



**Nile - Flow Volume 17**  
July – December 2024

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Editorial Committee  
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## ABOUT THE NEWSLETTER

ENTRO produces a magazine called Nile - Flow. We print free copies, which are sent to our governance members, line ministries, stakeholders in the eastern Nile Region, NBI Centers, our Development Partners and counterparts across the world.

Nile - Flow features institutional and technical information related to Nile water cooperation activities undertaken by Eastern Nile Technical Regional Office (ENTRO), Eastern Nile countries and partners.

## WHAT IS IN THE NAME?

We have chosen “Nile -Flow” as the name of our Newsletter.

**Nile** – Our great river!

**Flow** – The flow of our great river, running through the Four sisterly Eastern Nile Subsidiary

Action Program (ENSAP) Countries of Egypt, Ethiopia, Republic of South Sudan, and the Sudan; connecting the people, their cultures, their histories, their livelihood, and shared destinies since time immemorial.

In the psychological sense also symbolizes a feeling of energized focus, of total engagement, and success in the activity being undertaken– i.e., in the ENSAP cooperation process we are all engaged in. Thus, the twin message: a description of reality, on the one hand, and a statement of hope, vision, and purpose on the other.



## MESSAGE OF ACTING EXECUTIVE DIRECTOR



Eastern Nile Technical Regional Office (ENTRO) has been established by the Eastern Nile Council of Ministers (ENCOM) in June 2002 to identify, prepare, and facilitate implementation of cooperative projects within the Eastern Nile basin. The overall purpose of ENTRO is to support ENSAPT and ENCOM in the complex task of developing, implementing, and managing the multi-country Eastern Nile Subsidiary Action program. ENTRO country members are Egypt, Ethiopia, South Sudan and Sudan.

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In this Nile Flow newsletter, a variety of topics are covered, which relate to the main recent ENTRO activities that have taken place over the past six months. ENTRO believes that the cooperation among the Nile Basin countries in general and the Eastern Nile in particular, can only be achieved through strong engagement of the stakeholders in the different ENTRO activities. This is clearly reflected in the topics covered in this edition of the Newsletter. These include ENTRO Governance meetings, workshops/events, projects, projects discussions with our Development Partners, staff news, upcoming initiatives, and engaging conversations.

ENTRO would like to inform our esteemed readers that our newsletter and other documents including valuable reports on our projects can be found on our website <http://entro.nilebasin.org/>, [ikp.nilebasin.org](http://ikp.nilebasin.org/).

We encourage our readers to stay updated on the latest activities at ENTRO by continuing to read our materials.

Thank you for staying connected with us.

Acting Executive Director and Senior Regional Project Coordinator,  
Eng. Teshome Atnafie.





## PROJECTS

### NBI/ENTRO PROJECT ACTIVITIES.

The Eastern Nile Technical Regional Office (ENTRO) has been established by the Eastern Nile Council of Ministers (ENCOM) in June 2002 to identify, prepare, facilitate implementation, and coordinate cooperative projects within the Eastern Nile basin. The overall purpose of ENTRO is to support ENSAPT and ENCOM in the complex task of developing, implementing, and managing the multi-country Eastern Nile Subsidiary Action Program (ENSAP).



*ENSAPT Members,*

ENTRO is governed by ENCOM as the highest decision-making body, assisted by the Eastern Nile Subsidiary Action Team (ENSAPT), composed of three senior technical officials from each Eastern Nile (EN) member country.



## ONGOING PROJECTS

### **1. Nile Cooperation for Climate Resilience Project (NCCR)**

#### **Thematic areas:**

- 1: Platform for cooperation.
- 2: Flood and drought risk mitigation.
- 3: Dam safety capacity building.
- 4: Innovative information services for climate-resilient investment planning.
- 5: Water quality investment planning and prioritization.

### **2. Regional Climate Resilient Project (RCRP)**

#### **Components:**

- 1: Risk Management and Climate Financing
- 2: Infrastructure Investments and Sustainable Asset Management for Climate Resilience
- 3: Adaptive Climate Services for Resilient Communities
- 4: Project Management

### **3. Coordinated Operation of Cascade Damo (COCD)**





## DAM SAFETY MANAGEMENT

Many of the existing dams in the EN sub basin, particularly small dams, were built with limited investigations, inadequate design, and poor construction quality. These issues have been compounded by limited investments in operations and maintenance, as the public sector dams are mostly financed through Government transfers, which are often insufficient and neglected. As a result, many dams, particularly medium and small dams are deteriorating, posing a substantial risk to human safety and economic security, with structural and non-structural safety often falling below acceptable international standards. The deterioration of these dams, coupled with increased risk and uncertainty resulting from hydro-logical variability due to climate change, and uncoordinated operation in the sub basin, has placed many reservoirs at risk.

Recognizing this, key issues and actions are identified to develop and implement a dam safety regulatory framework and dam safety management plans at the basin wide level in general and at a national and dam owner levels in particular. ENTRO Dam Safety studies have produced the following important reports:



- Road map for Preparation of a Regional Dam Safety Framework
- Reference Dam Safety Guidelines for EN
- Dam Safety Framework for the EN
- Eastern Nile Small Dams Safety Guidelines
- Dam Safety Training Modules
- Nile Basin Reference dam safety guideline for basin wide implementation,
- Nile basin small dam operation and maintenance technical manual and institutional Framework and
- Nile Basin Reference Guideline on Emergency Action Planning for Dam Incidents and Failures.

### Merowe Hydropower Dam (Sudan)

These dam safety management tools aim to improve the capacity of riparian countries to manage risks related to the safety of dams and downstream communities. They also address the interdependencies associated with dams in transboundary basins, which may result in serious impacts across boundaries. For long-term dam safety technical and institutional capacity building, a regional dam safety center is under establishment. In this regard, several activities have been conducted, including needs assessment, institutional framework development, module and curriculum development, and the implementation strategy.





## FLOOD AND DROUGHT RISK MITIGATION

Flood and drought risk mitigation project contributes to improving mechanisms for cooperation in the Eastern Nile riparian countries in a challenging hydro-political environment by focusing primarily on provision of flood and drought risk mitigation services built on ENTRO's achievements in flood forecasting since 2010 and recently on Nile wide drought risk mitigation work. Some details on update of activities done and remaining work are given below.

### Flood Risk Mitigation (FRM)



The FRM project has three components: (a) WP1: Surveying and Data Collection – completed, (b) WP 2: FFEW enhancement and Flood Risk Mapping - completed, and © WP 3: Support in Establishing Flood Community Awareness and Preparedness - ongoing.

#### **WP1: Surveying and Data Collection (completed):**

Ground and EO based flood topography survey, asset and community data collection completed on 15 Jan 2024, after one year work, through firm consultancy work of CMC & MEE0, in which products were reviewed through regional inception and validation physical workshops with the following deliverables:





- Topographic survey completed for Atbara, Humera, Malakal, Akobo, Nassir, Pibor, Gambela and Itang. Asset maps for 9 sites completed and delivered to WP2 Consultant. Data shared to WP2 and WP3 consultants.
- Database conceptualization, data categorization (TS and Spatial datasets), Software development, reviewed at workshop and tested and implemented at ENTRO and operational.
- Community field survey completed, and report produced for flood prone communities at Akobo, Malakal, Pibor, Nasir, Gambela and Itang. These data were shared to WP2 and WP3 consultants.

## WP 2: EN-FFEWS enhancement and Flood Risk Mapping (completed):

EN-FFEWS enhancement and flood risk mapping, after one year work, completed in June 2024, through firm consultancy work of DHI, in which products were reviewed in regional inception and validation physical workshops with the following deliverables:



- Enhanced EN-FFEWS system completed and is operational for TSA, Blue Nile, Lake Tana, and BAS (at 35 forecast locations, rainfall over 55 catchments). The model is in public domain. <https://entro-ffews-dev.westeurope.cloudapp.azure.com/>
- Flood hazard maps for 16 flood prone areas produced and shared with WP3 consultant.
- Flood vulnerability and risk maps for 16 flood prone areas.
- Capacity building training conducted, on the enhanced EN-FFEWS for the national FFC experts of Ethiopia, South Sudan and Sudan. The advanced training were recorded for future re-use.





### **WP 3: Support in Establishing Flood Community Awareness and Preparedness (ongoing).**

Update on works done: Support in Establishing Flood Community Awareness and Preparedness WP3 contract signed with MetaMeta and HKV on 15 Feb 2024; and inception workshop conducted on 4-5 April 2024 in Ethiopia.

The consultant delivered on 20 August 2024, Flood Management Strategies for each of the 17 flood prone sites (7 sites in Ethiopia – TSA, Lake tana, BAS; Four In South Sudan in BAS; and 6 in Sudan in TSA), and Community specific flood action Bulletins for each of the 17 flood prone sites.

Remaining activities: Submission of (a) flood community awareness and preparedness plan and its implementation plan, (b) flood protection report for each of the seventeen sites. Also, the remaining work are: (a) conducting national flood preparedness training workshop as well as regional validation physical workshop, (b) flood community guidelines for each of the seventeen sites will be prepared and printed with relevant local language (English, Amharic & Arabic). The work will be completed by December 2024.

### **Drought Risk Mitigation (DRM)**

Development and implementation of Nile Drought Early Warning System (Nile DEWS) through firm consultancy with RMSI has been undergoing since 11th October 2023 based on the Nile basin drought early warning need, and data / knowledge gap assessment conducted by ENTRO in 2022.

Update on works done: Based on these baselines study, Nile DEWS regional inception workshop conducted on 29-30 January 2024, in Addis Ababa. Draft Interim report on the Nile-DEWS submitted on 15 August 2024 for review.



Remaining activities are: Submission of Version 1 of Nile DEWS software by the first week of September 2024 for review; conducting Nile DEWS software validation through regional workshop and feedback from the field by Jan 2025; and finalizing Nile-DEWS and get approval from the Nile Governance and to be completed by the end of May 2025 and putting the Nile-DEWS system online for the public.





ENTRO Consultation, capacity building, flood prone area field visit and other activities

ENTRO strengthened capacities of the EN national forecasting centers; and conducted community level flood awareness and preparedness training for Ethiopia, South Sudan, and Sudan including:

- FFC Ethiopia expert training conducted at Hawassa from November 27 – 29, 2023.
- FFC experts training for South Sudan and Sudan experts conducted in Juba from: 16-18 Jan 2024.
- Community level awareness training South Sudan and Sudan conducted in Juba from: 19-20 Jan 2024.
- Community level awareness training for Ethiopia was done 16-17 May 2024 in Hawassa, Ethiopia.

Remaining activities (Up to May 2025):

- Conduct community and institutional consultation / organizing field visit to flood prone areas (consultation with communities, local authorities, national water and DRM institutions)
- further build capacity of the EN national forecasting centers through EN-FFEWS further training.

### Benefits to the EN Countries so far:

- The Flood and Drought Risk Mitigation project created a collaborative platform for the EN countries to work together through physical workshops, some data sharing, on working groups meeting and joint approval ENTRO products.
- Flood Forecast Information provided by the enhanced EN-FFEWS (through WP2 work) has been utilized by the three countries and other stakeholders to save lives and their assets, and the 2024 forecast generation and dissemination are going on. The EN-FFEWS has a potential to benefit – about 2 million people residing in the flood prone areas in the EN. The FFC national experts every year are hosted at ENTRO for training and to issue FFEW with ENTRO experts. ENTRO regularly disseminates 3-day ahead forecast flood forecasts to the three countries Water Affair Ministries and to > 200 other stakeholders.

The EN-FFEWS services are also online for the public. The Water Affair Ministry uses it as one input for their decisions to issue warnings for the flood prone areas. This year Amhara RS South Gondar DRMC has been utilizing ENTRO forecast as one input for their local decision (Gumara flood case was ahead forecasted by ENTRO, Rib River overflowing the Bahir Dar-Gondar bridge near Adis Zemen, on 06 Aug 2024). WhatsApp based communication set by Ethiopia Flood intern facilitated the dissemination of forecast and receiving ground condition to and from the Zonal level flood managers in Lake Tana.





- Ethiopia, South Sudan and Sudan acquired the latest floodplain topographic map (DEM) and asset maps through (WPI work), which were shared to the countries and the countries can also be used for other engineering works.
- The Flood Risk Mitigation project activities have strengthened national offices (equipment and training) in terms of capacity and overall reduced the risk of flood devastation for ~100,000 million people in the flood prone areas Lake Tana, Atbara, Blue Nile and Baro-Akobo subbasin.





## PLATFORM FOR COOPERATION.

### INTERNSHIP AND YOUNG PROFESSIONALS:

ENTRO has taken the initiative to establish an internship project as part of its core activities and successfully implemented in the last 11 years. This project has proven immensely popular in fostering cooperation and allowing ENTRO to expand its professional network. The internship program started in 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 (EN universities).



The Internship Project has proven more effective in terms of building in-house capacity and bringing a diversity of expertise and outreach opportunities to ENTRO and academia. It has made a significant contribution to ENTRO in terms of enhancing and developing new analytical tools and knowledge products. On the other hand, ENTRO also enhanced the capacity of interns through facilitating training in various areas related to ENTRO projects.







*Interns during field visit*

The goal of the internship project is to empower young people from the Eastern Nile countries to support the emergence of a shared understanding about the resource base – its potential, the risks it is facing and its future. So far ENTRO has implemented the 8th batch according to the project implementation plan.





## REGIONAL CLIMATE RESILIENT PROGRAM (RCRP) FOR EASTERN AND SOUTHERN AFRICA.



*1st RCRP Meeting*

The purpose of this project is to improve regional preparedness for the increasing frequency, intensity, and impact of water-related climate shocks on people, livelihoods, infrastructure, and ecosystems.

The objective of the Regional Climate Resilience Program for Eastern and Southern Africa Project is to improve the management of water-related climate impacts in Eastern and Southern Africa, and, in case of an Eligible Crisis or Emergency, to respond promptly and effectively to it.

### Components of the Project

#### Component 1. Risk Management and Climate Financing

- 1.1. Climate and Disasters Risk Management
- 1.2. Climate Financing

#### Component 2. Infrastructure Investments and Sustainable Asset Management for Climate Resilience

- 2.1. Enhancing institutional capacity for long term climate risk management
- 2.2. Closing the climate resilient infrastructure gap
- 2.3. Sustainable Asset Management



### **Component 3. Adaptive Climate Services for Resilient Communities**

- 3.1. Community outreach
- 3.2. Mainstreaming climate resilience in social protection programs

### **Component 4. Project Management**

### **Component 5. CERC**

- For Comoros only: Contingent Emergency Response (CERC) mechanism
- 2.2 and 3.2 are not implemented in Nile Basin

### **Project Beneficiaries:**

**A. Regional Institutions:** SADC and ENTRO's capacity will be enhanced through their participation in tailored technical training and others.

**B. National Institutions:** Institutions responsible for Hydromet and early warning systems, disaster risk management, and water resources management at the regional, national and subnational levels, including line Ministries, government agencies, national authorities, and agencies at the national and sub-national levels.

**C. Community-Level:** Vulnerable communities and families will directly benefit from improved early warning systems and preparedness capacity.





**ENTRO EXECUTIVE DIRECTOR HANDING OVER AND FAREWELL**


*(From Left Senior Regional Project Coordinator, Eng. Teshome Atnafie and on the right side Dr. Salih Hamid Omar, the outgoing Executive Director)*

Dr. Salih Hamid Omar, the outgoing Executive Director of ENTRO, officially handed over his responsibilities to the Acting Executive Director and Senior Regional Project Coordinator, Eng. Teshome Atnafie at the event organized in ENTRO on October 28, 2024. Dr. Salih Hamid served as the Executive Director of ENTRO from December 15, 2020, for over three years.

During the handover ceremony, Dr. Salih expressed his gratitude to all ENTRO staff for their hard work and dedication. He also entrusted the care of ENTRO to ensure its continued success and legacy.

Eng. Teshome, the Acting Executive Director, expressed his appreciation to Dr. Salih for his leadership over the past 3 years and 10 months. He wished Dr. Salih all the best in his future endeavors and pledged to continue managing ENTRO with excellence.





**A CONSULTATION WORKSHOP WAS HELD TO DISCUSS THE STRATEGIC PARTNERSHIPS FOR THE ESTABLISHMENT OF THE NILE BASIN DAM SAFETY TRAINING CENTER.**



*Participant of the consultation Workshop*

The consultation Workshop is taking place from 15-17 July 2024 in Sky Light Hotel, Addis Ababa, Ethiopia. This workshop focuses on the Establishment of Regional Dam Safety Training Center for the NBI Region. The Regional Dam Safety Training Center is envisioned to contribute towards enhancing institutional and Human Resource Capacity of Nile Basin countries to better manage dam safety Risks, adopt good practice and encourage equivalence in dam safety management frameworks throughout the basin. The Workshop experts will also reviews the work done so far in the establishment of the Training Center particularly the curriculum modules, the institutional framework for the Nile Basin Training center to ensure that the center will develop skills and technical competencies of policy makers, dam owners, operators, regulators, technicians, etc and ensure safe design, construction, operation and safety management of Dams, as well as ensuring sustainable operation of the center through a strong partnership with related international institutions and development partners.





The workshop was graced by a number of esteemed high officials, his Excellency Dr. Habtamu Itefa, Minister of Water and Energy of Ethiopia and ENCOM Chair, Excellency Dr. Abraha Adunga State Minister of Water and Energy of Ethiopia, ICOLD President Michel Lion and Vice President for Africa Region Dr. Quentine Shaw, Delegates from British Embassy, UNIDO and USAID Ethiopia, United States Bureau of Reclamation, United State Army Corps of Engineers, and United State Society of Large Dams, Canadian Dam Association, ICOLD Switzerland, International Water Disaster Management Japan, CEO of Ethiopia Electric power Mr. Ashebir Balcha, CEO Of Addis Ababa Water and Sewerage Authority Mr. Zeribun Abate, Addis Ababa University Faculty of Technology, Scientific Director Dr. Bikila Teklu, Nile SEC Executive Director, Dr. Florence Adango, Technical Advisory Committee Members, National Committee of Large dams Representatives in the Nile Basin From DRC, Ethiopia, Kenya, Rwanda, Sudan, Tanzania, and Uganda.

*The welcome remarks were delivered by the Executive Director of ENTRO Dr. Salih Hamad, Dr. Salih state that ENTRO has so far done a lot in the way to establish the Regional Dam Safety Training Center by identifying key human and Institutional capacity training center gaps, training needs and develop a strategic document for subsequent activities including but not limited to curriculum development, training modules and framework for the regional training center. Also, ENTRO hired three international recognized Dam Safety experts, A senior Dam Safety Specialist and Institutional Development Specialist says Dr. Salih*



*Executive Director of ENTRO  
Dr. Salih Hamad, Dr. Salih*



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*Nile SEC Executive Director, Dr. Florence Adango*

Accordingly, Dr. Salih Invited Nile SEC Executive Director, Dr. Florence Adango. During the opening remarks Nile SEC Executive Director, Dr. Florence Adango, said that “Dams and reservoirs to serve the people of the Basin effectively for the present and future generations, there must be proper Dam safety management processes right from planning, construction accompanied by proper operations and maintenance following best acceptable practices at each stage says Dr. Florence Adango which was followed by the remarks from ICOLD President Michel Lion.



The ICOLD President Michel Lion state that “In the last decade, too many dams have been affected by serious incidents or failures during the first filling or the first 5 years of operation. The concern about dam safety is related to insufficient capacity and expertise at the global level. Capacity building appears to be a critical issue at the global level.

Maintaining our reservoirs and creating new storage capacity is essential to meet the challenges of climate change adaptation and energy transition in the context of a growing population. We need to educate the young generation that will gradually take over” Says ICOLD President Michel.



*ICOLD President Michel Lion*



*His Excellency Dr. Habtamu Itefa, Minister of Water and Energy of Ethiopia and ENCOM Chair*

*Finally at the commencement of his address, his Excellency Dr. Habtamu Itefa, Minister of Water and Energy of Ethiopia and ENCOM Chair, emphasize that “Dam failures are among the worst manmade disasters experienced in a peacetime. We should all work together to avoid or reduce the risks at all cost and strength dam safety management in our member countries. The Government of Ethiopia is committed to provide all necessary support to operationalize this training center, together with the member states.” Says Dr. Habtamu Itefa and declares the opening of the meetings and extends his best wishes for a productive workshop.*





**THE 9TH NCCR INTERNSHIP BATCH ON THE THEME OF “EASTERN NILE FLOOD FORECAST AND EARLY WARNING TEAM (ENFFEW) 2024 FLOOD SEASON**



*9th NCCR batch Graduation*

The 9th NCCR internship batch was implemented by enrolling three “2024 Eastern Nile Flood Forecasting and Early Warning (2024 EN-FFEW)” with two Sub-themes (Groups): The Eastern Nile Flood Forecasting and Early Warning System (EN-FFEWS) service is a key component of ENTRO activities that has been continuously conducted every flood season (June/July through September) since 2010. The (EN-FFEWS) activities aims to strengthen regional collaboration through information sharing, reinforcing national flood forecasting institutes and overall reduction of flood devastation risks for 2.2 million people living in flood prone areas in the Eastern Nile basin in Ethiopia, South Sudan, and Sudan.





The 2024 Flood Season Internship and capacity building Program, under the EN Flood Forecasting and Early Warning (EN-FFEWS) was structured around several key activities, including training, flood forecasting, flood impact assessment, forecast model performance evaluation, and practical field visits to flood prone areas. The program spanned from July to September 2024, focusing on flood risk mitigation in Ethiopia, South Sudan, and Sudan. The internship covers NBI Induction Courses, Mike Operation model and Mike Zero package to produce 10-days forecasts for the EN basin and disseminate forecast reports to most of stakeholders, 2023 flood impact assessment for EN countries, and model performance evaluation.



The Objectives of the 9th internship Batch are to increase regional collaboration, enhance flood forecasting model, improve national capacity building in flood forecasting and early warning system, emergency preparedness, and mitigate flood risks in the EN countries.





Some of the achievements from the Flood Season are:- the Introduction and Installation of Mike Zero 2023, NAM Hydrological modelling, River flood modelling (Mike Hydro River), MIKE workbench, Database PostgreSQL and Mike Operation Web, Flood Impact Assessment for 2023 Season Summary , Flooding Events Monitoring 2024 Season, Producing daily flood forecast reports (bulletins), Model Evaluation and Enhancements, Model performance analysis

## FIELD VISIT

ENTRO has conducted an educational field visit and modelling training from 15-21 September 2024 for the 9th NCCR internship batch working on the Theme “2024 Eastern Nile Flood Forecasting and Early Warning (2024 EN-FFEW)” in partnership with the NELSAP-CU in Kigali, Rwanda.



*Interns during field visit in Kigali, Rwanda.*





The objective of the field visit was to provide participants with practical experience, firsthand observation of flooding conditions, flood risk mitigation, and to bridge the gap between theoretical knowledge and practical application. During the event, Interns obtained practical modelling training on Nile Basin Flash Flood Early Warning System (NB-FFEWS). Moreover, the Rwandan Flood Risk Management experience was presented to give a firsthand information regarding flood risk management in the Nile basin countries. Each training session was facilitated with hands-on exercise supported by NELSAP-CU and Rwandan Water Board experts. During this educational field visit, Interns have also engaged in a practical field excursion to the flood prone hot spots areas and different structural and non-structural (nature-based) mitigation measures implementation for flood risk management in Kigali, Nyamata, Bugesera districts of Rwanda. Furthermore, practical lessons have been given to differentiate the flash flood and riverine flood risks with associated mitigation measures taking the case of Rwanda Water Board experiences.





## CAPACITY BUILDING TRAINING OF THE ETHIOPIA NATIONAL FLOOD FORECASTING CENTER STAFF

The Capacity Building Training took place from 14 – 16 October 2024 in Hawassa, Ethiopia. The objective of the training is to enhance the capacity of the Ethiopia Flood Forecasting Center staff at headquarters and branch offices on the EN-FFEWS.

ENTRO staff provides intensive training for three days for the Ethiopia Flood Forecasting Center staff at headquarters and branch offices on the EN-FFEWS on the technical modelling aspects of the EN-FFEWS. The participants of the training are from the hydrologist / water resources engineers, from the head quarter of the Ministry of Water and Energy including one ENSAPT, hydrologists from Abay Basin Administration Office and hydrologists from Baro -Akobo Basin Administration Office.





**CONSULTING SERVICE FOR WORK PACKAGE 3-SUPPORT  
IN ESTABLISHING FLOOD COMMUNITY AWARENESS &  
PREPAREDNESS**



*The Regional workshop Participants*

The Regional Validation Workshop on Work Package 3 - Consulting Service for Work Package 3-support in Establishing Flood Community Awareness & Preparedness took place from 31 Oct - 1 Nov 2024 in Bishoftu, Ethiopia.

The overall objectives of the workshop are (a) to disseminate established site-specific flood community awareness and preparedness strategies and plans and (b) carefully assess and validate the deliverables of these works by the EN Flood and Drought Risk Mitigation Regional Technical Working Group (F&DRM RTWG). Furthermore, the workshop will create a cooperative platform to jointly engage the three countries in managing riverine flood risks and facilitate the implementation afterwards.

The participants of the workshop are from the EN Country ( TAC and NB-F&D-TWG members, Disaster Risk Management Commission, City / Town Flood Manager – Gov (district to national) and from each EN Country, from NBD Representative, Participant from the World Bank, Participants from ENTRO (ED, SRPC, F&D RMC, Regional Social and Environmental Officer, Participant from MetaMeta & HKV.







From the workshop the following outputs have been achieved: -

- Improvement areas identified and reports validated by each country on site specific reports on:
  - (A) Flood Management Strategies for Flood Prone Communities (for 17 sites),
  - (B) Community-specific flood action bulletins (for 17 sites), and
  - (C) flood community awareness, preparedness and implementation plans (for 17 sites).
- Dissemination of products on the developed flood management strategies, flood Community awareness and preparedness plan, community-specific flood action for sustainability & high usability of the project.
- Participants' awareness and joint activities increased on Flood Community Awareness and Preparedness through the workshop.





## MEDIA TRAINING III WORKSHOP FOR THE EASTERN NILE



*EN Media Training Participants*

The Media training took place from Dec 20-23, 2024, in Bishoftu, Ethiopia. The main objective of this media training workshop is to increase the understanding of journalists on existing NBI cooperation and benefits gained, to share information on challenges and opportunities relevant to Nile Water Resources Management and Development, and to enable them to communicate factual and evidence-based information to concerned stakeholders including private sectors.

NGOs, politicians, government advisors, local communities, users of the Nile water resource, etc.) to boost cooperation among the EN countries.





Accordingly, the Media Training Workshop begins with the opening remarks of ENTRO Eng. Teshome Atnafie Acting Executive Director. Eng. Teshome warmly welcomes all participants to the third Regional Media Training workshop. He emphasizes the importance of this training, as it equips media personnel to play a significant role in addressing issues related to transboundary rivers. By reducing tension and building confidence and trust among riparian countries and stakeholders, the media can contribute to peaceful cooperation. Engineer Teshome also highlights this year as a special milestone in the journey of Nile cooperation. The ratification of the Cooperative Framework Agreement (CFA) has been completed and is now in force.

This marks a significant step forward in the efforts to promote cooperation and sustainable management of the Nile River.

Sudan ENSAPT Leader Representative Ahmed Ibrahim extends his gratitude to all participants and looks forward to the positive impact that the training will have on both the individuals and society. It is expected that trainees will apply the knowledge and skills gained during the training to benefit their communities and contribute to positive change.



South Sudan, ENSAPT Leader Eng. Thomas expresses gratitude to the participants, consultants, and ENTRO for their commitment and for facilitating the training. He also emphasizes the significance of ENTRO as a vital entity in EN. ENTRO plays a crucial role in our community. Additionally, Thomas highlights the importance of media personnel updating themselves annually.

ENSAPT Chair Dr. Zebene Lakew Welcome all participants! This workshop has been specifically designed to provide us with the tools necessary to convey crucial messages about water management, environmental sustainability, and regional cooperation. Journalists play a vital role in bridging gaps between communities, policymakers, and stakeholders both locally and internationally. Through our reporting, we have the power to raise awareness about urgent issues such as water scarcity, climate change, and transportation management, ultimately fostering a culture of dialogue and cooperation among nations. Dr. Zebene, encourages all participants to actively engage, ask questions, and share their insights.

The Media Training Workshop brings together more than 15 national-level journalists from each of the Eastern Nile Basin countries (Ethiopia, South Sudan, and Sudan) development journalists and communicators from Eastern Nile Countries who are well-versed in developmental issues, participate in the workshop.





## CONVERSATION

### CONVERSATION WITH DR. MUNA

**Q. Welcome to "conversations." Could you tell us a little bit about yourself, starting with your background, country, childhood, and academic background?**

Thank you for giving me this opportunity. My name is Muna Mohammed Musnad Farah, and I am a Sudanese national, born and grew in a very beautiful City in Khartoum North in Sudan called Bahri. I completed the primary and secondary schools in Saudi Arabia. My undergraduate study was in Sudan in the field of Civil Engineering- Hydraulics, where I developed a deep interest in water resources and engineering.

Academically, I hold a PhD in Water Resources Engineering, Development, and Management from the UNESCO Chair in Water Resources at Omdurman Islamic University, which I completed in April 2016. Prior to that, I earned a Diploma in Hydraulic Engineering in River Basin from the Hydraulic Research Institute in Egypt, a Master of Science in Water Resources Engineering from the University of Dar es Salaam, Tanzania, and a Bachelor of



*Dr. Muna Mohammed Musnad Farah*

Technology in Civil Engineering (Hydraulics) from Sudan University of Science and Technology. These academic achievements laid the foundation for my expertise in water resources engineering, management, and development.

**Q. What is your previous work experience?**

Professionally, I have around two decades of experience as a researcher in water resources engineering at UNESCO Chair in Water Resources- Omdurman Islamic University, Sudan. Before joining ENTRO I was assigned as an Acting Director of the UNESCO Chair in Water Resources, where I oversee research, postgraduate programs, and capacity-building initiatives. I have also held leadership positions such as Director of the Research and Innovation Department at the UNESCO Chair, where I managed water quality laboratories, coordinated research activities, and developed strategic plans for water resources development. Throughout this journey, I have been actively involved in numerous projects, including water quality assessments, flood risk modeling, groundwater management, and transboundary water cooperation. I have also contributed to capacity-building efforts by organizing training workshops and mentoring young professionals in the field of water resources.

My work extends beyond Sudan, as I have collaborated with regional and international organizations such as the Stockholm International Water Institute (SIWI), NBCBN network (Egypt) UNESCO and Nile Basin Initiative. I served also as a member of the Governing Board of the International Centre for Water Cooperation (ICWC). I am also a key member the council leadership of the Network of Women and Water Diplomacy in the Nile Basin and beyond, where I advocate for gender equity and women's leadership in water governance and peacebuilding.





**Q. How did you end up joining ENTRO? Where did you find out about ENTRO/NBI? When did you start at ENTRO? What were your motivations and goals?**

I first learned about NBI and ENTRO through my academic and professional engagements, particularly through my working at UNESCO Chair in Water Resources, there were many projects conducted jointly with ENTRO. Also, through my membership in the Nile Basin Capacity Building Network (NBCBN) and through my participation in regional workshops and training programs focused on transboundary water management. These experiences exposed me to NBI-ENTRO's efforts in fostering cooperation among the Nile Basin and Eastern Nile countries, addressing shared water challenges through technical expertise and collaborative projects.

In 2013, I joined ENTRO as an Intern which gave me a deep understanding of ENTRO's mission and its critical role in promoting sustainable water resources development in the Eastern Nile region. I was involved in the internship program entitled "Development of Eastern Nile Multi- Purpose Optimization and Scoping (ENMOS) model". My role was updating the Excel-VBA and GAMS codes of ENMOS and extracting data from models such as RIBRISM.

In 2023 I applied for the vacancy announced on ENTRO website, After the interview I was selected and joined ENTRO as a Regional Water Resources Modeler in November 2023.

My motivation for joining ENTRO generated from my passion for addressing water resources challenges in the shared Nile River and its Basins, particularly in the context of climate change and sustainable development. I was drawn to ENTRO's focus on using advanced modeling tools, Earth Observation data, and decision support systems to build resilience and adaptive capacity in the region. My goal is to contribute my expertise in water resources modeling, management, and research to support ENTRO's initiatives, and to help strengthen the region's ability to respond to water-related challenges.

**Q. What do you presume are the most critical and persistent obstacles to the advancement of Eastern Nile from your perspective?**

From my perspective, the Eastern Nile region faces several critical and persistent obstacles that hinder its advancement in water resources management and sustainable development. These challenges are complex and require coordinated efforts to address effectively. Some of the most pressing obstacles include:

Building trust among riparian countries remains a significant challenge. The Eastern Nile Basin is shared by multiple countries, each with its own priorities, policies, and development goals. This often leads to competing demands for water resources, making it challenging to achieve consensus on equitable and sustainable water allocation. Managing this transboundary Nile needs strengthening transboundary cooperation particularly in the context of high vulnerability of frequency floods, droughts and erratic rainfall patterns.

Data and Information Gaps is another challenge. The Eastern Nile region often faces gaps in hydrological, meteorological, and socio-economic data, which limits the ability to make informed decisions. Improving data collection, sharing, and accessibility is crucial for advancing water management practices. In addition to that, limited infrastructure and financial constraints often limit the implementation of large-scale projects aimed at improving water security and development in addition to the political tensions and socio-economic disparities among Eastern Nile countries can hinder collaboration and the implementation of joint projects. Overcoming these barriers requires diplomatic efforts, inclusive dialogue, and a focus on mutual benefits. I believe the Eastern Nile region must prioritize regional cooperation, integrated water resources management (IWRM), and investment in adaptive and innovative technologies which will be critical for building resilience and ensuring long-term success.





**Q. What is the most difficult situation you have had to face and how did you tackle it?**

As you know, challenges and difficulties are fundamental aspects of life. However, I believe that every difficult time adds valuable lessons to my experience. On a personal level, I faced significant hardship during the Sudan war. My family and I fled to Ethiopia amidst the conflict in Sudan. During this tumultuous period, I was fortunate to join ENTRO. Sadly, my mother passed away, marking the most difficult time in my life. Thankfully, with the support of my family and colleagues at ENTRO, I recovered. I found truly kindhearted colleagues, and through this interview, I would like to extend my heartfelt thanks to every member of the ENTRO family.

In my career, I sometimes faced imposter syndrome, particularly regarding gender issues, especially in the early stages of my career. I overcame these challenges by acquiring myself with knowledge and skills in various aspects, which helped me gain confidence in myself.

**Q. How do you perceive gender balance and gender-sensitive areas based on your experience and observations at ENTRO?**

Gender balance and gender-sensitive approaches are essential for sustainable water resources management. My experience at ENTRO and in the Nile Basin has reinforced this view. Despite progress, gender balance and sensitivity need ongoing attention to ensure inclusiveness and equity.

At ENTRO, there is a growing recognition of gender balance in technical and decision-making roles, supported by the establishment of a Social and Gender unit and the appointment of a Gender Focal person. Activities like gender training and establishment of Gender Forum for Transboundary Waters in the Eastern Nile initiative have been initiated in ENTRO. Moreover, there are appreciated efforts from ENTRO promotes networking with other gender initiatives/Networks in the Region and International levels like establishing a link and promoting ENTRO representation with the Network of Women and Water Diplomacy in the Nile Basin and beyond established by Stockholm International Water Institute (SIWI).

Regarding Gender-Sensitive Approaches, ENTRO advocates for integrating gender considerations into water projects. Such as the Nile Cooperation for Climate Resilience (NCCR) Project.

Still there is a room for ENTRO to play a significant role in capacity building for women in water disciplines, support the Basin Countries in adopting Gender-Responsive Policies and advocacy for gender inclusivity and equity.



**Q. How do you perceive the advantages and contributions of women in water security and hydro diplomacy, considering that women are often the primary stakeholders in water usage?**

Women play a pivotal role in water security and hydro diplomacy, and their contributions are essential for achieving sustainable and equitable water management. As primary stakeholders in water usage often responsible for water collection, household management, and agricultural activities women have unique insights and experiences that make their involvement critical in addressing water-related challenges. From my perspective, the advantages and contributions of women in these areas are transformative.





Women often have firsthand knowledge of water sources, usage patterns, and community needs due to their daily interactions with water resources. This practical experience allows them to identify effective, context-specific solutions to water security challenges. I believe that women are natural leaders within their communities, capable of mobilizing others to participate in water management initiatives. Their holistic approach to problem-solving, which considers social, economic, and environmental dimensions, is invaluable for developing integrated and sustainable water management strategies.

Moreover, women are skilled negotiators and peacebuilders, fostering trust and collaboration among diverse stakeholders. In transboundary water management, their diplomatic skills can bridge divides and facilitate cooperative agreements.

As a member of the Leader Council of the Network of Women and Water Diplomacy in the Nile Basin and beyond, I have witnessed the transformative impact of women's participation in water security and hydro diplomacy. For instance, during the Third Women in Water Diplomacy Workshop in Kenya in 2019, women leaders from across the Nile Basin issued a joint statement advocating for inclusive water governance and peacebuilding. This demonstrated the power of women's collective voice in shaping regional water policies.

**Q. Can you tell me about your most notable achievements during your time at ENTRO?**

During my time at ENTRO, I have had the opportunity to contribute to several impactful studies and projects that align with my expertise in water resources modeling, management, and development. I have provided technical support for the Nile Basin Cooperation for Climate Resilience (NCCR) Project, which aims to enhance the resilience of Eastern Nile countries to climate change and water-related challenges. Some of my most notable achievements include coordination role of the Development of the Eastern Nile Water Resources Models and Tools. Within the activities of this study, many workshops and training sessions were conducted for building capacity in Hydrology, Hydraulics, Water Resources Planning models as well as Sediment Transport Models. At the end of this project, all the data and developed models/tools will be accessible through the Knowledge Base site of NBI/ENTRO. Also, I am a Focal Person of the Water-Smart Irrigation Study in the Nile Basin which aims among other goals to leverage the use of innovative information technology and Earth Observation (EO) data for improving water management and productivity of irrigation developments in the Nile basin. I also contributed to the Water Quality Multi-Criteria Analysis to Prioritize Investments in Identified Hotspots Under the NCCR Project which is implemented jointly by NELSAP-CU (as a lead NBI center), ENTRO, NEL-SEC, NBVL and NBD.

My time at ENTRO has been marked by meaningful contributions to enhance transboundary cooperation in the Nile Basin region. I am proud to have played a role in implementing NCCR project, and I remain committed to supporting ENTRO's mission of fostering regional collaboration and resilience in the face of water-related challenges.

**Q. If you could write a message to ENTRO about what needs to be done in the next 10-20 years, what would you say?**

As we look ahead to the next 10-20 years, the Eastern Nile region faces both extraordinary challenges and opportunities in water resources management. Climate change, population growth, and increasing demands for water, energy, and food will require innovative, collaborative, and inclusive approaches to ensure sustainable development and resilience. From my own perspective, there are priorities and actions that I believe ENTRO should focus on to address these challenges and achieve its mission such as adoption of innovative technologies for including smart water management systems, renewable energy solutions, and precision agriculture and keep investing in regional data infrastructure to improve the collection, sharing, and analysis of hydrological,





meteorological, and socio-economic data in line with advocating use of the Earth Observation data. ENTRO also can target investment in Infrastructure and Innovation particularly in areas that directly link with the socio-economic livelihood such as Sanitation, Navigation, Clean Energy and Green Environmental solutions which demand a collaboration of all NBI centers and NB stakeholders. There is a need to facilitate the development of integrated water resources management (IWRM) frameworks that promote equitable and sustainable water allocation and promote inclusive governance structures that enable meaningful participation of all stakeholders in water management. In addition to that and through promoting hydro diplomacy as a tool for fostering peace and stability in the region and through Developing (leadership programs) to empower the next generation of water professionals and decision-makers in the Eastern Nile region, ENTRO can contribute to building a foundation for a sustainable and prosperous future for the region.

### Q. Any messages to anyone?

**Message to Young Water Professionals:** The field of water resources management is both demanding and deeply fulfilling. As you begin your careers, grab the chance to make a significant impact, especially in areas like the Nile Basin, where water challenges are pressing. Your success will depend not only on technical skills but also on collaboration, innovation, and inclusivity. Engage with communities and professionals, learn from diverse perspectives, strive for sustainable solutions and recognize the influence of your voice in shaping the future of water management.



**Message to Women in the Water Sector:** Your role in water resources management is invaluable, you can bring unique perspectives and strengths to the table. Whether you're representing grass roots, working in engineering, research, policy, or diplomacy, your contributions are essential for achieving sustainable and inclusive water management. Let's keep pushing boundaries and inspiring the next generation of women leaders in the water sector.

**Message to Policymakers and Stakeholders:** Water is a shared resource that improves health, livelihoods, and ecosystems. As we face growing challenges and competing demands for water in our Nile Basin Countries, it is imperative that we prioritize integrated water resources management (IWRM), transboundary cooperation, and good water governance. It is crucial to invest in sustainable infrastructure, support data-driven decision-making, and promote policies that ensure equitable access to water for all.

**Message to my ENTRO/NBI Colleagues,** it has been an honor to work alongside such a dedicated and talented team. Your commitment to advancing sustainable water resources management in the Nile Basin is truly inspiring. As we look to the future, I encourage us to continue pushing the boundaries of innovation, collaboration, and inclusivity. By working together and leveraging our collective expertise, we can overcome the challenges ahead and create a sustainable and resilient future for the Eastern Nile Basin.

**Message to the Members of the Global Water Community,** let us unite in our efforts to protect and manage this precious resource for generations to come.

**And my final message goes to myself.** My journey from Sudan to the regional stage reflects my dedication to addressing water-related challenges and contributing to the development of resilient and adaptive water systems.



## ENTRO Core Values Are **RIGHT**:

### **R**egional Orientation, Focus on People and Environment

We are committed to regional cooperation in all our activities and relationships among ourselves and with our partners. We are committed to working for the benefit of the people and the environment of the EN countries.

**I**nitiatives, Dynamism and Creativity As a team and as individuals, we take initiative and embrace new ideas for the enhancement of both our performance and our working environment. We strive for creativity to set an example and place for others.

### **G**ender Balance, Equity and Respect Diversity

In all our work and interactions, we give equal opportunities for both genders and seek gender balance. We also do not discriminate any individuals because of their beliefs or physical appearance. We emphasize mutual respect for individuals, recognition of their contributions, and their rights to equity in benefit sharing.

### **H**onesty, Excellence and professionalism

We perform all our duties in a spirit of trust, transparency and honesty. We are committed to excellence and professionalism in all our work. We do not compromise on quality and accountability.

### **T**eamwork, participation and partnership

We choose to work in teams with our colleagues at ENTRO and with ENTRO'S owners and partners. We also seek to expand and intensify participation of non-governmental stakeholders, particularly from EN civil society and private sector.

We believe through participation and partnership we would achieve synergies otherwise lost. We hold ourselves individually and collectively accountable in achieving our commonly shared objectives.









## 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”.

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 Eastern Nile Technical Regional Office - ENTRO

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ONE RIVER ONE PEOPLE ONE VISION

