The Nile Basin: Towards Cooperation and A New Legal Regime

S. Salman

September 28, 2017
Structure of the Presentation

- Political Geography of the Nile
- The Colonial Era Treaties
- The 1990s Agreements
- Cooperative Framework Agreement (CFA)
- Agreement on DoP on the GERD
  - Khartoum Document
- Conclusion
  - Sharing benefits not water: Areas for cooperation
  - Disentangling the CFA Gordian Knot
Political Geography of the Nile Basin
- World’s longest river (6,650 km);
- 2nd largest lake; Largest swamps
- Oldest and largest dams
- Oldest and most controversial treaties
- Cradle of Ancient civilizations
- 250 m people (300 m by 2030)
- 10% of the African Continent
- Ethnic, religious and linguistic diversity

**Shared by 11 countries**

Burundi  D.R. Congo  Egypt  
Ethiopia  Eritrea  Kenya  
Rwanda  South Sudan  Sudan  
Tanzania  Uganda

**Region of Extremes**

- Poverty: 9 of 15 poorest in world
- High variability & climate change
- Landscape vulnerability
- Conflict: 10 countries since 1994
- Flow pattern of Blue & White Nile
• Small Flow System-wide (~ 84 bcm/yr)
  2% Amazon; 6% Congo;
  12% Yangtze; 17% Niger;
  25% Zambezi –Recent Increase 109 bcm

• Very Limited Infrastructure….
  ▪ 10% HEP potential developed
  ▪ 15% population with electricity
  ▪ < 10% irrigable land irrigated
    (excluding Egypt & Sudan)

Other Characteristics of Variability of Nile Basin

⇒ Ethiopia: tributaries contribute 86-95% flow at Aswan
⇒ Egypt: minimal rain & no flow additions
  90% of population on 5% of Nile land
  Uses about 86% of Nile waters
⇒ High equatorial flows lost in Sudd, about 66%; White Nile contributes 14%
⇒ Sudan and South Sudan: 65% basin
  Now about 45%, 20%
  Confluence of major tributaries
The Nile Basin

- Limited flow of 84-109 BCM
  - Increasing demands due to population growth,
  - Current allocation of Nile waters
  - Climate change and environmental degradation
  - Major differences over the Nile Basin Cooperative Framework Agreement (CFA)
  - Unilateral Development Plans - dams
  - The Ethiopian Grand Renaissance Dam (GERD)
## Contribution of Each of the Nile Main Tributaries

<table>
<thead>
<tr>
<th>River</th>
<th>Flow (BCM)</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blue Nile</td>
<td>50</td>
<td>59%</td>
</tr>
<tr>
<td>White Nile</td>
<td>11.5</td>
<td>14%</td>
</tr>
<tr>
<td>Sobat</td>
<td>11.5</td>
<td>14%</td>
</tr>
<tr>
<td>Atbara</td>
<td>11</td>
<td>13%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>84</strong></td>
<td><strong>100%</strong></td>
</tr>
<tr>
<td>Country</td>
<td>Country Area</td>
<td>NB Area</td>
</tr>
<tr>
<td>-----------</td>
<td>--------------</td>
<td>-----------</td>
</tr>
<tr>
<td>Sudan</td>
<td>2506000</td>
<td>1933300</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>1104000</td>
<td>356900</td>
</tr>
<tr>
<td>Egypt</td>
<td>1001000</td>
<td>277500</td>
</tr>
<tr>
<td>Uganda</td>
<td>241000</td>
<td>238900</td>
</tr>
<tr>
<td>Tanzania</td>
<td>945000</td>
<td>120300</td>
</tr>
<tr>
<td>Kenya</td>
<td>580000</td>
<td>50900</td>
</tr>
<tr>
<td>Congo</td>
<td>2345000</td>
<td>21700</td>
</tr>
<tr>
<td>Rwanda</td>
<td>26000</td>
<td>20800</td>
</tr>
<tr>
<td>Burundi</td>
<td>28000</td>
<td>13000</td>
</tr>
<tr>
<td>Eritrea</td>
<td>118000</td>
<td>3500</td>
</tr>
<tr>
<td>Total Area</td>
<td>8894000</td>
<td>3036800</td>
</tr>
</tbody>
</table>
# Riparians’ Stakes and Interests

<table>
<thead>
<tr>
<th>Stake</th>
<th>Position</th>
<th>Interest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Egypt</td>
<td>v.high ‘acquired rights’, existing uses, existing agreements</td>
<td>water security, more water</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>v.high ‘absolute sovereignty’, equity</td>
<td>hydropower, irrigation, investment</td>
</tr>
<tr>
<td>Sudan</td>
<td>v. High ‘acquired rights’, existing rights, existing agreements</td>
<td>1959 quota, Blue Nile regulation</td>
</tr>
<tr>
<td>South Sudan</td>
<td>v. High Need for a share of Nile waters</td>
<td>Hydropower; some irrigation</td>
</tr>
<tr>
<td>Uganda</td>
<td>High against 1929 agreement; equity</td>
<td>hydropower, some irrigation</td>
</tr>
<tr>
<td>Burundi</td>
<td>medium against existing agreements; equity</td>
<td>hydropower, investment</td>
</tr>
<tr>
<td>Kenya</td>
<td>medium against 1929 agreement; equity</td>
<td>some irrigation, investment</td>
</tr>
<tr>
<td>Rwanda</td>
<td>medium against existing agreements; equity</td>
<td>hydropower, agric, investment</td>
</tr>
<tr>
<td>Tanzania</td>
<td>medium against 1929 agreement; equity</td>
<td>some irrigation, water transfer, investment</td>
</tr>
<tr>
<td>DRC</td>
<td>low Congo 20x Nile flow</td>
<td>regional stature, connectivity</td>
</tr>
<tr>
<td>Eritrea</td>
<td>low observer</td>
<td>Some irrigation, boundaries</td>
</tr>
</tbody>
</table>
Existing Nile agreements characterize colonial legacy, are viewed as rights in perpetuity by some, contested/abrogated by others; 1902, 1902; 1929 & 1959 treaties central to current concerns of parties

<table>
<thead>
<tr>
<th>Date</th>
<th>Parties</th>
<th>Name of Treaty</th>
<th>Treaty Objective/Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>1891</td>
<td>G.B. Italy</td>
<td>Protocol for spheres of influence in E. Africa</td>
<td>Italy agreed not to construct any works on Atbara that would affect flow into Nile (main concern: irrigation works)</td>
</tr>
<tr>
<td>1902</td>
<td>GB Ethiopia</td>
<td>Treaty on Frontiers between Anglo-Egyptian Sudan, Ethiopia, &amp; Eritrea</td>
<td>Ethiopia agrees not to interfere with flow of Nile without consulting Great Britain &amp; Sudan.</td>
</tr>
<tr>
<td>1906</td>
<td>GB Congo</td>
<td>Agreement on spheres of influence in E. &amp; C. Africa</td>
<td>Congo agreed not construct any work which would diminish flow into Lake Albert, unless in agreement with Government of Sudan.</td>
</tr>
<tr>
<td>1925</td>
<td>GB Italy</td>
<td>Exchange of Notes re. Concessions for Barrage at Lake Tana…</td>
<td>Italy recognized prior hydraulic rights of Egypt &amp; Sudan &amp; agrees not to construct on headwaters of Blue Nile &amp; White Nile &amp; their tributaries works which might modify Nile flow</td>
</tr>
<tr>
<td>1929</td>
<td>GB Egypt</td>
<td>Exchange of Notes re. Use of the Waters of the River Nile for irrigation</td>
<td>Egypt claims ‘natural &amp; historic rights’ in Nile waters; without agreement of Egypt, no measures to be taken on Nile &amp; its tributaries in Sudan or in countries under British administration (Kenya, Tanganyika &amp; Uganda)</td>
</tr>
<tr>
<td>1934</td>
<td>GB Belgium</td>
<td>Agreement re. Water Rights between Tanganyika &amp; Rwanda-Burundi</td>
<td>Regulates utilization of boundary waters, notification of projects, water quality &amp; navigation</td>
</tr>
<tr>
<td>1949 &amp; 1952</td>
<td>GB Egypt</td>
<td>Exchange of Notes re. Construction of Owen Falls Dam (Uganda)</td>
<td>Uganda to build hydroelectric dam that “did not adversely affect discharges of water passed through”; reconfirms curves agreed in 1929; resident Egyptian engineer at Owen Falls; (1952) Egypt agrees to bear part of cost of dam to raise L. Victoria level for water storage</td>
</tr>
<tr>
<td>1959</td>
<td>Egypt Sudan</td>
<td>Agreement for the Full Utilization of the Nile Waters</td>
<td>Parties agree to: allocate of full yield (55.5 bcm/year Egypt; 18.5 bcm/year Sudan); Permanent Joint Technical Commission; have unified view for Nile negotiations with others</td>
</tr>
<tr>
<td>1977</td>
<td>Rwanda Tanzania Uganda</td>
<td>Agreement to Establish Kagera River Basin Organization</td>
<td>Establishment of KBO as regional integration and development organization (now defunct)</td>
</tr>
<tr>
<td>1993</td>
<td>Egypt Ethiopia</td>
<td>Framework for General Cooperation</td>
<td>Confirm intention to cooperate on Nile Waters &amp; agree to refrain from engaging in any activity that may cause appreciable harm to interests of other</td>
</tr>
<tr>
<td>2003</td>
<td>Kenya Uganda Tanzania</td>
<td>Protocol for Sustainable Development of Lake Victoria Basin</td>
<td>Parties agree to cooperate on sustainable development and management of the basin. Establishment of the Lake Victoria Basin Commission</td>
</tr>
</tbody>
</table>
Colonial Era Treaties

1902 Treaty - Great Britain & Ethiopia
- Borders delimitation between Sudan & Ethiopia
- Gave Britain veto power over projects on E. Nile
- Egypt claims to have succeeded to this treaty
- Rejected by Ethiopia

1929 Agreement – Great Britain & Egypt
- Allocation of Nile waters Egypt & Sudan
- Gave Egypt veto power over projects in Sudan, Uganda, Kenya & Tanganyika
- Rejected by three countries - Nyerere Doctrine
The 1959 Nile Waters Agreement

**Bilateral Treaty between Sudan and Egypt**

- Allocation of entire Nile flow at Aswan (84 bcm) between the two countries
- Other Nile countries claims to Nile waters to be reviewed by Egypt and Sudan
- Who will decide if and how much to be allocated to any such country
- If any amount is allotted, joint committee would supervise such amount not exceeded
- Future additions to Nile waters from swamps of South Sudan to be divided between two states
The 1990s Agreements

- 1991 Ethiopia Sudan Peace & Friendship – Khartoum Declaration
  - Para 4.1.1 to 4.1.7- Minutes of Appreciation of Principles & needs for uses of Nile waters
  - Recognition of Nile as a common resource
  - Equitable utilization & no harm obligation
  - Need for a joint technical committee

- 1993 Ethiopia Egypt Framework for regional cooperation
  - Uses of Nile waters to be worked out by experts
  - Obligation against causing harm
  - Need for mechanism for periodic consultation
The Nile Basin Initiative (NBI) & The Nile Basin Cooperative Framework Agreement (CFA)
The NBI

Born Officially on February 22, 1999 in Dar-es-salaam, Tanzania

Ministers of Water Resources of Nine riparian countries signed Minutes of the meeting establishing NBI

Vision – “to achieve sustainable socio-economic development through equitable utilization of, and benefit from, the common Nile Basin water resources.”

Recognition of the rights of all states on Nile

Task: conclude work on an inclusive treaty
NBI Institutional Set-Up

NILE Council of Ministers
Nile-COM

Nile Technical Advisory Committee
Nile-TAC

NBI Secretariat
Nile-SEC

NBI SECRETARIAT
Entebbe

NELSAP-CU
Kigali

ENTRO
Addis

Egypt, Ethiopia, Sudan

Burundi, DR Congo, Egypt, Kenya, Rwanda, Sudan, Tanzania, Uganda
Negotiations on CFA started in 1999

CFA Based largely on UN Convention

Deadlocked in 2009 over three main issues

- Water security - Existing uses and rights of Egypt & Sudan
  - Basically the 1902, 1929 & 1959 treaties
- Prior notification on projects & planned measures
- Amendment to CFA: consensus or majority
Current Status of the CFA

- Six countries signed the CFA in 2010
  - Ethiopia, Tanzania, Uganda, Kenya, Rwanda and Burundi
  - Vehemently opposed by Egypt and Sudan
  - Ethiopia ratified CFA in June 2013, Rwanda in August 2013, Tanzania in March 2015
  - South Sudan declared it supports CFA, but took no action
  - Democratic Republic of Congo undecided
  - The CFA needs ratification by six countries to enter into force
Signing the CFA in May 2010
The Grand Ethiopian Renaissance Dam (GERD)
History and developments of the GERD

- Earlier dams in Ethiopia on the Nile: Fincha, Tana Beles, Tis Abay, Tekeze
- Announcement made in March 2011
- Construction started in April 2011
  - Egypt was busy with January 2011 revolution
- Lies 20 km from Sudanese borders
- 170 meters in height
- Lake capacity: 74 BCM of water
  - Largest Dam in Africa
  - Tenth largest in the world
History and developments of the GERD

- Expected to be completed in 2017
- To generate 6000 megawatts of electricity
  - 16 turbines each 375 megawatts
  - First turbines expected to operate in 2017
  - Cost estimated as $5 billion
- Construction by Salini company of Italy
- Chinese building transmission lines
- Europeans providing mechanical equipment
- Funding from Ethiopia’s own resources and bonds issued to Ethiopians
The GERD January 2014
The GERD January 2015
GERD May 2016
Egypt and Sudan Reaction

- Egypt opposed vehemently the GERD
  - Decrease of water flow to Egypt
  - Decrease in irrigated area
  - Decrease in electricity at High Dam

- Sudan wavered between opposition and support
  - Finally formally supported the dam on 4th of December 2013 through President himself
  - A major shift away from Egypt, the first since 1959
  - Support of GERD by most Nile states
Benefits & Risks of GERD to Sudan

Benefits of GERD to Sudan:
- Trapping sediments, stopping floods, regulating flow round year, increased crop rotations
- Regulation of electricity generation, replenishment of groundwater
- Cheaper electricity, possible storage for Sudan

Risks
- Safety of the dam – only 20 km from borders
- Period in which Lake to be filled
- Erosion of river banks in Sudan because of decrease in sediments, decrease in fisheries
Egyptian government and opposition discussing GERD June 2013
International Panel of Experts

- Egypt demanded halt in construction of dam
  - Studies to be done by international experts
- Ethiopia refused halting construction
  - Panel did not ask for that – its mandate
  - Agreed to undertake studies by three parties
- Tripartite meetings in Nov, Dec 2013, January, August, September, October, 2014
- Breakthrough in 4th and 5th, 2014 meetings
  - Egypt dropped demand for halt of construction
  - 2 studies to be undertaken by international firm
International Panel of Experts

- Ethiopia proposed establishment of international Panel of experts to review possible negative effects of the GERD
  - Two from each Ethiopia, Egypt and Sudan, four from outside Nile basin countries

- Panel established in November 2011
- Submitted Report in May 2013
  - Three days after Ethiopia diverted Blue Nile
- Recommended 2 more in-depth studies
  - Reading of Egypt & Ethiopia of the Report
Report of the International Panel of Experts on the GERD
March 23, 2015 Agreement on GERD

DoP on the GERD Signed by three leaders in Khartoum on March 23, 2015

Consists of 10 points, 6 on international water law:

- Cooperation;
- Obligation not to cause harm;
- Principle of equitable & reasonable utilization;
- Exchange of data and information;
- Sovereignty, territorial integrity;
- Peaceful resolution of disputes
March 23, 2015 Agreement on GERD

- Consists of 10 points, 4 on the GERD
  - Principle of development, regional integration and sustainability – acceptance of GERD
  - Cooperation on management of the GERD
    - Agree on rules for first filling of reservoir
    - Agree on rules for annual operation of GERD
  - Priority for electricity sale to Egypt and Sudan
  - Principle of Dam safety

- Agreement is a major breakthrough
  - First trilateral agreement
  - Explicit acceptance of GERD by Egypt & Sudan
Signing the GERD Agreement,
Khartoum March 23, 2015
Signing the GERD Agreement, Khartoum March 23, 2015
Three leaders after signing DoP
Fourth tripartite meeting of both Ministers of Water Resources & Ministers of Foreign Affairs

In Khartoum December 27 – 28, 2015

Six ministers signed “Summary & Outcome of the Meeting (Khartoum Document)

Consists of six provisions

BRLi & Artelia to carry out the two studies

Technical team of three members from each country to help with studies
Conclusion

- Nile is a river of limited flow resulting in
  - Increasing competition and disputes
  - Unilateral development plans - dams
- Existing treaties have led to
  - monopoly of Nile waters by Egypt & Sudan
  - disputes & grievances
    • source for conflict instead of route for cooperation
- Major power shifts in the Nile Basin
  - CFA as an "African Peaceful Spring"
  - GERD sign of the leveling of the playing field
Conclusion

The CFA, GERD, DoP & Khartoum Doc. resulted in major shifts in positions.

Egypt & Sudan accepted:

-equality of all Nile states – the basic principle of international water law (IWL),
-Rights of other states to use Nile waters
-Equitable and reasonable utilization as the cardinal principle of IWL

Ethiopia accepted concept of notification

-Through International Panel
-Through trilateral national commission (TNC)
Conclusion

Benefits rather than water sharing

- Emphasis should be on sharing benefits not water – cooperation to harness
  - Ethiopia hydropower potential from Nile
  - Sudan irrigable lands
  - Lake Victoria Fisheries wealth
  - South Sudan livestock wealth
  - Egypt food industries capabilities

- This could pave the way for solving other differences; particularly over CFA
Conclusion

Disentangling CFA Gordian knot

- CFA to be amended to
  - Delete reference to water security
    - Rely instead on equitable and reasonable utilization and obligation against harm
    - With no reference to colonial era treaties
  - Include provisions on notification
    - Similar to provisions of UN Convention
    - With a clear understanding they apply to both downstream & upstream riparians
- Compromise position addressing both concerns
- Need political commitment, goodwill & cooperation
Thank You

salmanmasalman@gmail.com
www.salmanmasalman.org
Thank You

Salmanmasalman@gmail.com

www.salmansalamman
### Nile Basin Countries and the UN Watercourses Convention

<table>
<thead>
<tr>
<th>Country</th>
<th>For</th>
<th>Abstain</th>
<th>Against</th>
<th>Did Not Participate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burundi</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Congo (DR)</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Egypt</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Eritrea</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Ethiopia</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Kenya</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rwanda</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Sudan</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Tanzania</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Uganda</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>
Location of the GERD
Treaties or Disputes?

Legacies of Nile colonial treaties
- 1902 Nile Treaty – Britain and Ethiopia
- 1929 Nile Treaty – Britain and Egypt
- 1959 Nile Waters Treaty
  - Bilateral Treaty between Egypt and Sudan
  - For full utilization of the Nile
    - Dividing entire Nile flow between Egypt and Sudan
  - Recognizes other Nile states rights but gives Egypt and Sudan right to determine, allocate and supervise any amount of water allotted
International Panel of Experts

- Egypt demanded halt in construction of dam
  - Studies to be done by international experts
- Ethiopia refused halting construction
  - Panel did not ask for that – its mandate
  - Agreed to undertake studies by three parties
- Tripartite meetings in Nov, Dec 2013, January, August, September, October, 2014
- Breakthrough in 4th and 5th, 2014 meetings
  - Egypt dropped demand for halt of construction
  - 2 studies to be undertaken by international firm
Sisi and Halie Mariam in Malabo, Equatorial Guinea, June 26, 2014
Differences Over Two Studies

Differences emerged on studies

- Detailed ToR between three parties
- Role of each of the two consulting firms – French BRLi and Dutch Deltares
- Deltares rejected role as minor, withdrew in September 2015
- Rumors of Egypt withdrawal from DoP
- Series of trilateral meetings
- Finally two trilateral meetings in Dec 2015
- Ethiopia returned Blue Nile to its course December 25, 2015 (diverted May 28, 2013).
Egypt request for addition of two more bottom outlets in main dam; technical team to study; rejected in Jan by Ethiopia

Reconfirmation of commitment of three parties implement provisions of DoP

Commitment for regular tripartite meetings & on confidence building measures

Roadmap for carrying two studies

Contracts finally signed in Sept 2015

Studies to completed with 11 months
June 22, 2017 Nile Entebbe Summit
June 22, 2017 Nile Entebbe Summit

- Only three head of states attended
  - Egypt, Ethiopia and the host Uganda
  - Poor preparations – Agenda
  - Started at where they stopped in 2010
  - No new ideas
Conclusion

- Nile is a river of limited flow resulting in
  - Increasing competition and disputes
  - Unilateral development plans - dams
- Existing treaties have led to
  - monopoly of Nile waters by Egypt & Sudan
  - disputes & grievances
    - source for conflict instead of route for cooperation
- Major power shifts in the Nile Basin
  - CFA as an “African Peaceful Spring”
  - GERD sign of the leveling of the playing fields
Conclusion

- GERD
  - Is now a reality bolstered by two agreements
  - Should have been replacements of existing dams (Aswan High Dam, Roseiris & Merowe)
  - should have been a jointly owned and operated project by three countries

- Large areas for possible cooperation
  - hydropower, irrigation lands, fisheries, livestock, agricultural industries

- Cooperation is the only way for optimal utilization of shared watercourses
Thank You

salmanmasalman@gmail.com

www.salmanmasalman.org
Omo River
Netanyahu in Addis Ababa with Haile Mariam, July 2016
Possible Areas for Cooperation

- **Ethiopia**: Huge hydro-power potential
  - 45,000 megawatts; 30,000 from the Nile
  - Not water consuming
- **Sudan, South Sudan**: Huge agricultural lands
- **Lake Victoria**: Fish wealth
- **Egypt**: Industrial capabilities
- **South Sudan**: Swamps as a source for more water for the Nile; livestock wealth
- **Water harvesting/storage in upstream states**
- **Yet unilateral development plans is the norm**
Going with the Flow

The Nile is already dotted with dams. New projects could help spread the river’s wealth of water, but environmentalists fear ecological disaster.

**EGYPT**
Population: 74 million
GDP: $75.1 billion

Unlike other Nile states, Egypt has almost fully tapped the hydropower potential of the Nile. Opened in 1973, the 2,100-MW Aswan High Dam is currently the biggest on the river. An ambitious irrigation scheme to water some 220,000 hectares of land in the Toshka Irrigation Scheme is scheduled for completion by 2017. Further north, a series of barrages, most of them originally built by the British but many since updated, help provide much-needed power to Egypt. When it is completed, the Salam Canal will divert water from the Nile to the northern Sinai to make it habitable.

**SUDAN**
Population: 36 million
GDP: $13.6 billion

Many of the dams along the White and Blue Niles and the Atbara tributary in Sudan, built between the 1950s and ‘70s, are now sitting up. The 13-MW Khashm El Girba Dam has lost almost half of its capacity to siltation, as has the 15-MW Sennar Dam. The Sennar, the 280-MW Roseires Dam, currently Sudan’s biggest, was built for irrigation but converted to hydropower production. These dams will soon be dwarfed by the $1.8 billion Merowe Dam, which will produce 1,250 MW but will also put acres of agricultural land underwater, displace some 50,000 people, flood a trove of ancient Nubian artifacts and, environmentalists fear, change the local ecosystem forever. A 300-MW dam at Kajbar is also being built.

**SOUTH**

Soon after it crosses the border into Sudan, the White Nile disappears into the Sudd, a 130,000-sq-km swamp—the largest in the world. More than half the White Nile’s water is lost through evaporation or by being absorbed into thick aquatic vegetation and marshy soil. The Jonglei Canal, a joint Sudan-Egypt project to bypass the Sudd and use the water to irrigate thousands of acres of farmland, was begun in 1978 but stalled with the outbreak of civil war in Sudan in 1983. A peace deal signed in late 2004 could eventually restart the ambitious scheme.

**UGANDA**
Population: 29 million
GDP: $6.8 billion

Built by the British in the 1950s and extended in 2000, Owen Falls Dam has a 380-MW capacity, but generates much less due to hydraulic bottlenecks that occur when insufficient water gets through to turn all the turbines. Owen Falls will be joined in the next decade by a dam at Bujagali Falls, a few kilometers downriver. Costing around $450 million, Bujagali will provide 200 MW of power, but will also force the relocation of villagers and flood the Bujagali Falls, a popular tourist site. Uganda authorities also have plans for a 180-MW dam at Karuma, as well as other sites along the Nile.

**ETHIOPIA**
Population: 77 million
GDP: $12 billion

Tis Abay, a new 73-MW hydro plant just below the Blue Nile Falls, took Ethiopia’s power national power capacity to 170 MW three years ago; a $224 million, 188-m-tall dam at Tekeze on a tributary of the Atbara River being built by the Chinese firm responsible for much of China’s Three Gorges Dam will soon add 300 MW more. But it’s what comes next that could change Ethiopia and the Nile forever: the Blue Nile alone has the potential to generate some 30,000 MW of power for the nation, and officials have identified more than 100 sites for large-scale hydropower development schemes along the Nile and the country’s other rivers. Development will help power the country, but it will also cut the flow of water that reaches Sudan and Egypt, block sediment transfer, and require the relocation of thousands of people.
The Nile Basin Cooperative Framework Agreement (CFA)
Entebbe Agreement
## Existing Nile agreements characterize colonial legacy, are viewed as rights in perpetuity by some, contested/abrogated by others; 1902, 1929 & 1959 treaties are central to current concerns of all parties

<table>
<thead>
<tr>
<th>Date</th>
<th>Parties</th>
<th>Name of Treaty</th>
<th>Treaty Objective/Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>1891</td>
<td>G.B. &amp; Italy</td>
<td>Protocol for spheres of influence in E. Africa</td>
<td>Italy agreed not to construct any works on Atbara that would affect flow into Nile (main concern: irrigation works)</td>
</tr>
<tr>
<td>1902</td>
<td>GB &amp; Ethiopia</td>
<td>Treaty on Frontiers between Anglo-Egyptian Sudan, Ethiopia, &amp; Eritrea</td>
<td>Ethiopia agrees not to interfere with flow of Nile without consulting Great Britain &amp; Sudan.</td>
</tr>
<tr>
<td>1906</td>
<td>GB &amp; Congo</td>
<td>Agreement on spheres of influence in E. &amp; C. Africa</td>
<td>Congo agreed not construct any work which would diminish flow into Lake Albert, unless in agreement with Government of Sudan.</td>
</tr>
<tr>
<td>1925</td>
<td>GB &amp; Italy</td>
<td>Exchange of Notes re. Concessions for Barrage at Lake Tana…</td>
<td>Italy recognized prior hydraulic rights of Egypt &amp; Sudan &amp; agrees not to construct on headwaters of Blue Nile &amp; White Nile &amp; their tributaries works which might modify Nile flow</td>
</tr>
<tr>
<td>1929</td>
<td>GB &amp; Egypt</td>
<td>Exchange of Notes re. Use of the Waters of the River Nile for irrigation</td>
<td>Egypt claims ‘natural &amp; historic rights’ in Nile waters; without agreement of Egypt, no measures to be taken on Nile &amp; its tributaries in Sudan or in countries under British administration (Kenya, Tanganyika &amp; Uganda)</td>
</tr>
<tr>
<td>1934</td>
<td>GB &amp; Belgium</td>
<td>Agreement re. Water Rights between Tanganyika &amp; Rwanda-Burundi</td>
<td>Regulates utilization of boundary waters, notification of projects, water quality &amp; navigation</td>
</tr>
<tr>
<td>1949 &amp; 1952</td>
<td>GB &amp; Egypt</td>
<td>Exchange of Notes re. Construction of Owen Falls Dam (Uganda)</td>
<td>Uganda to build hydroelectric dam that “did not adversely affect discharges of water passed through”; reconfirms curves agreed in 1929; resident Egyptian engineer at Owen Falls; (1952) Egypt agrees to bear part of cost of dam to raise L. Victoria level for water storage</td>
</tr>
<tr>
<td>1959</td>
<td>Egypt &amp; Sudan</td>
<td>Agreement for the Full Utilization of the Nile Waters</td>
<td>Parties agree to: allocate of full yield (55.5 bcm/year Egypt; 18.5 bcm/year Sudan); Permanent Joint Technical Commission; have unified view for Nile negotiations with others</td>
</tr>
<tr>
<td>1977</td>
<td>Rwanda, Tanzania &amp; Uganda</td>
<td>Agreement to Establish Kagera River Basin Organization</td>
<td>Establishment of KBO as regional integration and development organization (now defunct)</td>
</tr>
<tr>
<td>1993</td>
<td>Egypt &amp; Ethiopia</td>
<td>Framework for General Cooperation</td>
<td>Confirm intention to cooperate on Nile Waters &amp; agree to refrain from engaging in any activity that may cause appreciable harm to interests of other</td>
</tr>
<tr>
<td>2003</td>
<td>Kenya, Uganda &amp; Tanzania</td>
<td>Protocol for Sustainable Development of Lake Victoria Basin</td>
<td>Parties agree to cooperate on sustainable development and management of the basin. Establishment of the Lake Victoria Basin Commission</td>
</tr>
</tbody>
</table>