
Terms of Reference
Intern – Eastern Nile Drought Assessment
10th NCCR Internship Batch (27th ENTRO Internship Batch)

1. Background

The Nile Basin Initiative (NBI) is an intergovernmental partnership of the ten Nile Basin states sharing the Nile. The NBI established to develop the river cooperatively; reduce poverty and environmental degradation; share substantial socio-economic benefits and promote regional peace and security. The NBI guided by a Shared Vision, which envisages achieving “sustainable socio-economic development through the equitable utilization of, and benefit from, the common Nile Basin water resources”.

The Eastern Nile Technical Regional Office (ENTRO) is one of the three Centers of the Nile Basin Initiative, (NBI). Guided by the mandate in the 1999 Strategic Action Program Guidelines, NELSAP – CU and ENTRO operate at a sub-basin level, and are charged with facilitating water resources development, including investment projects in agriculture, environmental, energy and river basin management, as well as gathering data and conducting analysis on issues unique to the sub-basins such as flood and drought.

The NILE COOPERATION FOR CLIMATE RESILIENCE (NCCR) is one of the NBI main projects that aim to improve mechanisms for cooperation on water resources management and development in the Nile Basin.

ENTRO Internship and Young Professionals Program: ENTRO has taken the initiative to establish the Internship and YPs program as part of its core activities and successfully implemented in the last 12 years. This program has proven immensely popular in fostering cooperation and allowing ENTRO to expand its professional network. The Internship Program has proven more effective in terms of building regional capacity in the Eastern Nile Basin and bringing a diversity of expertise and outreach opportunities to ENTRO and academia. Up to now 26 different batches of internship have been implemented through the program.

2. Eastern Nile Drought Assessment

Drought is a natural hazard that has significant negative effects on human and environmental systems, and it is widely considered as the most complex and least understood of all the natural hazards. It is an event of prolonged shortage in the water supply and a recurring phenomenon that can lead to significant losses to societies affecting different aspects of human life such as agriculture, food security, water and energy supply, and the environment. Drought events differ in the following aspects: intensity, duration, spatial coverage and the consequences of this impact can be direct and indirect. The impacts of drought can also be economic (energy generation, tourism industry, fishery production, water supplies), environmental (loss of biodiversity, degradation of environment, erosion of soils, water quality and quantity effects) and social (food shortages, increased groundwater depletion, loss of natural and cultural heritage, decreased quality of life).

Droughts are usually categorized as Meteorological, agricultural, and hydrological drought where in the first stage deficiencies in precipitation occur which later directed to the plants water demands cannot be met due to soil water deficiency resulting from dryness brought on by reduction in moisture from precipitation condition. The third stage is characterized by the condition of significant reduction in surface water storages and wetlands where much of the human and natural system can severely be impacted by the losses in the amount of available water in the hydrological system that can lead to a socio-economic drought that reflected by the imbalance between the supply and demand of economic product.

Unlike other natural hazards, drought happens through evolving over a long period of time. Hence, assessing the magnitude of drought can assist the evaluation of drought processes and impacts then to mitigate and/or adapt the anticipated effects from the extreme climates. Moreover, a timely drought monitoring system and an in depth understanding of the evolution and phenomenon of drought can play a critical role for designing an effective impact mitigation measure such as designing an appropriate planning and management of water resources

Theme-I: Eastern Nile Drought Assessment: Meteorological and Hydrological Drought

Under this theme, the occurrence and distribution of Meteorological and Hydrological drought will be analyzed based on different indices in the four sub-basins of the Eastern Nile (EN) Basin for the past 20-30. The assessment will utilize observation and reanalysis data to compute indices in the respective category. Interns are expected to engage in obtaining observation or reanalysis data and conduct desk review on existing knowledge products about Meteorological and hydrological drought phenomenon in the EN for streamflow and precipitation measurements from multiple national, regional and global sources for the analysis.

Theme-II: Eastern Nile Drought Assessment: Agricultural Drought

Under this theme, interns will engage in obtaining available high resolution remote sensing data for Vegetation Index products that comprise either the Normalized Difference Vegetation Index (NDVI) or Enhanced Vegetation Index (EVI) within the domain of Eastern Nile Basin from global and regional sources. Moreover, Interns are expected to conduct desk review on existing knowledge products regarding agricultural drought occurrences and impact and conduct verification of assessment results through event sequencing for the last 20-30 years in the Eastern Nile Basin.

3. About the position

ENTRO intends to engage highly motivated candidates from EN countries with tertiary level education, to work collaboratively in several activities to facilitate outreach efforts in regional cooperation. The Interns are expected to help bring fresh perspectives to ENTRO work and significantly learn from this experience to help with their professional career development.

ENTRO internship opportunity is expected to be beneficial to the interns by providing them an exposure to working as team in a regional organization, develop a regional perspective for their work, learn new skills, tools, techniques, and methodologies, interact with other regional and international staff/consultants/interns, and contribute to the work of ENTRO in fostering and improve cooperation on water resources development and management within the Eastern Nile Basin including work on information/analysis

4. Objective

The main objective of the assessment is to quantify and monitor trends of categorical drought and its spatial and temporal distribution in the Eastern Nile Basin as well as update database at ENTRO for drought assessment.

5. Duties and Responsibilities

- Collect observation (point and remote sensing) and reanalysis data for meteorological, hydrological and agricultural drought assessment from national, regional and global sources,
- Conduct desk review of knowledge products on drought occurrences specific to the EN river basin,
- Assess the Meteorological, hydrological, and agricultural drought indices for the last 20-30 years
- Update drought observation database at ENTRO specific to the EN River basin
- Apply new techniques (e.g., data analysis, development of new knowledge products/maps, assisting in model development and application, preparation of reports and documents, etc.).
- Organize and compile the assessment to present the results for policy/decision makers, stakeholders, and for knowledge base at ENTRO and EN countries.
- Participates in capacity building training, field visits and workshops.
- Performs other duties as assigned or required.

6. Qualification Requirements

- **Minimum B.Sc.** in Hydrology, Meteorology, Remote Sensing and GIS, Water Resources Engineering and Management, Hydraulic Engineering, Irrigation Engineering, River Basin Management, or related fields
- Minimum of five (5) years of Experience after B.Sc. degree in the above fields of area.
- Having MSc. Degree or above in the above fields is an advantage.
- Knowledge of applying and using drought assessment models and tools is an advantage.
- Knowledge of programming language (preferably R) and/or using water resources data analysis tools, GIS and any other spatial analysis and statistical tools is an asset.
- Fluency in written and oral communication in English, capability of clear report writings with excellent illustrative and graphical presentation skills,
- Capability of working in multi-disciplinary and multi-cultural teams, and under tight deadlines.
- Must be under thirty-five (**35**) years of age at the time of application.
- Only Citizen of one of the Eastern Nile basin countries (Egypt, Ethiopia, South Sudan, and Sudan) **can apply**.
- Female candidates are **highly encouraged** to apply.
- Previous ENTRO interns **are not allowed to apply!**

7. Deliverables:

At the end of the internship the following deliverables are expected:

Deliverables/Outputs	Theme	Planned Date of report submission
Desk Review	I and II	After 2-weeks of the Internship Started
Data Sourcing and compilation for drought assessment	I and II	After 1 month of the Internship started
Categorical drought assessments and indices computation specific to the EN River Basin	I and II	After 2 months of the internship started
Draft Report compilation and submission	I and II	After 2 and ½ months of internship started
Final Report and Presentation (Consolidated)	I and II	At the End of the Internship



8. Selection:

ENTRO will evaluate the applications inclusively and contact the finalist. During the Selection process, ENTRO will ensure country representations equally among the EN basin Countries (Egypt, Ethiopia, Sudan, and South Sudan).

9. Implementation Arrangements:

- The deadline of application is **30-September 2024, time: 24:00hr** (mid-night Addis Ababa time)
- This assignment is a 3-month assignment, extending from **01-November 2024 to 31-January 2025**
- The Intern will be stationed at ENTRO office, Addis Ababa, Ethiopia.
- ENTRO will cover the cost of the travel expenses (ticket, visa, etc) as well as giving monthly stipend to cater accommodation and living expenses.
- ENTRO assigns internship supervisor who will be responsible for overseeing the work and to whom each intern shall report.
- ENTRO shall also provide:
 - Adequate support to the interns by facilitating gathering of data, access to relevant information and authorities.
 - Providing adequate office space and support facilities (such as internet)
 - Capacity building programs and training will be organized in collaboration with other partners, and it will be defined later.
- Any studies, reports, or other material, or otherwise, prepared by the Intern during the internship period shall belong to and remain the property of the ENTRO. The Intern may retain a copy of such documents.

10. Application:

Interns must submit their CVs together with the cover letter **Via email** to the following email addresses: entrovacancy@nilebasin.org, gabdi@nilebasin.org, etedla@nilebasin.org

And copy to the following e-mail addresses:
tatnafie@nilebasin.org, egoda@nilebasin.org

PLEASE make sure **to include all** email addresses above during the application:

If you have questions, feel free to contact Internship and Young Professionals Program Coordinator through e-mail: etedla@nilebasin.org