



**NILE BASIN INITIATIVE**  
INITIATIVE DU BASSIN DU NIL

# Towards Sustainable Groundwater Management in the Nile Basin

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# Water Uses in the Nile Basin

- Arid/semi-desert downstream countries of the basin have large irrigation schemes that fully rely on the Nile river flow
- Upstream countries still rely on traditional, subsistence level rain-fed agriculture.
- Other water uses
  - Hydropower
  - Fisheries and aquaculture
  - Inland transport – navigable waterways
  - Environment
  - Tourism - diverse natural resources and rich history of the Nile



High Aswan dam HEP



Fish market

# Water Management Challenges

Challenge is how to ensure the waters of the Nile are **utilized** and **managed sustainably** to meet the needs of all riparian states.

- 25% of the population of Africa – up to 600 million by 2025.
- One of the poorest regions of the world.
- Low Infrastructure development – only 10-15% of hydropower is developed and yet only 15% of the population has access to electricity.
- Up to 70% of the population are involved in agriculture – irrigation in Sudan and Egypt and subsistence agriculture in upstream countries
- Lack of a matured regional mechanism for coordinated water resources planning and management - Developments undertaken individually -
- Others
  - Lack of sufficient water storage,
  - poor water use efficiencies in agriculture,
  - insufficient knowledge on the hydrology of the Nile system, and
  - lack of working mechanisms for cooperative and mutually beneficial mechanisms



# History of Cooperation on the Nile

- **Nile water agreement (1959)** – that allocated Nile Water between Egypt and Sudan
- **HYDROMET Program (1967 – 1992)** - Decision was made by Egypt, Kenya, Sudan, Uganda and the United Republic of Tanzania that a hydrometeorological survey project be established, developed, with a regional centre at Entebbe
- **TECCONILE (1992 – 1998)** - to promote development, conservation and use of the Nile Basin water resources in a sustainable manner through basin-wide co-operation, and to determine the equitable entitlement of each riparian country to the use of Nile waters
- **Nile Basin Initiative (NBI) – 1999 – to date:** set up with a Shared Vision Objective “to achieve sustainable socio-economic devt through equitable utilization of, and benefit from the shared Nile Basin water resources”.
- **Cooperative Framework Agreement (CFA)** – aimed at establishing a permanent institutional mechanism to promote and facilitate cooperation among the Nile Basin States in the conservation, management and development of the Nile River Basin and its waters.

# About NBI



The **Nile Basin Initiative** (NBI) is a regional intergovernmental Partnership among 10 countries.

Egypt, Sudan, South Sudan, Ethiopia, Kenya, Uganda, DR.Congo, Rwanda, Burundi and Tanzania

**Objective** 'To achieve sustainable socio-economic development through equitable utilization of, and benefit from, the common Nile Basin Water resources'.



**STRONGER TOGETHER**

[www.nilebasin.org](http://www.nilebasin.org)

# NBI Structure

Council of Ministers - Nile-COM

Technical Advisory Committee - Nile-TAC

NBI Secretariat - Nile-SEC

ENTRO - Eastern Nile Region (Egypt,  
Ethiopia and South Sudan)

NELSAP - Nile Equatorial Lakes region  
(Tanzania, Kenya, Uganda, Rwanda, Burundi,  
DR Congo and South Sudan)



# NBI Core Functions



**Facilitating Basin Cooperation (Nile-SEC):** to facilitate dialogue, support and nurture cooperation amongst the Nile Basin countries so as to promote timely and efficient joint actions. It focuses on

- providing and nurturing the Platform for Cooperation;
- Strengthening Member States Capacity;
- Strategic Planning as well as Strategic Communication and Media engagement.

**Water Resources Management (Nile-SEC):** The overall Goal is to strengthen cooperative water resources management in the Nile Basin. Key activities under this core function include:

- Water Resources Analyses, Knowledge Services, Water Resources Assessment, Trans-boundary Policies and Program Technical Support (core).
- Capacity development

**Water Resources Development (Led by ENTRO and NELSAP ):** focuses on promoting multi-country investments with the primary objective of developing the Nile Basin water resources in an equitable, efficient and sustainable manner to reduce poverty, promote economic growth and integration among countries, increase resilience to climate and water related disasters and reverse environmental degradation.



# NBI Strategy

- ❖ To achieve the Shared Vision Objective, NBI prepared a 10 year strategy 2017-2027.
  
- ❖ 10 year strategy identifies six strategic priorities
  - ❖ Goal 1: Water Security,
  - ❖ Goal 2: Energy Security,
  - ❖ Goal 3: Food Security,
  - ❖ Goal 4: Environmental Sustainability,
  - ❖ Goal 5: Climate Change adaptation,
  - ❖ Goal 6: Strengthening Transboundary Water Governance.

# NBI Transboundary Groundwater Management



NBI Strategic direction No 1.4 aims at Enhancing conjunctive use of groundwater and surface water

NBI shall support member countries in

- groundwater monitoring;
- Improving the knowledgebase and capacity for sustainable management utilization and management of groundwater resources.
- putting in place and supporting cross-border mechanisms for joint management and sustainable utilization of shared aquifers.

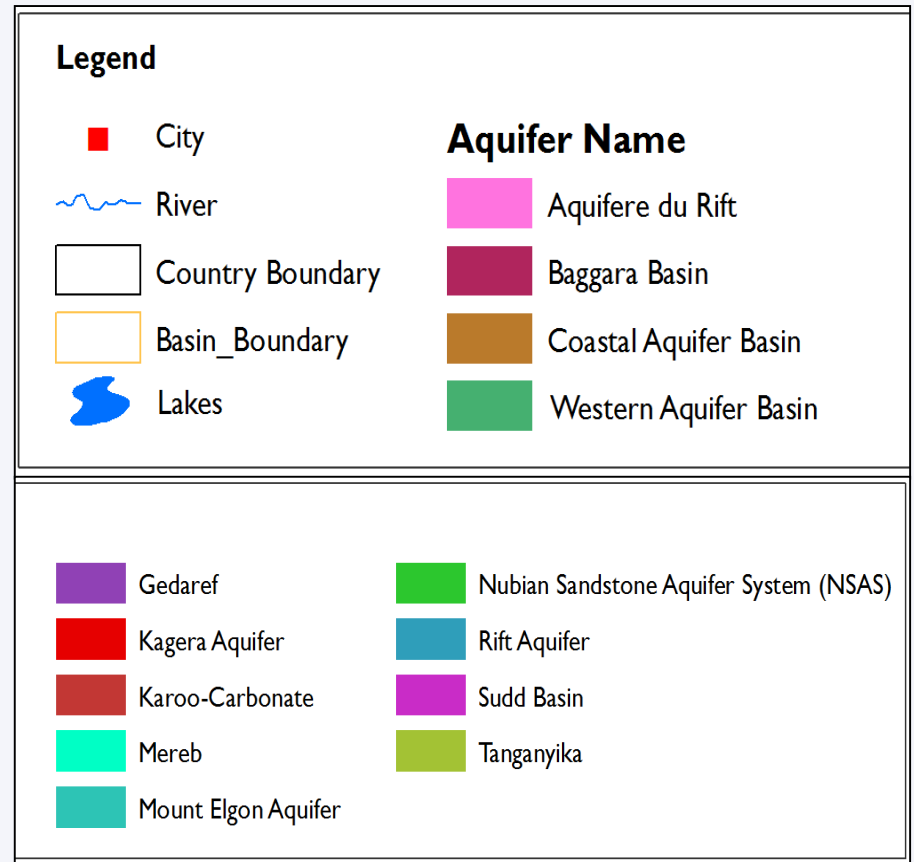
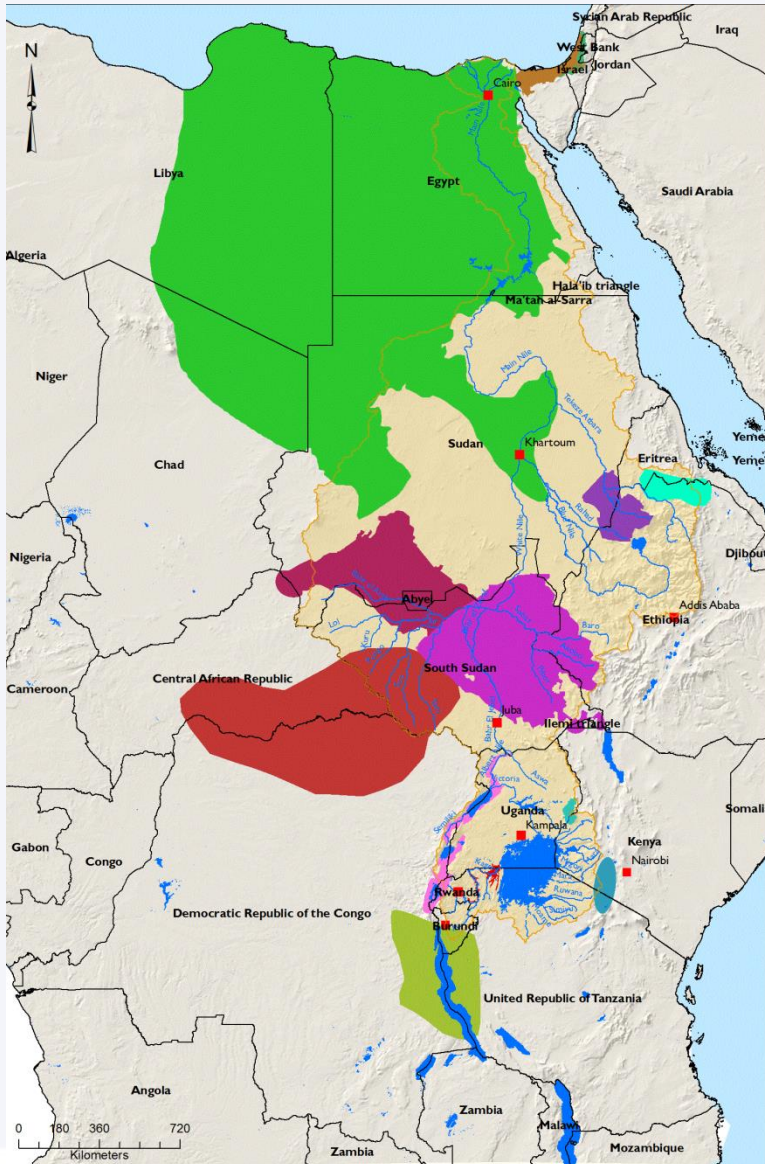
# NBI Groundwater Project



- **Project Objective:** to enhance knowledge and capacity for sustainable use and management of transboundary aquifers and aquifers of regional significance in the Nile Basin
- **Specific Objectives:** Building on previous GEF-financed actions:
  - further improve knowledge and understanding of groundwater resources in the Nile Basin;
  - strengthen the overall water resources management nationally and basin-wide;
  - respond to climate change impacts through effective risk-reduction adaptation measures, including conjunctive use and management of surface water and groundwater; and,
  - ensure a healthy ecosystem and strengthened livelihoods
- **Budget 5.3 M USD**
- **Funding – Global Environment Facility**

# Proposed TB Aquifers

- 1 – Gadaref: Ethiopia – Sudan
- 2 – Mount elgon; Kenya – Uganda
- 3 - Kagera aquifer: Tanzania – Uganda



# NBI Groundwater Project



- Focus on selected aquifers rather than 'basin wide'
- Geographic coverage:
  - Knowledge/data, concrete actions: Selected aquifers covering a subset of Nile Basin countries
  - Capacity building, stakeholder forums, etc: cover all currently NBI participating countries
- Project components:
  - **Understanding the resource base:** Enhancing the knowledgebase, information gaps, issues of groundwater status
  - **Groundwater monitoring:** baseline on aquifer yield, water quality; monitoring infrastructure enhancement (needs assessment); pilot RS based monitoring of groundwater and operationalize the same as part of NBI functions
  - **Action plans for assessment,** protection and for cooperative conjunctive use of surface water and groundwater; or strategy
  - **Enhancing awareness and Capacity strengthening** in remote sensing technologies for aquifer mapping and characterization,



# Project Components

**Component 1:** Furthering knowledge and understanding about availability of groundwater resources in the Nile River Basin and its adjacent areas

## Outputs:

- Assessments on key aquifers (of international and national importance), benefiting from TWAP methodology and other tools, including: *Safe recharge and sustainable yield; Climate change scenarios; GW/SW conjunctive management options; Governance structures (national and regional); Limitations of existing policies; legislation and institutional arrangements for GW management; State of knowledge on aquifers including gaps; Status of utilisation of groundwater resources; Identification of key groundwater dependent ecosystems*
- Transboundary aquifer maps
- Geo-based database of aquifers, including key attributes
- Database of national policies for GW management

# Project Components

**Component 2:** Development of action plans on groundwater resources governance, management , and protection for inclusion in national, sub-basin and basin-wide frameworks:– also including consideration of surface water/groundwater resources conjunctive use

**Outputs:** Application of innovative technology to develop climate resilient strategies and management actions responding to root causes identified in the GW assessments (C1) are included in the Eastern Nile and Nile Equatorial Lakes/ Subsidiary Action Programmes

# Project Components

**Component 3:** Targeted pilot projects within on-going ENSAP and NELSAP projects to explore conjunctive use of surface and groundwaters, and links to dependent biodiversity, land degradation and climate change adaptation

## Outputs

- At least 3 pilots illustrating appropriate innovative techniques such as amongst others most advanced remote sensing and MAR and SLM applications relevant to management and conjunctive use of surface and groundwater at the national and regional level

# Project Components

**Component 4:** strengthening capacity to address groundwater issues at the national and regional levels

## Outputs:

- Relevant national agencies, academics and NBI/LVBC representatives receive training on: *Groundwater assessment methodology; Hydro-diplomacy with focus on groundwater governance; Transboundary waters management legal and institutional components; Isotopes techniques applications*
- Targeted research programs and processes, including South-South cooperation, visits, exchanges, etc.
- Targeted training at various administrative levels in groundwater governance and management,
- Targeted training of multiple stakeholders on conjunctive surface and groundwater management and protection.
- Capacity built on water and gender for the promotion of gender equality and women empowerment.

# Project Status



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# Project Components

## Component 5: Communications and awareness raising

### Outputs:

- Information and guidance on groundwater issues prepared for different groups of stakeholders
  - Website; Lessons and experiences documented and disseminated; Groundwater /water network, IW:LEARN, CoP; School children focused actions; Nile-FM radio programmes; Active presence at Development Partners meetings and for a; Scientific conference

# Project Status



- Project concept (PIF) approved by GEF
- Preparation of detailed project document ongoing
- Submission to UNDP and GEF Headquarters by end of March 2019
- Endorsement by GEF CEO in May
- Project implementation to commence in 2<sup>nd</sup> half of 2019



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**THANK YOU!**