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MINISTRY OF WATER AND ENERGY
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ውሃና ኢነርጂ ሚ/ር፣

REQUEST FOR EXPRESSIONS OF INTEREST
(CONSULTING SERVICES – INDIVIDUAL CONSULTANT)
COUNTRY: FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA
NAME OF PROJECT: ETHIOPIA WATER SUPPLY, SANITATION AND HYGIENE PROJECT
CREDIT NO.: IDA 64450

Assignment Title: Selection & Employment of #1 WESWG coordinator individual consultant for CWA-II PMU (Procurement Ref. No. ET-MOWE-538510-CS-INDV).
The Federal Democratic Republic of Ethiopia (FDRE) has received financing from the World Bank toward the cost of implementation of the Water Supply, Sanitation and Hygiene Project and intends to apply part of the proceeds for consulting services.

1. Objectives of the Assignment

The objective of this assignment is to provide implementation support to the WESWG Secretariat, which plays a key role in fostering coordination and linkages across the WaSH, Water Resources Management (WRM), and Energy sectors. The Consultant is expected to establish robust communication with the National WaSH Coordination Office (NWCO) and the Program Management Units (PMUs) within the Ministry of Water and Energy (MoWE). In close collaboration with the WaSH, WRM, and Energy subgroups, the Consultant will provide targeted support and implementation guidance to ensure program implementation adheres to the Program Operations Manual (POM).

2. SCOPE OF SERVICE

Specific duties and responsibilities

The scope of service for the assignment includes but is not limited to the following tasks:

Program Development and Support

- Formulate, facilitate/lead, and follow up a practical action plan on the directions of WESWG for a full shift towards a sector-wide approach.
- Identifying funding opportunities, developing funding proposals and securing project and capacity building funding
- Lead and coordinate analytical work and inputs into the WESWG meetings on key sector-wide strategy and planning issues (e.g., Water and Energy Sector Development Program review and update; 10-year National Plan targets review and update; revised Universal Access Program strategy review and update etc).
- Initiate discussions on the sector-wide approach for the broad Water Resources Management (watershed management, irrigation, hydropower, etc), WASH and energy programs.
- Review current sector financing requirements for achieving National and Global objectives and the development of appropriate strategies to address these needs.

WESWG Secretariat management, supervision & Operations

- Supervise the management of the Secretariat; ensuring day to day efficiency of the Secretariat; prepare and submit report annually on the operations and the activities of the Secretariat.
- Provide open and transparent reporting to donor partners, Ministry of Water and Energy and other GOE stakeholders.
- Provide oversight of the secretariat including ensuring focal persons provide appropriate levels of program, knowledge management, networking and coordination and communications support for each WESWG subgroup
- Coordinate and provide oversight of the financial and in-kind contributions of the DPs and the GOE stakeholders necessary to resume and maintain the activities of the WESWG Secretariat.

Knowledge Management

- Establish a repository of GOE policies, strategies, guidelines, laws and regulations, and lessons from past and on-going programming in WASH, WRM and Energy sub sectors.

Networking and Coordination

- Convening and leading multi stakeholders dialogue, presenting to new and diverse audiences online and in-person, planning, delivering and chairing multi stakeholder meetings and workshops
- Facilitate and lead quarterly meetings of the WESWG and ensure that priorities and concerns of all actors reflected in the technical committees are adequately taken up during the WESWG meetings.

Communication

- Prepare the provisional agenda for the meetings of the WESWG, WASH SG, WRM SG and EFG SG.

Support in Maintaining and updating the Project's implementation schedule (OWNP)

- Together with the NWCO in preparation of annual work plan and budget, translation into Procurement plans and schedules for all sub projects

Implementation review mission (regular and interim missions)

- Participate and support in mission planning, communication and logistical arrangements for the project.

Regular Progress review meetings

- Support in the Preparation of draft meeting schedules, agendas and supporting documentation for such meetings.

Support the team on M&E and closer supervision

- Closely work with the NWCO and Water PMUs to get timely and quality progress reports in line with the POM

3. REQUIRED QUALIFICATIONS/COMPETENCES

The following skills are essential for this work:

- The candidate will have a primary expertise in project management and implementation. S/he will be familiar with project implementation in complex settings, and will meet the following selection criteria:
- At least 10 years of experience in project implementation in Ethiopia, with demonstrated ability to solve challenges related to development interventions.
- University degree in a field such as Water Resources/Hydraulic Engineering or other relevant fields.
- Experience in the WaSH/Water Resources Management sector, policy development and familiarity with the issues in the sector.
- Experience working with or in similar Project management or coordination role with one or more of the development partners or Government.
- Ability to promote client/beneficiary participation and commitment to ensuring effective implementation and longer-term sustainability of projects/programs.
- Professional fluency (writing and oral) in English and other local Languages,
- Strong communication skills and flexibility working with various stakeholders,
- Highly Proficient and knowledgeable in the use of computer software, MS Office etc.

4. The Ministry of water and Energy now invites eligible "Individual Consultants" to indicate their interest in providing the Services. Interested Consultants should provide information demonstrating that they have the required qualifications and relevant experience to perform the Services.
5. The attention of interested Consultants is drawn to Section VII, paragraphs 7.35, 7.36, and 7.37 of the World Bank's "Procurement Regulations for IPF Borrowers", Seventh Edition, September, 2025 ("Procurement Regulations"), setting forth the World Bank's policy on conflict of interest.

6. A Consultant will be selected in accordance with the individual consultants Selection method set out in the Consultant Guidelines.
7. Further information can be obtained at the address below during office hours from 9:00 am to 12:00 noon and 2:00 pm to 5:00 pm from Monday to Friday.
8. Interested individual consultants may submit their CVs and credentials with written application to the address below (in person or by e-mail) on or before **April 21, 2026, 4:00 pm.**

Ministry of Water and Energy
OWNP-CWA-II PMU
Attn: Mr. Tadelle Gezahage/Mohammed Sirage
Haile Gebresilassie Avenue 5th floor, Room Number 511
E-mail: tadele.gezahegn@mowe.gov.et / mohammed.sirage@mowe.gov.et
Addis Ababa, Ethiopia

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MINISTRY OF WATER AND ENERGY
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Terms of Reference for the development of Rating curve and CONOPS preparation

Federal PMU for Water, Program Management Unit

MOWE
Addis Ababa, Ethiopia
March, 2026

Hailemariam Tilahun
Beyene Hydrology & Basin Information Lead Execution Officer

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Beyene Hydrology & Basin
Information Lead Execution
Officer

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1. Introduction

1.1. Background

The Ministry of Water and Energy (MoWE), through the Hydrology and Basin Information Lead Executive, is mandated to plan, develop, manage, and regulate Ethiopia's water resources in a sustainable and integrated manner. Hydrological services play a critical role in water resources assessment, flood forecasting and early warning, drought monitoring, infrastructure design and operation, irrigation planning, hydropower development, and climate resilience. Given the expansion of hydrological monitoring networks and aging rating curves at many stations, there is a critical need to systematically update and validate rating curves across 400+ key stations to ensure national hydrology data reliability.

To strengthen the effectiveness, consistency, and reliability of hydrological services, MoWE intends to (i) prepare a comprehensive Concept of Operations (CONOPS) for Hydrology Services and (ii) assess and improve the reliability of river stage–discharge relationships (rating curves) at selected hydrometric stations through systematic testing, updating, and full revision where necessary.

1.2. Rationales

The assignment is driven by the following needs:

- Ensuring reliable hydrological data for national decision-making
- Addressing inconsistencies in rating curves due to morphological and hydraulic changes
- Improving operational coordination among MoWE, Basin Development Offices, and regions
- Establishing a standardized operational framework (CONOPS)
- Supporting flood forecasting, drought management, and transboundary water management
- Enhancing data governance, quality assurance, and service delivery

2. Objective

2.1.1. General objective

To enhance the operational effectiveness, data quality, and decision-support capacity of national hydrology services through clear operational guidance and improved rating curve accuracy.

2.1.2. Specific objectives

The specific objectives of the Assignment are to:

- Develop a standardized Concept of Operations (CONOPS) for Hydrology Services under MoWE.
- Assess the reliability of existing rating curves at selected hydrological gauging stations.
- Update rating curves using recent and historical discharge measurements.
- Fully revise rating curves where significant inconsistencies or changes in channel conditions are identified.
- Strengthen institutional capacity for sustainable rating curve management and quality assurance.
- Develop a prioritization framework for selecting stations based on data criticality, station condition, and risk
- Establish a scalable, repeatable methodology for mass rating curve revision applicable across diverse river basins in Ethiopia

3. Scope and activities for the development of guidelines

The assignment consists of two interrelated components:

Component 1: Preparation of CONOPS for Hydrology Services (MoWE – Hydrology and Basin Information Lead Executive)

The consultant shall:

1. Review existing policies, strategies, guidelines, SOPs, and institutional arrangements related to hydrology services under MoWE, particularly those led by the Hydrology and Basin Information Lead Executive, Basin Development Offices (Abay, Awash, Rift Valley Lakes, Baro–Akobo, Genale–Dawa, and Tekeze), and Regional Water Bureaus.
2. Assess the current operational status of hydrological monitoring networks (surface water, groundwater, water resource information and GIS–hydrology interface).
3. Define the overall operational concept for hydrology services under the Hydrology and Basin Information Lead Executive, including:
    - Service objectives and functions
    - Roles and responsibilities of the Hydrology and Basin Information Lead Executive, Surface Water, Groundwater, GIS and Water Resources Information desks, Basin Development Offices, and Regional Water Bureaus
    - Data flow, processing, quality control, storage, and dissemination
    - Use of hydrological data for forecasting, planning, and decision-making
4. Define standard operational procedures (SOPs) for:
    - Network operation and maintenance
    - Data acquisition and validation
    - Information products and service delivery
5. Identify gaps, risks, and capacity needs (human resources, equipment, ICT, financing).
6. Propose an implementation roadmap with short-, medium-, and long-term actions.

Component 2: Rating Curve Reliability Test, Updating, and Revision.

The consultant shall:

1. Review existing stage–discharge data, rating curves, and station metadata for selected hydrological gauging stations managed by MoWE through the Hydrology and Basin Information Lead Executive and Basin Development Offices.
2. Conduct rating curve reliability analysis using:
    - Historical discharge measurements
    - Recent flow measurements
    - Statistical and hydraulic consistency checks
3. Categorize stations into priority tiers (e.g., high, medium, low) based on usage in forecasting, design, or water allocation.
4. Identify causes of rating curve instability, including:
    - Channel morphology changes
    - Sedimentation and erosion
    - Backwater effects

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Beyene Hydrology & Basin Information Lead Execution Officer

- Structural or gauge reference changes

5. Prioritizing stations with recommended actions (update/revise/maintain)
6. Update existing rating curves where minor adjustments are required.
7. Perform full rating curve revision where major deviations are identified, including:
   - Segmentation of curves if required
   - Development of new control sections
   - Documentation of assumptions and limitations
8. For stations where a conventional single-valued rating curve is deemed unsuitable or unreliable due to hydraulic complexities (e.g., backwater, unstable control, hysteresis), the consultant shall:
9. a. Diagnose the primary cause of instability.
   b. Propose and justify the most technically and economically feasible alternative method from an approved list (e.g., parameterized ratings, index-velocity, slope-area, hydrodynamic modeling, or continuous direct measurement).
   c. Develop, calibrate, and validate the alternative discharge estimation model.
   d. Clearly document the methodology, assumptions, uncertainty, and operational requirements (e.g., need for additional sensors) in the station technical report.
10. Define a statistically sound sampling approach for field verification to optimize resources while ensuring representativeness across 400+ stations
11. Validate revised rating curves and recommend monitoring and re-measurement frequency.
12. Develop or apply automated tools for batch processing of rating curve analysis and consistency checks.
13. Prepare standardized rating curve documentation and archiving formats.
14. Ensure updated rating curves are integrated into MoWE's hydrological database system with version control and audit trails

Component 3: Capacity building training for MOWE and Basin development office hydrologist and hydrologist technicians. on mass rating curve management

4. Methodology

The assignment shall adopt a combination of:

- Desk review of existing documents and datasets
- Field verification and flow measurement (where required)
- Statistical and hydraulic analysis
- Stakeholder consultations and technical workshops
- Alignment with WMO and international best practices

5. Deliverables of the assignment(s)

The consultant shall provide the following deliverables:

Component 1: CONOPS

1. Inception Report (work plan, methodology, and schedule)
2. Draft CONOPS for Hydrology Services

3. Stakeholder consultation workshop report
4. Final CONOPS document incorporating comments from MoWE

Component 2: Rating Curve Assessment

1. Rating curve assessment and reliability analysis report
2. Updated and/or revised rating curves (digital and hard copy formats)
3. Station-wise technical documentation and metadata
4. Final consolidated technical report
5.

All reports shall be submitted in editable (MS Word, Excel) and PDF formats.

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6. Time schedule of the deliverables

The consulting firm is expected to prepare and submit separate reports for each project under the assignment at each milestone.

N/S	Deliverable	Type	Duration/week/	Cumulative in weeks
1.	CONOPS preparation			
1.1	Contract Signature			0
1.2	Inception Report (work plan, methodology, and schedule)	Draft	1	1
		Appraisal	0.5	1.5
		Final	0.5	2
1.3	Assessment of Hydrology Services	Draft	0.5	2.5
		Basin Development office visit	1	3.5
		Appraisal	0.5	4
		Final	0.5	4.5
1.4	Draft CONOPS for Hydrology Services	Draft	8	12.5
		Appraisal	1	13.5
1.5	Final CONOPS for Hydrology Services	Final	1.5	15
1.6	Validation Workshop	Appraisal	1	16
1.7	Finalized and closure of contract	Completion	2	18 (126 days)
2.	Rating Curve Development			
2.1	Rating curve assessment and reliability analysis report	Draft	5	5
		Appraisal	1.5	6.5
		Final	1	7.5
2.2	Updated and/or revised rating curves (digital and hard copy formats)	Draft	4.5	12
		Appraisal	1	13
		Final	1	14
2.3	Station-wise technical documentation and metadata.	Draft	2.5	16.5
		Appraisal	1	17.5
		Final	0.5	18

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Hydrology & Basin Information Lead Execution Officer

N/S	Deliverable	Type	Duration/week/	Cumulative in weeks
2.4	Final consolidated technical report	Draft	1	19
		Appraisal	0.5	19.5
		Final	0.5	20(140 days)

7. Qualification, expertise and team composition

The consulting team shall include, at a minimum:

1. Team Leader / Senior Hydrologist (MSc or PhD, ≥10 years' experience)
   - Minimum MSc or above in Hydrology, water resources engineering.
   - 10 years of general water resource and Hydrological/flood and drought projects,
   - Proven a minimum of 8 (eight) years of similar experience at Hydrological service delivery and Hydrological service management;
2. Hydrometry and Rating Curve Specialist (≥10 years' experience)
   Minimum MSc or above in Hydrology, Hydrometeorology and water resources engineering.
   - 10 years of general water resource and Hydrological data analysis and research flood and drought forecasting,
   - Proven a minimum of 8 (eight) years of similar experience at Hydrological management and quality control and assurance, rating curve development;
3. Hydrologist/Hydrological Data Analyst
   Minimum BSc or above in Hydrology, Hydrometeorology and water resources engineering.
   - 8 years of general water resource and Hydrological data analysis and research flood and drought forecasting,
   - Proven a minimum of 6 (eight) years of similar experience at Hydrological management and quality control and assurance, rating curve development;
4. GIS and Data Management Specialist
   Minimum MSc or above in GIS, Hydro informatics and Geo informatics
   - 8 years of general remote sensing and geo information activities for water resource and Hydrological data analysis and research especially for Hydrological data observation system and flood and drought forecasting,
   - Proven a minimum of 8 (eight) years of similar experience at spatial data analysis for Hydrological data quality control and quality assurance.
5. Hydrometerologist Climatologist/ Meteorologist
   Minimum MSc or above in Climatology, climate change, meteorology, Hydrometeorology
   - 8 (eight) year of climate and weather data analysis for hydrological data interpolation, modeling and flood and drought forecasting.

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- 6 (six)years of general water resource and Hydrological data analysis and research flood and drought forecasting,

• Proven a minimum of 6 (six) years of similar experience at Hydrological management and quality control and assurance, rating curve development;

6. Computer science, programmer/modeler /Database expert
   Minimum MSc or above in computer science.IT, computer engineering
   • 8 (eight) year of climate and Hydrological database management and modeling and programing .
   - 6 (six)years of general water resource and Hydrological data analysis and research flood and drought forecasting,

   • Proven a minimum of 6 (six) years of similar experience at Hydrological database management and Hydrological data quality control and assurance.

Experience with WMO standards, MoWE hydrological systems, and similar assignments in Ethiopia or comparable contexts are an advantage.

Consultant must demonstrate experience in managing large-scale hydrometry projects (>200 stations) and using batch processing tools for rating curve analysis

The consulting team must include a specialist with proven experience in implementing alternative discharge measurement and estimation techniques (e.g., ADCP deployment, index-velocity ratings, and hydrodynamic modeling for ratings) in challenging environments

Table: No. of experts and Man-month workload

S/N	Name of Expertise/responsibility	No of person	Man-month
1	Team Leader / Senior Hydrologist	1	5
2	Hydrometry and Rating Curve Specialist	1	4
3	Hydrologist/Hydrological Data Analyst	1	3
4	GIS and Data Management Specialist	1	2
5	Hydrometerologist, Climatologist/ Meteorologist	1	3
6	Computer science, programmer/modeler /Database expert	1	1

8. Reporting and communication

All data, reports, and outputs produced under this assignment shall be the property of the Ministry of Water and Energy (MoWE) and shall not be disclosed without prior written consent.

Client's Responsibilities (MoWE)

The Ministry of Water and Energy (MoWE), through the Hydrology and Basin Information Lead Executive, shall provide the following support to ensure effective implementation of the consultancy:

1. Institutional and Administrative Support

- Assign a **Project Coordinator / Focal Person** to manage day-to-day coordination

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- Facilitate communication with:
  - Basin Development Offices
  - Regional Water Bureaus
  - Other relevant stakeholders
- Provide official letters for **field access and stakeholder engagement**

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2. Data and Information Provision

MoWE shall provide access to all available and relevant data, including:

- Hydrological time series data (stage, discharge, rainfall, etc.)
- Existing **rating curves and station metadata**
- Hydrological database systems and GIS layers
- Previous studies, reports, and technical documents
- Policies, strategies, guidelines, and SOPs

9. Logistic and budgets of the assignment

The consultant's firm is committed to covering all project costs, with the exception of workshop-related expenses. This encompasses the salaries of consultant team members, daily allowances, stationery, transportation, and materials and equipment required for in-house assignments. Additionally, the consultant's firm will bear the reimbursable costs associated with capacity building and training for 15 participants. This includes daily allowances, transportation, and other logistical requirements for the overseas component of the project.

10. Payment modality for the consultant

Payment for the consulting firm is effected in two stages as per the following modality:

a. Advance payments of up to 10% upon presenting an unconditional equivalent Bank guarantee to be settled proportionally at each payment.
b. On Submission of the final approved inception report and Experience Sharing Proposal: 10% of the contract amount
c. On Submission of the draft guide and process report: 30% of the contract amount
d. On the submission of the final accepted detail design report: 30% of the contract amount.

11. Ethical consideration

The consultants involved in developing the technical guidelines need to adhere to ethical considerations throughout the process. Some key ethical considerations are as follows:

1. Transparency: Ensure transparency in all aspects of the guideline development process. The methodologies, data sources, and decision-making processes are clearly communicated.
2. Inclusivity: Involve all relevant stakeholders in guideline development, including communities, experts, and representatives from diverse groups. The perspectives of all stakeholders should be considered.
3. Confidentiality: Protects sensitive information and data. Safeguard the confidentiality of individuals and organizations involved in the guideline development process.

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4. Conflict of interest: Disclose and manage any potential conflicts of interest among consultants, experts, or stakeholders involved in the development process. Ensure that personal or financial interests do not unduly influence decisions.
5. Equity: Ensure that the guidelines promote equity and do not disproportionately benefit or harm specific individuals or groups. The potential impacts on vulnerable populations are considered.
6. Quality and accuracy: Strive for high-quality, accurate, and evidence-based guidelines. Clearly, uncertainties and limitations in the available evidence are communicated.
7. Cultural sensitivity: culturally sensitive and respecting local customs, practices, and beliefs.
8. Communication and feedback: Provide opportunities for feedback and address concerns raised by stakeholders promptly.
9. Accountability: Take responsibility for the consequences of the guidelines. We would like to acknowledge and rectify errors if they were identified after the guidelines were published.

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