Jur, Tonj and Naam rivers. The city of Wau, the capital of Western Bahr el Ghazal state, is situated on the Jur River. The Jur and Bahr el Arab merge to form Bahr el Ghazal, and after joining Bahr el Jebel at Lake No, the river is called the White Nile. The River Bahr el Zaraf, which branches off Bahr el Jebel, joins the White Nile a few kilometres after Lake No. The White Nile then flows eastward to the city of Malakal, the capital of Upper Nile State, where it is joined by the Sobat River. The White Nile contributes about 11.5 BCM, or about 14%, of the total flow of the Nile River of 84 BCM.
The Sobat River originates in Ethiopia as the Baro and Akobo rivers which merge inside southern Sudan. The Sobat River is then joined by the Pibor River, which originates within southern Sudan. The river thereafter flows through the Machar/Sobat marshes before joining the White Nile near the city of Malakal. The combined river, still called the White Nile, flows for a considerable distance within southern Sudan before entering northern Sudan, later merging with the Blue Nile at Khartoum, the capital of the Sudan. The Sobat River also contributes about 11.5 BCM, or 14% of the total flow of the Nile River.

The Blue Nile and its tributaries, including the Rahad and Dinder rivers, rise in the Ethiopian highlands. Upon their confluence at Khartoum, the White Nile and the Blue Nile form the Nile River. The Nile is joined after that, still in northern Sudan, by the Atbara River, which also originates in the Ethiopian highlands. The Atbara River is the last tributary to join the Nile, and the Nile thereafter flows through northern Sudan and Egypt before emptying into the Mediterranean Sea (Collins 1996, pp. 3–25). It should be clarified that neither the Blue Nile nor any of its tributaries runs through southern Sudan; rather it is the White Nile which dominates there. Indeed, southern Sudan is the land where the equatorial and Ethiopian sources of the White Nile meet, and where the White Nile loses and later re-establishes itself.

As indicated earlier, the White Nile (including the Sobat River) contributes about 28% (about 23 BCM) of the total Nile flow. The remaining 72% of the flow of the Nile (about 61 BCM) is derived from both the Blue Nile (59%; 50 BCM) and the Atbara River (13%; 11 BCM). Thus, the Ethiopian plateaus are the origin of about 86% of the waters of the Nile (73.5 BCM), made up of the Blue Nile, the Sobat and the Atbara rivers. The equatorial lakes contribute, through the White Nile, the remaining 14% (11.5 BCM) (Waterbury 2002, p. 129). Despite the high contribution of the Blue Nile, its flow is largely seasonal, concentrated in the months of June through September. The relatively smaller contribution of the White Nile remains steady throughout most of the year and provides for the critical water needs of Sudan and Egypt during the low-flow period of the Blue Nile. Moreover, the Blue Nile carries a heavy load of silt from the Ethiopian highlands, whereas the White Nile is almost silt-free. As such the two rivers complement each other and provide a perennial water flow for Sudan and Egypt.

**Hydro-politics of the Nile Basin**

The emergence of South Sudan as an independent state raises the number of Nile riparian countries to 11. Tanzania, Uganda and Kenya share Lake Victoria where the White Nile originates as the Victoria Nile. The highlands of Burundi and Rwanda are the origins of the Kagera River, which is the major river flowing into Lake Victoria. The Democratic Republic of Congo shares the Semliki River, which flows into Lake Albert (one of the sources of the White Nile), as well as Lake Albert itself, with Uganda. As discussed earlier, the White Nile consolidates itself in the new state of South Sudan. Eritrea shares portions of the Setit River, which is a tributary of the Atbara River, with Ethiopia, where the Blue Nile and almost all of its tributaries originate. Sudan and Egypt are the lowest downstream riparian states. Thus, 11 states share the Nile River with varying contribution, uses and stakes. The stakes and interests of Egypt, Sudan and Ethiopia are classified as very high; those of Uganda as high; those of Tanzania, Kenya, Burundi and Rwanda as moderate; and those of Eritrea and the Democratic Republic of Congo as low (Waterbury 2002). Because of the size of the White Nile in southern Sudan, the heavy water losses at the swamps there, and the possibility of conservation of a good part of such water, the stakes of South Sudan can be classified as very high, almost at par with Egypt, Ethiopia and the Sudan.
Despite this wide range of interests and contributions to the River flow, Egypt and to a lesser extent Sudan, have for a long time dominated the Nile River. In November 1959, Egypt and Sudan concluded the Agreement for the Full Utilization of the Nile Waters (known as the 1959 Nile Agreement). This Agreement established the total annual flow of the Nile measured at Aswan as 84 BCM, and allocated 55.5 BCM to Egypt and 18.5 BCM to the Sudan. The remaining 10 BCM represent the evaporation losses at the large reservoir created by and extending below the Aswan High Dam in southern Egypt and northern Sudan. The Agreement also sanctioned the construction of the Aswan High Dam in Egypt, and the Roseiris Dam on the Blue Nile in Sudan. To ensure cooperation in the management of the Nile waters, the Agreement established a Permanent Joint Technical Committee with an equal number of members from each country. The mandate of the Committee includes the carrying out of research related to the management of the Nile waters and increase of the Nile supply, and of hydrological survey work in the Nile’s upper reaches.

Thus, the two countries allocated the entire flow of the Nile at Aswan to themselves. While they recognized the claims of the other riparian states to a share of the Nile waters if the other states so requested, they reserved to themselves the ultimate right to decide on whether any of those states would get a share, and if so, how much. They also vested the Permanent Joint Technical Committee with the authority to supervise the use of such share, if granted. This position is totally rejected by the other riparian states which saw it as an attempt to confirm the hegemony of Egypt and Sudan over the Nile, and to get them to recognize the 1959 Agreement. Those other riparians also reject the 1929 Nile Agreement which gave Egypt veto power over any project in the then British colonies of Kenya, Sudan, Tanganyika and Uganda which would negatively affect Egypt. They have argued that they are not bound by this agreement because they were not parties to it (Garretson 1967, chapter 10). These countries also invoked the Nyerere Doctrine (named after Julius Nyerere, the first prime minister and later president of Tanzania), which gave treaties concluded during the colonial era two years to be renegotiated; otherwise they would lapse after that period (Makonnen 1984). Egypt, on the other hand, invokes the principle of state succession to support its claim that the 1929 Agreement remains valid and binding. Egypt and Sudan contend that their historic and existing uses and rights are protected under international law and not negotiable. The other riparian states also invoke international law in support of their claims to a share of the Nile waters. They argue that since almost the entire flow of the Nile originates within their territories, they are entitled to an equitable and reasonable share of that flow.

The 1959 Nile Agreement also addressed the water losses in the vast swamps and marshes of southern Sudan, and the need for conservation and use of such waters. Under the Agreement, the two parties would carry out projects for conserving some of the waters of these swamps in order to increase the flow of the Nile. The benefits and costs of such projects are to be shared equally between the two parties. The Agreement gave Egypt the right to undertake this work by itself if it needs the water before Sudan does. When Sudan is ready to use its share, it would reimburse Egypt for its share of the cost of the work. Thus, the swamps and marshes of southern Sudan have been viewed by Egypt and northern Sudan as a major potential source of additional water for their use.

Concerns were voiced that the size of the Nile Basin in southern Sudan may raise the expectations of the SPLM/A for a bigger share and role in the Nile waters during the peace negotiations that led to the CPA. However, as discussed below, that turned out not to be the case.
Water resources under the CPA

One feature of the CPA that may come as a surprise to the reader is that the Wealth Sharing Agreement that addressed, *inter alia*, oil, land and other natural resources did not address water resources. Instead, water resources were addressed under the Power Sharing Agreement. The Power Sharing Agreement and subsequently the Interim Constitution (Schedule A, paragraph 33 of each document), granted the national government exclusive jurisdiction over “Nile Water Commission, the management of the Nile Waters, transboundary waters and disputes arising from the management of interstate waters between northern states and any dispute between northern and southern states.” Both instruments devolved to the government of southern Sudan the authority to coordinate southern Sudan services and establish minimum standards in a number of areas, including water provision and waste management (Schedule B, paragraph 9 of each document). The government of southern Sudan was also given jurisdiction over natural resources and forestry, as well as over disputes arising from the management of interstate waters within southern Sudan. Thus, jurisdiction over the Nile and other transboundary waters was placed exclusively with the national government in Khartoum, while local water-resources management was devolved to the government of southern Sudan.

Given the size of the Nile Basin in southern Sudan and the fact that most of the projects to augment the flow of the Nile would take place there, it may seem counterintuitive that the SPLM/A did not push for a more active role in Nile water management during the interim period, as it did with oil, land and other natural resources. In the author’s view, there are two main reasons for this decision.

The primary reason relates to the wide and acute controversies surrounding rights to the Nile River waters, as described in the previous section. Attempting to bridge their differences and to establish a more conducive environment for cooperation, the 10 riparian states set up, with the assistance of the World Bank, the United Nations Development Programme (UNDP) and some donors, the Nile Basin Initiative (NBI) in 1999. The NBI has described its vision as achieving “sustainable socioeconomic development through the equitable utilization of, and benefit from, the common Nile Basin water resources” (Nile Basin Initiative 2011). One of the goals of the NBI has been to get the Nile River Basin Cooperative Framework Agreement (CFA) concluded by all the Nile riparian countries for regulating the sharing and management of the Nile Basin. However, despite intense discussions and negotiations on the CFA since 2001, the Nile riparian states have failed to reach a final agreement on the CFA. Five of the riparian states – Ethiopia, Kenya, Rwanda, Tanzania and Uganda – signed the CFA in May 2010. Burundi and the Democratic Republic of Congo have indicated their intention to sign, and Burundi did so on 28 February 2011. However, the Democratic Republic of Congo, as of the time of writing, has not signed the CFA. Egypt and Sudan vehemently oppose the CFA, and Eritrea has remained an observer, and not a full member, of the NBI, perhaps because of its limited interests and stakes in the Nile (Nile Basin Initiative 2011). To enter into force and effect, the CFA requires ratification by six of the riparian countries.

One of the major differences over the CFA relates to the existing uses of water by Egypt and Sudan, for which the two countries demand recognition by the other riparians, as well as in the CFA. Another difference relates to treaties concluded during the colonial era, particularly the 1929 Agreement, as discussed earlier. Other differences concern notification for planned projects, and whether the CFA should be amendable by a majority, or by consensus. Differences on the first three issues have dominated the Nile discussions since the 1960s when the Nile Equatorial countries gained their independence, and when Ethiopia’s request to be a party to the 1959 Nile negotiations was ignored by Egypt and Sudan. As
such, major differences between the Nile riparian states existed for a long time, and were brought to a head, and indeed exacerbated, by the negotiations over the CFA, resulting in heightened tension, accusations and threats.  

The SPLM/A leaders must have been keenly aware of these controversies. It seems likely that they realized that southern Sudan’s hard-won right to self-determination could be jeopardized if it became entangled with the Nile politics, and could cause the other riparian states to fear the emergence of a new competitor for the Nile River waters, or at least a complicating factor in an already complex situation. The Organization of African Unity and its successor, the African Union, have opposed secessionist movements and have repeatedly called for the retention of the boundaries set during the colonial era. Under these circumstances, the SPLM/A choice not to demand a voice in Nile water management must have assisted in allaying the fears of the other Nile riparian states, and made it easier for them to support, or at least remain neutral on, the issue of self-determination for southern Sudan.

The second reason for the SPLM/A’s decision not to pursue a role in the Nile water management under the CPA is that there were no functional irrigation projects in southern Sudan that use Nile waters when the CPA was concluded in 2005. While there are several large irrigation projects in the north, these projects have not exhausted Sudan’s annual share of the 18.5 BCM under the 1959 Agreement. The north’s average annual use has ranged between 14 and 15 BCM. The few existing agricultural projects in southern Sudan – such as the Nzara (or Anzara) Agro-industrial Project, Tonj Kenaf factory, Melutt and Mongalla sugar projects, Wau Brewery and Malakal Pulp and Paper project – either were not completed, or are in need of major rehabilitation (Yongo-Bure 2007). Moreover, the heavy rains in southern Sudan have been, thus far, sufficient to sustain the limited subsistence agriculture and livestock herds of the communities in the south. It might have also been thought during the CPA negotiations that, even if the projects in southern Sudan were completed or rehabilitated, Sudan’s share of Nile waters could accommodate them.

Although the SPLM/A left responsibility for the Nile waters under the CPA and the Constitution to the national government, the SPLM/A practically asserted itself in this area from the very beginning of the interim period. The SPLM/A made it abundantly clear during the interim period that the Jonglei Canal Project was not in its list of priorities, and indicated the need for more thorough studies of the canal and its environmental and social effects (Mayardit 2010). Thus, the gap between the provisions of the CPA and the Constitution on authority over Nile waters on the one hand, and the real situation on the ground on the other, varied considerably.

The centrality of water resources in the relationship of the two states

As indicated earlier, water resources have been listed in the Southern Sudan Referendum Act as one of the pending issues between the two states. Consequently, southern Sudan is now demanding a share in the Nile waters allocated to the Sudan under the 1959 Agreement. The issue might have been easier to negotiate and resolve before the referendum when the two states were still one country. This is because negotiations between two states are generally more difficult than between two parts of the same state. While the six-month transitional period between the referendum vote and the establishment of South Sudan as a separate state will provide some time to negotiate these issues, they are complex and will likely require more time to finalize. Moreover, it is more likely that negotiations on water resources could be expanded to include projects for conserving the waters of the
swamps of southern Sudan, and may extend to the grazing and water rights of the border communities in the two countries.

The demand of southern Sudan for a part of the share of the Sudan’s Nile waters under the 1959 Agreement may seem easier to accommodate given the fact that Sudan has not been able to use more than 14 to 15 BCM of its share of 18.5 BCM under the 1959 Agreement. However, this situation may be complicated by other new factors. Secession will result in the loss to the Sudan of 50% of the oil of southern Sudan, as stipulated in the CPA. Thus, the government of Sudan plans to pay more attention to agriculture as a focal point of its national economic strategy. This in turn will mean the need for more waters than Sudan is currently using. Sudan has large irrigable lands that have hitherto not been developed, and it has recently revived the four-decade-old slogan of Sudan being the breadbasket of the Arab world. Following completion of the Merowe Dam on the Nile River in northern Sudan, the government of Sudan has started implementing a project for increasing the height of the Roseiris Dam. The government has also started the leasing of large tracts of land to foreign investors and other countries for the growing of food crops (International Food Policy Research Institute 2009). On the other hand, southern Sudan is claiming a share of the Nile waters allotted to the Sudan to meet the needs of its agricultural projects that need rehabilitation as discussed earlier, and its existing and planned projects, as well as the growing needs of the returning southern Sudanese. Work on the Bedden Dam on Bahr el Jebel, south of Juba, is already underway. This would mean that the competing demands of the two countries may not be easy to meet with the current allocation to the Sudan of 18.5 BCM.

The factors enumerated under the United Nations Convention on the Law of the Non-Navigational Uses of International Watercourses regarding utilization of shared watercourses should provide helpful guidance to the parties in deciding how to share the 18.5 BCM. Such factors would include, inter alia, the current and planned uses of northern Sudan on the one hand, and the expected future uses of southern Sudan; the amount of Nile waters crossing from southern Sudan into northern Sudan and Egypt; as well as the heavy rains in southern Sudan as an alternative source of water for southern Sudan. Negotiations may also bring up the issue of the waters lost in the swamps of the southern Sudan and the need to complete the Jonglei Canal to augment the flow of the White Nile, and provide more water for sharing. The fact that southern Sudan is not part of the Blue Nile that provides the bulk of the Nile waters is another factor. Thus, the negotiations on the reallocation of the 18.5 BCM allotted to the Sudan under the 1959 Agreement are not expected to be easy.

**The Jonglei Canal Project**

The history of the Jonglei Canal Project dates back to the early days of the Anglo-Egyptian colonial administration of Sudan that was established in 1898. That administration quickly recognized the Sudd’s potential for helping to maximize the flow of the Nile. More Nile water was needed to meet the needs of the growing population of Egypt, as well as the textile industry in Lancashire for more Egyptian cotton (Tvedt 2004). The search commenced immediately after the conquest of Sudan for ways to bypass the swamps and deliver more water to the Nile.

In 1904 Sir William Garstin, the undersecretary of state for public works in Egypt, published an influential report on the Upper Nile (Garstin 1904), which included a thorough investigation of the White Nile and its tributaries. To bypass the Sudd, Garstin recommended excavating a new channel of about 340 kilometres to bring water from the Upper
Nile (Bahr el Jebel) at Bor directly to the junction of the White Nile with the Sobat River. This proposal was the genesis of what is now known as the Jonglei Canal Project.

Garstin’s proposal was reconsidered in the early 1920s, as well as in the mid-1930s, and again in 1946, when the colonial administration in Sudan established the Jonglei Investigation Team. The Team produced a thorough report in 1953 (Howell et al. 1988). However, by that time the attention of Egypt had shifted to the Aswan High Dam, and the Jonglei Canal Project took a back seat.

As discussed earlier, the 1959 Nile Agreement between Egypt and Sudan included detailed provisions on projects for conserving the waters of the swamps of southern Sudan. Construction of the Jonglei Canal, however, did not start until 1974, after the temporary end of Sudan’s civil war following the conclusion of the Addis Ababa Agreement in 1972. The newly designed project, which was based substantially on the 1904 Garstin proposal, consisted of a 360-kilometre canal from Bahr el Jebel at Jonglei village to the junction of the White Nile with the Sobat River. It also included development components for the project area: a large-scale irrigation scheme for sugar growing and processing; all-year roads, bridges and river transportation links; and education and health services. Under the 1959 Nile Agreement, Egypt had agreed to pay 15 million Egyptian pounds to Sudan in compensation for the inundation of Sudanese territory by the Aswan High Dam. However, the Agreement did not mention compensation to the people adversely affected by projects in the swamps of southern Sudan.

Sudan established a National Council for the Development of the Jonglei Canal Area in 1974. Nonetheless, the Permanent Joint Technical Committee established under the 1959 Nile Agreement continued to have supervisory responsibility for the project. The cost of the project was estimated at US$260 million; the costs and benefits were to be divided equally between Sudan and Egypt. When completed, the canal was expected to add close to five BCM to the flow of the White Nile. An equal amount of water is expected from a second canal that would drain a large part of the remaining swamps in the Sudd area of Behr el Jebel and Bahr el Zeraf. Studies also indicate that a similar amount of water could be drained from each of the Bahr el Ghazal swamps and the Machar/Sobat marshes. The four projects together could almost double the flow of the White Nile (Waterbury 2002, p. 144).

The Jonglei Canal Project faced some major opposition in southern Sudan from the start because it was seen as serving the interests of northern Sudan and Egypt. Local and international civil society organizations and academics voiced concerns that the canal could have a negative impact on the Sudd ecosystem and on local livelihoods – specifically, on drinking water, pasture, fisheries and access to either side of the canal by pastoral communities and their herds and by wildlife (Yongo-Bure 2007, chapter 10). Students in a number of cities in southern Sudan rioted against the project, and three people were shot and killed during those riots. The situation gradually quieted, however, and implementation of the project started in 1978. By November 1983, about 260 of the canal’s 360 kilometres were completed. However, in February 1984, the then recently formed SPLM/A attacked the canal site, and brought the project to a complete halt. Since that time, the huge excavator has sat idle and rusting in the middle of the Sudd swamps, about 100 kilometres north of Jonglei village. The completed portion of the Canal has turned into a large ditch where wildlife can easily be trapped and die, and which is impeding the movement of people and animals in the region (Salman 2008).

SPLM/A’s main complaint against the project was that its implementation concentrated on the excavation of the canal, which would benefit northern Sudan and Egypt, and neglected the components of the project intended to help develop southern Sudan.
Such components had not even been started in 1983, although they had originally been presented as an integral part of the project (Oduho 1983).

It is quite clear that any resumption of the work on the Jonglei Canal, or on any new project for conservation of the waters of the swamps of southern Sudan would need the full agreement and cooperation of both the government of South Sudan and the local communities in the area, regardless of the legal arguments related to the 1959 Nile Agreement. It will also depend on whether the new state of South Sudan will be able to assert its authority, impose law, order and security throughout the south, and end the intermittent inter-tribal fights and mutinies that have spread during the interim period, particularly in the Jonglei State (Schomerus and Allen 2010). It should also be added that the Sudd was officially recognized on 1 November 2006, as an internationally important wetland under the Ramsar Convention on Wetlands. This recognition will certainly strengthen the hands of the local and international civil society organizations concerned with the preservation of the ecosystem and ecological integrity of the swamps of southern Sudan.

Moreover, the increasing assertiveness of the Nile upstream riparian states could also complicate future negotiations on resumption of work on the Jonglei Canal. This is because the waters of the Sudd and of the Machar/Sobat marshes of southern Sudan could be viewed, due to the sources of those waters, as a wider Nile Basin issue, and not simply an issue for Egypt, Sudan, and now South Sudan, to handle.

As discussed earlier, the state of South Sudan has been born at a time of tense relations among the 10 Nile riparian countries, exacerbated by the acute differences over some basic principles and provisions of the CFA. Will the new state align itself with the equatorial lakes countries – as is widely expected, based on common interests on the White Nile, ethnicity, geography, and history? Will it accede to the Nile Basin CFA which has six signatories and needs six ratifications to enter into force, thus enhancing the CFA chances of entering into force? Will Sudan and Egypt claim that southern Sudan is bound by the 1959 Nile Agreement, particularly with regard to construction of the water conservation projects specified in that Agreement? If they make that claim, how can they enforce it? Will Egypt claim that the new state is bound by the 1929 Nile Agreement, based on the same reasoning it argues vis-à-vis Kenya, Tanzania and Uganda, and demand that any project in South Sudan be subject to its prior agreement? These are some of the difficult questions that may be posed now, adding more complexities to the already intricate relations within and among the Nile Basin states.

**Conclusion**

The emergence of new states invariably carries with it a vast array of challenges. Some of these challenges relate to resolving outstanding issues with the mother state, and the sharing and managing of common resources. This is certainly the case with the new state of South Sudan. Indeed, the challenges in South Sudan are compounded by the inability of northern Sudan and southern Sudan to resolve any of the large number of outstanding issues before secession. For reasons related to hydro-politics the SPLM/A gave up any responsibility for the Nile waters during the interim period to the central government. Although this might have facilitated acceptance by the Nile riparians of the right to self-determination, it has resulted in major delays in the decisions on the sharing and management of the Nile waters between the two parts of the country, and eventually between the two states.

Sudan and the new state of South Sudan now have to address, *inter alia*, the issue of sharing and managing the Nile waters. They also have to address the grazing and related
water rights of the border communities in areas across some of the tributaries of the White Nile. Indeed, some of the disputed border areas that the two parties still have to resolve, including the dispute over the Abyei area, fall across the White Nile or some of its tributaries, thus extending the border disputes to water rights. The Jonglei Canal Project, as well as the other projects for conserving some of the waters of the swamps of southern Sudan, could as well be on the agenda of the Sudan. The Sudan may bring up completion of the Jonglei Canal Project as a way of providing more water for sharing with the new state. Aside from hydro-politics, the security situation in South Sudan may be an important factor in determining the future of the Jonglei Canal Project, as well as the other swamp projects.

Moreover, South Sudan will also face the issue of its relationship with the other Nile riparians, and how to deal with the Nile Basin CFA. As indicated earlier, the six countries that have thus far signed the CFA will do their best to woo, perhaps even pressure, southern Sudan to become a party to the CFA so as to provide the desperately needed sixth state for the CFA to enter into force and effect. On the other hand, Egypt and Sudan, who vehemently oppose the CFA, will do their best to court southern Sudan to their side, or at least keep it neutral on this issue. It remains to be seen how South Sudan will handle this matter.

The centrality of water resources in the issues that need to be addressed in post-conflict situations has been reconfirmed by the emergence of South Sudan as an independent nation. In this case, the issues go well beyond the Sudan and the new state of South Sudan, and extend to the other riparian states of the Nile Basin.

Notes
1. The full title of the Agreement is “Exchange of Notes between Great Britain and Northern Ireland and Egypt in Regard to the Use of the Waters of the River Nile for Irrigation Purposes, Cairo, May, 1929.”
2. The “Nile Water Commission” should be understood to refer to the “Permanent Joint Technical Committee” established under the 1959 Nile Agreement, as discussed earlier.
4. John Garang, the leader of the SPLM/A until his death in a plane crash in July 2005, and one of his closest advisers, Mansour Khalid, both addressed Nile water issues at length in their respective doctoral dissertations (Khalid 1966, Garang de Mabior 1981).
5. Some academics have raised the point that any water allotted to the state of South Sudan out of the waters of the Nile could arguably fall under Article 5(2) of the 1959 Nile Waters Agreement, which states: “Since other riparian countries on the Nile besides the Republic of Sudan and the United Arab Republic claim a share in the Nile waters, both Republics agree to study together these claims and adopt a unified view thereon. If such studies result in the possibility of allotting an amount of the Nile water to one or the other of these territories, then the value of this amount as at Aswan shall be deducted in equal shares from the share of each of the two Republics.” However, it is unlikely that the claims of South Sudan will be addressed under the provisions of this Article because southern Sudan was part of the Sudan when the Agreement was concluded in 1959.
6. Although the Watercourses Convention has not yet entered into force, many of its provisions, including those on equitable and reasonable utilization, are considered as reflecting customary international water law; see Salman (2007).
7. The Abyei Protocol defined Abyei as the area transferred from southern Sudan to the north in 1905. The area is currently a focus of a major dispute between northern Sudan and the northern tribe of the Misseriya on the one hand, and southern Sudan and the southern tribe of the Ngok Dinka on the other. The Protocol established arrangements for delimiting the boundaries of the area, and for a referendum that was to be carried out simultaneously with the southern Sudan
referendum to determine the area’s future. However, the referendum did not take place because of the insistence of the Misseriya tribe that they have claims over the area extending beyond grazing and water rights, and that they are entitled to participate in the referendum. Both claims are rejected by southern Sudan and the Ngok Dinka. For a fuller discussion of the Abyei dispute see Salman (2011).

References

Garstin, W., 1904. Report upon the basin of the Upper Nile with proposals for improvement of the river. Cairo: National Printing Department.