REPUBLIC OF SLOVENIA
MINISTRY OF THE ENVIRONMENT AND SPATIAL PLANNING
MINISTER'S OFFICE

International Roundtable
"Integrated Management of Shared Groundwater in South Eastern Europe"

Brdo pri Kranju, Slovenia, 14-16 November 2007

IAEA/ UNDP/ GEF "Mainstreaming Groundwater Considerations into Nile Basin Management" Project

by
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Organized by the
Slovenian Ministry of Environment and Spatial Planning
Global Water Partnership Mediterranean

Within the framework of
Petersberg Process Phase II / Athens Declaration Process
and
GEF IW:LEARN, Activity D2

Federal Ministry for the Environment, Nature Conservation and Nuclear Safety
HELLENIC REPUBLIC MINISTRY OF FOREIGN AFFAIRS
THE WORLD BANK

Overall Scope & Objectives

"Provide the scientific basis and necessary institutional and policy support for incorporating a "groundwater dimension" into planning and management of the Nile basin ecosystem "

Immediate Objectives:

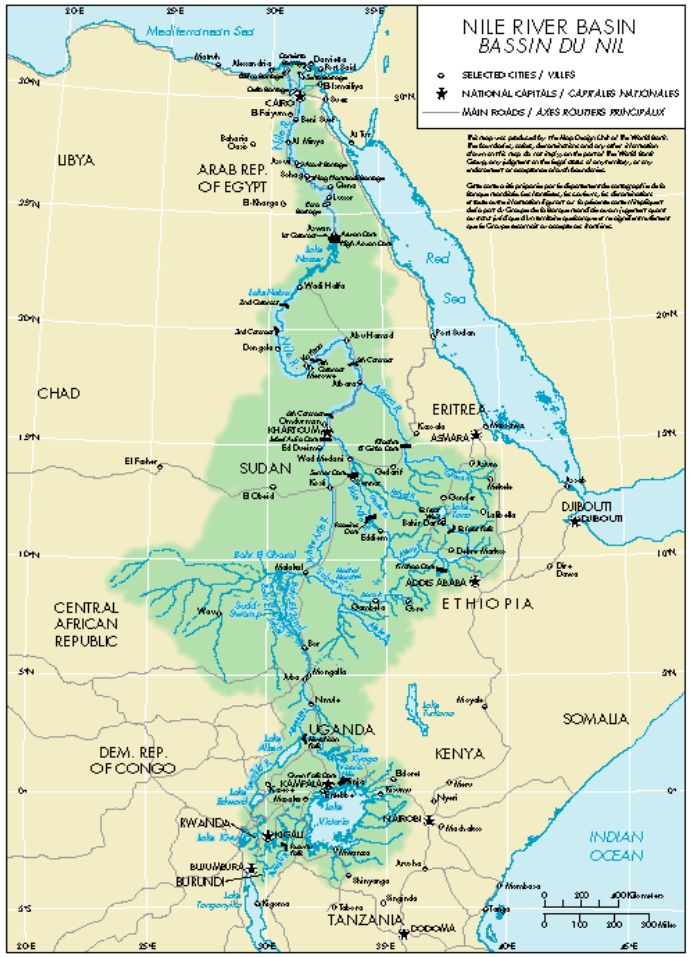
i. Improve assessment of groundwater-surface water interaction;

ii. Enhance the characterization of the role of groundwater in wetlands and of the Sudd Swamps in the regional water cycle;

iii. Improve the use of models in estimating basin-wide water balances

iv. Facilitate inclusion of groundwater considerations into integrated Nile basin management

NILE BASIN MAIN FEATURES

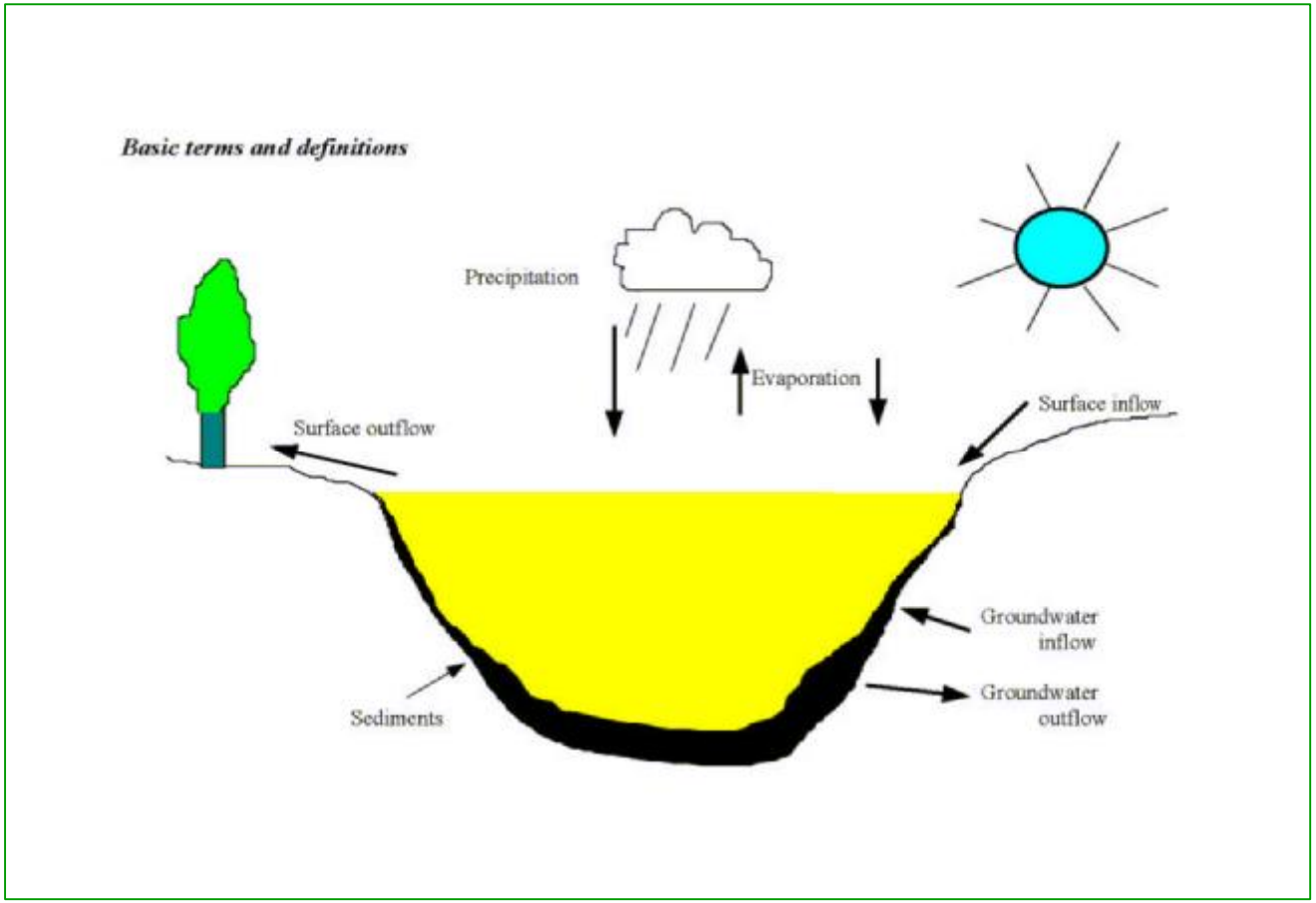


- The Nile is one of the world's great rivers.
- 6,700 kilometers long
- Ten countries share the Nile
- The Nile River Basin serves as home to 160 million people
- 300 million live within the ten countries

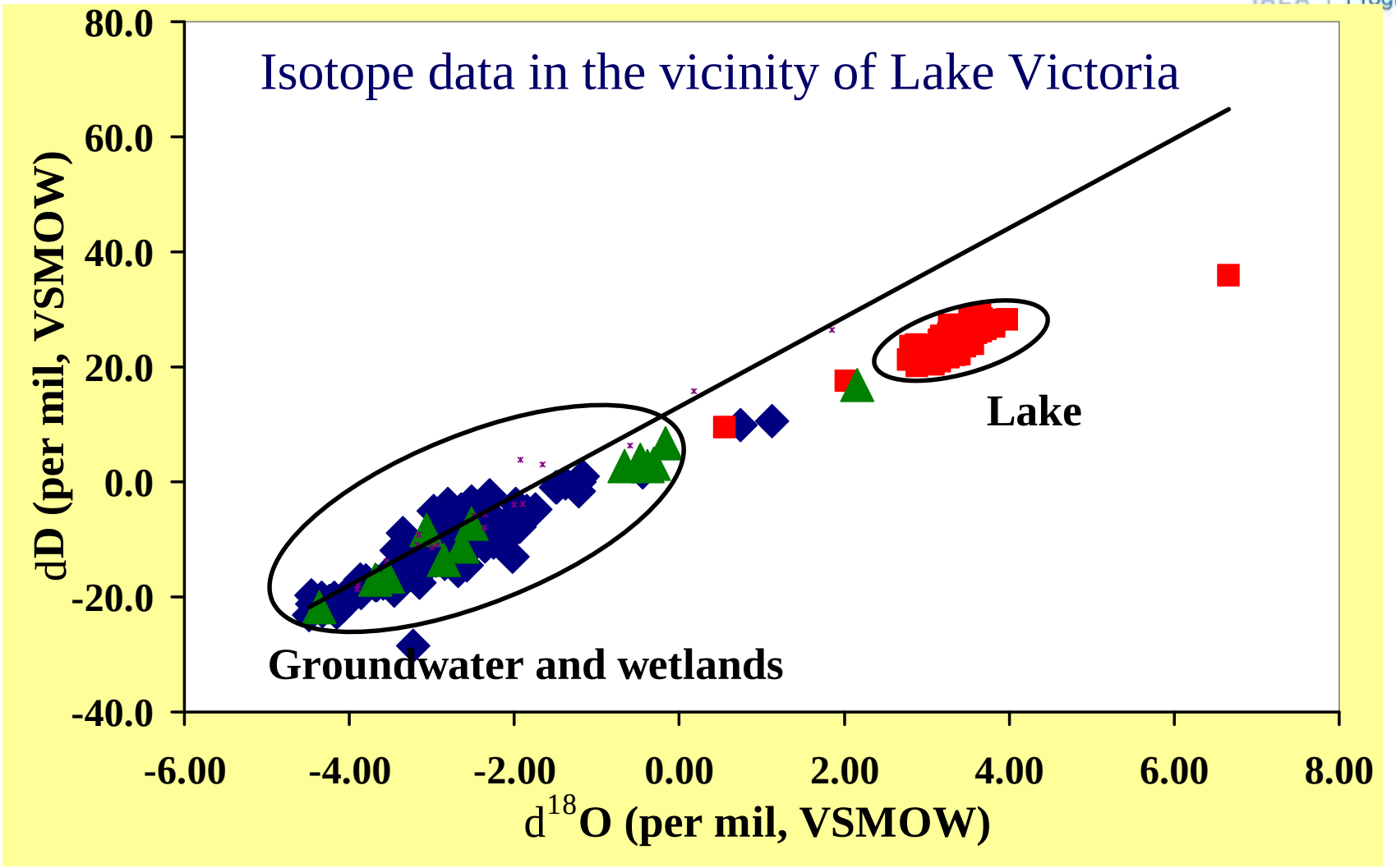
WATER BALANCE OF LAKE VICTORIA USING ISOTOPE DATA

- Water balance of lake Victoria is dominated by over- lake precipitation and evaporation
- Many rivers flowing into the lake

WATER BALANCE OF LAKE VICTORIA USING ISOTOPE METHODOLOGY



- ***Lakes*** **are complex systems, but...**
- **well suited for studies with environmental isotopes**


Isotope data in the vicinity of Lake Victoria
80.0
60.0
40.0
20.0
0.0
-20.0
-40.0
dD (per mil, VSMOW)
-6.00
-4.00
-2.00
0.00
2.00
4.00
6.00
8.00
d18O (per mil, VSMOW)
Lake
Groundwater and wetlands

Achievements?
Phase 1: 2003- present (IAEA funded)

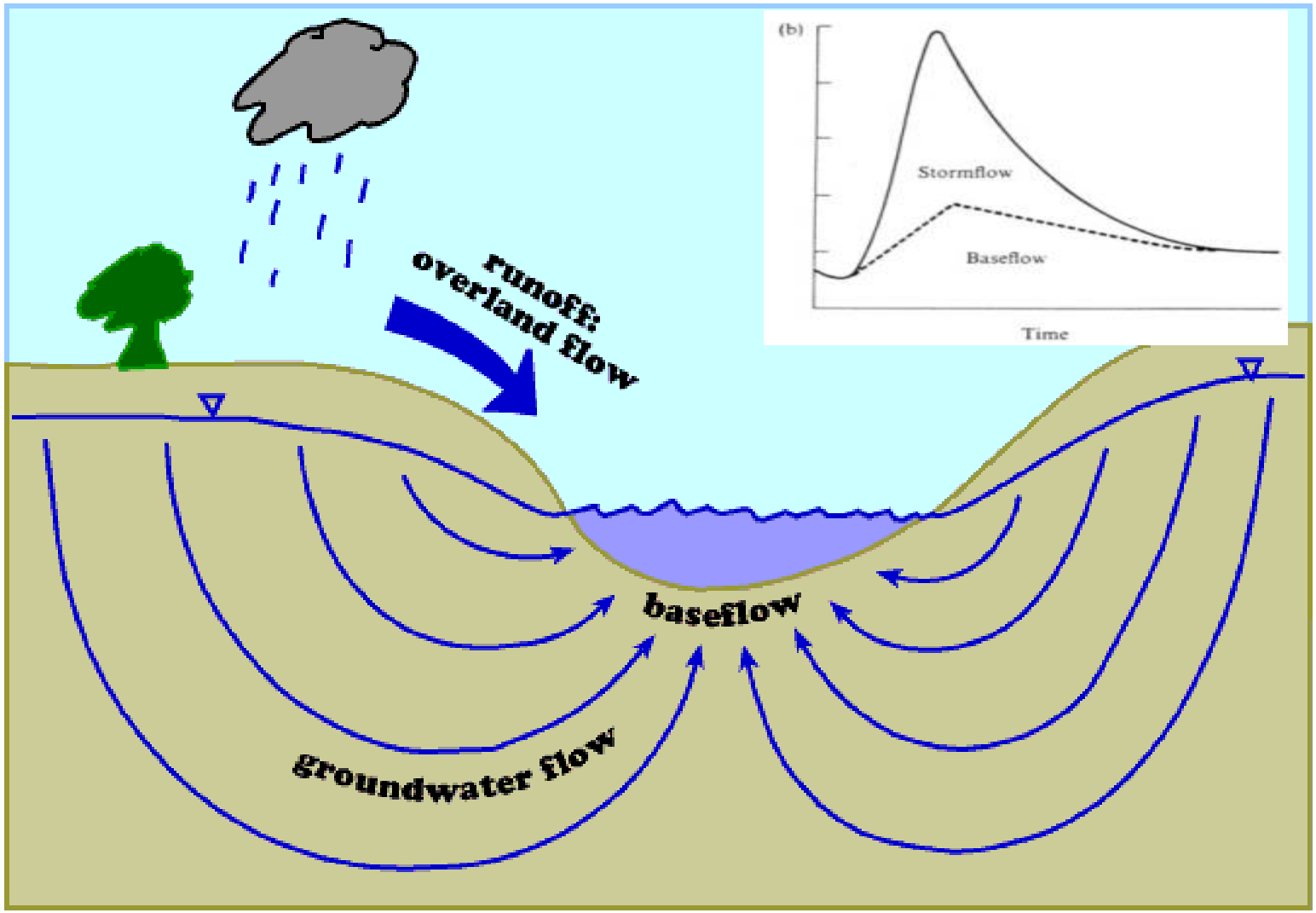
- First phase demonstrated both the need for and the value in assessing groundwater in part of the Nile Basin (Lake Victoria.)
- Demonstrated the value of various techniques including isotopic analysis
- This serves as “proof of concept” for the approach to be utilized in this new GEF supported project.

Phase 2: 2008- 2010 (new IAEA/UNDP/ GEF project)

Key Challenges to Achieving Objectives?

- Huge data gaps;
- Difficulties in conducting sampling/assessment activities e.g. access to the Sudd swamps for sampling;
- Lack of examples in incorporating groundwater into river basin management (e.g. modeling etc.);
- Too few linkages between groundwater and surface water professional communities/ institutions.

Determination of Groundwater Age from Tritium Decay



Water in Swamps and Wetlands
Is it part of the surface water budget?

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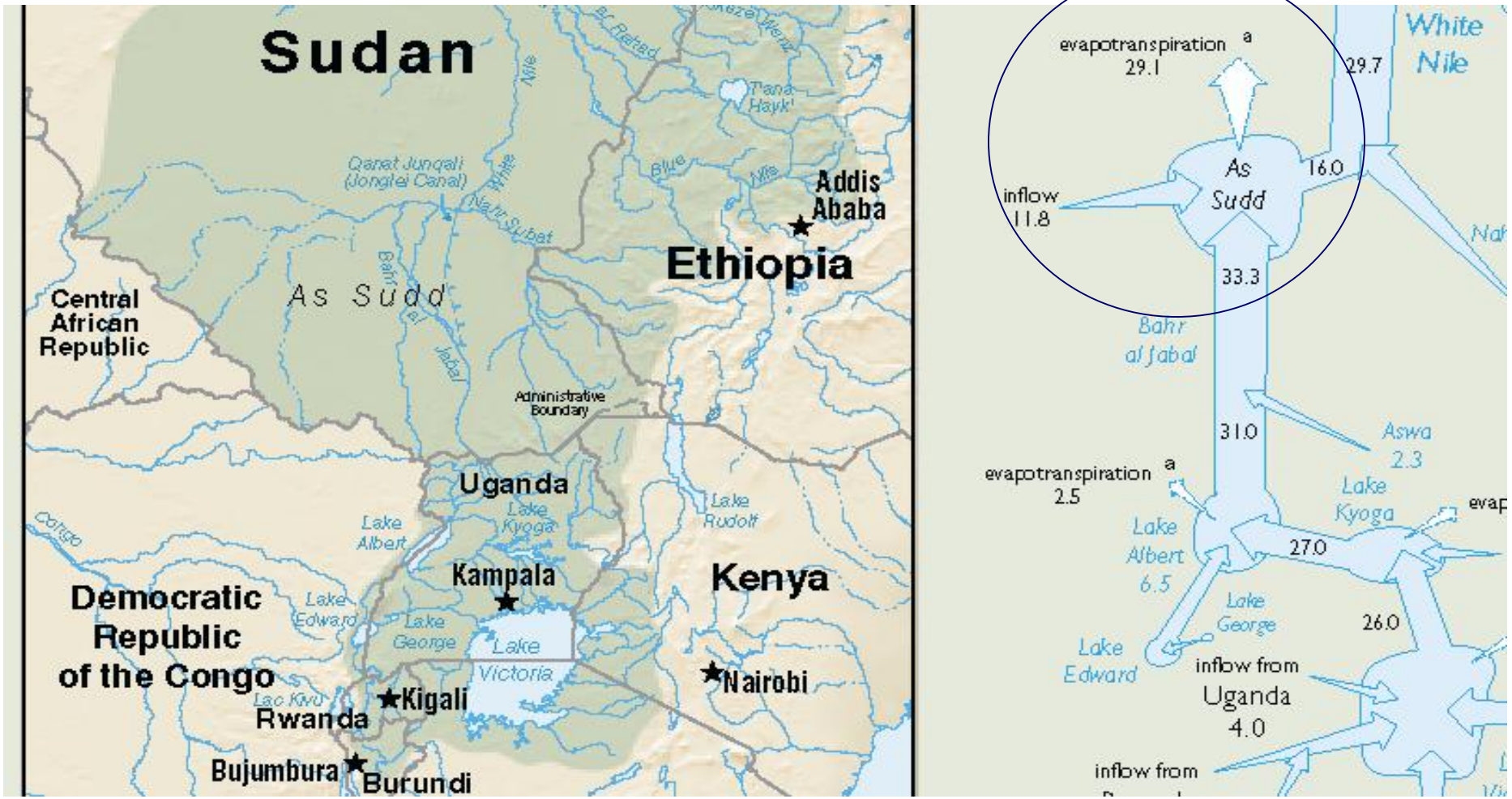

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What is being done to address challenges?

- Ambitious sampling campaigns;
- Close collaboration with the relevant components of NBI work (e.g. Water Resource Management Project – Decision Support System etc.)
- Early approach and communication with Under-Secretaries from the Governments of Sudan and South Sudan has been initiated.

Conclusions

- Integrating groundwater into river basin management (and lakes etc.) is important in many river basins around the world (eg. Nile, Danube/ Sava, La Plata, Amazon etc.)
- Needs to be based on sound science.
- Efforts to bring together professions/ institutions still needed.