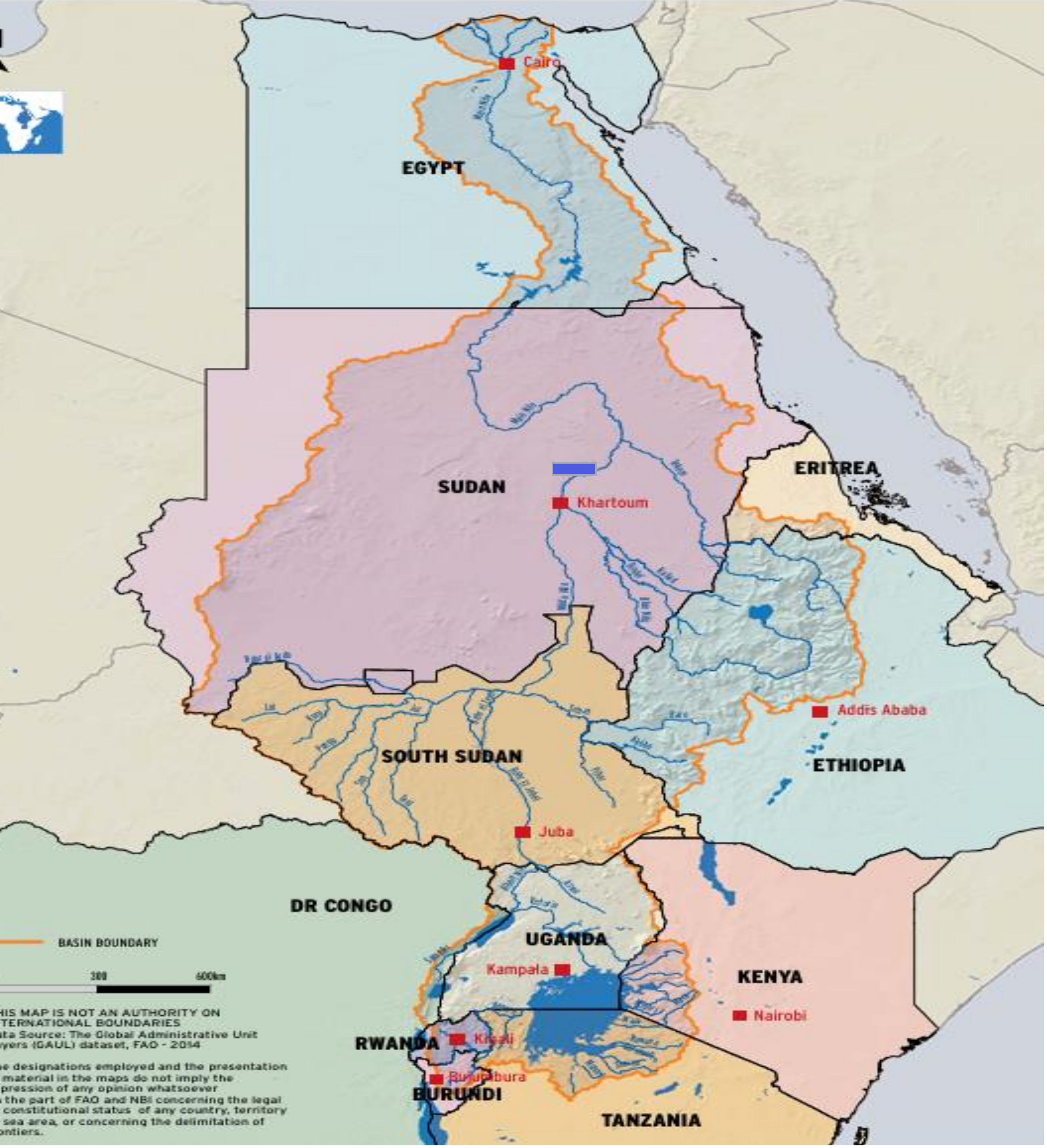


NILE BASIN DAMS DATABASE (NB-DD)

Enhancing Dam Safety in Nile Basin Countries

NELSAP-CU
NILE BASIN INITIATIVE
INITIATIVE DU BASSIN DU NIL

Nile Equatorial Lakes Subsidiary Action Program Coordination Unit (NELSAP-CU)

March 2025

WHAT IS NB-DD?

It is an online georeferenced and centralized database of dams in the Nile Basin. It is designed to support dam development and safety management in the Basin. It includes detailed information on the dams, such as

- Location,
- General features,
- Hydrology,
- Geologic features,
- Seismic hazard,
- Reservoir features,
- Dam features,
- Spillways and Outlet works,
- Instrumentation,
- Existing conditions of the dam,
- Downstream area,
- Dam safety documentation

WHY NB-DD?

The Nile Basin, a transboundary river system shared by ten countries, is home to many dams. However, the number and status of the dams were not fully known

- Dam inventory has not been conducted in Burundi, DR Congo, South Sudan
- The dam inventory in Ethiopia, Kenya, Rwanda, Sudan, Tanzania, and Uganda is incomplete and has not been updated.

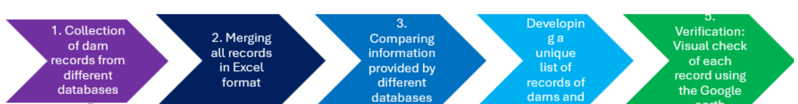
Dam inventory is the basis for dam safety regulatory activities, including

- Development of dam registry,
- Dam classification,
- Dam risk assessment,
  - ✓ Dam surveillance: prioritizing dam inspection etc
  - ✓ Dam rehabilitation: prioritizing rehabilitation

APPROACHES AND METHODES

*Two Data Collection Approaches and Methods have been utilized for the database. The first approach is **traditional data collection**, which involves gathering dam data and supporting documentation from national focal points and various agencies across the Nile basin countries, including sectors like energy, agriculture, mining, and water resources management. This method also encompasses collecting information from existing dam records for the Eastern Nile and the Nile Equatorial Lakes countries through the dam information/inventory available from ENTRO and NELSAP, as well as obtaining data from global datasets.*

*The second approach is enhanced data collection , which occurs concurrently with traditional data collection. This involves the development and calibration of **remote detection** /**remote sensing** tools to detect barriers such as dams and/or water bodies like reservoirs. It includes the analysis of satellite imagery for the basin using remote sensing technologies, with a particular focus on Nile Basin dams. Additionally, this approach aims to enhance the database by integrating additional dam information obtained from remote sensing surveys, including new dam data and downstream consequences. Finally, data cleaning and validation are essential steps incorporated in this process.*



Traditional method

- Database by NELSAP,
- IWMI, Water reservoir and irrigation development in Ethiopia (2007)
- Global Geo-referenced Database of Dams (GOODD database) (2010)
- Rwanda Water portal database (2012),
- Future Hydropower Reservoirs and Dams (FHRED) database (2015)
- Geo-referenced Global Dams and Reservoirs (GEODAR) dataset (2019)
- FAO's global information system on water and agriculture database (AQUASTAT) (2019)
- ICOLD database (2020),
- Global Reservoir and Dam (GRAND) database (2021)
- Global Power Plant Database (GPPD) (2021)

Earth Observation (Remote Detection)

- DHI Data Base (2023/2024)

THE DATABASE

The database has been developed using a **WebGIS** platform. It features 813 dams and contains 70 dam data/information for each dam.

ACCESS

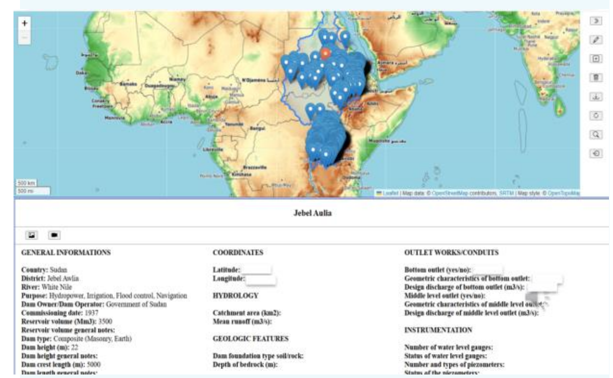
The database could be accessed via

- NBI website https://nilebasin.org/
  Data & Knowledge Portal ➔ Nile Basin Dams Database

- https://dams.nilebasin.org/api/dams

FUNCTIONALITY

- View
- Edit
- Create
- Delete



ACKNOWLEDGMENTS

This study has been financed by the World Bank through the Cooperation in International Waters in Africa Trust Fund (CIWA).