NILE BASIN INITIATIVE

The Story of the Nile River

The History, Organisation Structure, Meetings, Projects and Process of the Nile River Bain and NBI

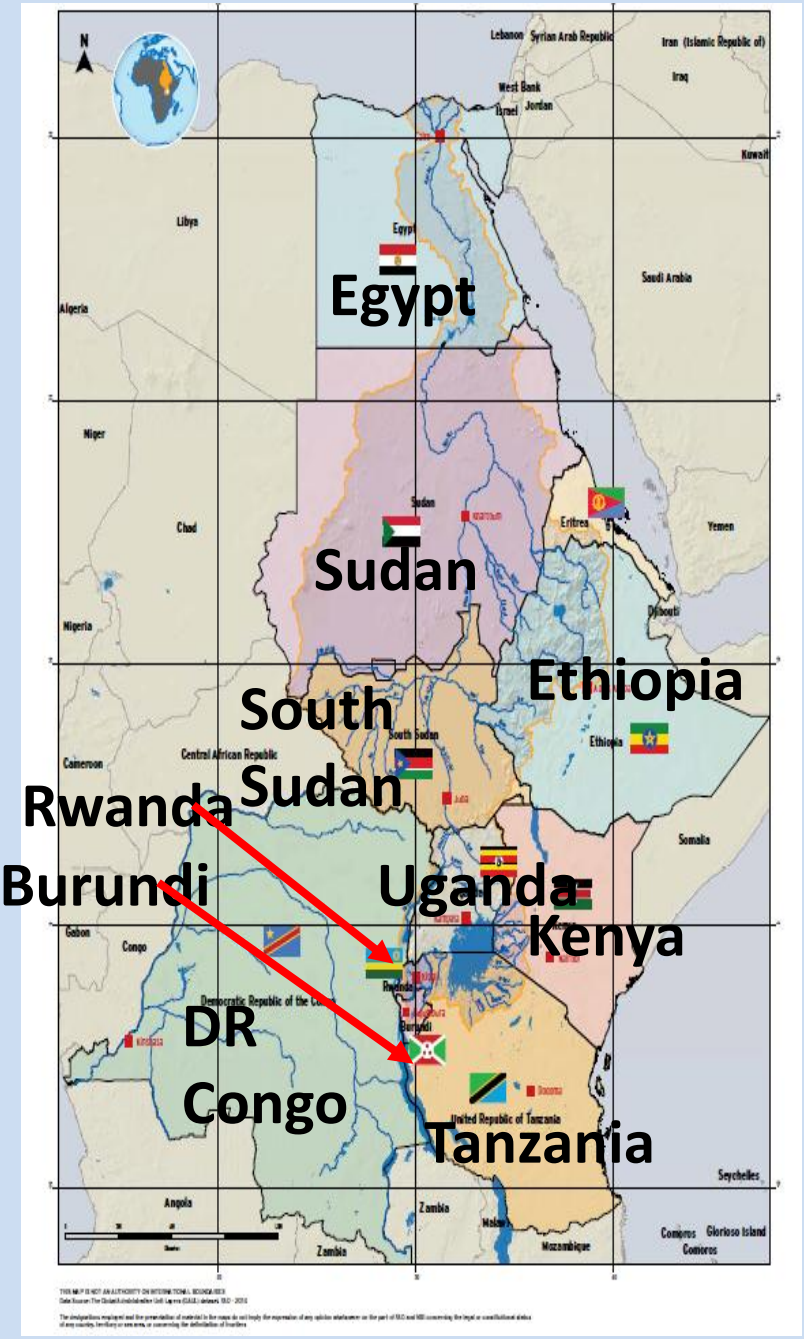
By

Dr. John Rao Nyaoro, HSC

Introduction:

- The Basin
  - Geographical location
  - Key facts
  - The Nile River Flows
  - History of The Nile basin
- The Nile Basin Initiative(NBI)
- Development of the Nile Basin Legal Framework
- NBI's efforts to address basin water resources challenges
- Opportunities and Challenges
- Lesson Learnt

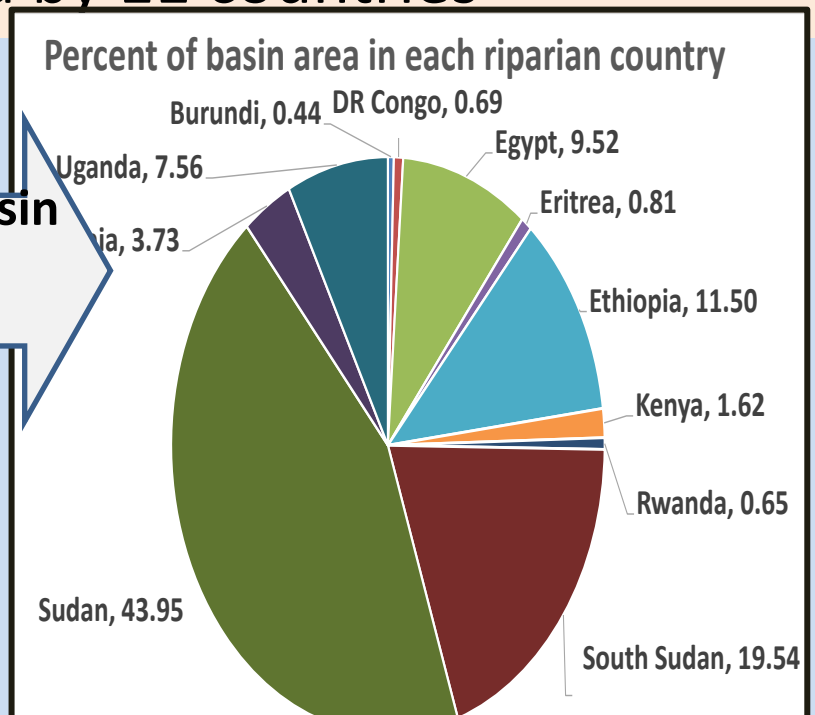
The Nile Basin

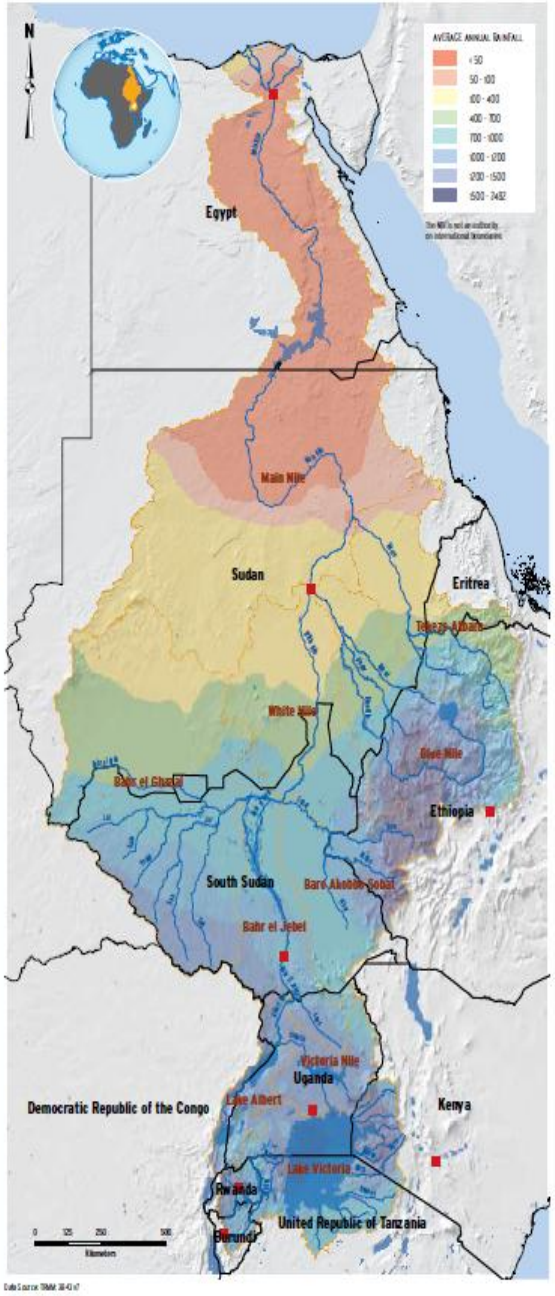


Basic Facts:

- Basin Area: 3.2 Mill km^2
- Ca 250 Million people live in the basin;
- Ca 480 Million people in all riparian countries
- Shared by 11 countries

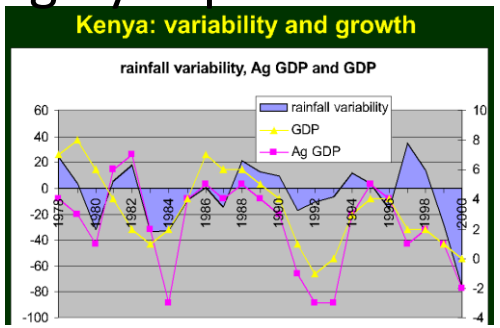
Percent Basin Area by Country

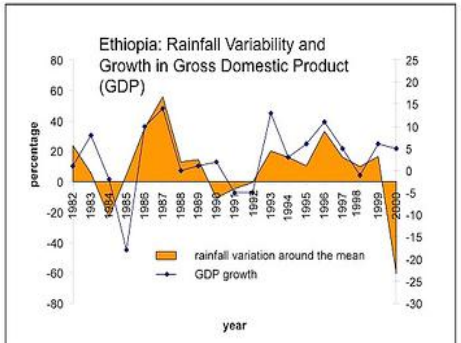




Rainfall distribution

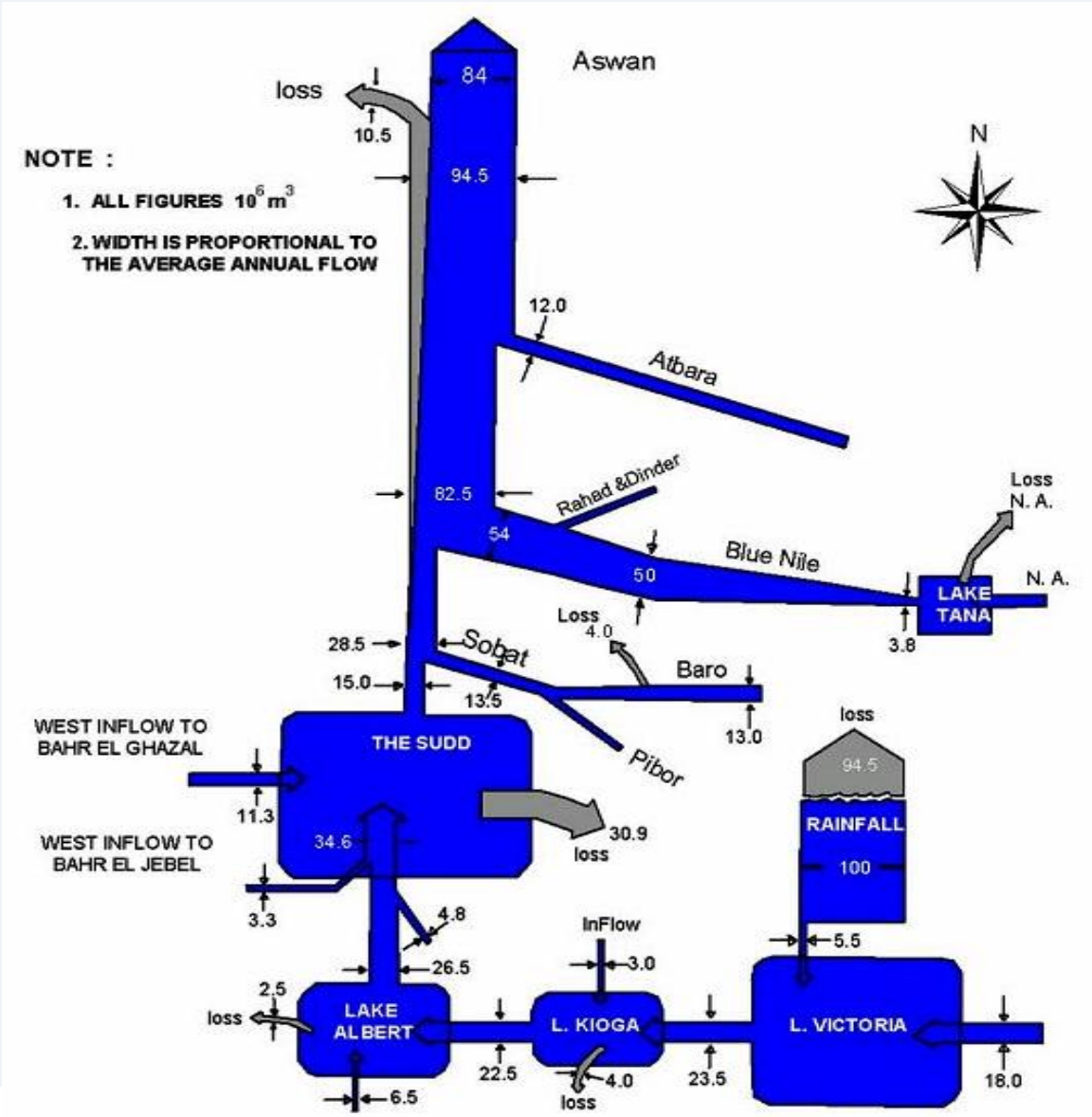
- There is substantial variation in rainfall distribution in the basin
- Upstream parts of the basin receive annual average rainfall that ranges from 1500 – 2000 mm; in some locations > 2000 mm
- Downstream parts of the basin have very little rainfall → nearly totally dependent on Nile waters (*irrigated agriculture is a must*).
- Rainfall in upstream parts is hardly regular from season to season and from year to year
- Economies of most upstream countries are highly dependent on rainfall (rain-fed agriculture) → highly exposed climate to drought and floods



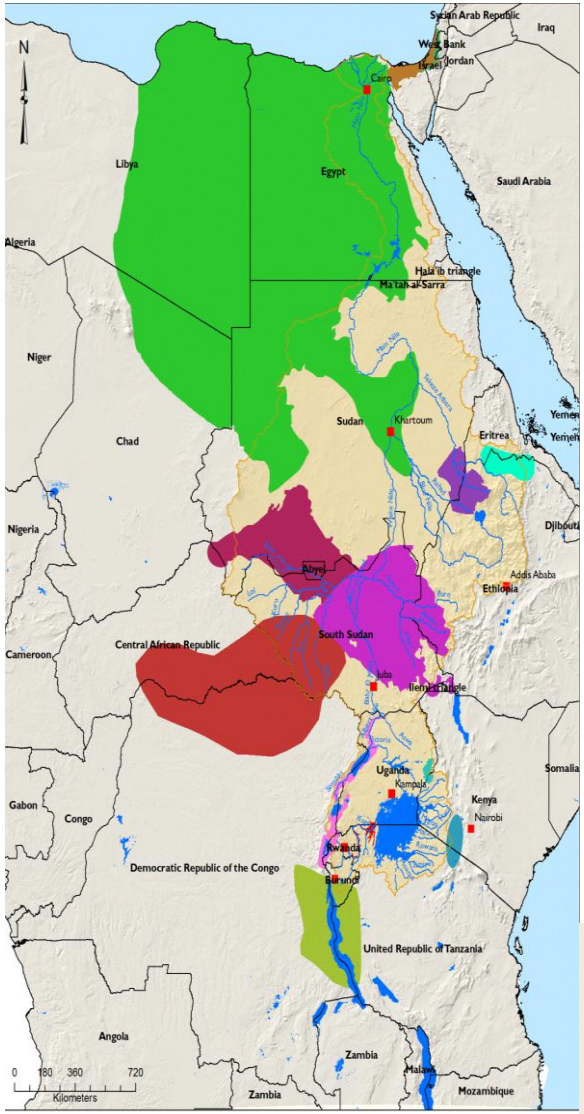


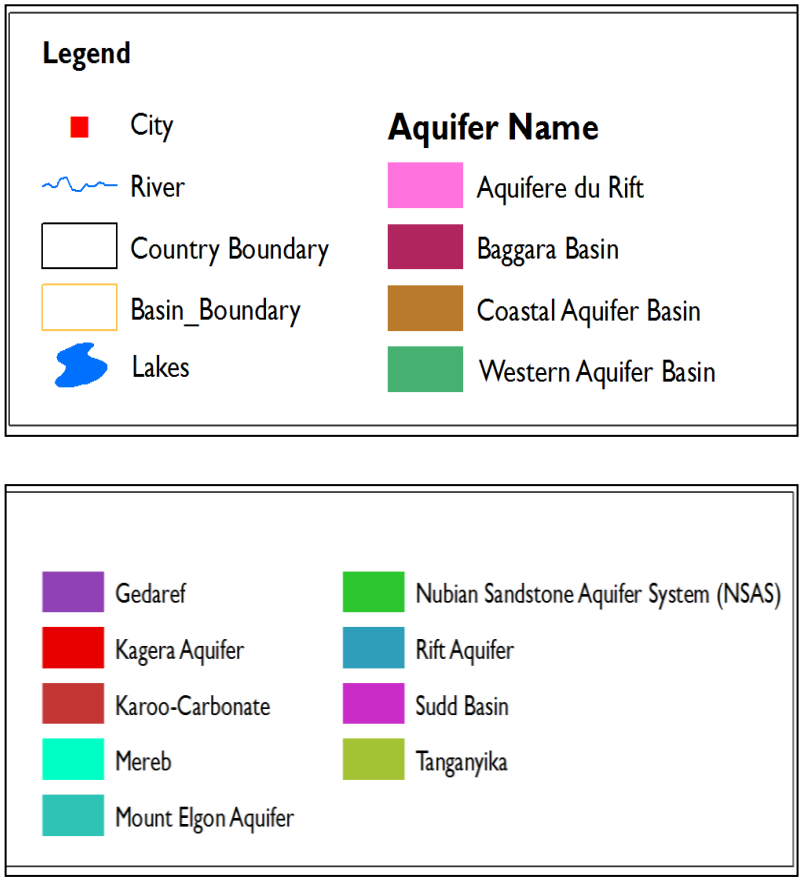
Nile River Flows

NILE BASIN INITIATIVE



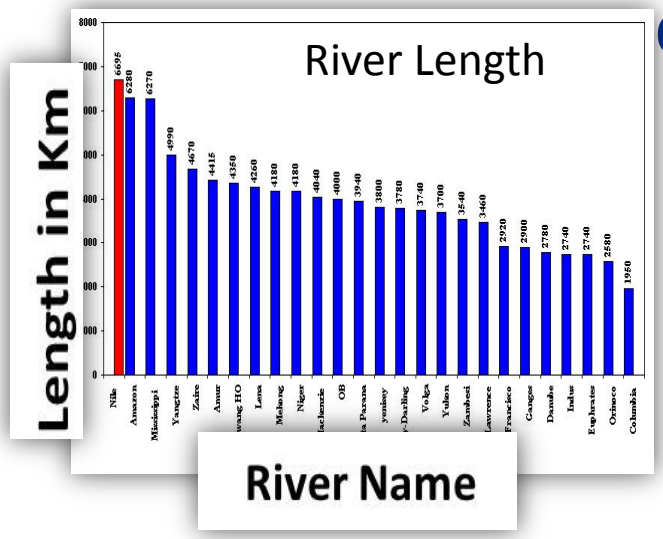
Transboundary Aquifers shared by Nile Basin countries

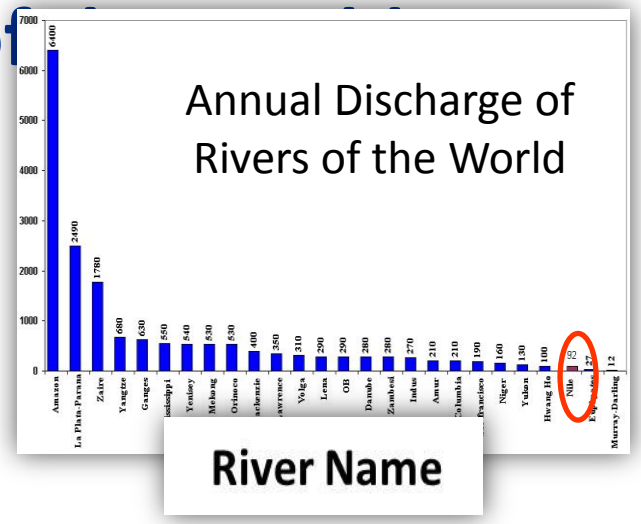




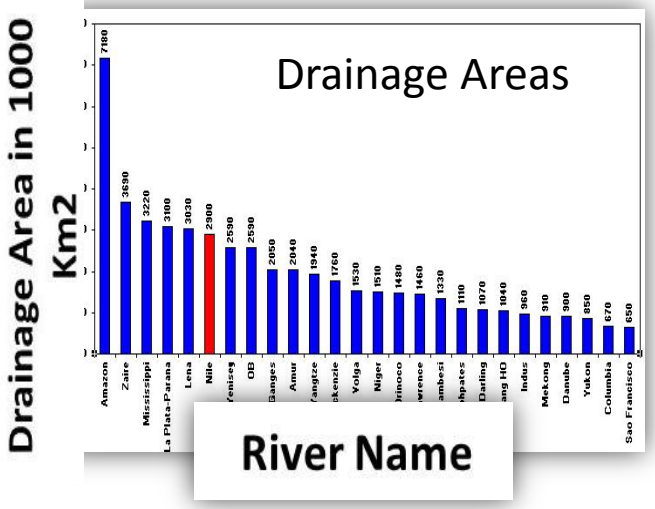
Source: International Groundwater Resources Assessment Centre (IGRAC), the UNESCO Global Groundwater Center

The Nile compared to Large Rivers



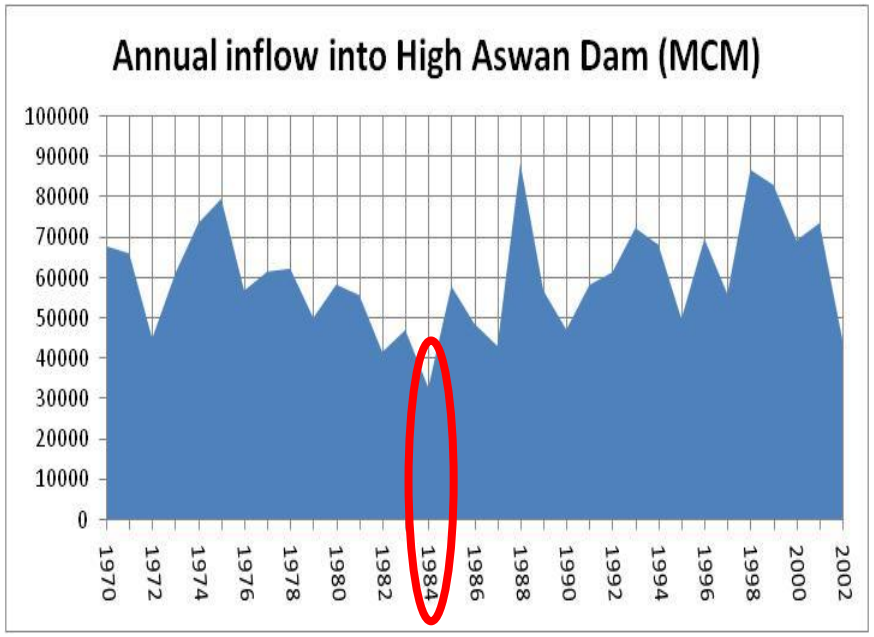


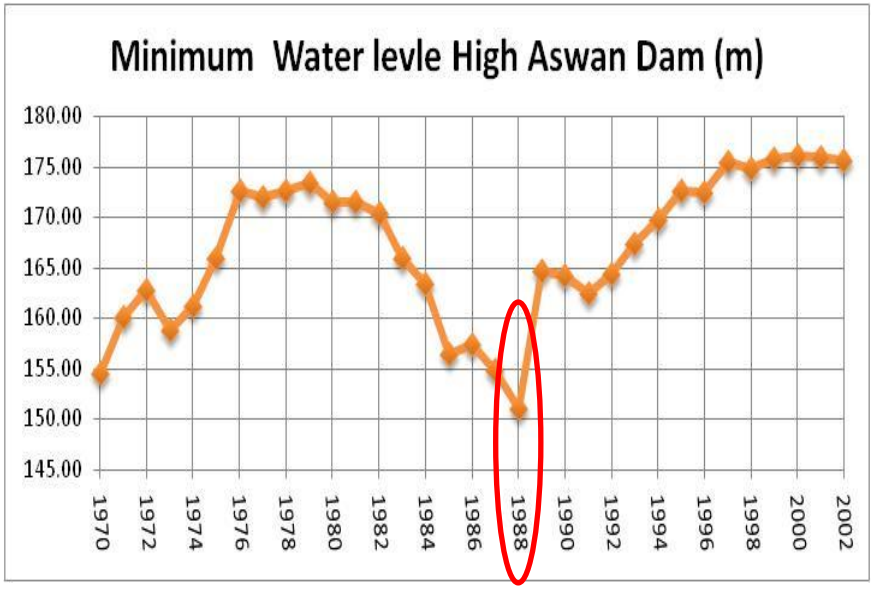
For its size, the Nile has relatively less flow compared to large river basins in the world



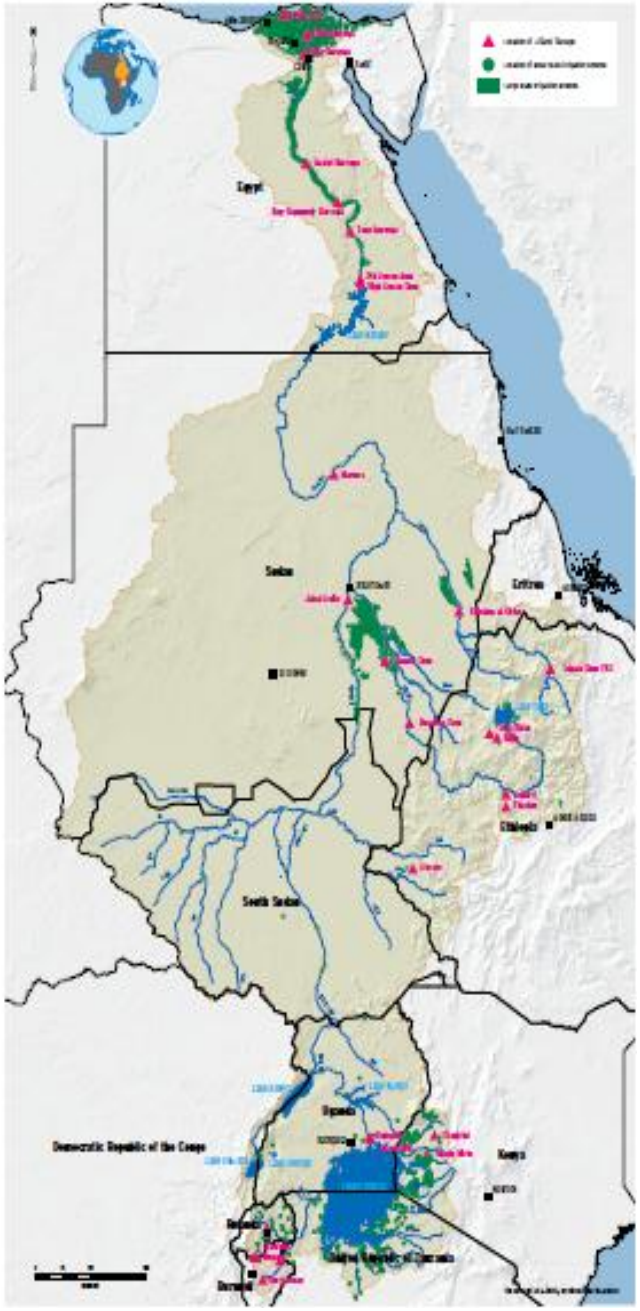
River	Area (Mill km^2)	Discharge (BCM/y)	to Nile flow
Nile(@ aswan)	2.9	84	1
Mississippi (@ St.Louis)	1.8	155	2
Yangtze (@ Hankow)	1.5	748	9
Congo* (@ mouth)	3.7	1294	15
Amazon (outlet)	6.2	6312	74

Impacts of water infrastructures - *beyond acres and GWhs*





During 1984 – 1988, about substantial volume of water released from storage to compensate for deficit in water supply

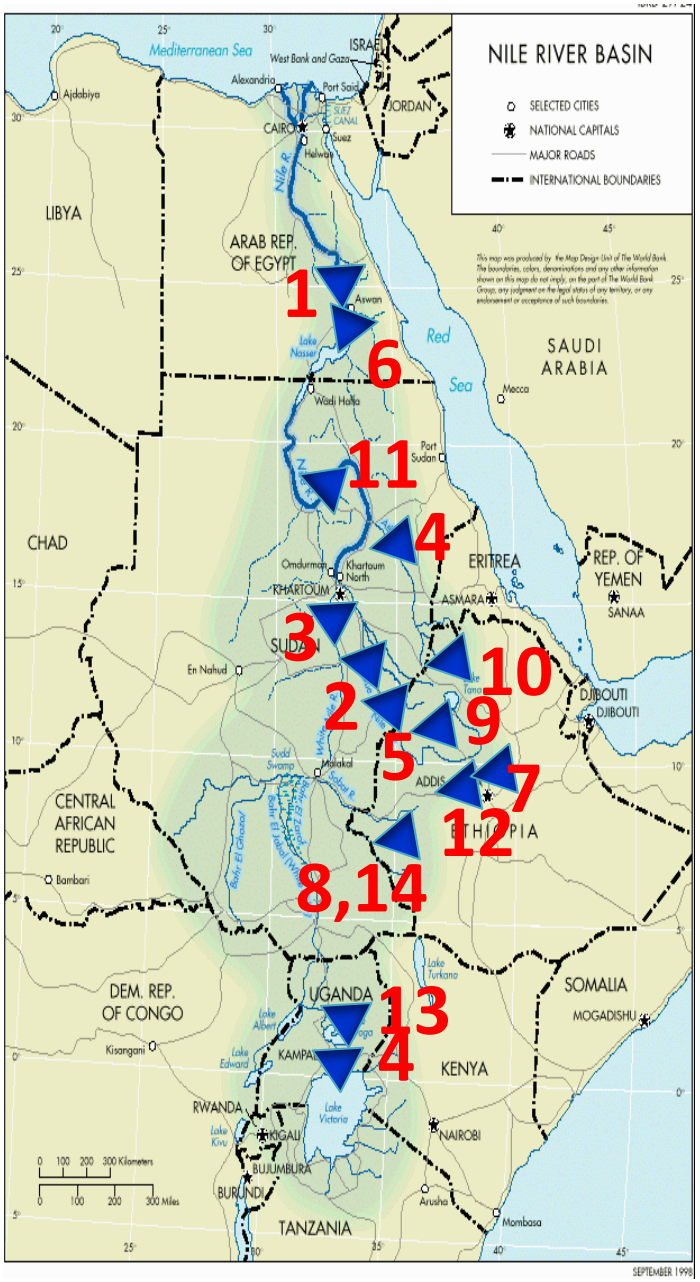


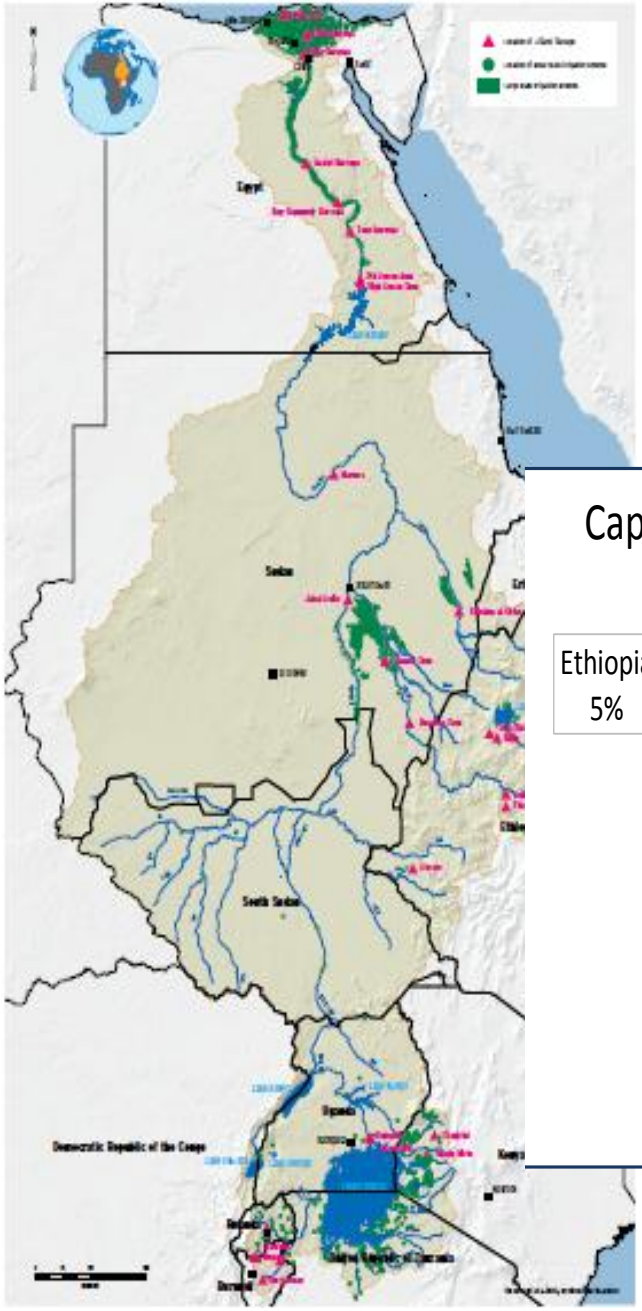
Water resources infrastructure

- Most of the Nile river flow is generated in just 3 – 4 months of the year
- However, demands for water are not concentrated in these 3 – 4 months
- → storing water during times of high river flow for use through out the year is an age-old water resources management technique
- Adequate storage capacity is one of the key climate change adaptation measures
- Currently, there is ca 200 BCM of

Major existing storage dams

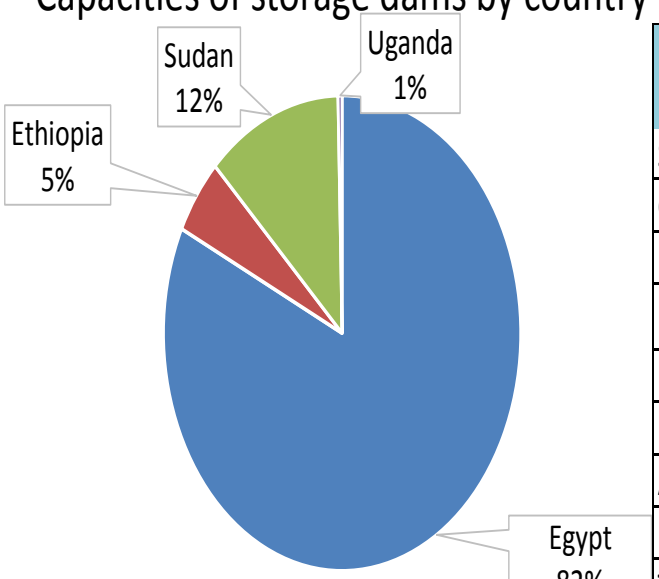
Ser No	Name	Storage capacity (MCM)	Year
1	Aswan Low Dam	5300	1902
2	Sennar	602	1925
3	Gebel Awlia	3377	1937
4	Khashm el Girba	616	1964
5	Roseries	2000	1966
6	High Aswan Dam	162,000	1968
7	Fincha Dam	940	1973
8	Alwero	75	1995
9	Koga dam	77	2007
10	TK-5	9293	2009
11	Merowe	12390	2009
12	Amerti-Neshe dam	130	2011
13	Bujagali	750	2011
14	Roseries (heightened)	5900	2012





Water resources infrastructure

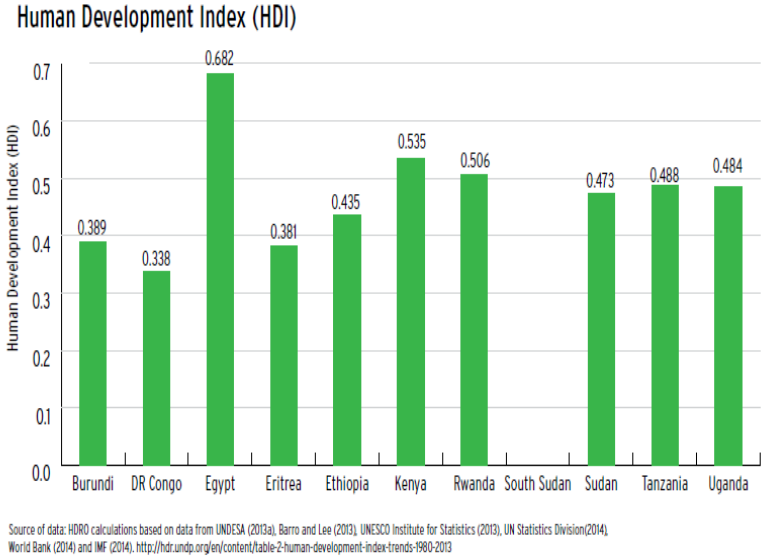
- Currently, there is ca 200 BCM of storage capacity in major dams across the basin;
- Most existing dams are in

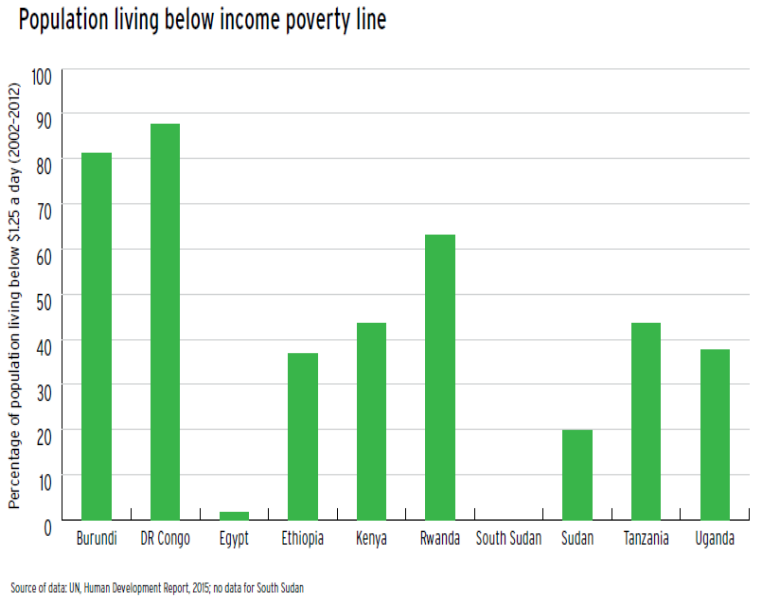


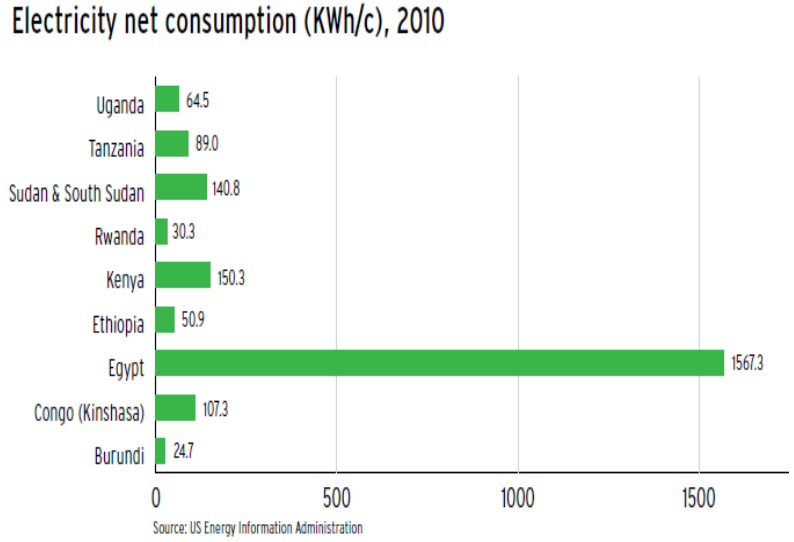
s of the basin

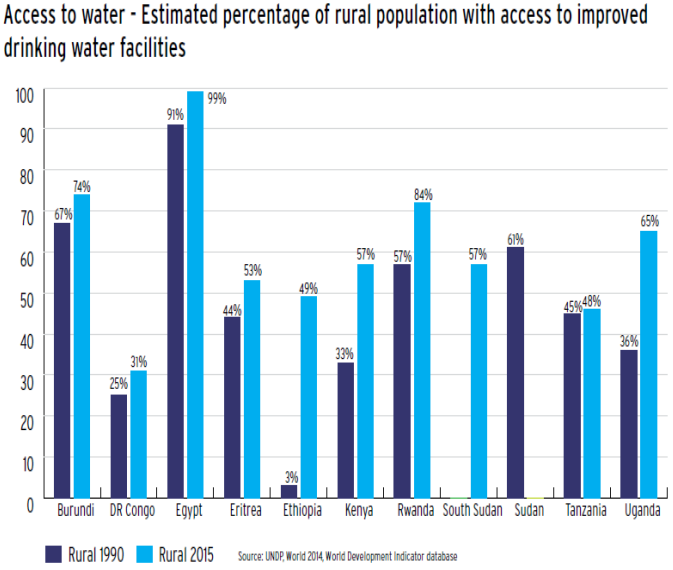
Name	Primary purpose
Sennar	Irrigation water supply
Gebel Awlia	Irrigation water supply
Khashm el Girba	Irrigation water supply
Roseries	Hydropower, Irrigation, flood control
High Aswan Dam	Irrigation water supply
Fincha Dam	Irrigation water supply
Alwero	Irrigation water supply
Koga dam	Irrigation water supply
TK-5	Hydropower
Merowe	Hydropower
Amerti-Neshe dam	Irrigation water supply
Roseries (heightened)	Irrigation water supply

The Nile Basin: *a basin of substantial unmet basic needs*

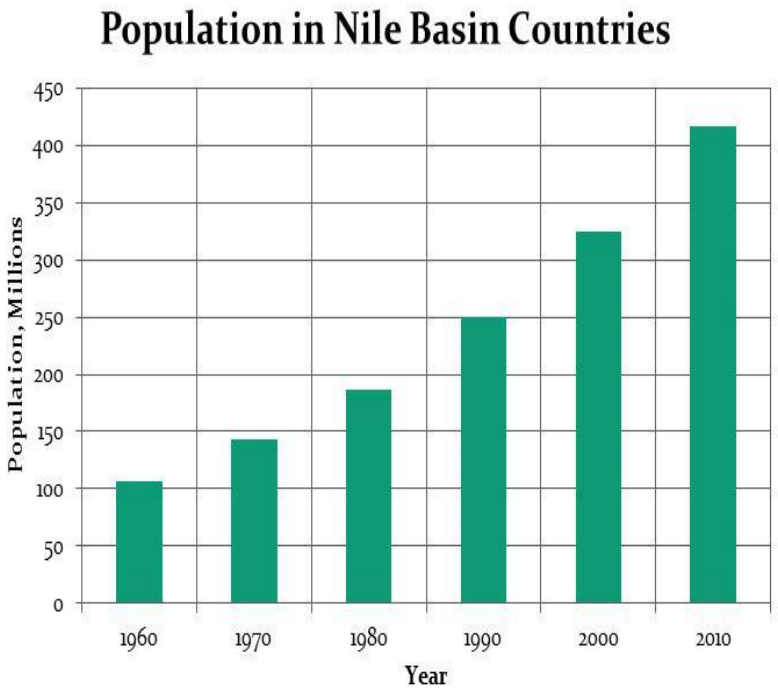


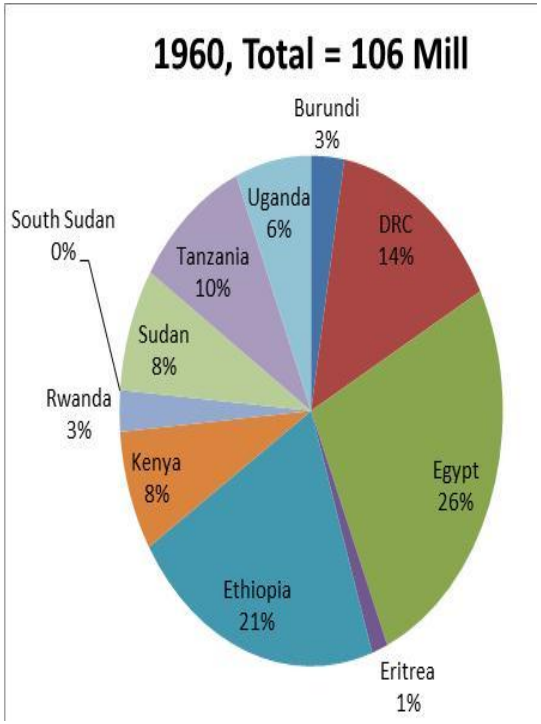


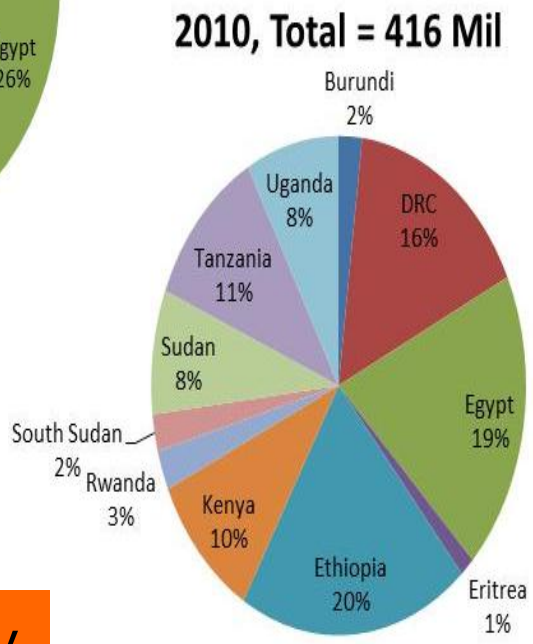




the Nile Basin Countries…Rapid population growth





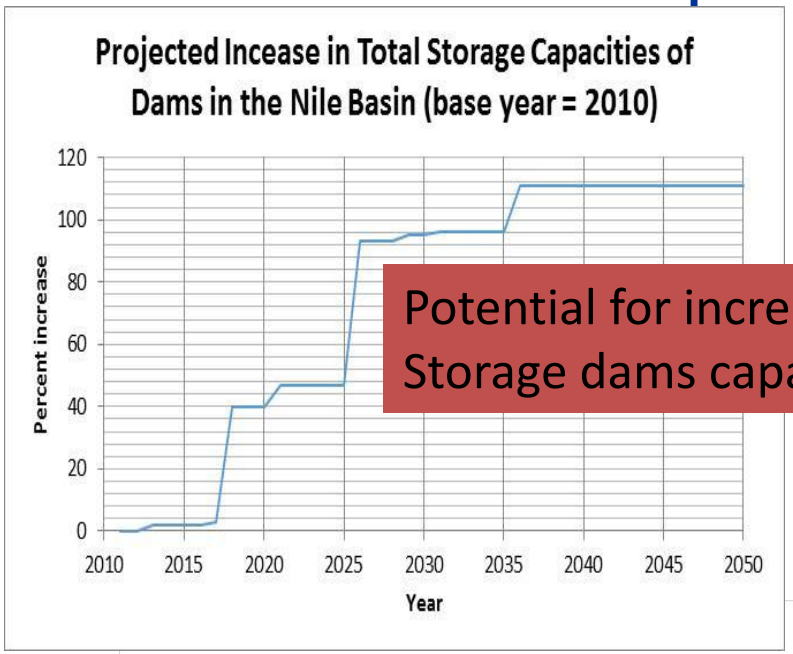


Population of basin countries increased
4 fold between 1960 and 2010

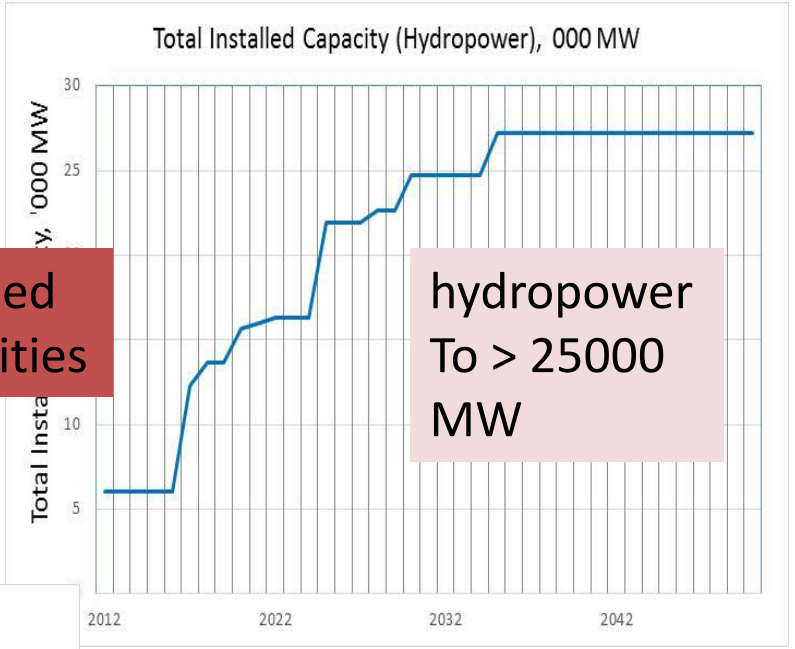
Shrinking per capita water availability

Source: World Bank; World Development Indicator database

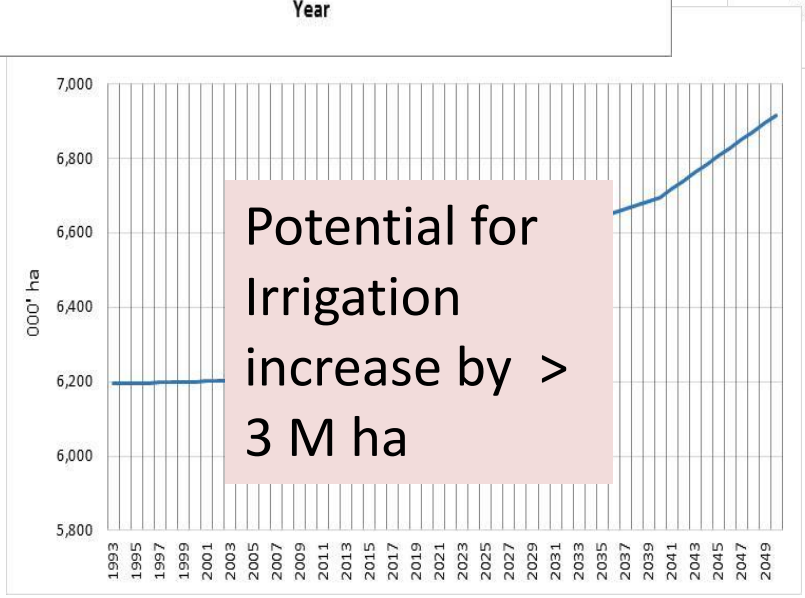
… a basin of considerable untapped potential



Potential for increased Storage dams capacities



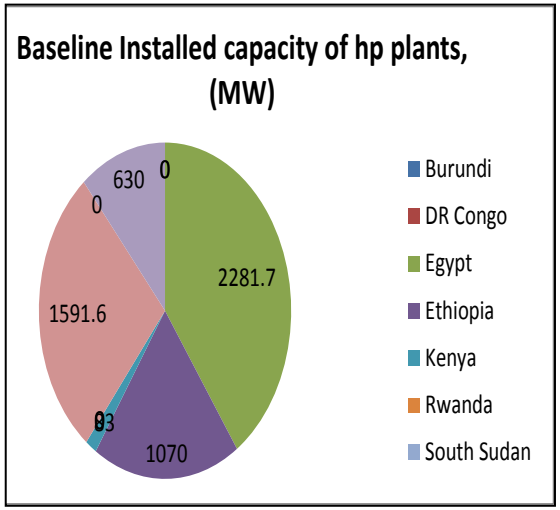
hydropower To > 25000 MW

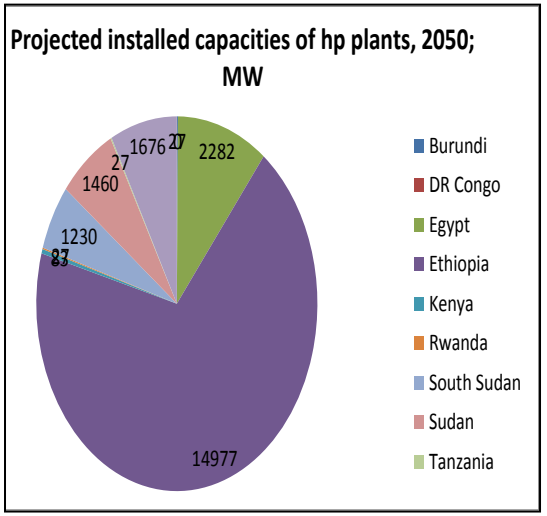


Potential for Irrigation increase by > 3 M ha

Substantial untapped potential in the Nile Basin

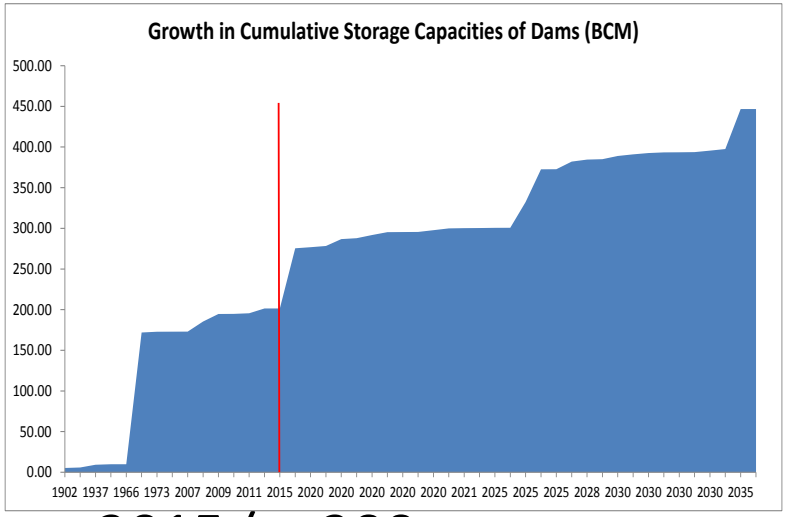
Projected growth in storage dams and hp plants installed capacities





2014: 5600 MW

2050: ca 26300 MW



2015 (< 200 BCM)

2050 (> 400 BCM)

History of Cooperation on the Nile

Hydromet (1967 - 1992):

Members: Burundi, Egypt, Kenya, Rwanda, Sudan, Tanzania, Uganda; Ethiopia and DRC as observers (after 1971 and 1977, respectively)

Focus: hydrometeorological survey in the lakes region

UNDUGU (1983 – 1992); run in parallel to Hydromet

Members: Egypt, DRC, Sudan, Uganda, Burundi, Rwanda; Ethiopia and Kenya as observers

Focus: establishment of Nile Basin Economic Community

TECCONILE (1993 - 1999):

Members: Egypt, Sudan, Rwanda, Tanzania, Uganda, and DRC

Focus: techincal cooperation (environmental and water quality); started the Nile 2002 conferences, a huge success in bringing basin countries together.

Nile Basin Initiative (NBI)

- NBI was formally established in February, 1999
- The NBI brings all Nile Basin countries to work together to develop the resources of the Nile Basin for the benefit of all.
- Provides a platform for co-operation and for building working relationships between the riparian countries
- Promote regional peace and security
- Guiding Principles: Equitable utilization, No Significant harm, Notification (giving information on Planned measures); Benefit-Sharing, Win-Win,, Subsidiarity.
- It is a mechanism for the implementation of the

  “shared vision”

  through an agreed

  “Strategic Action Program”

NILE BASIN INITIATIVE

Shared Vision Objective of NBI

"To achieve sustainable socioeconomic development through the equitable utilization of, and benefit from the common Nile basin water resources"



Objectives of NBI

- To develop the water resources of the Nile Basin in a sustainable and equitable way to ensure prosperity, security, and peace for all its peoples.
- To ensure efficient water management and the optimal use of the resources.
- To ensure cooperation and joint action between the riparian countries, seeking win-win gains.
- To target poverty eradication and promote economic integration.
- To ensure that the program results in a move from planning to action.

NBI: Institutional Setup

- Established in 1999, NBI is a transitional institutional mechanism, pending the adoption of a Cooperative Framework Agreement (CFA) to:
  - Develop the Nile River Basin water resources in a cooperative manner,
  - Share substantial socioeconomic benefits,
  - Promote regional peace and security to achieve its shared vision
- NBI is a multi track platform
  - Cooperation (Technical) track
  - Legal and Institutional (political).

} Parallel Track

NBI Structure

Governance

Executive Organs

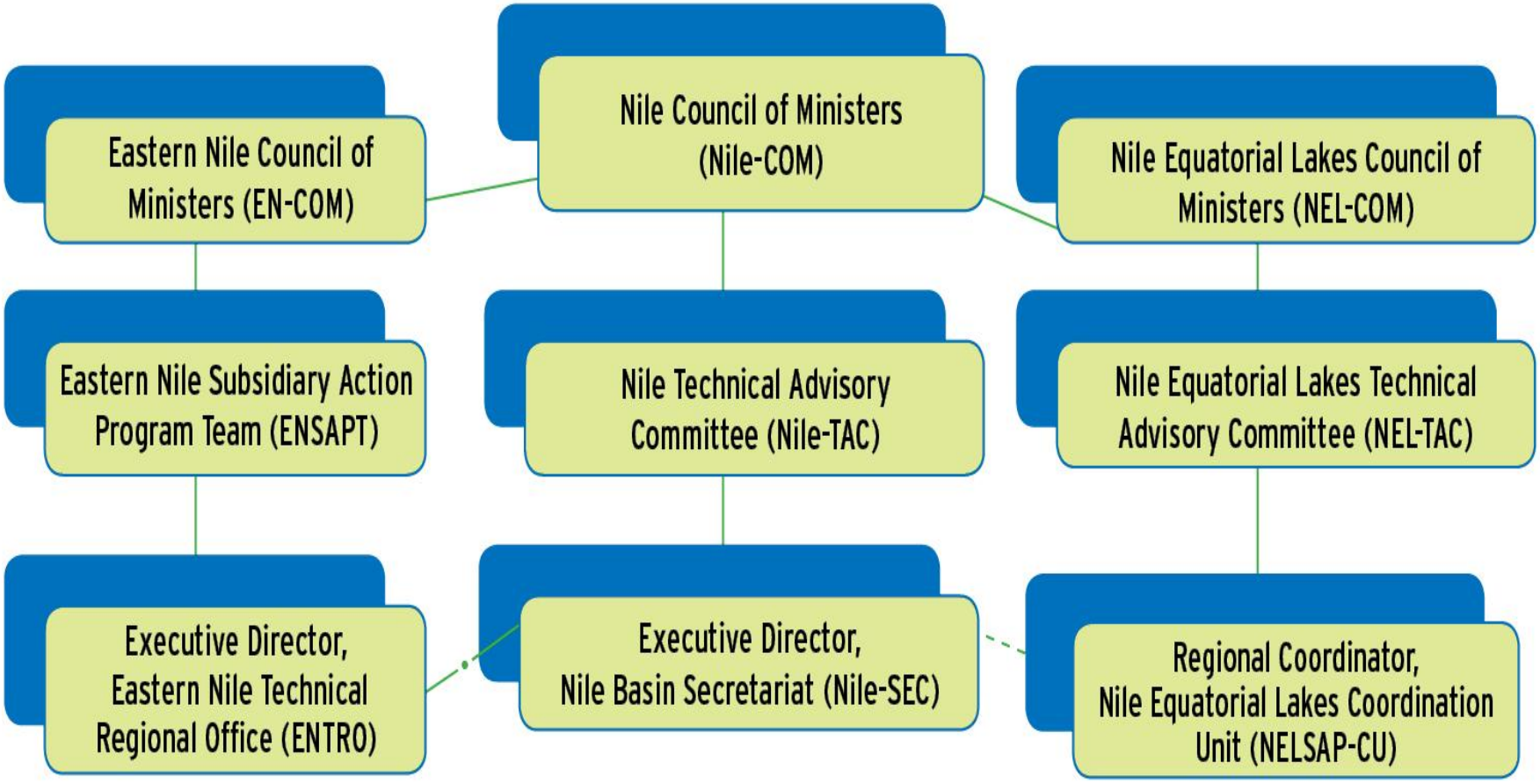
Council of Ministers - Nile-COM

Technical Advisory Committee - Nile-TAC

NBI Secretariat - Nile-SEC

NBI National Desks (Focal Points)

NBI Institutional Architecture



NBI Core functions

- **Basin Cooperation Program:**

  Supporting, nurturing and fostering basin-wide cooperation so as to enhance and consolidate the ability of NBI to achieve the Objectives of the Nile River Basin Strategic Action Plan. This includes improved and proactive support to NBI governance.

- **Water Resources Management Program:**

  Focus on building and operationalizing an accessible, interactive knowledge base and system that will facilitate optimal water resource management and development through provision of comprehensive information and scenario analysis

- **Water Resources Development Program:**

  To identify, prepare and facilitate investment in trans-boundary water development projects and programs whilst avoiding negative impacts on the health of the Nile Basin's resources through applying the principles of IWRM; NBI assists its member countries to achieve joint water development projects and management programs through supporting the identification of development opportunities, the preparation of projects and facilitation of investment which then enables member countries to *implement* the projects.

NILE BASIN INITIATIVE (NBI)

N

- 1999 Strategic Action Plan

B

- The Shared Vision
- Strategic Objectives

I

- Strategic Focus
- Key Results

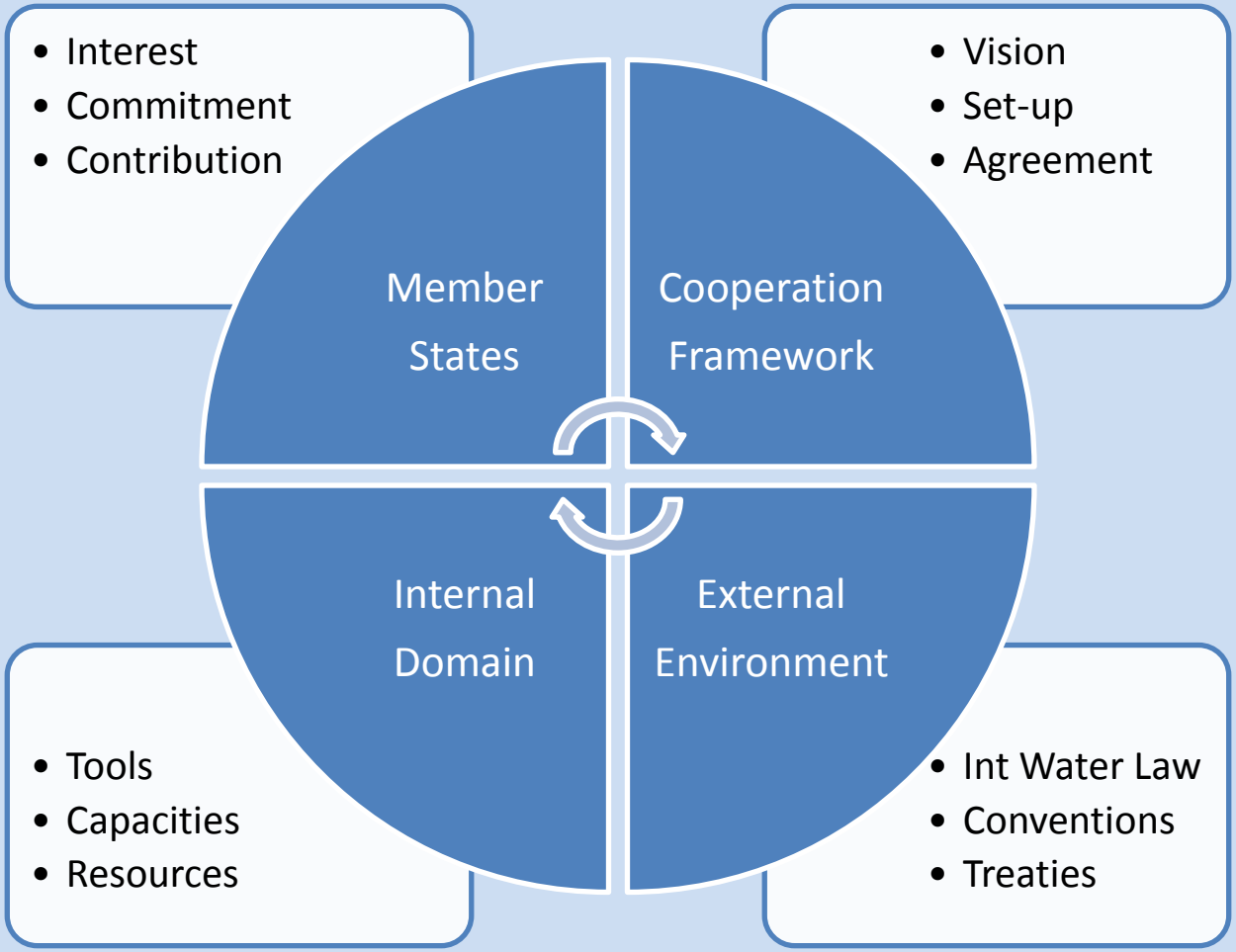
NBI Results Log Frame

Impact	**Sustainable socio-economic development in the Nile Basin through the equitable utilization of, and benefit from, the common Nile Basin water and the related natural resources**			
Results	Increased cooperative action in power development and trade, agriculture and natural resource management and sustainable development			
Outcomes	*Increased regional cooperation in the Nile Basin*		*Efficient trans-boundary management and optimal use of Nile Basin water and water-related resources*	
Outputs	Increased communication, trust, involvement and cooperation among NB governments and populations	Increased joint and trans-boundary investments in the Nile Basin.	Enhanced basin-wide capabilities and capacities based on best practices, on trans-boundary issues in power development and trade, agriculture and natural resource management and development	Increased convergence of legal, regulatory and policy frameworks of NB countries on trans-boundary issues in power development and trade, agriculture and natural resource management and development

Joint Institutional Arrangements

Nurturing cooperation and on improving performance as the platform for whole-of-Basin dialogue

Basin-wide knowledge base, including world-class capabilities for intelligent knowledge analysis



Support SAPs, national ministries and line agencies in facilitating and implementing water resources management & development through capacity building and consultative development of trans-boundary guidelines relevant to Nile Basin cooperation.

NBI: Strengths and Power

NILE BASIN INITIATIVE

N
- PLATFORM FOR COOPERATION
- CAPACITY DEVELOPMENT

B
- ANALYTIC TOOLS & TECHNIQUES
- SHARED KNOWLEDGEBASES

I
- INTERNATIONAL EXPERIENCES
- POLICIES .. STANDARDS .. KNOW HOW

EVIDENCE FACTS | COMMON UNDERSTANDING | STRATEGIC MEASURES | INFORMED DECISIONS | INFORM DIALOGUE | REDUCE CONFLICT

The Nile Basin Cooperative Framework Agreement (CFA) process

- Started in 1997 through what was known as 'the D3 project':
  - Short term objective: develop a cooperative framework agreement
  - Long-term objective: develop mechanism for equitable water allocation
- Negotiation continued up to May 2009 and in May 2009 seven Council of Ministers adopted the CFA in Kinshasa, DR. Congo with Egypt and Sudan giving their reservation calling for more negotiations.
- On 14th May 2010 the CFA was opened for signature at NBI offices Entebbe.
- As a result, Egypt and Sudan 'froze' their participation in Nile Basin Initiative activities;
- To date 6 countries have signed (Kenya, Uganda, Tanzania, Rwanda, Ethiopia and Burundi) and 3 countries ratified (Ethiopia, Rwanda, Tanzania)

The CFA process Cont.

- Sudan joined back in 2012 and is current active participant in Nile Basin Initiative activities;
- Egypt participates in annual governance meetings and NBI governance – development partners dialogue;
- Efforts are being made by Nile Basin Initiative to bring back Egypt to fully participates in the NBI activities.

Unresolved Issue Article 14b on Water Security

- Key differences between upstream Basin States and downstream States (Egypt and Sudan) are:

  i) Article 14b on the water security of the Nile Basin States touching on:

  - on the Historical Nile Agreements (with water allocations and veto powers)
  - Historical Rights
  - Natural Rights
  - Balancing of the existing uses and potential uses

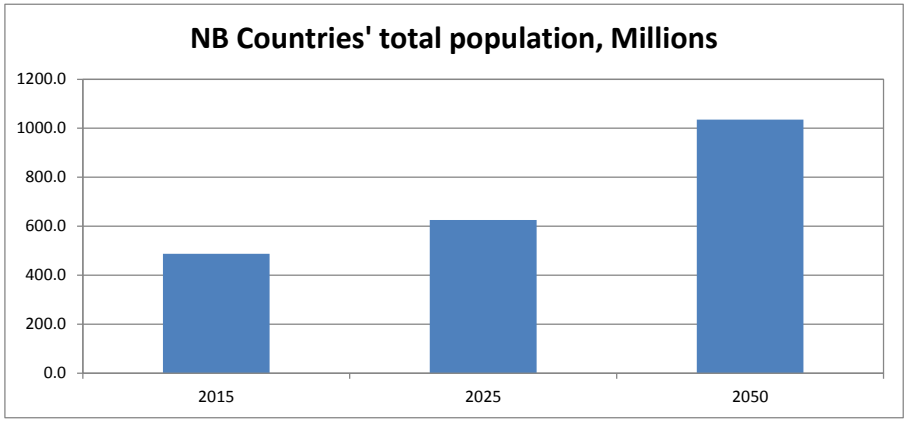
  ii) Notification of planned measures (information of Planned measures)

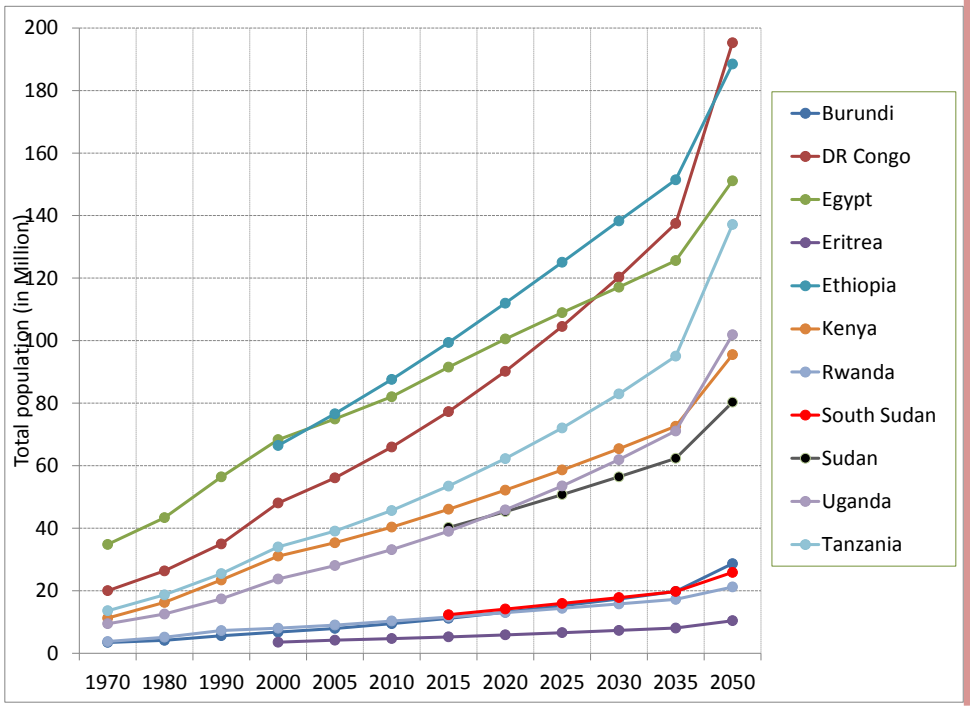
- Article 14 b is annexed pending resolution
- With the use of Science (NB DSS and Strategic Water Resources analysis) and the prevailing international water law (equitable utilization, Prevention of harm, joint planning, Cooperation and management of Conflict that might arise) the solution to article 14 b is in the offering.

The strategic water resources analysis

An example on *NBI's efforts to address basin water resources challenges;*

Water demand in the Nile Basin is rising rapidly



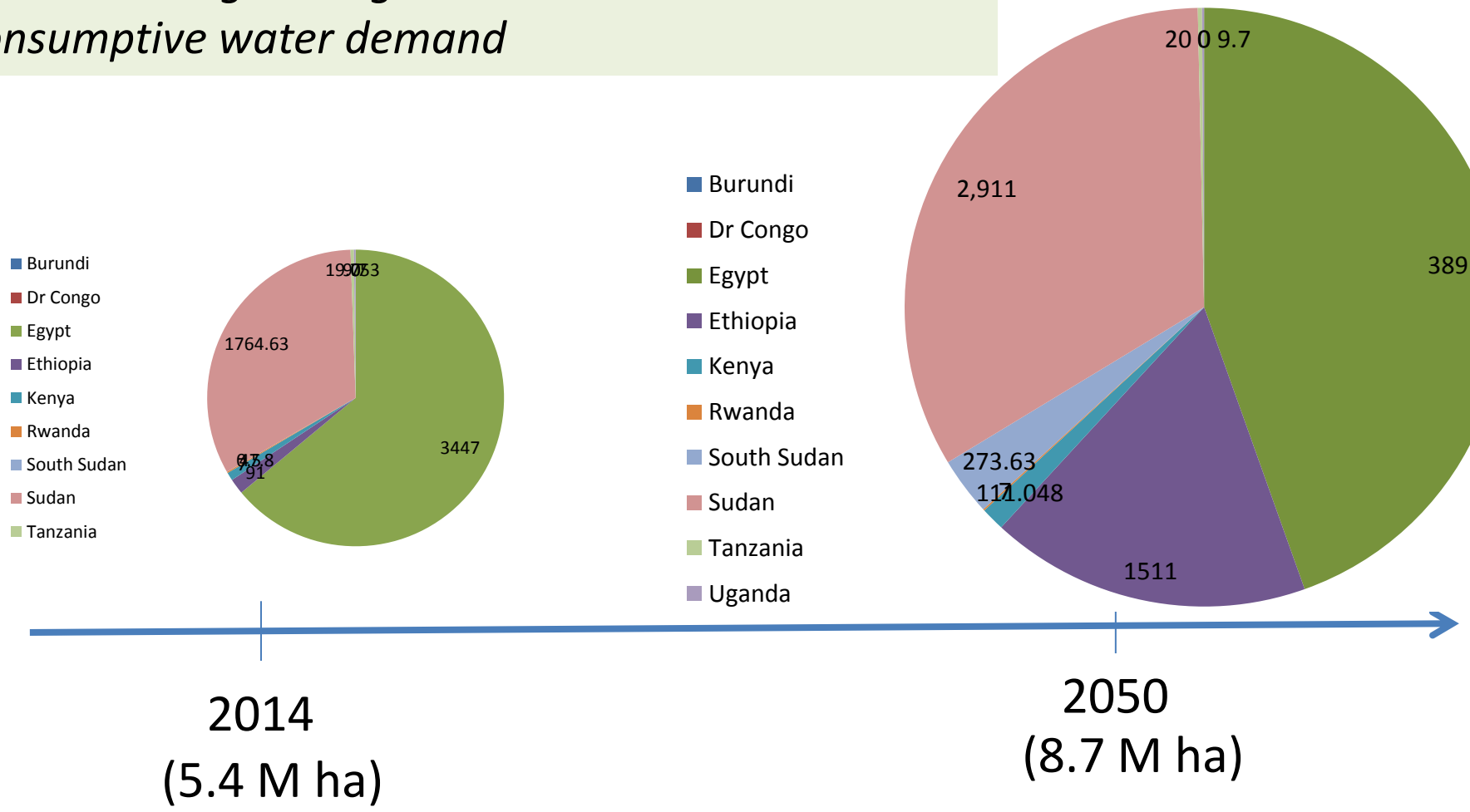


- Rapidly increasing water demand for consumption, food and energy production
- Decreasing per capita water availability

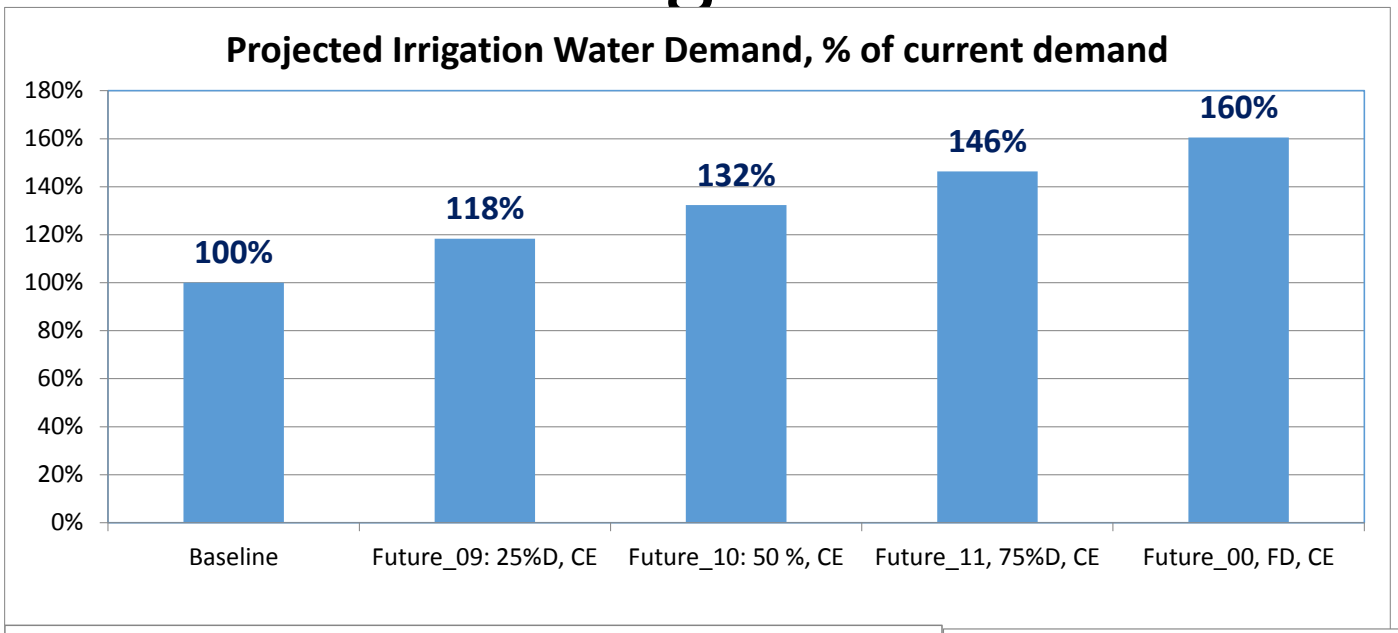
The Nile, compared to the demand for it, is a water scarce basin. *NBI is working with member countries to identify options for addressing the rising water demands sustainably reduce the potential for conflict over water use*

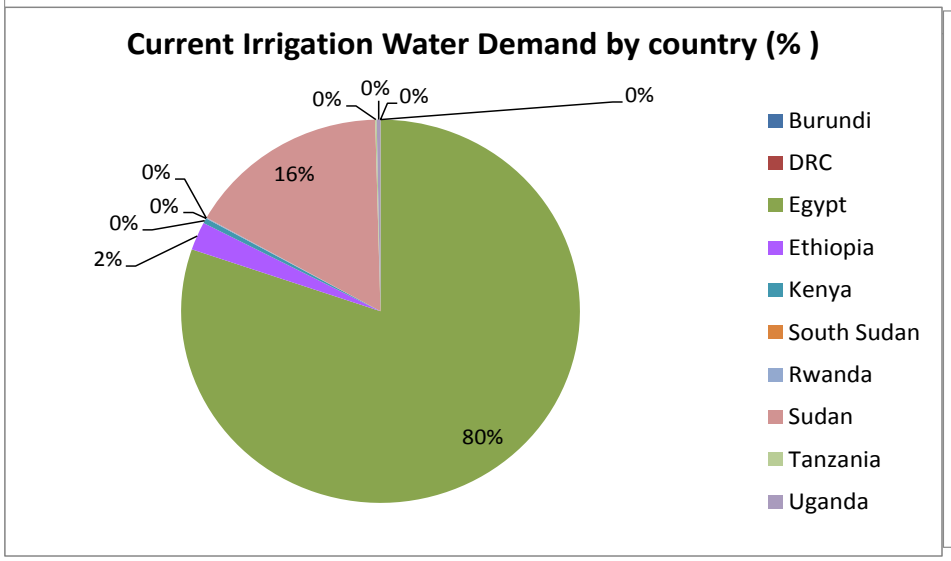
Planned growth in irrigation areas

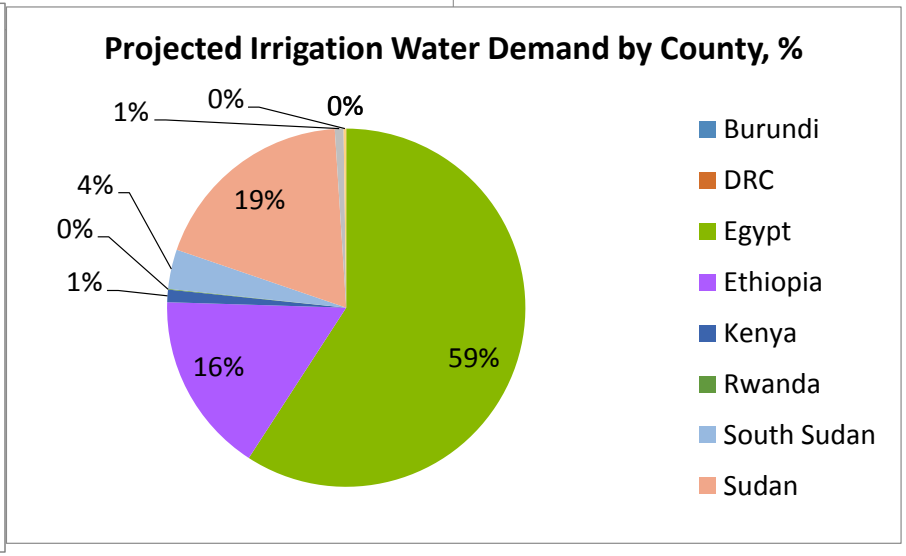
Irrigation is largest consumer of water
Growth in irrigated agriculture mean increase in consumptive water demand



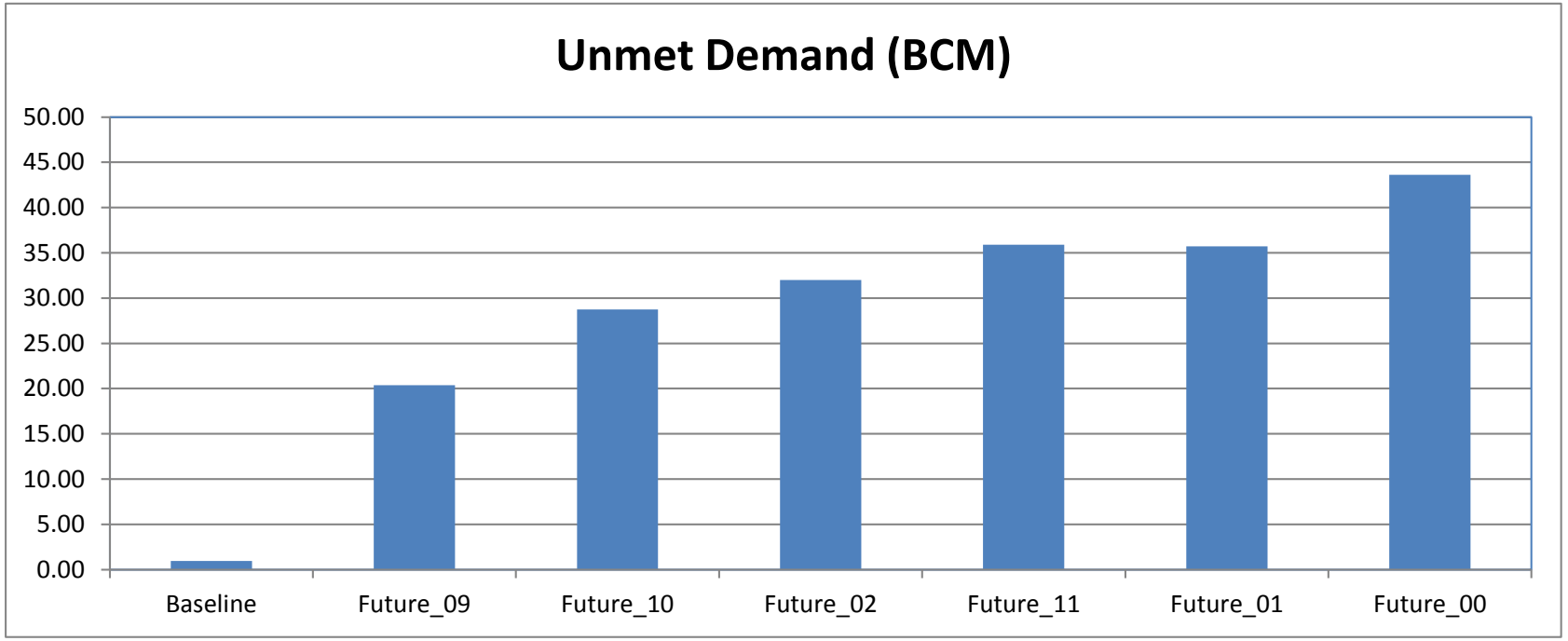
Scenarios of Irrigation Water Demand growth







Potential growth in water shortfall for irrigation



Scenario	Unmet Demand (BCM)
Baseline	0.97
Future_09	20.36
Future_10	28.73
Future_02	32.00
Future_11	35.88
Future_01	35.70
Future_00	43.62

Opportunities

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- *Optimal and sustainable utilization of shared water resources*
- *Sharing knowledge, experiences and best practices*
- *Strengthening capacities thru;*
  - *mainstreaming transboundary dimensions in national policies,*
  - *Standardization and harmonization of policies, tools and data collection formats*
  - *Training of personnel, bridging the knowledge gap among countries*

Challenges

- Institutional sustainability
  - Countries demonstration of ownership not a given, but earned thru demo of benefits
  - Innovative Financial resources mobilization
  - Niche of transboundary interventions beyond unilateral actions
  - High expectations
- Conceptual challenges; understanding benefits of cooperation (e.g beyond the river sharing of benefits)
- Financial sustainability
  - Dwindling opportunities for external support
- Hydro-Geopolitics of transboundary waters
- Lack of awareness and visibility of the efforts amidst other competing or similar initiatives

Challenges

- Transition institutional arrangement depicting temporary nature and not yet permanent - Lack of Permanent RBO – CFA
- Basin wide coordination require strong institutional mechanism and mandate
- Sustaining the gains requires a sustained and vast stakeholders involvement and visibility
- Competition and duplication of efforts with other regional initiatives that depend on the same resource base
- Uncertainty of when NBI will transform into a permanent RBO

Challenges

- NBI Legal Foundation: NBI Agreement, 1999
- Highly conflicting interests of NB countries
- Varying expectations of different Member States (more water, financing projects, etc.)
- Asymmetric capacities of the NB countries
- High dependence on Nile waters (DS countries)
- Huge untapped potentials (US countries)
- Limited water resources
- Balancing of existing uses and potential uses
- External finance (agenda and priorities might not be set according to basin needs

Challenges

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- Different interest of the Member States in terms of the NBI mission, mandate, role, etc.
- No overarching treaty; defines and regulates
- Parallel political and technical tracks
- Issues from CFA reflected in Governance (e.g. compromised data sharing procedures)
- Huge Disparity in countries' capacities; affecting programs, staff, piloting, pace, technologies, etc.

Lessons Learned

- Aggregate water demand of NB countries in short – to medium term can surpass available surface water resources.
- There are various ways by which NB countries can address the mismatch without necessarily over-stressing surface water resources.
- The NBI is working with member states to find solutions for addressing current and emerging challenges; Examples of such solutions include:
  - → ***Increasing the diversity of water resources investments- in increasing basin water yield; water use efficiency; managing scarce water resources***
  - → **Leveraging scale, Resource Use efficiency** → doing more with less; optimization
  - → **Building trust and confidence** → Conflict prevention through mutual gains from resource use efficiency ;
  - → **Sustaining the River and associated ecosystems**→ managing likely future mismatch between demand and supply; environmental flow; the Nile and associated ecosystems as Stakeholders;

Thank You

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