Hydro-hegemony in the Nile Basin: a Sudanese perspective

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Abstract

This paper seeks to re-evaluate Sudan’s position, power and policy in light of the hydro-hegemony theory. Sudan’s unique transboundary hydrology, particularly in the south, and recent important developments in Sudanese affairs are of particular interest. The possibility of Sudan disintegrating into two sovereign states as per Sudan’s Comprehensive Peace Agreement and Sudan’s emergence as an oil-exporting country have provided new political events that serve as important factors to be used to analyse Sudan’s position and power under the hydro-hegemony theory. Furthermore, Sudan’s historical hydro-political objective, the ‘midstream doctrine’ which strives to reconcile the competing demands of downstream and upstream Nile riparians shall be brought to the fore. The methodology utilised in this paper to evaluate hydro-hegemony shall be based on Viotti and Kauppi’s definition of Hegemony, Yoffe’s Water Event Intensity Scale and Naff and Matson’s Power Ratio.

Keywords: Hydro-hegemony; Hydro-political analysis; Midstream doctrine; Nile Basin; Sudan

1. Introduction

The low intensity downstream–upstream conflict in the Nile Basin has been well documented in hydro-political circles. Nile Basin hydro-political theory and commentary has focused primarily on downstream and upstream riparians, namely Egypt vs. Ethiopia, Kenya, Uganda and Tanzania. Within the Nile Basin the potential hydrological and hydro-political role of the mid-stream riparian—the Sudan—has not been sufficiently analysed. Sudan is the Nile Basin’s largest riparian, a mid-stream riparian that borders six other Nile riparians and has abundant arable land and ideal hydrological conditions for water capture and storage. Sudan is party to the 1959 Agreement on the Full Utilisation of the Nile’s Waters. The 1959 Agreement is a bilateral treaty between Sudan and Egypt. Sudan also voted in favour of the 1997 UN Watercourses Convention which advocates ‘equitable utilisation and participation’ of all riparian states in their shared freshwater resources. Focusing on recent


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developments in Sudanese affairs, this paper re-analyses Sudan’s position with respect to the hydro-hegemony theory in light of important historical, geo-political, legal, socio-anthropological and economic factors. Sudan’s contemporary hydro-political relations and its hydro-projects shall be examined from a power-based perspective. The hydro-hegemony framework will be used to question the hydro-political reasons for Sudan’s vote in favour of the 1997 UN Watercourses Convention. Sudan’s hydro-policy which differs from that of downstream and upstream Nile riparians will be considered and presented as Sudan’s ‘midstream doctrine’. As such, the paper will examine Sudan’s position and raise interesting questions as to Sudan’s possible contribution to the hydro-political developmental discourse between the Nile Basin’s riparians whilst noting the general commitment to basin-wide cooperation that Nile riparians have made.

The traditional hydro-political view of Sudan boxes Sudan in with Egypt hydro-geographically and by virtue of the 1959 Agreement. Sudan is also typically characterised in hydro-political literature as an underdeveloped, chronically underachieving ailing State with some potential for the development of its water resources that has been crippled by Sudan’s civil and political unrest. Two recent momentous events challenge the traditional hydro-political view of Sudan.

In 1999 Sudanese oil exports to the international market began, both revitalising the Sudanese economy as well as providing a significant source of foreign currency revenue. One of the effects of Sudan’s oil wealth is the construction of the Merowe Dam, which is Sudan’s largest and most significant major water project and the largest contemporary project of its kind in Africa. And on 9 January 2004 the Comprehensive Peace Agreement was signed, bringing Sudan’s long civil war to an end, opening up South Sudan’s vast water resources for development and allowing for the secession of South Sudan in 2011 as per a referendum.

The first section of this paper explores Sudan’s hydrology, hydro-projects and the Nile Basin Initiative, which is a political basin-wide project that Sudan is involved with. This information is needed in order to consolidate the factors that are considered in section 3 that are used to determine Sudan’s position on the Water Event Intensity scale and Power Ratio.

The second section of this paper analyses Sudan’s political relations both nationally and geo-politically. The two significant events that have changed the Sudanese political landscape, oil production and the Comprehensive Peace Agreement are duly examined. Sudano-Egyptian historical relations are highlighted with a summary of the 1959 Agreement from the historical Sudanese perspective.

Sudan’s position, power and policy according to hydro-hegemony theory are addressed in section 3. Sudan’s position within the framework of hydro-hegemony, according to Viotti and Kaupi, is given special consideration. Sudan’s relations with all of its neighbouring Nile riparians shall then be evaluated according to Yoffe’s Water Event Intensity Scale. The changes in the factors used to evaluate Sudan’s power according to Naff and Matson’s pillars of power, as compared to Egypt and Ethiopia, shall then be explained. Sudan’s involvement in the 1959 Agreement shall be revisited. Sudan’s ‘mid-stream philosophy’ shall then be introduced as its policy objective in striving to develop its own water resources whilst reconciling the competing interests of its upstream and downstream neighbouring riparians.

In the final section the conclusions of this study present Sudan not as a chronically weakened, downstream riparian but as an important emerging nation in the Nile Basin and an entrenched mid-stream riparian both geographically and hydro-politically through adherence to the ‘midstream doctrine’.
2. Sudan: hydrology and hydro-projects

This chapter describes Sudan’s hydrology and highlights the contemporary hydro-projects that Sudan is currently undertaking. Sudan’s developmental prospects are then examined in the light of recent developments.

2.1. Sudan’s hydrology

At 6600 km The Nile is the longest river in the world. Sudan is the largest country in Africa and the vast Nile basin covers more than 70% of Sudan’s territory (see Hamad & El-Battahani (2004)). The Nile traverses the length of Sudan from close to the equator in the south, to the Tropic of Cancer in the north. As such, Sudan is a hydrological microcosm of the entire Nile Basin for, in its 2.5 million km² many of the geographical features of the basin are to be found.

The main tributaries of the River Nile can be roughly divided into eastern tributaries that originate in the Ethiopian highlands and the southern tributaries that originate in the Equatorial great lakes region. Within Sudan the White Nile commences above Malakal at the junction of Bahr AlGhazal and Bahr AlJabal at Lake No in the Upper Nile state of South Sudan and passes into the White Nile state in North Sudan until it reaches Khartoum and joins with the Blue Nile to form the River Nile. Another of the White Nile’s tributaries is the Sobat River which joins the Bahr AlJabal above Malakal. The Sobat’s tributaries are the Pibor and Baro rivers, which are located near the South Sudan–Ethiopia border. South Sudan receives a significant amount of rain which nourishes its abundant fluvial water resources. South Sudan’s rivers are slow running, forming wide valley floodplains that have crept into some of the world’s largest swamplands (Howell & Lock, 1996, pp. 244–246). Due to South Sudan’s climate more than 50% of the fluvial water that enters the swamps does not exit them, but is lost back to the atmosphere through evapo-transpiration. It has long been proposed that the recuperation of this water could take place through the canalisation of water from the swamps and marshlands into the White Nile river system.

1 Sudan’s area is 2.5 million km² (between latitudes 4 and 23 degrees North and longitudes 22 and 38 degrees East). Data available at The World Bank Group, Sudan Data File website, available at: http://devdata.worldbank.org/external/CPProfile.asp?CCODE=SDN&PTYPE=CP (last visited 20 April 2004).

2 The Sobat River enters the south of Sudan from Ethiopia, making it the anomalous southern tributary that originates in Ethiopia.


4 The FAO’s Information System on Water and Agriculture—Sudan website states the following: “Due to losses in the Sudd swamp area, the White Nile leaves this area with only about 16 km³, out of 37 km³ on entering it.” Available at: http://www.fao.org/mr/water/aquastat/countries/sudan/index.stm (last visited January 03 2005).

5 Such proposals are outlined in: The Agreement between Sudan and the United Arab Republic on the Full Utilisation of the Nile Waters, Nov. 8, 1959, Registered by the United Arab Republic on 7 February 1963, 6519 U.N.T.S. 63, Sudan—Egypt, Art. 3: ‘In view of the fact that at present, considerable volumes of the Nile Basin Waters are lost in the swamps of Bahr el Jebel, Bahr El Zeraf, Bahr el Ghazal and the Sobat River, and as it is essential that efforts should be exerted in order to prevent these losses and to increase the yield of the River for use in agricultural expansion in the two Republics, the two Republics agree to the following:

1. The Republic of the Sudan in agreement with the United Arab Republic shall construct projects for the increase of the River yield by preventing losses of waters of the Nile Basin in the swamps of Bahr El Jebel, Bahr el Zeraf, Bahr el Ghazal and its tributaries, the Sobat River and its tributaries and the White Nile Basin...’ Governments of Sudan and Egypt (1959).
The Blue Nile and the Atbara River are the main eastern tributaries of the River Nile and they pass through the territory of North Sudan. The Blue Nile traverses the states of Sennar and Gezira and is augmented by the Dinder and Rahad rivers until it reaches Khartoum and joins the White Nile to form the River Nile. The Atbara River measures 805 km and is the River Nile’s last tributary and has also has its origins in the Ethiopian highlands north of Lake Tana. It flows west into Sudan and then northwards joining the Angareb and Siteit Rivers before joining the River Nile at the city of Atbara in the River Nile state in North Sudan.

2.2. Dams and engineering projects

A number of dams are in operation in Sudan for the generation of hydroelectricity and for irrigation purposes. These include the Sennar6 and Roseires7 dams on the Blue Nile and the Khashm AlGirba and Jabal Aulia storage dams8 on the Atbara River and White Nile. The Kajbar Dam on the second cataract of the River Nile, close to the Egyptian border, is currently under construction. Its main financiers are the governments of China and Sudan and it is expected to have a 300 MW power capacity9. In South Sudan a Malaysian company has been awarded a letter of intent, to construct and operate a 5000 MW hydroelectric facility over a period of 15 years at a cost of $9.5 billion10. As well as providing electricity for the people of South Sudan this dam is envisaged to provide cheap energy to neighbouring upstream countries such as Ethiopia and Kenya. In an unprecedented development on the Nile Basin, Sudan and Egypt agreed in 2001 to partially finance the dam at Kara Dobe in Ethiopia. This dam, along with many others, is envisaged to contribute towards generating up to 38 000 MW, much of which will be exported to Sudan and in the long-term, Egypt as part of the Nile Basin Initiative’s Eastern Nile Regional Power Trade Investment Sub-Project11.

A significant hydro-project in Sudan that involves the transfer, as opposed to the impounding, of water is the Atbara River–Port Sudan water pipeline. Although eastern Sudan is extremely water-
stressed, it is a region of economic importance due to its location as gateway to Sudan’s maritime ports on the western coast of the Red Sea. A 470 km long water pipeline with a capacity of 1,000,000 m³ is being constructed from the Atbara River to Port Sudan by a Chinese company at a cost of 345 million dollars. This project is of great significance in alleviating the extreme water scarcity that the inhabitants of East Sudan face.

Another major project in Sudan is the canalisation of the swamp and marshland water of South Sudan into the White Nile system. This was first envisaged in the 1940’s when Sudan was under British administration. The 1959 Agreement set out a 50–50 share of both the costs of the canalisation projects, and the allotment of newly accrued water from any such projects. Construction of the Jonglei canal began in 1979 and three quarters of the canal was excavated. However the resumption of the Sudan civil war stopped any further progress. Jonglei, which was a joint Sudano-Egyptian venture, was envisaged to add at least 3.8 km³ of water into the Nile system. The late former Vice-President of Sudan, Dr John Garang de Mabior, stated in 2005 that resumption of work on the Jonglei Canal project necessitates new research and studies and surveys, according to and after which the government of South Sudan would have no objections to its resumption. It is significant to note that a delegation comprising the South Sudan Minister of Water Resources visited Egypt in August of this year, at the invitation of the Egyptian Minister of Water Resources to discuss, amongst other generic issues, the resuscitation of the Jonglei Canal project.

However the most significant Hydro-Project that is underway in Sudan is the Merowe Multi-Purpose Hydro-Project, more commonly known as the Merowe Dam on the fourth cataract of the River Nile in North Sudan (see Figures 1 and 2). The Merowe Dam is expected to reap many economic and developmental benefits. Once it is completed in 2008 the Merowe Dam is expected to have an annual electricity yield of 1250 MW. The extra electrical output is expected to greatly increase urban and peri-urban domestic electrification in Sudan, as well as revitalising Sudan’s light manufacturing industries and kick-starting a heavy industry sector in Sudan that shall create jobs and exportable commodities. As regards agricultural activity, the Dam shall enable the irrigation of up to 20,000 ha of land. With its height of 67 m and length of 9 km and its reservoir of 12.5 billion m³ of water, measuring 1,174 km in length and 476 km² in surface area the Dam is expected to impound 20% of the Nile’s annual flow in its 12.5 billion m³ reservoir. Some of the power generated by the Dam could be exported to Ethiopia through the joint grid that is

13 Commenting on the plans to construct canals in South Sudan, John Waterbury states: ‘Sir William Garstin first called for a canal to help channel floodwaters through the swamps to a northern outlet to the White Nile around Malakal. The proposal was...studied in some depth by the Jonglei Investigation Team after 1947’ (Waterbury, 2002, pp. 143–144).
14 ‘The Agreement between Sudan and the United Arab Republic on the Full Utilisation of the Nile Waters, Nov. 8, 1959, 6519 U.N.T.S. 63, Sudan—Egypt, art. 3, § 1: ‘...The Republic of the Sudan shall finance the above-mentioned projects out of its own funds and the United Arab Republic shall pay its share in the costs in the same ratio of 50 per cent allotted for her in the yield of these projects.’
15 The Sudan People’s Liberation Army attacked the machinery that was constructing the Jonglei Canal in 1984. (Waterbury, 2002, pp. 143–144). However this should not be interpreted as a tacit refusal of the canal by the SPLM. Dr John Garang de Mabior’s doctoral thesis ‘Identifying, selecting and implementing Rural Development in the Jonglei Projects Area, Southern Sudan’ Iowa State University 1981 was generally in favour of the canalisation of the Sudd’s waters.’
Fig. 1. Nile Basin.
under planning as part of the Nile Basin Initiative’s Eastern Nile Subsidiary Action Program for energy trade.

2.3. The Nile Basin Initiative

A notable political developmental organisation that Sudan has been involved with is the Nile Basin Initiative. The NBI is an international partnership amongst Nile Riparians which serves as a ‘forum for cooperative development’ of the Nile’s water resources. It has representation from all of the Nile Riparians who have varying degrees of activity. The NBI seeks to secure funding for basin-wise projects under a Shared Vision Project whose sub-projects cover biodiversity, poverty eradication, forestry, hydro-power trade and development of institutional frameworks for sustainable development amongst other issues. The mandate of the organisation evolved with the launch of a project in 1995.
for the setting-up of a cooperative legal framework for the management of the Nile known as D3. Since then regular meetings have taken place at different levels including the Ministerial Nile-Com level, the Technical Advisory Committee level as well as meetings of technical specialists from the various Nile riparians. The NBI has a subsidiary action program that is split into two geographic sub-regions, one of which is the Equatorial Lakes investment program which is aimed at the development of joint investments to combat poverty in Burundi, Rwanda, the Democratic Republic of the Congo, Kenya and Tanzania. The other program is the Eastern Nile subsidiary action program which comprises Sudan, Egypt and Ethiopia and tackles water management as well as hydropower trade. A number of regional project management units were established that deal with the various shared vision projects in various cities in riparian states. These include the Nile Transboundary Environmental Action Project which is based in Khartoum, the Water Resources Planning and Management Project which is based in Addis Ababa and the Applied Training Project which is based in Cairo. The NBI is primarily financed through a trust fund into which many traditional major western donors make contributions. The impact of the NBI has been to shift the discourse in the Nile basin from one of competing interests to one of cooperation in the sphere of public relations. However, the NBI still lacks a legal regime that regulates the rights, roles and obligations of the member states. It is also significant to note that to date the NBI has not come up with any hydro-projects that have transboundary developmental benefits in any of its 10 member states. In spite of the lack of tangible development forged under the NBI, with a legal regime it could provide a suitable framework and forum for basin-wide developmental consultations and a forum for effective basin-wide decision-making at some point in the future.

3. Sudanese hydro-politics in the Nile Basin

This section outlines the traditional hydro-political views of Sudan and contrasts them with significant politico-economic events that have occurred in Sudan. Sudan’s relations with Egypt and the 1959 Agreement from a Sudanese perspective are also addressed.

3.1. Recent political developments in Sudan

Sudan has been classified as a ‘Highly Indebted Poor Country’ of some 40 million citizens. Sudan’s population is expected to double within 20 years. The civil unrest that has marred most of Sudan’s history as an independent state has been the main impediment to Sudan’s economic development. Long years of civil unrest have also fomented economic and developmental discrepancies between Khartoum and Sudan’s regions. Having been touted as Africa/The Middle East’s, even the whole world’s, bread-basket has meant that Sudan’s economic development has been traditionally gauged according to the performance of the agricultural sector. In recent hydro-political literature that is based on the Nile, Sudan’s economic and developmental prospects were evaluated as being poor with no foreseeable breakthroughs.

In 1999 Sudan became an oil-exporting country. Sudan currently exports between 375,000 and 500,000 barrels per day, and this was expected to increase to 750,000 barrels per day by late 2006. Sudan is currently considering joining the OPEC cartel as a full-fledged member after having been granted observer status for the past few years. The capital injection that oil has provided has boosted the Sudanese economy at a macro-economic level. The Government of Sudan has acquired a creditworthiness that has allowed for major investment\(^{18}\) and the financing of mega-projects\(^{19}\) such as the Merowe Dam.

With the signing of the Comprehensive Peace Agreement between the Government of Sudan and the Sudan Peoples’ Liberation Movement in January 2005, Sudan’s civil war came to an end. This momentous achievement has largely mitigated the main stumbling block of Sudan’s development, which had been the war. The CPA has opened up South Sudan for further oil exploration, investment and development\(^{20}\). Whilst the costs of reconstruction in South Sudan are colossal, there are great prospects for economic development in Sudan until 2011 when the southern Sudanese shall vote either for secession or to remain in a united Sudan.

Sudan’s new-found oil wealth has not eclipsed the centrality of the agricultural sector amongst Sudanese policy makers\(^{21}\). Agriculture is the main source of living for two in three people living in Northern rural areas and over for 85% of those in the South\(^{22}\). With a combination of a large amount of arable land\(^{23}\), abundant fluvial water resources as well as rain-fed farming, agriculture has historically been the core of the Sudanese economy and is the main consumer of water\(^{24}\). Ex-Chairman of the SPLM and former Sudan Vice-President Dr John Garang de Mabior had a vision of the south’s oil wealth funding a largely agrarian-based economy whose backbone would undoubtedly be the water resources of the South\(^{25}\). The urgency of the agrarian vision has been compounded by the famines and food shortages

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18 An example of such investment is the recently established $10 billion Saudi public shareholding company for investment in the field of real estate in Sudan. See: [http://www.sudantribune.com/article.php3?id_article = 13014](http://www.sudantribune.com/article.php3?id_article = 13014) (last visited 14 December 2005).

19 An example of a mega-project currently underway in Sudan is the $4 billion Alsunut Development Company project for the construction of a central business district and adjacent residential area in AlMogran, Khartoum at the confluence of the Blue and White Niles. The Alsunut project is aimed at transforming Khartoum into a financial hub in the East Africa region. See: [http://alsunut.com/index.php](http://alsunut.com/index.php) (last visited 10 December 2005).

20 Lundin Petroleum, a Swedish oil company, has recently decided to resume exploration and production operations in South Sudan in light of the end of the civil war and French oil giant Total has voiced a similar intention.

21 It is worth noting that Sudan’s Finance Minister, AlZubeir Muhammad AlHassan, recently stated in a speech to Parliament that Sudan’s economy was suffering from Dutch Disease—the deagriculturalisation of the economy in favour of petroleum based activity. See: Al-Rayalaam Daily, 27 May 2006, available at: [http://rayaam.net](http://rayaam.net) (last visited 27 May 2005).


25 Dr Garang’s doctoral thesis *Identifying, selecting and implementing Rural Development in the Jonglei Projects Area, Southern Sudan*, Iowa State University 1981 was generally in favour of the canalisation of the Sudd’s waters. However, the project was specifically targeted by the SPLA during the war.
that the Sudanese have witnessed. With the incidence of child malnutrition in North Sudan at 35% and in South Sudan at 48%, increasing agricultural capacity so as to attain food security and halve malnutrition is a constant objective. Sudan’s Constitution\(^26\) stipulates that the national economy has, as its guiding principles, the achievement of the Millennium Development Goals\(^27\). Two of the MDGs are inextricably linked to water resources in Sudan: reducing by half the number of people suffering from hunger and ensuring environmental sustainability.

Peace in South Sudan has shed light on the other marginalized regions of the country—the East and West. Civil strife in Sudan’s western region of Darfur from 2003 to the present day has caused a grave humanitarian crisis and a major developmental setback to Sudan as a whole. However, political negotiations under the aegis of the African Union recently bore fruit in the signing of the Darfur Peace Agreement between the Government of Sudan and a powerful faction of Darfur’s main rebel group, the Sudan Liberation Movement. The Darfur Peace Agreement grants more political representation for Darfur in Khartoum, as well as greater financial allocation from Khartoum to Darfur. The SLA’s leader Minni Arcoi Minnawi has been appointed to the fourth highest position of political authority in the country. Darfur is thought to contain sizeable amounts of commercially exploitable petroleum and uranium.

East Sudan’s rebel groups, the Beja Congress and the Free Lions, are engaged in formal peace negotiations with the Government of Sudan in Eritrea, with Eritrean mediation. Sudan’s eastern rebels also want more representative political representation, more revenue from Khartoum and a share in the developmental benefits of their region’s natural resources which include gold and gas. Although peace in Sudan’s regions has been difficult to nurture, indications suggest that the momentum in Sudan is in favour of the peaceful settlement of national disputes. A Sudan at peace will undoubtedly need to further develop its water resources and will have greater potential to do so.

3.2. The Khartoum–Cairo axis

Sudan’s historical relations with Egypt can be accurately described as being complex. Sudano-Egyptian relations include common ties in antiquity, wars and invasions and ultimately the co-colonisation of Sudan by Egypt and Britain. Since Sudan’s independence from the Anglo-Egyptian condominium in 1956, Sudan and Egypt have, on the whole, enjoyed very good and special relations whose greatest achievement, for Egypt, was the 1959 Agreement.

In spite of the closeness between Egypt and Sudan that contemporary relations and the 1959 Agreement allude to, numerous contemporary political differences exist between the two countries. Whilst Sudan is a Federal Republic that encompasses two autonomous regions—South Sudan and the


\(^{27}\)Hereinafter referred to as the MDGs. Available at: http://ddp-ext.worldbank.org/ext/GMIS/home.do?siteId=2 (last visited 30 April 2005).
Transitional Darfur Regional Authority—Egypt is a highly centralised unitary Republic. Political Islam takes up a substantial measure of Sudan’s political spectrum, whereas in Egypt religious political parties are banned. Egypt has a strategic relationship with the United States of America that is based on its role as a pioneering peace-broker with Israel, whereas North Sudan has been under US economic sanctions for the past decade. The only supranational laws that are shared by Sudan and Egypt are the as yet unimplemented four freedoms, which allow for the freedom of movement, residence, employment and purchase of property reciprocally by citizens of both countries, and the 1959 Agreement. Sudan and Egypt have an unresolved border dispute, with Egyptian troops having forcibly annexed the Halaib triangle in North East Sudan in the early 1990s. Egypt’s trade with Sudan lags far behind Sudan’s trade with the Gulf States which have no land borders with Sudan. As such, there is scant evidence to suggest that the citizens and governments of Egypt and Sudan are real mutual beneficiaries of their respective hydrological involvement, particularly through the 1959 Agreement, as well as through non-hydrological economic development in spite of any political statements that suggest otherwise.

Furthermore in spite of the strong political ties between Sudan and Egypt, both countries have taken acutely divergent stances on the potential transformation of Sudan into two sovereign states—North Sudan and South Sudan. Egypt and Libya’s proposals for peace in Sudan did not allow for self-determination of South Sudan and their efforts were abandoned in favour of the IGAD forum, which based the peace talks in Kenya. By virtue of the Comprehensive Peace Agreement that was formulated under the auspices of IGAD, and in the absence of Egypt, the self-determination of South Sudan or its remaining as part of a unified Sudan was made a principle of the Comprehensive Peace Agreement whereby the southern Sudanese shall vote in an internationally monitored referendum in 2011 whether to remain in a united Sudan or to secede. Egypt has consistently remained firmly in favour of a unified Sudan, as a unified Sudan has proven to be a relatively easy entity to deal with on hydro-cooperation, as compared to two independent countries, each lying upstream of Egypt.

3.3. Treaties

In order to re-evaluate whether the 1959 Agreement justifies Sudan’s hydro-political categorisation as a downstream riparian, the circumstances involving the signing of the 1959 Agreement and its effect must be examined.

On independence, Sudan was a parliamentary democracy. Sudan’s post-independence parliament demanded the abrogation of the 1929 Agreement between Egypt and Anglo-Egyptian Sudan that gave Sudan 4 billion m³ of water as compared to 48 billion m³ granted to Egypt. Sudan’s parliamentarians demanded equity. It was at this time that Egypt was trying to formulate a new legal regime with Sudan for use of the Nile’s waters. The motivation for the new legal regime was brought about primarily by the


29 In November 2005, Sudan’s Vice President Ali Osman Muhammad Taha stated in a lecture at the University of Cairo that a ‘golden rule’ existed between Egypt and Sudan whereby the peace and prosperity of one country would be the peace and prosperity of the other.
demands of the financiers of the Aswan Dam for a legal agreement that would compensate the tens of thousands of Sudanese who would be displaced by the Dam’s reservoir. The Aswan Dam’s construction also necessitated the formulation of a new allocation regime with the newly independent Sudan in light of the Dam’s construction.

In November 1958 General Ibrahim Abboud, a Sudanese officer who had served in the Egyptian army prior to Sudan’s independence, took over power in a bloodless coup. In November of the following year the 1959 Agreement was adopted. The Agreement became a focal point for much social agitation. The decision to agree to the 1959 Agreement was hugely unpopular in Sudan because the Agreement allowed for the inundation of the historically important Sudanese city of Halfa and the displacement of at least 50,000 of its inhabitants and the inhabitants of its environs. The Agreement’s inequity in its allocation of water between Sudan and Egypt was also vocally criticised by many politicians during that period and has been more subtly criticised ever since.

The Agreement allowed for the construction of the Aswan Dam, which has reaped many benefits for Egypt’s population including electrification, prevention of flooding and control of water for irrigation during drought periods. However, for the Sudanese the Agreement was arguably of no developmental benefit. Although a much larger allotment of water was granted to Sudan by virtue of the 1959 Agreement, Sudan did not receive any electricity from the Dam and the re-settled Sudanese at New Halfa in North-Eastern Sudan are, and have been, economically and developmentally worse off than they were in Halfa.

Notwithstanding this historical chronology of the 1959 Agreement and its effects, the Agreement obligates Sudan under Public International Law and, despite any misgivings Sudanese politicians may have regarding it, they have in a spirit of pragmatism accepted it. The Sudanese acceptance of the 1959 Agreement should not suggest that there is no desire for the Agreement’s expansion, consolidation or alteration. Sudan’s vote in favour of the UN Watercourses Convention, as shall be explored in the next section, offers sufficient evidence to suggest that there is a Sudanese vision for a newer and more inclusive type of agreement.

4. Sudan: a hydro-political reappraisal

This section shall examine Sudan’s riparian position and apply the Framework of Hydro-hegemony to Sudan. It shall also examine the nature of the low-intensity conflict on the Nile Basin from Sudan’s perspective as well as re-examining Sudan’s power relations with two of its neighbouring Nile riparians.

4.1. Sudan’s precarious riparian position

A downstream riparian is dependent on the freshwater resources that enter its territory from other states. This dependence for water is the dynamo that drives the hydro-politics of downstream riparians. Keeping this in mind, the hydro-political categorisation of Sudan as a downstream riparian has various justifications. A principal reason why Sudan has been hydro-politically categorised as downstream is the 1959 Agreement which binds Sudan and Egypt, to the exclusion of the other Nile riparians who are all upstream. The Agreement also creates a body; the Permanent Technical Joint Committee which is
composed of engineers from both countries, whose role is to oversee the Agreement’s practical functioning as well as having a predetermined policy and stance of unanimity as regards negotiations with other Nile riparians as set out in the Agreement.

Another reason for the hydro-political categorisation of Sudan as a downstream state is based on the hydro-geological fact that more than 70% of the Nile’s water originates in Ethiopia as opposed to Sudan. Whereas this cannot be disputed, there are many reasons that substantively challenge Sudan’s hydrological categorisation as a typical downstream riparian. The River Nile that forms in Khartoum is made up of many rivers that traverse the length of Sudan, Sudan’s Nile tributaries receive a noteworthy amount of rain within the country and the River Nile’s mouth pours into the Mediterranean Sea hundreds of thousands of kilometres beyond Sudan’s political borders. It is therefore difficult to justify Sudan’s categorisation as a downstream riparian, especially if it is to be treated in the same vein as Egypt, which receives virtually no rainfall and has only one river basin, the River Nile that commences in Khartoum and ends in Egypt’s delta.

4.2. Sudan under the Hydro-Hegemony Framework

The definition of hegemony and subsequently hydro-hegemony that shall be used in this paper is the dominative form of hegemony (Zeitoun & Warner, 2006). Specifically, it is based on the definition of hegemony provided by Viotti and Kauppi:

‘Hegemony—Relations of dominance as when a major power exercises hegemony over countries within its sphere of influence... An alternative characterization reflecting pre-eminent position for a state, but not necessarily implying dominance, is to refer to it as a leader exercising leadership of other states within its sphere.’

By Viotti and Kauppi’s definition, Egypt can be categorised as the Nile Basin’s hydro-hegemon for a number of reasons. The most important of these is the 1959 Agreement between Egypt and Sudan which gives Egypt 75% of the annual flow (55.5 bm3/yr). As such, Egypt is in consolidated control of the waters of the Nile, not through riparian position, but through the legally binding and geo-politically compulsive nature of the 1959 Agreement which translates into a negative-sum, or at best neutral, form of...
hegemony. There are many other reasons why Egypt can be categorised as the Nile Basin’s hegemon: Egypt has the highest GDP, the largest army and the largest storage dam amongst Nile riparians. Egypt has a high level of geo-strategic importance that is manifested in its key position in the Middle East Peace Process and its strategic relations with the United States of America. Egypt also leads the other Nile riparians in its expertise in water resource management and there is a disproportionate prevalence of its citizens or individuals of Egyptian origin in many of the world’s leading water resources organisations and the NBI.

The 1959 Agreement fits into the category of a normative, compliance-producing mechanism, as cited from Lustick (see Zeitoun & Warner, 2006). The 1959 Agreement legally entrenches Egypt’s right to a large quantified share of the Nile’s waters. It is worth reiterating that Sudan’s involvement in the 1959 Agreement and the allocation of Nile waters that it receives by virtue of the Agreement has caused commentators to hydro-politically categorise it as a downstream riparian.

As far as Sudan is concerned some of the strategies and tactics used by Egypt to achieve consolidated control over the Nilotic water resources that it shares with Sudan have recently become less significant factors (Figure 3)\textsuperscript{31}. Sudan’s emergence as a petroleum-exporting country has meant that Egypt’s experienced financial mobilization and international support are less effective strategies. Sudan’s oil-importing partners, namely China, are willing to secure financing and credit for Sudan’s hydro-projects such as the Merowe and Kajbar Dams. The strategy of time manipulation is linked to the strategies of financial mobilization and international support. In the Nile Basin most riparians do not have strong enough economies to attract major investment in hydro-projects. In such a case the hydro-hegemon is free to develop its own water resources whilst manipulating time through a negative utilisation of the strategies of financial mobilization and international support in its favour, and against the interests of other riparians. As regards Sudan, due to Sudan’s economic empowerment, time manipulation is a less significant strategy employed by Egypt. Nonetheless, the factors that are significant in Egypt’s strategy to achieve consolidated control over its shared water resources with Sudan are resource capture and international treaty. The physical reality of the Aswan Dam and the mechanisms set by the 1959 Agreement towards effectuating the allocation of waters between Egypt and Sudan are a tangible hydrological and hydro-political reality. In 2009 the 1959 Agreement will have been in uninterrupted operation for a period of 50 years and the 1959 Agreement and similar international treaties does not accommodate any opt-out clauses. As far as the strategies of human capital and knowledge construction are concerned, these two strategies have become less effective in achieving Egypt’s consolidated control over its shared water resources with Sudan, because an oil-rich Sudan can buy international expertise. At the level of political discourse, Egypt’s Nilotic water resources have been made into a highly securitized issue. On the one hand this is understandable due to Egypt’s high population and high dependence on the Nile. However, some of the strategies utilised by Egypt to achieve consolidated control nullify the need for such high securitization of the Nile’s waters discourse. International treaty, international support and human capital can all be employed by Egypt in the event of a threat to the flow of water that reaches it from upstream riparians.

On face value the hydro-political categorisation of Sudan as downstream, along with Egypt, might seem to be logical based on the inference that Sudan is a content beneficiary of the 1959 Agreement,\textsuperscript{31} It is interesting to note that, in this figure, Sudan is only featured through the 1959 Agreement, and more specifically through the provision in the agreement that grants Egypt 50% of any additional flow that is accrued from the construction of the canals from South Sudan’s swamps, into the Nile. As such, this figure highlights the extent of Egypt’s hydro-hegemony and the notable lack of tangible involvement and benefit of Sudan.
because the Agreement is still functioning and the Agreement was entered into by Sudan as an independent State. However, the existence of the 1959 legal regime should not obscure its skewed nature, which is in favour of Egypt, as well as hydro-political sentiments in Sudan that would like a more equitable legal regime to be agreed upon by Nile riparians. The hydro-political categorisation of Sudan as a downstream riparian might also stem from Egypt’s hegemony over Sudan when Sudan was ruled under the Anglo-Egyptian condominium between 1899 and 1956 and through Egypt’s intermittent political involvement in Sudanese affairs since 1956.

If one can ignore the military and administrative dominance that Egypt exercised over Sudan during the condominium, a tenuous case can be made that Egypt has also historically had a positive hegemony over Sudan that has been influence- and leadership-based, as opposed to being coercive and dominant. In spite of the colder stances towards Egypt that were taken up by the Sudanese Umma Party which had a strong backing in the past, most of Sudan’s post-independence politicians and administrators, many of whom are still active, have ties with Egypt based on education or training. These types of ties have significantly decreased, particularly amongst the contemporary generation during the past two decades. However, a special relationship persists between Sudan and Egypt that is based increasingly on geopolitical realism as well as historical ties.

4.3. Applying the water event intensity scale

The nature of the low-intensity conflict on the Nile from Sudan’s perspective merits examination. Sudan’s relations with its neighbouring Nile riparians are a good indicator for gauging Sudan’s policy
objectives regarding use of the Nile’s water. Political events shall be used as factors in Yoffe’s Water
Event Intensity Scale (Figure 4) to gauge Sudan’s hydro-political relations. Sudan’s relations with its
six neighbouring Nile riparians oscillate between 2: Official Verbal Support of goals, values or
regime and 6: Major Strategic Alliance (International Freshwater Treaty). Sudan’s relations with its
neighbouring Nile riparians extend back into history for thousands of years due to the fact that many
of Sudan’s tribes and ethnic groups straddle the borders of its neighbouring riparians\(^\text{32}\). It is worth
noting that Sudan is emerging from the past decade which was the worst period in its modern
history in terms of its foreign relations with its neighbours and the international community at large.
Sudan’s foreign relations have vastly improved since 2000 and particularly after the signing of the
CPA in 2005.

On the Water Event Intensity Scale Sudan’s relations with its neighbouring Nile riparians vary. On
one end of the scale Sudan’s relations with the Democratic Republic of the Congo have been scored at 2:
Official Verbal Support of goals, values or regime.

Sudan’s relations with Eritrea can be gauged at 5: Strategic Support. This is manifested by Eritrea’s
hosting of Sudan’s peace talks with the Sudanese Eastern Front.

Sudan’s relations with Ethiopia are also at 5: Military, Economic or Strategic Support. This is
manifested through Ethiopia’s import of Sudanese oil, Sudan’s part-financing of the Kara Dobe Dam in
Ethiopia\(^\text{33}\) and Sudan’s hosting of the Somali peace talks. The return by Ethiopia to Sudan of agricultural
land adjacent to Gadarif State that was administered by Ethiopia is noteworthy as is the 1991 Sudan–
Ethiopia Agreement\(^\text{34}\) which commits Sudan and Ethiopia to ‘the principle of equitable utilisation of the
waters of The Blue Nile and Atbara River’.

Sudan, and particularly South Sudan, enjoys relations with Kenya and Uganda that correspond with 5:
Military, Economic or Strategic Support. The high level of relations between Sudan, Kenya and Uganda is
due to their support for the Sudan Peoples’ Liberation Movement, and Kenya’s support for and hosting of
Sudan’s peace talks. South Sudan’s hosting of Uganda’s peace talks between the Ugandan Government
and the Lord’s Resistance Army is of particular significance.

Sudan’s relations with Egypt fall in between 6: Major Strategic Alliance (International Freshwater
Treaty) and 7: Voluntary Unification into one nation; the former is reflected in the 1959 Agreement
whereas the latter is only very partially evidenced in the reciprocal privileges and rights of free
movement, ownership, employment and residence granted to citizens of both countries\(^\text{35}\).

In spite of the relations between Nile riparians that are generally good, and Sudan’s relations with
its neighbouring Nile riparians that are generally very good, a hydro-political schism persists in the

\(^{32}\) Some of the tribes and ethnic grouping that Sudan shares with its neighbouring Nile Riparians are: the Nubians, Abaabda and
Bishairiyeen between Sudan and Egypt, the Beja, Rashaida and Bani Aamer between Sudan and Eritrea, the Hamar-Banna
(Sidamo) between Sudan and Ethiopia, the Azande between Sudan and the Democratic Republic of the Congo, and the Madi
and Acholi between Sudan and Uganda.

051004/2005100427.html} (last visited 1 November 2004).

\(^{34}\) Agreement between Republic of Sudan and the Federal Democratic Republic of Ethiopia, 1991, document deposited at the
Sudan Foreign Ministry, copy available with author.

\(^{35}\) The Parliaments of Egypt and Sudan have ratified the Four Freedoms Agreement which guarantee reciprocal freedom of
movement, work, ownership and residence for citizens of both countries. Cairo, Khartoum probe implementation of Four
April 2004).
Nile Basin due to the dissatisfaction voiced by certain southern upstream Nile Riparians with the 1959 Agreement and its perceived hydro-hegemonic discourse\(^\text{36}\).

Sudan therefore falls into a position where it is the junior, observing partner in a hydro-hegemonic discourse. Egypt, the hydro-hegemon, has consolidated control over the Nile’s waters through the 1959 Agreement which grants it the lion’s share of allocated water. The dissatisfaction of upstream Nile riparians with the contemporary legal regime that governs use of the Nile’s waters translates into low-intensity conflict. And the form of hydro-hegemony that Sudan within the Nile is involved with is negative-sum with no evidence of tangible projects that have provided equitable, or even mutual benefit (Figure 5).

\(^{36}\) This is the official policy, as stated by the Ministers entrusted with water resources in both Tanzania and Kenya. ‘Tanzanian Water and Livestock Development Minister Edward Lowassa said the country’s founding president, Julius Nyerere, had told the United Nations in 1962 he rejected the Nile Waters Agreement and that position still held...This is still the official stand of the government today on this treaty’. Lowassa added that Tanzania would continue using water from Lake Victoria for domestic purposes and livestock: ‘We are instead going to continue dialogue with Nile Basin member countries on equitable use of the natural water resource.’ Moreover construction by a Chinese company of a pipeline is underway in Tanzania that transports water from Lake Victoria to the semi-arid regions of Shinyanga and Kahama. This is in contravention of The 1929 Agreement in that Egypt’s prior approval was not sought. See Mail\&GuardianOnline Tanzania says it’s not bound by Nile water treaty 16 Feb. 04, available at: http://www.mg.co.za/articlePage.aspx?area=breaking_news/breaking_news_africa&articleId = 42626 (last visited 28 April 05).

Ugandan Parliamentarians have also voiced discontent over it. An example of a Ugandan position which is at loggerheads with the Nile agreements is that of Ugandan MP Amon Muzoora. ‘Ugandan MP Amon Muzoora in 2002 proposed a motion in parliament for Uganda to renounce the pre-independence Nile water agreements, and made claims for annual compensation of some US $1.2 million.’

4.4. Applying the 'pillars of hydro-hegemony'

Using Naff and Matson’s Power Ratio (1984) as quoted in Mendzini (2001, p. 14) and Zeitoun & Warner (2006) Sudan scores highly on the three main pillars of the Power Ratio as compared to two of its neighbouring Nile Riparians, Egypt and Ethiopia. These are represented in Figure 6.

On the Riparian position pillar, Sudan’s midstream position automatically puts it at an advantage over downstream Egypt and a disadvantage as compared to upstream Ethiopia as well as the equatorial Nile riparians. However, the possibility to canalise marsh and swampland water into the Nile, thus increasing the Nile’s flow, is only possible in South Sudan. Sudan is therefore not a typical midstream riparian as it enjoys the unique hydrological conditions which allow for augmentation of the Nile’s flow, which in turn increases its score on the hydrology pillar.

On the power: structural and bargaining pillar Sudan’s main strength rests with its recent economic empowerment. Sudan has historically been more economically prosperous than Ethiopia and less economically prosperous than Egypt. However, since Sudan became an oil exporter in 1999, Sudan’s creditworthiness has increased and the undertaking of major projects such as the Merowe Dam has become possible. It is worth noting that Sudan is massively under-explored for hydrocarbons and is expected, according to modest predictions, to become an important medium-sized international oil-exporting country. As such, Sudan’s current surge in growth has the potential to continue for some years. Egypt’s main strength on the power pillar is also its economic clout especially as regards mobilising international funds, which successfully occurred during the construction of the Aswan Dam. Ethiopia’s main strength on the power pillar is its moral case for a stake in the waters of the Nile in order to meet the food security needs of its burgeoning population and to alleviate poverty in Ethiopia. Sudan’s second most important factor on the power pillar is the issue of time. As per the 1959 Agreement, Egypt and Sudan, as represented in the PJTC, have a predetermined policy and stance of unanimity as regards negotiations with other Nile riparians on how to deal with the 1959 regime. Since 1959 no significant
legal breakthrough has been made between Egypt and Sudan and the other Nile riparians as regards expanding or amending the 1959 regime. This has given Sudan ample time to develop its Nilotic water resources and—despite the existence of the NBI?—an inclusive Nile Basin legal regime does not seem to be imminent. As such, in the current conditions Sudan has the factor of time in its favour as regards developing its Nilotic water resources. Issue-linkage is an important source of bargaining power for Sudan because it reflects Sudan’s ‘midstream philosophy’ that allows it to balance out commitments that can be seen to be diametrically opposed. On the one hand, Sudan commits itself to allowing Egypt the amount of water that its people need, as set out in the 1959 Agreement. On the other hand, Sudan also commits itself to ‘equitable’ sharing of its transboundary waters with Ethiopia as per the 1991 Agreement. Sudan then votes in favour of the UN Watercourses Convention—thus recognising ‘reasonnable and equitable utilisation and participation’ as the optimum method of reconciling competing interests in the Nile Basin and Sudan finally recognises the right of the peoples of its marginalized regions to development as per the new Sudanese Constitution. Whilst these commitments may seem to

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3. The sharing and allocation of the wealth of the Sudan shall be based on the premise that all parts of the country are entitled to development.

Accordingly, wealth emanating from the resources of the Sudan shall be allocated in a manner to ensure that the quality of life, dignity and living conditions of all citizens are promoted without discrimination on grounds of gender, race, religion, political affiliation, ethnicity, language, or region;

7. Revenue sharing shall reflect a commitment to devolution of powers and decentralisation of decision-making in regard to development, service delivery and governance.
be impracticable and idealistic, in the polarised and static low-intensity upstream-downstream conflict on the Nile, the ‘midstream philosophy’ warrants further examination as a possible means of bridging the gap between upstream and downstream Nile riparians.

On the exploitation potential pillar, Sudan’s credentials, particularly as regards technical capacity, have been given a boost by the ongoing construction of the Merowe Dam. Sudan’s infrastructure is still very poor, especially in the south. As such, Sudan’s exploitation potential is greater than that of Ethiopia but less than that of Egypt.

Sudan’s strong historical and ethnic ties with its neighbouring Nile riparians and its good political relations with their governments consolidates its midstream position within the Nile. Sudan’s willingness to part with Egypt on crucial issues such as self-determination of the south and the need for ‘equitable’ sharing of its transboundary water resources with its neighbouring riparians reveals what can be considered a ‘midstream philosophy’. Even though Sudan and Ethiopia are in no foreseeable position to develop their shared water resources in a manner that might threaten the 1959 regime, the 1991 Sudan–Ethiopia Agreement is of great significance if only as a reflection of Sudan’s policy objective as one that seeks to equitably share its water resources with Ethiopia. Sudan is in a position where it benefits from the development of its major river basins, which are all connected to the Nile and are transboundary, whether this development occurs within its territory or in the territory of its neighbouring Nile riparians, provided that transboundary coordination takes place. A potential example is the Blue Nile State in Sudan which has been detrimentally affected by the civil war and is constitutionally considered to be a ‘special region’ as per the CPA. The Blue Nile River passes through the Blue Nile State from the Benishangul-Gumaz region in Ethiopia. Joint development of the Blue Nile between the Blue Nile State and the Benishangul-Gumaz region could potentially alleviate the poverty of the inhabitants of both regions, address the problems of malnutrition, illiteracy and inadequate health services and thus decrease the level of marginalisation of both regions and contribute to the political stability and overall development of both Ethiopia and Sudan. Similar examples can be given for Sudan’s states that border Eritrea, Kenya, Uganda and the Democratic Republic of the Congo.

It is not unforeseeable for an independent South Sudan to join its neighbouring riparians in a call for an overhaul of the 1959 Agreement. The existence of an independent South Sudan could also stall the Jonglei Project and similar projects that are capable of augmenting the Nile’s flow. As such, a united, peaceful Sudan is the key riparian that might be capable of diffusing the conflict of interests caused by Hydro-hegemony and by Counter-hydro-hegemony by virtue of Sudan’s hydrological situation and multi-ethnic nature.

5. Conclusion

This paper has evaluated Sudan according to the Framework of Hydro-Hegemony. The notion that Sudan is a downstream riparian has been set aside in favour of an evaluation of Sudan’s position that reflects its hydrology, geography, ethnic make up and history, which strongly suggests that Sudan is following a ‘midstream doctrine’. The analysis was carried out in light of recent politico-economic developments in Sudan and in tandem with Sudan’s ‘midstream policy’.

The second section reviewed new factors that warrant a re-evaluation of Sudan’s traditional standing in the hydro-political literature. It was suggested that the extent to which Sudan is hegemonised has decreased due to Sudan’s recent petroleum-based economic empowerment, and the self-determination
clause in Sudan’s Comprehensive Peace Agreement. Sudan’s relations with Egypt and the 1959 Agreement were also examined from a Sudanese perspective.

In the third section of this paper, Sudan’s political relations with its neighbouring Nile riparians were found to be at worst good and at best excellent. Sudan was also found to have a special type of relationship at the grassroots level with its neighbouring Nile riparians due to the ethnic groupings that straddle the borders of Sudan and its neighbouring Nile riparians. Sudan’s power was re-evaluated according to Naff and Matson’s Power Ratio, with the finding that Sudan’s conventional mid-stream position was augmented by the existence of the swamplands of South Sudan, from which additional water may be canalised into the Nile River system. Sudan’s exploitation potential was also found to have increased since Sudan became an oil-exporting country and started work on the Merowe Dam.

The changeable nature of geo-politics and the effect of oil on the economy of riparian states was not found to constitute a real and foreseeable challenge to Hydro-hegemony as in the case of Sudan. However, even if Sudan were to become two sovereign states, the reasons for adopting the ‘midstream doctrine’ would persist for both North and South Sudan. The role that the ‘midstream doctrine’ may have in bridging the downstream–upstream gap is of particular academic interest.

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