



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



**The Egypt Investment Benefit  
from The Nile Basin Cooperation**



## VISION

“A credible, adaptive regional institution fostering sustainable transboundary cooperation”.

## MISSION

“We Work to realize shared benefits of cooperative Water Resources Development and Management in the Eastern Nile”.

**ONE RIVER ONE PEOPLE ONE VISION**





# NILE BASIN INITIATIVE

## INITIATIVE DU BASSIN DU NIL

The NBI/ ENTRO Logo can be interpreted as the spirit of unity in the Nile Basin, showing the Nile winding between a field of Green on the left, symbolizing the lush vegetation of the upstream countries, with a field of light green on the right, symbolizing the more arid land of the downstream countries. On the right-hand side is the Nile Basin Initiative's name in both English and French the two dominant languages of the region.

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### **Acknowledgement**

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## THE EGYPT INVESTMENT BENEFIT FROM THE NILE BASIN COOPERATION



### ABOUT ENTRO



*Eastern Nile Technical Regional Office (ENTRO) Addis Ababa, Ethiopia*

ENTRO was established in 1999 and comprises Egypt, Ethiopia, and Sudan (South Sudan joined in 2012). ENTRO supports the countries in preparing cooperative water resources investment programs and projects, capacitating and strengthening institutions and providing secretariat support to its governance. The goal of ENTRO is sustainable socio-economic development through the equitable utilization of, and benefit from, the common Eastern Nile Water resources. Since its establishment, ENTRO has played significant role in advancing and enhancing cooperation among the Eastern Nile Countries on water resource development and management.

Eastern Nile though linked to and from one hydrologic unit of the entire Nile Basin, bears unique features, making a compelling case for the four countries to form ENSAP.

These features include:

**Hydrology:** This sub-basin supplies over 86% of the Nile flow over a 3–4-month period, characterized by seasonal and inter-annual variability.

**Topography:** The cool, high, and rugged Ethiopian highlands offer huge hydropower generation and water saving potential

**Environment:** Land degradation and environmental problems has resulted in huge sediment load in the Nile.

**Culture:** The four countries share common religions and intricate historical and cultural linkages.

**Demography:** The four countries make nearly two-thirds of the entire Nile Basin population.

**Geography:** The four countries are geographically interlinked making infrastructure interconnection power, road, rail possible.

**Economy:** Owing to scale, the four countries could make foundation for a viable regional integration possibility.



## ABOUT EGYPT

Egypt has been part of the Nile cooperation since the Hydromet 1967-1992, UNDUGU (1983-1992), followed by TECCONILE (1993-1999) before joining NBI in 1999.

Egypt is the most populous country in the Arab world and the third-most-populous country in Africa, behind Nigeria and Ethiopia. Most of the country is desert, so about 95% of the population is concentrated in a narrow strip of fertile land along the Nile River, which represents only about 5% of Egypt's land area.



### FACTS

- **Official Name:** Arab Republic of Egypt.
- **Form Of Government:** Republic
- **Capital:** Cairo
- **Official Language:** Arabic.
- **Area:** 386,662 square miles (1,001,449 square kilometers)
- **Population:** 107.7 million
- **Language:** Arabic
- **Life expectancy:** 69 years (men) 74 years (women)

**Hydrology:** Egypt's dependency on the Nile is 97% of its total renewable water resources, making it vulnerable to flow variation due to climate change or upstream human activities. Its water share currently stands at 560 m<sup>3</sup> annually per capita, which is far below the water poverty line (1000 m<sup>3</sup> annually per capital)



**Topography:** - Southern Egypt's landscape contains low mountains and desert. Northern Egypt has wide valleys near the Nile and desert to the east and west. North of Cairo, the capital, is the sprawling, triangular Nile River Delta. This fertile land is completely covered with farms.

**Environment:** - Egypt's climate is dry, hot, and dominated by desert. It has a mild winter season with rain falling along coastal areas, and a hot and dry summer season (May to September).

**Culture:** - Modern Egyptian culture is a blend of ancient traditions and contemporary influences. It's characterized by a mix of Islamic, Arabic, and Western elements. Urban areas are more cosmopolitan, while rural areas maintain more traditional practices.

**Population:** Egypt Population currently are 116,905,779

**Geography:** Southern Egypt's landscape contains low mountains and desert. Northern Egypt has wide valleys near the Nile and desert to the east and west. North of Cairo, the capital, is the sprawling, triangular Nile River Delta. This fertile land is completely covered with farms. Physiographically, Egypt is usually divided into four major regions the Nile valley and delta, the Eastern Desert, the Western Desert, and the Sinai Peninsula.



## INTRODUCTION TO NBI INVESTMENTS IN EGYPT

### ACCESS TO RELIABLE AND AFFORDABLE ELECTRICITY

#### ETHIOPIA-SUDAN (RABAK) – EGYPT (NAGE HAMADI) REGIONAL TRANSMISSION

The Eastern Nile Power Trade Studies proposed the Eastern Nile Regional Transmission Line, connecting the grids across Ethiopia, Sudan and Egypt and has the potential to enable the country to generate up to USD 600 million per year from electricity exports. Under this study the Rabak-Nage Hamadi Transmission Line was identified.

After the identification, the Feasibility study for the Ethiopia-Sudan (Rabak) – Egypt (Nage Hamadi) power interconnection has been completed. The study covered Ethiop-Sudan 1,200 MW or 9,200 MWh/yr and Ethiopia- Egypt 2,000 MW or 7,700 MWh/yr interconnections that will facilitate import and export of power between the three countries.

### EASTERN NILE WATERSHED MANAGERMENTS



**Objective:** To establish a sustainable framework for the management of selected watersheds in the sub-basin to improve the living conditions of the people, enhance agricultural productivity, protect the environment, and reduce sediment transport and siltation.

**Project Goal:** Provide enhanced support (to facilitate investment) for the sustainable management of the Eastern Nile sub basin.

**Beneficiaries:** - the following watershed management projects has been implemented in the three countries: Upper Rib, Upper Gumera, and Jemma (Ethiopia); Dinder, Ingasena, Lower At- bara, Lau (Sudan) and Lake Nasser-Nubia (Egypt).

**Project Description:** -The ENWSM Project has built a significant degree of experience in the analysis, identification, and preparation of watershed interventions from a transboundary, basin-wide, hydrologic-unit perspective. A regional knowledge base in the form of the CRA has been established. Fast track projects worth about USD 80 million, which have piloted important regional approaches to watershed management, are implemented. The area of cultivated land whose use is unsustainable is estimated at 4.7 million ha. ENTRO initiated and implemented WSM as a fast truck project from 2004 - 2015 at various levels.



Towards meeting its objective, the Watershed project undertook two sets of activities in parallel between 2004 -2008:

- I) Regional Cooperative Assessment (CRA) study for watershed Management and
- II) Preparation of investment ready projects for national implementation (fast track projects).

**Status:** - Both sets of activities were successfully completed.

**Eastern Nile WSM CRA Study:** - The CRA study is geared at enhancing the understanding of benefits and costs accruing to WSM projects across the sub-basin’s countries and assessed transboundary Analysis of WSM interventions.

**Investment projects preparation:** - Investment projects prepared for Egypt, Ethiopia, and Sudan.

### EASTERN NILE IRRIGATION AND DRAINAGE PROJECT (ENIDP)



Projects Identification, Feasibility study, detail design and construction has been implemented in Egypt and Ethiopia. Status of implementation varies in each country. Megech Saraba Pump and Ribb Irrigation Projects implemented in Ethiopia with the support of 160 million USD.

**Project goal:** - contribute to attaining the agriculture sector goals of Egypt, Ethiopia and Sudan including food security, to improve rural employment opportunities, livelihoods and income, reduction of rural poverty.

**Beneficiaries:** - Development of preliminary option for irrigation improvements; Good irrigation water management practices identified; database of EN irrigation (existing and planned) developed Agreement mediated between countries to advance new irrigation development. Ethiopia: 20,000 ha Irrigation under development 12,600 Framing Household (56,700 people) Directly benefited from the project.

**Egypt:** 25,200 -27,800 ha Irrigation under development

**Generated Employment:** 107,200 Directly and 214,400 indirectly

**Projects under preparations/ to be implemented:** A potential of more than 1,500,000ha Irrigation projects Regionally Identified to be implemented in the EN.





## Eastern Nile Joint Multi-Purpose(JMP) Study

Ethiopia participated in the landmark Eastern Nile Joint Multi-Purpose (JMP) Study. The JMP identified the Abbay/Blue Nile sub-basin as most suitable for cooperation among Egypt, Ethiopia, and Sudan on joint large-scale transformational multipurpose sub-basin cooperation in infrastructure development from which each country could derive benefits. Even though the JMP did not result in implementable projects as initially envisaged, the study nevertheless yielded two useful working papers:



Paper 1: Environmental and Social Perspectives on Blue Nile Multipurpose Development and  
Paper 2: Strategic Options Assessment for Blue Nile Multipurpose Development.

Building on these studies, ENTRO has been advancing preparation for Eastern Nile Basin cooperation from which Ethiopia is benefitting.

**Project goal:** - is to contribute to transformational and sustainable socio-economic development, economic integration, and stability in the EN region. A more immediate development objective of the JMP is to undertake cooperative and sustainable development and management of the shared Blue/Main Nile water resources.

**Project Description:** - Move from single sector/or unilateral to multipurpose program.

**Project Objectives:** - undertaken cooperative and sustainable development and management of the common Blue/Main Nile water resources through the JMP-1 project, putting in place the requisite transboundary institutions: linking the three countries thru multipurpose storage and power system infrastructure: improving watershed and flood plain management: modernizing irrigation system, promoting related investment (eg. in transport, private sector, rural electrification, etc) and to define JMP more closely and to enable identification of the first set of investments within a broader joint multipurpose program.

**Beneficiaries:** - Scoping study completed. 2 working papers; Working paper 1; Environmental and social perspectives on Blue Nile Multipurpose project development. Working paper 2; strategic options assessment for Blue Nile Multi-Purpose development

The JMP included:

- “One System Inventory”, which established a ‘no-borders’ database of natural resources and information across the Eastern Nile sub-basin.
- An independent Scoping Study that examined water resources matters to broadly assess development options in the basin, which would fulfill JMP criteria.

The preparation of Thematic Papers on “Financing and Implementation Arrangements” and on “Institutional and Broad Legal Considerations”.



## PLATFORM FOR COOPERATION



## CAPACITY DEVELOPMENT

### SKILLS-CAPACITY BUILDING

Capacity building of nationals in areas, including: scholarships; internships; media training; negotiations training; project planning and management; Integrated Water Resources Management (IWRM); Decision Support Systems (DSS); expert working group consultations on ongoing studies (SOB, Wetlands studies; cascade coordination, watershed management; SSEA/ environmental and social safeguards, policies, upstream investment studies such as MSIOAs); knowledge-exchange study visits to RBOs, etc.

### HYDRO-DIPLOMACY:

#### 1. Objective of hydro-diplomacy

- Training National Negotiation Teams; Study Visits; provision of platforms for targeted stakeholders with potential to contribute to the peaceful resolution were undertaken by ENTRO.
- EN Hydro-diplomacy Dialogue Forum, EN Water Law Forum and EN Security Forum – Tana were among hydro-diplomacy work conducted by ENTRO.

**Countries Benefited: Ethiopia, Egypt, South Sudan and Sudan**

### MEDIA CAPACITY BUILDING:



*Media Training Juba, Sudan.*

Engaging the media, keeping them informed through robust communication and participation has been given due emphasis as one of the building blocks of Eastern Nile Basin. Thus, ENTRO partners with the media in the member States to raise awareness on the opportunities and benefits of Nile cooperation and the need for the EN countries to work together to address the shared challenges, risks, and threats.



This was done in line with The NBI Communication and Stakeholder Engagement Strategy 2018-2023 identifies and prioritizes the media among NBI's key stakeholders, whose support deemed critical to the successful attainment of the NBI Shared Vision Objective. To this end:

- Tailored media training targeting communication professionals from Egypt, South Sudan, Sudan and Ethiopia conducted with funding support obtained from the German Government thru GIZ (FA).
  - Under NCCR project (ongoing since 2021) two rounds of media training conducted and training engaged journalists working in different media outlets (from Ethiopia, Egypt, South Sudan and Sudan) ENTRO management and Staff, and ENSAPT ladders. Overall participants capacitated though program.
- Countries Benefited:** Egypt, Ethiopia, South Sudan and Sudan

## INNOVATIVE STAKEHOLDERS FORUM

The main objective of this forum is to engage five critical Eastern Nile Stakeholders the Faith Community (mainly of the two predominant faiths Christian and Muslim), Hydropower/Dam operators and Ex-Diplomats (who have good knowledge of the Nile issues), media house owners, parliamentarians to promote all-inclusive Eastern Nile Cooperation and avoid or at least minimize misunderstanding and mistrust that hinders the shared vision.



Under NCCR project (ongoing since 2021) two rounds of innovative stakeholder's forum conducted and the forum engaged Eastern Nile Stakeholders (from Ethiopia, Egypt, South Sudan and Sudan), ENTRO management and staff and ENSAPT ladders. Overall participants attended and exchanged information on the status of Nile Cooperation and benefits gained through investment in EN.



**INTERNSHIP AND YOUNG PROFESSIONALS PROGRAM**

**1. Background**

ENTRO has taken the initiative to establish the Internship and Young Professional program as part of its core activities and successfully implemented in the last 12 years. The internship program started in December 2011 when ENTRO worked with the World Bank to modify the implementation arrangement of the Eastern Nile Planning Model (ENPM) project. This has helped ENTRO to engage the countries through partnership with scientific communities (Eastern Nile Universities) despite the political differences at the time.



*Interns During Filed Visit.*

The internship program has proven popular in fostering cooperation and allowing ENTRO to expand its professional network. The program has also delivered results and proven more effective in terms of building regional capacity and bringing a diversity of expertise and outreach opportunities to ENTRO engaging the member countries through this unique and structured capacity development program. Up to now 25 different batches of the internship program have been implemented with the financial support from the World Bank under different projects such as Eastern Nile Planning Model (ENPM), Nile Cooperation for Results (NCORE) and Nile Cooperation for Climate Resilience (NCCR).

ENTRO internship opportunities is beneficial to the young professionals by providing them an exposure to working as team in a regional institute; working in a multi-cultural environment; develop a regional perspective for their work; learn new skills, tools, techniques, and methodologies; interact with other regional and international staff/consultants/interns; visits to water resources development projects and infrastructures; participate in a workshop and professional networking events; and contribute to the work of ENTRO in fostering and improve cooperation on water resources development and management within the Eastern Nile Basin.



*Interns from Egypt, Ethiopia, South Sudan, and Sudan have been enrolling under the ENTRO’s Internship and Young Professional program. As a result, Eastern Nile countries did acknowledge the contribution of the program and recommended its sustainability and expansion. Considering the ever-increasing number of applications to enroll into the program and to meet the demands of learning new skills and knowledge, the program has been extended its reach outside academia to include Young Professionals from other government ministries (specifically water affair ministries), private sector, civil society, and other*



*7th Internship Batch*

## 2. Objectives

*The Internship and Young Professionals (I&YPs) program at ENTRO has two overarching objectives to achieve in the transboundary water management and cooperation of the Eastern Nile Basin. These objectives are:*

*1) To Create a knowledge community among young professionals from the Eastern Nile Basin Countries to support/facilitate the emergence of a shared understanding about the Nile resource base – its potential, the challenges it is facing, and establish enabling environment/platform for transboundary water cooperation.*

*2. To engage early career professionals in transboundary dialogue and trust building among relevant Nile Basin stakeholders to enhance cooperation, mitigate risks, and harness opportunities.*



*8th internship Batch During Graduation*

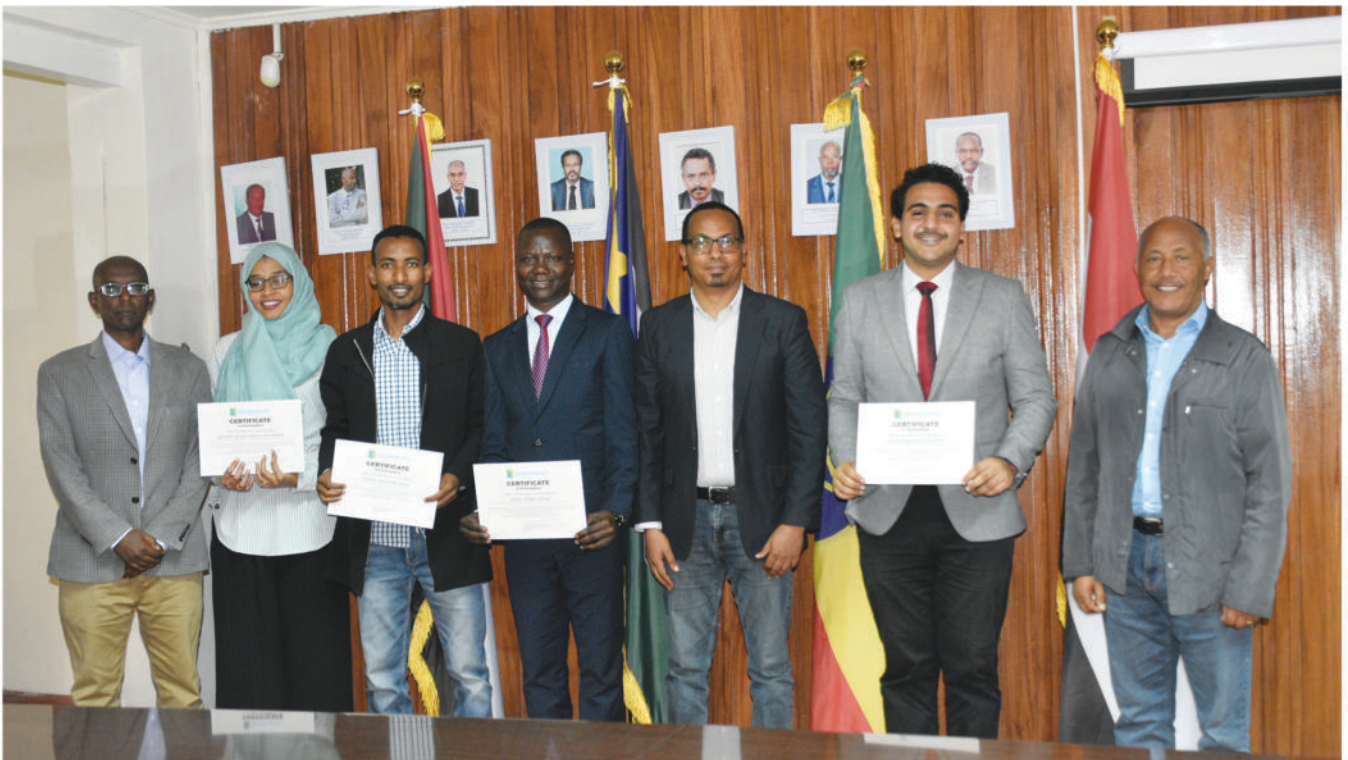


### 3. Program Categories

There are four categories structured to implement the 3-months internship and young professionals' program at ENRO. These are:

#### Category one: Regular Internship Program (for Interns)

This category mainly engages young people from the Nile basin countries to work together in selected challenge that address water issues, as well as other water management issues at the basin level. This category targets youths from disadvantaged contexts, who have ideas with the potential to improve water issues in the region, but who have not had significant training and/or funding opportunities before. The selection will strive for gender balance. ENTRO also build the capacity of those interns by giving them continuous training sessions and engaging them in different capacity building programs, field demonstrations, and workshops. This internship gives for the youth the chance to start their career and help them acquire better idea of what they want to do in the future.



*5th Batch*

#### Category Two: Joint Studies (for Interns)

This category aims to empower young leaders from the region to carry out joint studies by offering them the opportunity to work in different institutes in the basin in addition to NBI centres. The interns will be provided an intensive training program and mentoring support by senior level experts. This programme will bring young leaders capable of successfully designing sustainable and inclusive water projects that significantly improve living conditions of the Nile Basin communities, while supporting the Nile Basin cooperation. This new component of the internship program will be coordinated directly by ENTRO, and the joint studies will be done cooperatively with different EN institutes.



**Category Three: Flood Management Team-FMT (for Young Professionals):**

This category is periodic engagement of young professionals for Eastern Nile Flood Management and Forecasting activity. This is one of the activities that ENTRO initiated as a regional cooperation effort coordinated by the Eastern Nile countries. The program has been running for the last twelve flood seasons and created a system that links multiple stakeholders to work together to address flooding and reducing the risk of flood devastation. To support this program, ENTRO engage young professionals from Eastern Nile countries with previous experience in performing flood forecasting and early warning tasks and work together with ENTRO flood team.



**Category Four: Regular Young Professionals Program:**

This is the category where young professionals with some experiences are invited to fill some gaps of ENTRO by giving them specific tasks. While contributing to development and enhancement of knowledge and analytical tools, these young professionals also benefit by building their capacity, acquiring new skills and exposure on issues of the Nile basin.



#### 4. Thematic Area

ENTRO built capacities of interns for the last 12 years with 25 batches of internship program implementation and given an opportunity to exercise and improve their technical capacities in multiple thematic areas which have relevance for transboundary water management and cooperations. The following are some of the thematic areas, but not limited to, where interns have been engaged:

- Flood and Drought Management
- Hydrological and Climate analysis and modelling
- Agriculture and hydropower development
- Environment and sustainability
- Water-Energy-Food-Ecosystem (WEFE) nexus
- Water information management system
- Watershed management
- Water governance, diplomacy, and Institutions
- Remote sensing and spatial modelling
- Data, toolkits, models development and application
- GIS and Remote Sensing (Spatial analysis and mapping)
- Dam safety and reservoir management.
- Groundwater potential assessment
- Climate change, etc

The internship program has been implementing using the above listed thematic areas and provided interns and young professionals an opportunity to engage or participate in the form of Assessment (Case study), Tailor made capacity development trainings, and Field visits demonstration (for practice). This approach permitted ENTRO to provide to interns to have first-hand knowledge and be on track to become an expert in the Nile Basin water management issues.



6th Batch





## 5. Results

### 5.1 Overall Program Implementation

Since the start of the internship program at ENTRO in 2011, 25 batches of internship batch have been implemented that enrolled 216 interns and young professionals from the four countries of the Eastern Nile. These are Egypt, Ethiopia, South Sudan, and Sudan. The program was financed by the World Bank through three projects namely ENPM, NCORE, and NCCR. The following summary shows the overall implementation results of the Internship and Young Professional program since its commencement.

Table [1]: Total number of ENTRO Interns

Implementation Years	Projects	Total Number	Gender		Country			
			Male	Female	Egypt	Ethiopia	South Sudan	Sudan
2011-2024	ENPM, NCORE, NCCR	216	166	50	20	89	44	63

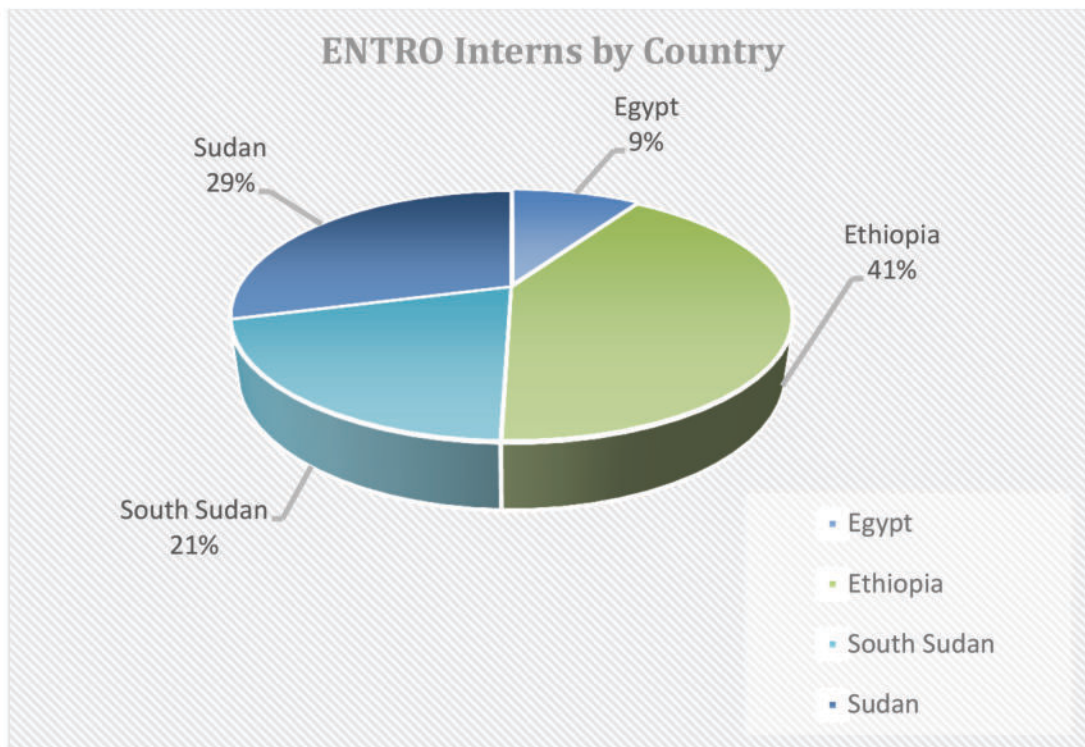


Figure [1]: ENTRO Interns by Country



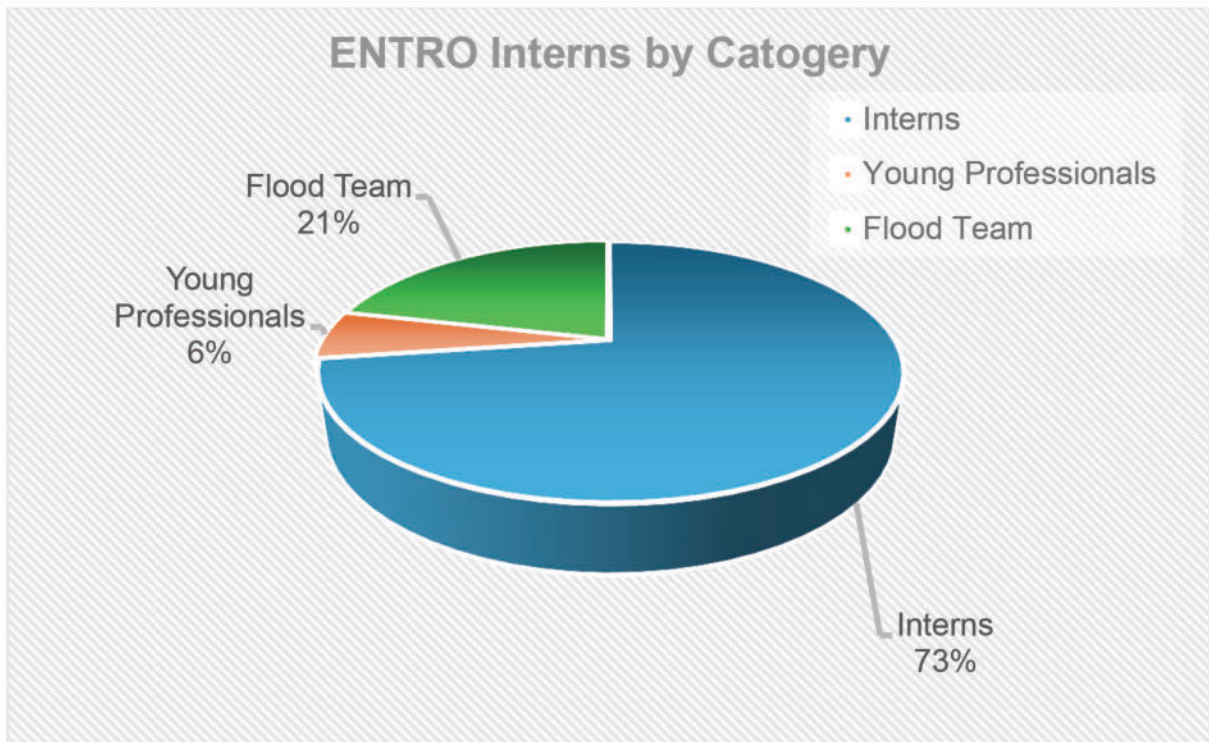


Figure [2]: ENTRO Interns by Category

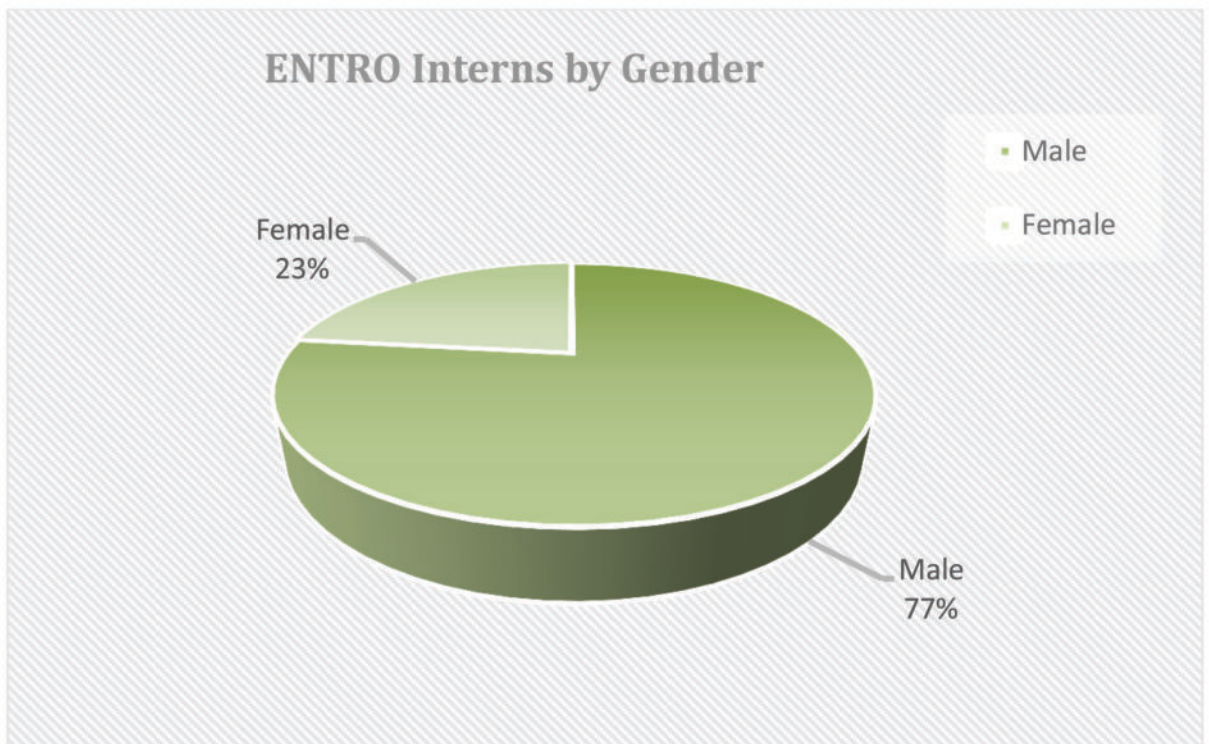


Figure [3]: ENTRO Interns by Gender



## 5.2 Countries Benefit

The internship and young professional program have supported member countries in terms of building capacities of early and mid-career professionals with contemporary knowledge and skills that are necessary for the transboundary water resources management in particular and water sector in general. On the other side, ENTRO has also benefited through the program in terms of obtaining new datasets, information, and toolkits which have been generated by Interns. Moreover, the program has significant impact on increasing the number of water professionals' network across the Eastern Nile region in addition to the technical capacity development. Most of the Alumni interns who have attended ENTRO's internship and young professional program are currently working in water affair ministries, water research centers, universities, and the private sector in their respective county as well as in regional and international organizations such as NBI, World bank, etc.



*4th Batch During Filed Visit*





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**DESSIE ROAD, IN FRONT OF ARARAT HOTEL**

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