

Global Water Condition and Transboundary Rivers

The Nile River Basin



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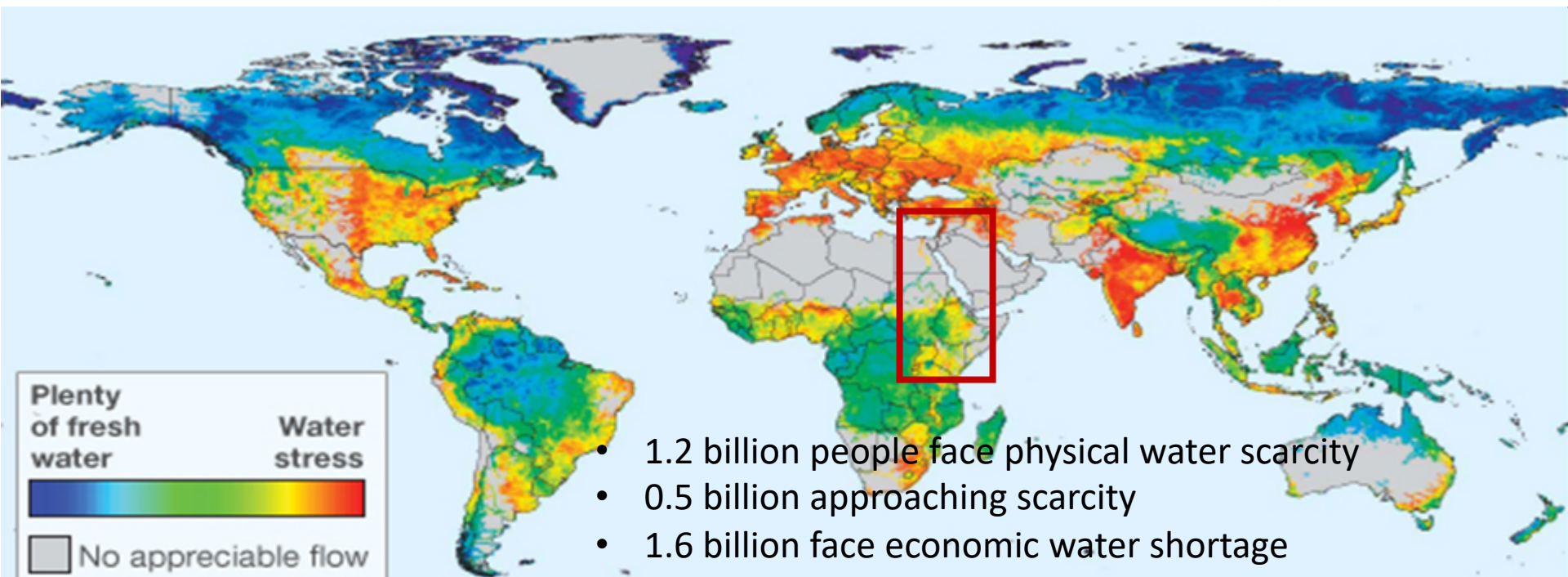
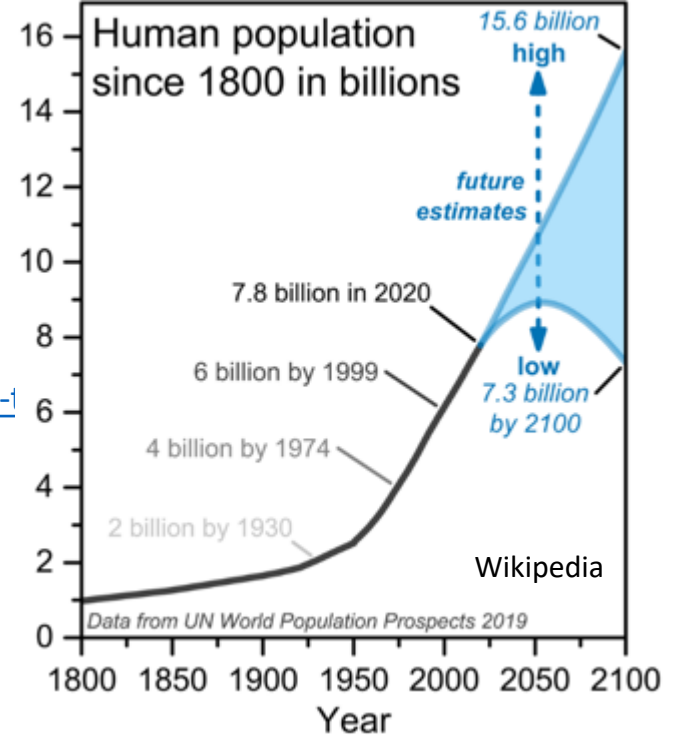
Keynote speech
August 20-21, 2020

Population, Water Demand, Water Value Keeps on Increasing

“By 2030 water shortfall will reach 40%.”

World Economic Forum. 2017. <https://www.weforum.org/our-impact/closing-the-water-gap>

The scramble for fresh water has started – Africa may be late to realize

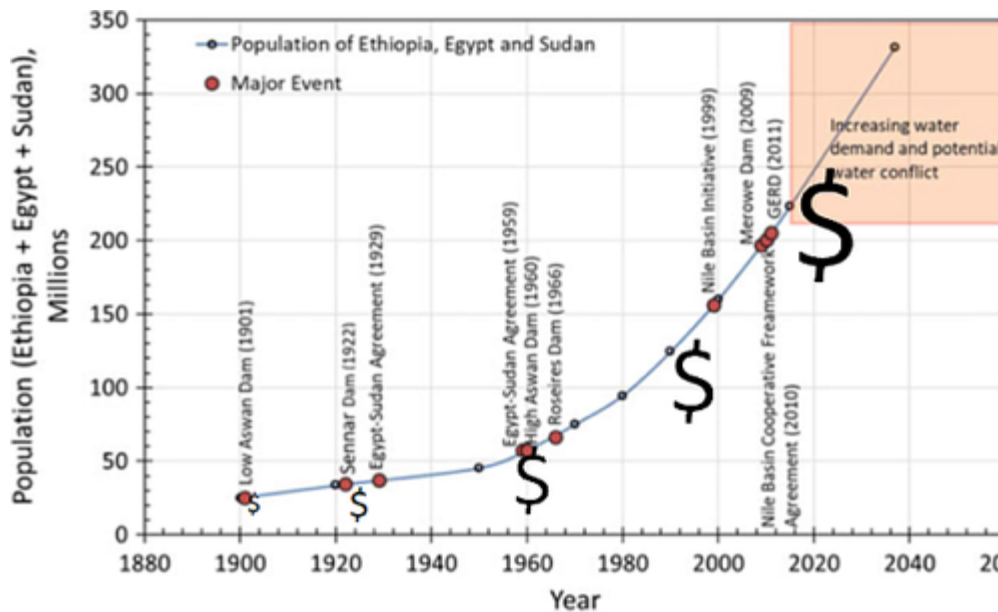


Eastern Nile Population Growth, Water Value and Water Conflict

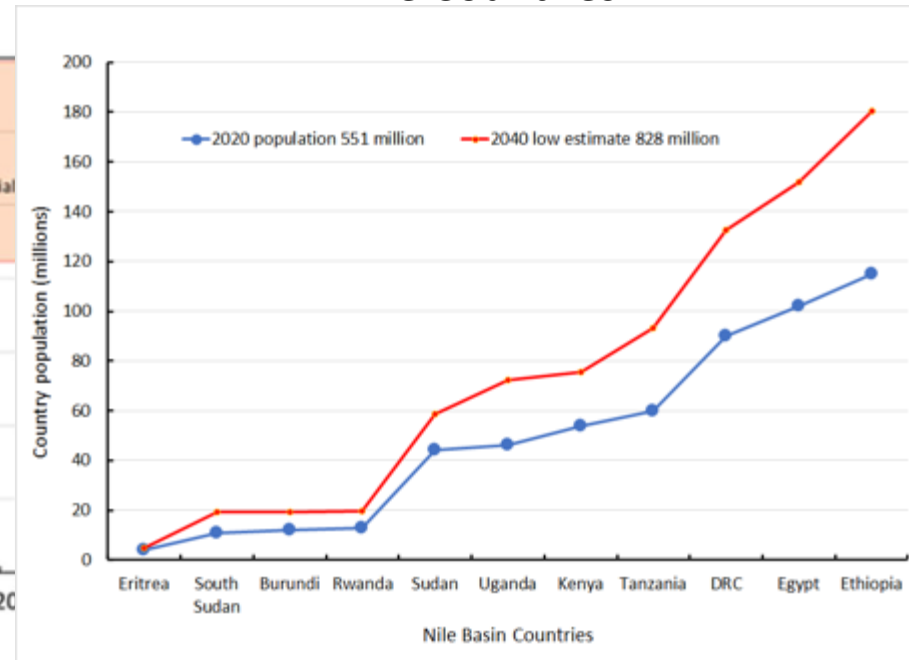
The Price of Nile water has increased inviting

1. Out of basin water transfer/sale (direct or indirect); Egypt is feeding the Gulf
2. Political and economic bartering of water and internationalizing Nile water conflict
3. It is drawing speculators attention
4. Domestic political value of water keeps on increasing
5. The Nile flow will likely decrease

Eastern Nile Countries



Nile Countries



Upstream Water Right Affirmation - Institutional and Structural



Cooperative Framework
Agreement



Downstream Upstream or Upstream Downstream Relationship Models for Transboundary Basins

UN Resolution of 1997 “Affirming the importance of international cooperation and good neighbourliness in this field”

Hostility

- Undermine upstream security
- Restrict sea access
- Undermine upstream development by blocking fund etc.
- Threaten militarily
- Propaganda war
- Diplomatic war
- No water sharing
- Race for water use expansion
- Undermine upstream water needs
- Stick to colonial treaties
- Internationalize water use and water conflict

Cooperation

- Fair water sharing agreement
- Watershed management
- Economic cooperation
- Support economic development and access to diverse resources
- Trust and data sharing
- Peace among neighbors

GERD Negotiations

Are not about GERD Filling and Operation Plans?

The two Agendas – Water Share and Dam Filling/Operation

Egypt

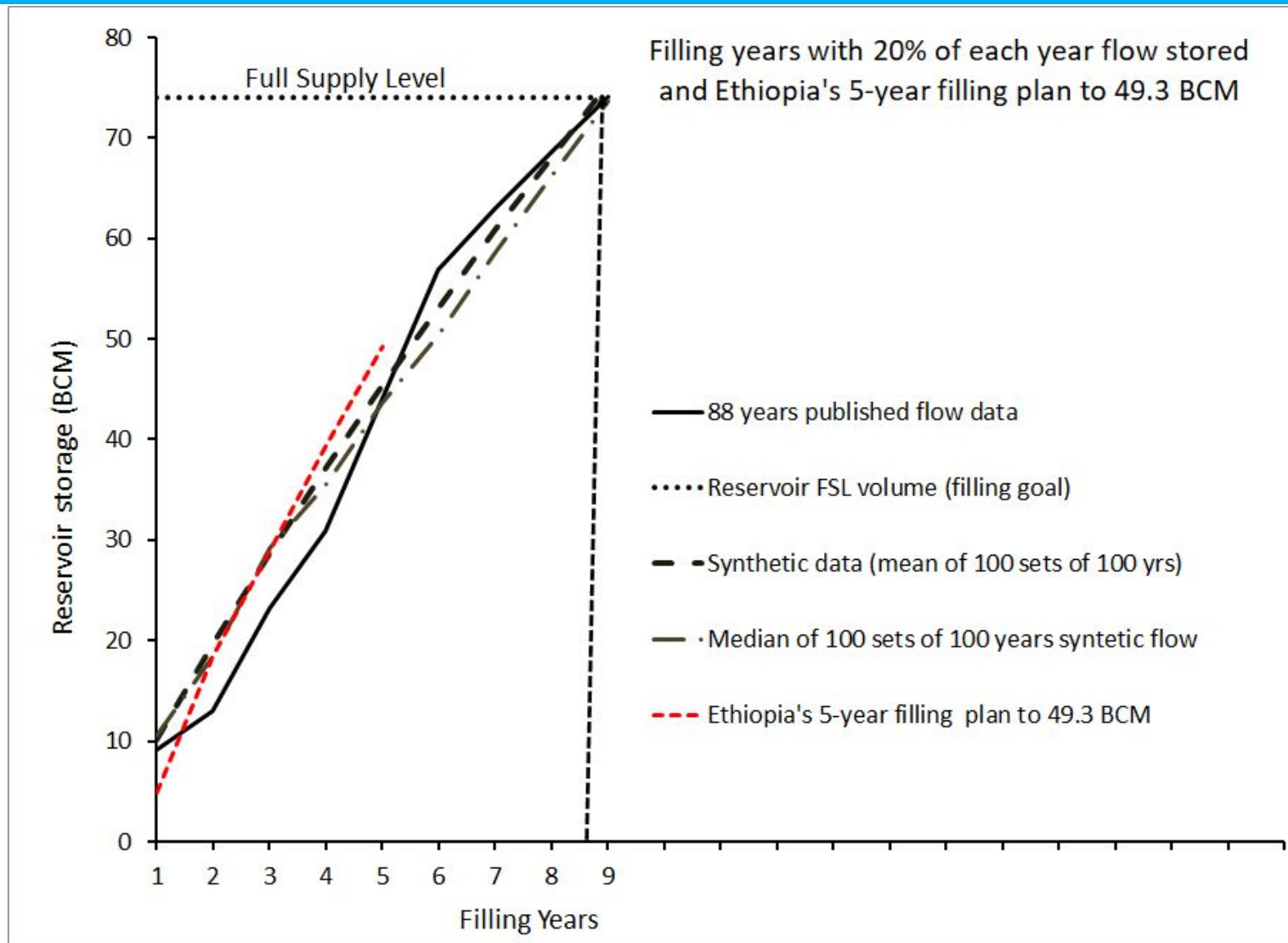
Secure current water share including water for potential beneficiaries out of the Nile Basin

- Insert water share guarantee into GERD negotiations in an ingenious way
- Make GERD a water supply reservoir
- Achieve legally binding agreement that hinders upstream water use

Ethiopia

- Fill GERD in a reasonably short period
- Operate GERD to generate design power
- Don't want to loose right of water share for consumptive use by signing legally binding agreement
- Will not sign until its water use right is respected

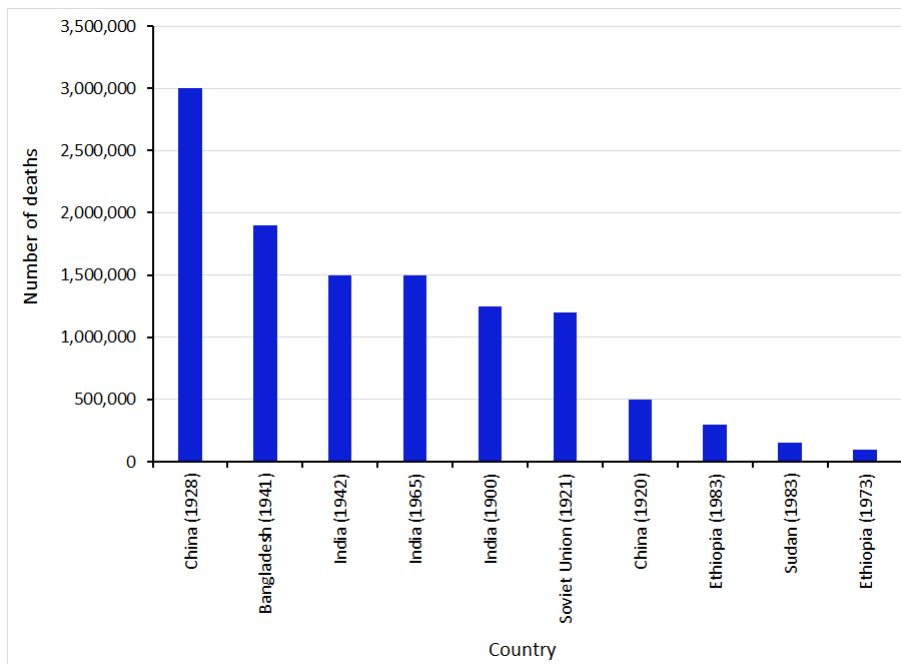
GERD Filling Plans and implication to Ethiopia's Water Share (Does Ethiopia has 20% Water Share from its River?)



GERD Negotiations and the Question of Drought and Downstream Dams

- USA and Mexico Colorado Water Agreement During Drought

Food insecurity in Ethiopia
70% of its water is in the Nile Basin



(Source: World Economic Forum)



Paul Block, University of Wisconsin

GERD Negotiations – Washington DC, The Numbers Game, How much is left for Ethiopia

Drought	Filling	Long Term operation
Drought (Annual)	<ul style="list-style-type: none"> - Minimum release (R) = 37 - If $Q_{in} < 37$, $R = (Q_{in} + \text{Add from storage})$ (Annex A) 	<ul style="list-style-type: none"> - Minimum release (R) = 37 - If $Q_{in} < 37$, $R = (37 + \text{Add from storage})$ (Annex A)
Prolonged Drought (4 year average)	<ul style="list-style-type: none"> - Minimum release (R) = 37 - If $4Q_{in} < 37$, $R = (37 + 62.5\% \text{ (from storage)})$ $> 603 \text{ m}$, the following 4 yrs) 	<ul style="list-style-type: none"> - Minimum release (R) = 37 - If $4Q_{R} < 39$, $R = (37 + 100\% \text{ (from storage)})$ > 603, the following 4 years)
Prolonged Period of Dry Years (4* & 5** year average)	<ul style="list-style-type: none"> - Minimum release (R) = 37 - If $4Q_{in} < 40$, release additional 50 % (from storage > 603, the following 4 years) 	<ul style="list-style-type: none"> - Minimum release (R) = 37 - If $5Q_{R} < 40$, release additional 100% (from storage > 603. over the following 5 years)

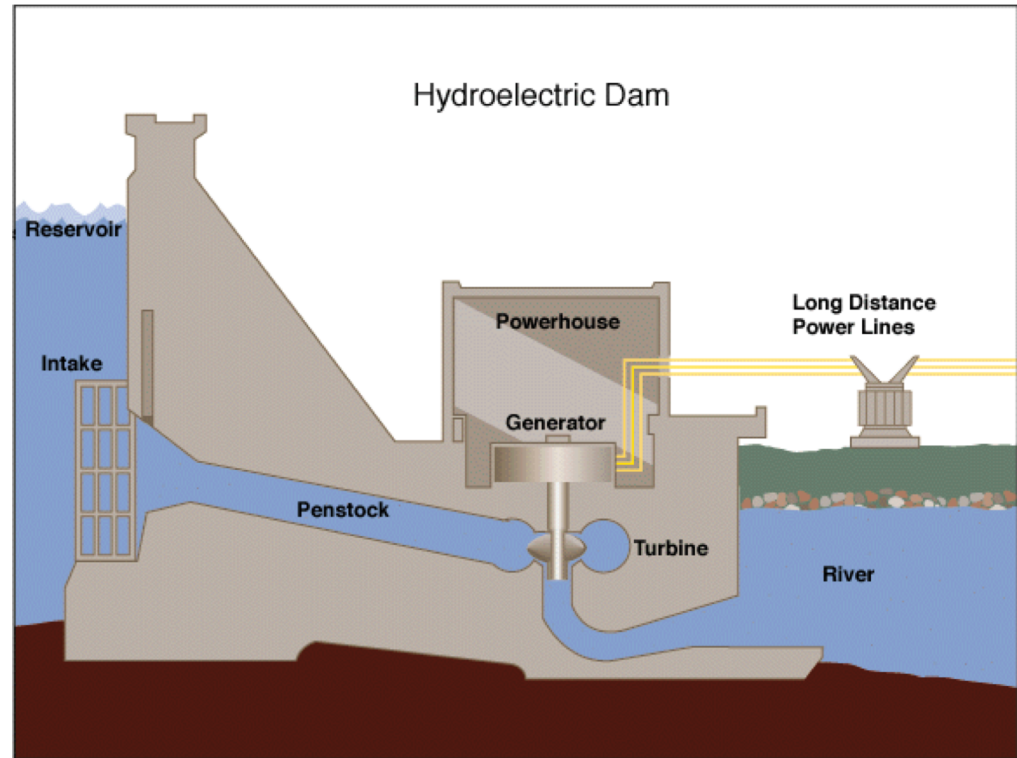
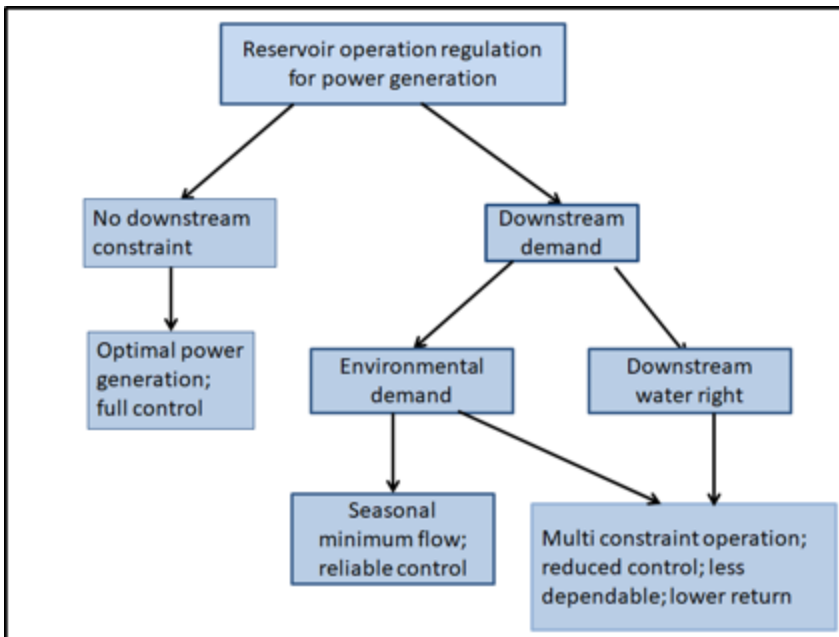
Egypt

- Secure current water share
- Inserts water share into GERD negotiations
- Achieve legally binding agreement **swiftly**

Ethiopia

- Fill GERD in a reasonably short period
- Operate GERD to generate design power
- Don't want to loose future right of water share for consumptive use and hydropower
- No legally binding agreement

Dam Operation for Hydropower Generation with Downstream Constraint (Drought, Prolonged Drought, Prolonged Period of Dry Years) without Cooperation



US Energy Information Administration

Abtew, W, Dessu S. 2018. *The Grand Ethiopian Renaissance Dam on the Blue Nile River*: Springer (<https://www.springer.com/la/book/9783319970936>)

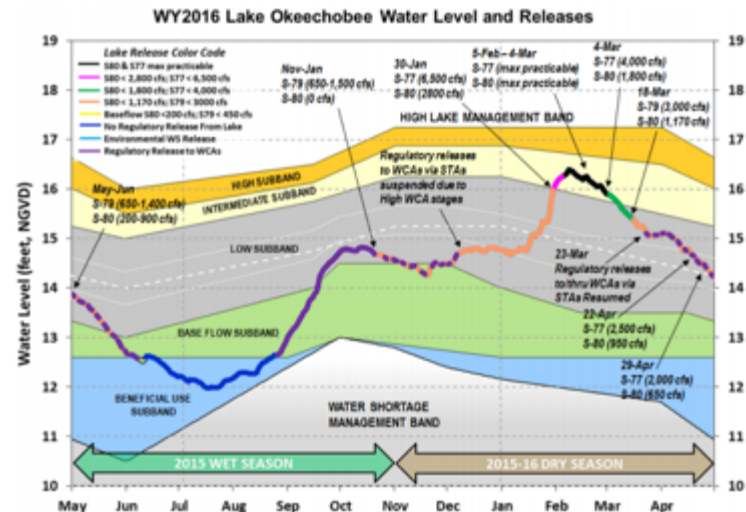
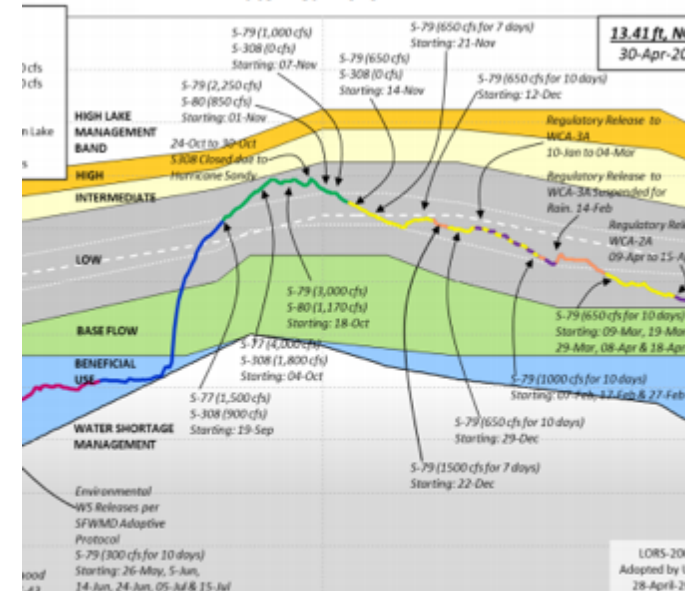
Optimal power generation will be affected, refilling will create conflict

Treaty on Dam Operation?

What is the Rush?

- Dam operation plan takes time to develop
- Dam operation plan has to be flexible
- Use short and long-term climate prediction
- Incorporate dam safety
- Be flexible for maintenance work
- Deviations from regular operation have to be part of the plan
- Needs periodic update

Lake Okeechobee – An Earth Dam Operation Schedule

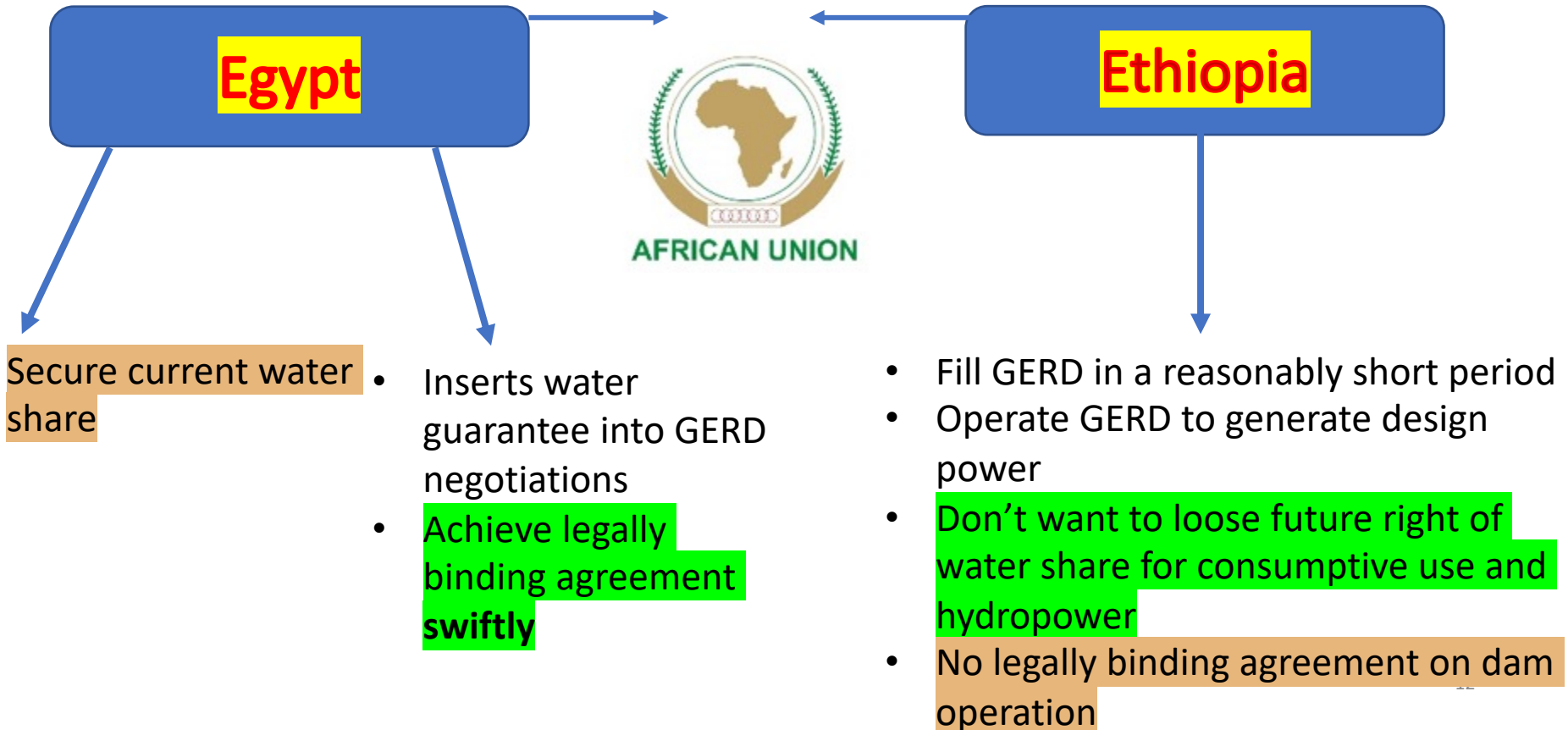


GERD Negotiations – African Union Mediation

(COMMUNIQUE OF THE 2nd EXTRAORDINARY AFRICAN UNION (AU) BUREAU OF THE ASSEMBLY OF HEADS OF STATE AND GOVERNMENT
VIDEOTELECONFERENCE MEETING ON THE GRAND ETHIOPIAN RENAISSANCE DAM
(GERD) HELD ON 21 JULY 2020)

.... a binding Agreement on the Filling and Operation of the GERD, which should include a Comprehensive Agreement on future developments on the Blue Nile River.

I can't summarize Sudan's position. Sudan is upstream and downstream of Nile water interests



What is the Solution? Cooperation and Agreement or Join the Scramble for Water before it is too Late

- Any draft agreement will benefit from independent review
- Replace hostility with cooperation and separate GERD from water sharing
- First, reach consensus on GERD filling plan
- Then reach consensus on GERD operation plan subject to changes as dam operation, the climate, and other factors bring new challenges
- Take sufficient time to reach basin water management and water sharing agreement based on percentage of prevailing flow and periodically reviewable agreements
- Cooperation between riparian countries in all areas including access to the sea, economic, water sale, power sale, and climate change adaptation
- Uniform water transfer right (Inter-basin, inter-country, inter-continental transfer of water share)
- Collective ecological protection, watershed restoration/protection
- Efficient water use and water management

