



**Short-Term Technical Assistance for Water Application usage and Dashboard Development for Water Service Asset Management System and WASH Service M & E**

|                                      |  |
|--------------------------------------|--|
| <b>Title</b>                         | Digitalizing Water Service Asset Management System and Update WASH service M&E                             |
| <b>Purpose</b>                       | To develop digital Water Service Asset Management System and to capture upload and update WASH service M&E |
| <b>Location/Duty Station</b>         | In two regions (Afar and Somalia), 23 Woredas  |
| <b>Duration</b>                      | 24 days  |
| <b>Ref No.:</b>                      | RTI/CR-WASH/STTA-Data Management/007/2024  |
| <b>Closing Date for Submissions:</b> | August 1, 2024.  |
| <b>Expected Start Date</b>           | August 8, 2024   |
| <b>Duration</b>                      | 24 days  |
| <b>Reporting to</b>                  | Enabling Environment Advisor   |
| <b>USAID Contract Number</b>         | 72066323R00010   |
| <b>Project Code</b>                  | Charge Code: 0218794.001.001.001.001-CR - WASH   |

## About RTI

Research Triangle Institute (RTI) has over 30 years' experience assisting governments, communities, and the private sector. As a not-for-profit, independent research institute based in North Carolina, USA, RTI has roughly 6,000 employees with global experience implementing international development projects. RTI's Sustainable Growth & Resilience (SG&R) technical unit within the International Development Group brings together RTI experts and capabilities across food security, agriculture, energy, environment, water, governance, and economic opportunity. SG&R will leverage RTI's experience designing and delivering multisectoral programming and technical solutions to respond to climate change, build resilience, and promote economic growth around the world.

SG&R's Water portfolio has delivered innovative, breakthrough solutions in key development sectors globally, including water sector governance, water, sanitation, and hygiene (WASH) services, water resources management, community engagement, urban resilience, and institutional capacity building.

## I. Introduction

### I.1. Background to the Project

Recent data show that pastoral communities in Ethiopia still have much less access to clean water sources than the national average, with many of them depending on contaminated or unsafe water. Infrastructure related to water has been invested in, yet problems with sustainability and management still exist. Many water points break down due to a lack of maintenance, and there is often insufficient local capacity to repair and manage these facilities. Successful water service asset management is critical for ensuring sustainable water supply and distribution systems. However, many water service providers face major challenges and gaps that hinder their ability to successfully manage assets. These concerns can lead to frequent service disruptions, increased operational costs, and reduced service quality. Here are some common problems and gaps in water service asset management. One of the primary challenges in water service asset management is the aging of public services.

The Afar region is characterized by an arid climate and a challenging environment prone to recurrent drought. This makes the management of water resources critical for the survival of its inhabitants, who are primarily pastoralists. Many of the water delivery systems and treatment plants that were built decades ago are nearing the end of their useful lives. Older assets are more prone to recurrent malfunctions, leaks, and inefficiency, which raises maintenance expenses and causes interruptions in service. Accurate and comprehensive data are necessary for effective asset management. On the other hand, a lot of water service providers don't have current, comprehensive data about their assets. This data gap hinders the ability to make informed decisions regarding maintenance, rehabilitation, and spare of assets.

The effective use of digital systems for capturing, uploading, and updating WASH service Monitoring & Evaluation (M&E) data is crucial for several reasons:

- Digital systems ensure the reliability of data by reducing human errors associated with manual data entry Government-led WASH Monitoring Systems-
- A Stakeholders can access information in real-time, allowing for timely decision-making and response to issues.
- Utilization a Digital platforms enable better utilization, moving beyond donor-centric reporting to inform program strategies and operations.
- With transparent data sharing, digital systems enhance to citizens for service providers and authorities.
- Transitioning from paper-based or spreadsheet systems to digital solutions saves time, reduces costs.

### I.2. The Project

Since 2018, the GoE has implemented a climate resilient WASH approach, as recognized in the second phase One WASH National Program (OWNP Phase II) which requires climate resilience to be mainstreamed across the sector. USAID CR WASH Activity will emphasize system strengthening and evidence generation for operational decision-making of water service delivery to inform pastoral-sensitive

policies and plans. The AMS will include data collection process, dashboards and analysis for motorized water system assets, and capacity building.

There is a significant gap in the adoption of advanced technologies for water asset management. Tools such as Geographic Information Systems (GIS), remote sensing, and asset management software can enhance the ability to monitor, analyze, and manage water service assets. However, many providers have yet to fully leverage these technologies due to cost, lack of expertise, or resistance to change.

Effective asset management requires a skilled workforce with expertise in various areas, including data management, and information technology. Many water services face challenges in recruiting and retaining qualified personnel. Additionally, ongoing training and capacity-building efforts are often inadequate to keep up with advancing best practices and technological advancements.

Learnings from CR WASH activity assessment of the Somali Functionality Inventory (SFI) system and the Afar Water Service Asset Management Systems (AMS) identified; There was no proper handover of the system to the RWEB, and the region does not have administrative rights (which still reside with partners as the former setup organization), asset inventory (AI) data is not up to date, Water scheme sensors and hydrometers were installed in the Afar region but could not be sustained because payment for satellites and data ceased when the former project was phased out, there is inadequate human capacity to use a digital system for data collection, the budget is inadequate to cover internet data from the government treasury and WWOs have no smartphones or tablets to report maintenance needs using the SFI.

In partnership with the USAID Ethiopian Resilience Learning Activity, CR WASH trained Afar and Somali regional and woreda water experts and technicians. The training familiarized data collectors with the current indicators used for water asset management inventory, and how to use and manage digital data collection using mWater data- collection tools. And conducted an asset inventory in intervention woredas in the Afar and Somali region. The aim was to collect data on water supply assets, to be used as the basis for an asset management system and potential future interventions to support maintenance, system strengthening, and evidence generation for operational decision-making about water service delivery. The asset management system includes a data-collection process, dashboards for analysis of water system assets, and capacity building.

The National WASH Inventory (NWI) is a significant initiative that aims to collect up-to-date and reliable data on WASH across the country. This inventory is crucial for improving service delivery and policymaking<sup>1</sup>. The One WASH National Program is a collaborative effort that seeks to improve M&E for WASH services. It involves a diagnostic review of existing systems and the development of improved M&E practices<sup>2</sup>.

The existing national monitoring system in Ethiopia has been established with the aim to track national progress against key performance indicators. A new Management Information System (MIS) is being launched to support this task<sup>3</sup>. While such monitoring supports policy making and planning, different monitoring processes are required to support operational processes for service providers and the service

---

<sup>1</sup> [https://www.ircwash.org/sites/default/files/symposium\\_report.pdf](https://www.ircwash.org/sites/default/files/symposium_report.pdf)

<sup>2</sup> <https://www.ircwash.org/resources/diagnostic-review-report-technical-and-managerial-support-strengthening-monitoring-and>

<sup>3</sup> [Government-led WASH Monitoring Systems-Millennium Water Alliance-August 2019 \(mwawater.org\)](https://www.mwawater.org/government-led-wash-monitoring-systems-millennium-water-alliance-august-2019)

authorities who provide support. Subsequently, Ethiopian WASH sector stakeholders have separately developed a range of alternative processes and systems for their specific needs at the district, regional and national level. Major, recent examples of integrated data collection were National WASH Inventory (NWI) 2010- 2011 and from regions through standard formats for the Consolidated WASH Account annual report. WASH M&E MIS is not yet operational but is undergoing implementation. Fully integrated reporting is not yet underway at regional or district levels.

Considering this, USAID's CR WASH Activity begins at ideal time to Strengthen data collection and use for asset management. And improving effective use of digital systems to capture upload and update WASH service M&E data.

Hence, the overall purpose of the five-year USAID Climate Resilient (CR) Water, Sanitation and Hygiene (WASH) Activity awarded to RTI International is to accelerate the expansion and sustainability of climate resilient water services and the adoption of key hygiene and sanitation practices for the underserved and vulnerable targeted lowland areas in Afar, Oromia, Somali and South Ethiopia regions.

The Activity will work to fulfill this purpose through four complementary intermediate results:

1. Professionalize and expand quality climate-resilient water services.
2. Increase sustainable access to and use of sanitation and hygiene products and services, including for menstrual health and hygiene.
3. Improve gender power dynamics; and
4. Strengthen the enabling environment for climate-resilient water and sanitation services.

Therefore, the STTA is expected to strengthen digital data collection and use for water asset management and effective use of digital systems to capture upload and update WASH service M&E data. Develop and provide capacity-building trainings to regional, zonal, and WWOs to ensure regular updating and continued use of the AMS (Asset Management System). And improving effective use of digital systems to capture upload and update WASH service M&E data.

## 2. Scope of Work

### 2.1 Objectives

- Review and update curricula for capacity building support on use of mWater for water service asset management and WASH service monitoring.
- Provide training for WWO on effective use of digital systems to capture water asset and upload and update WASH service M&E data.
- To develop and adapt dashboards for real-time monitoring and analysis of water service assets and WASH service M&E data.
- To build the capacity of relevant staff on the use and maintenance of these tool/system in the two regions in 23 Woredas.

### 1.3. Scope of Work

The STTA will work together with the Enabling Environment Advisor and Deputy chief of party throughout all stages of the implementation of the USAID CR WASH activity.

Hence, the qualified STTA assignments include the following major tasks and activities: Strengthen data collection and management system, through achieving the following activities.

**1. Data Collection and Standardization:**

- ❖ Design the mWater application to meet the specific data collection requirements of CR WASH.
- ❖ Compile existing data on water service assets and WASH services M& E.
- ❖ Customize data collection forms within the mWater platform to capture relevant asset information and WASH service M & E as per the CR WASH Activity and national and regional standards.

**2. System Development and Customization:**

- ❖ Customizing mWater digital tools and software for water asset management and WASH M&E service.
- ❖ Ensuring the system can handle data input, storage, processing, analysis and reporting efficiently.

**3. Data Visualization, Migration, and Integration:**

- ❖ Transferring existing data into the new system.
- ❖ Integrating the new system with other relevant databases and platforms to ensure unified data flow.
- ❖ Establish protocols for regular data updates and synchronization between existing systems and mWater.
- ❖ Design and develop user-friendly dashboards that display real-time data and analytics related to water service assets and WASH M & E service indicators.
- ❖ Ensure dashboards can visualize key performance indicators (KPIs), asset conditions, maintenance schedules, and other critical data.
- ❖ Provide ongoing support during the initial phase of implementation to troubleshoot issues and ensure smooth operation.

**4. Training and Capacity Building:**

- ❖ Develop training materials or curriculum and conducting training sessions for partners staff and stakeholders on effective use of digital systems to capture upload and update WASH service M&E data.
- ❖ Building capacity for ongoing data management and system maintenance.
- ❖ Document all configurations, customizations, and integration processes.

**5. Data Capture and Upload:**

- ❖ Establishing protocols for capturing new data on water service assets and WASH services.
- ❖ Implementing processes for regular data uploads and updates to keep the system current.

**6. Monitoring and Evaluation Framework:**

- ❖ Developing an M&E framework to track the performance of water service assets and WASH services.
- ❖ Setting up indicators, data collection tools, and reporting templates.

**7. Stakeholder Engagement and Coordination:**

- ❖ Engaging with key stakeholders to ensure their needs are met and to gather feedback.
- ❖ Coordinating with other departments and partners to align efforts and share best practices.

**8. Documentation and Reporting:**

- ❖ Documenting all processes, system specifications, and user guides
- ❖ Preparing reports on system development, data management activities, and project outcomes.
- ❖ Prepare a final report summarizing the work completed, challenges encountered, solutions implemented, and recommendations for future improvements.

**9. Sustainability Planning:**

- ❖ Developing plans for the long-term sustainability and scalability of the system

- ❖ Provide training for WWO on effective use of digital systems to capture upload and update WASH service M&E data via grant

## 2.2. Assignment Description and locations

The USAID CR WASH Activity entails strengthening the enabling environment for climate-resilient water and sanitation services through Strengthen data capturing and management Under IR CC, USAID CR WASH will focus on 3 sub-IRs: (IR CC.1) improve WASH and climate data use and management. Strengthen data collection and use for asset management. USAID CR WASH Activity will emphasize system strengthening and evidence generation for operational decision-making of water service delivery and to inform pastoral-sensitive policies and plans.

The water scheme asset management inventory initiative in Afar and Somali regions aims to assess and document the existing drinking water infrastructure in the region's target woredas. This comprehensive inventory will provide valuable information about the condition, functionality, and maintenance needs of the drinking water schemes in these regions. By establishing Asset management system and WASH service M & E system, the CR-WASH activity intends to support evidence-based decision-making, strengthen the drinking water service delivery systems, monitoring, and evaluation systems of WASH services.

Based on this initiative, CR WASH aims to improve the management system of water service assets and WASH M & E system through integrating the mWater application for data collection and generating customized dashboards for data visualization in two regions (Somali and Afar), in 23 Woredas. See in the table I, below for detail information of sites.

Table I. A detailed description of support areas: -

| Region | Zone   | Woredas         |
|--------|--------|-----------------|
| Afar   | Zone 1 | Chifra          |
|        |        | Mile            |
|        |        | Dubti           |
|        |        | Afambo          |
|        |        | Aysaita         |
|        | Zone 3 | Amibara         |
|        |        | Gewane          |
| Somali | Siti   | Meiso (Mullo)   |
|        |        | Erer            |
|        |        | Shinile         |
|        |        | Dembel          |
|        | Fafen  | Awbere          |
|        |        | Gursum          |
|        |        | Babile (somali) |

|  |           |            |
|--|-----------|------------|
|  |           | Kebribeyah |
|  |           | Jiggiga    |
|  | Degehabur | Degehabur  |
|  | Dawa      | Hudet      |
|  |           | Moyale     |
|  | Liben     | Filtu      |
|  |           | Deka Suftu |
|  | Shebelle  | Adadle     |
|  |           | Gode       |

Climate-Resilient (CR) Water, Sanitation and Hygiene (WASH) activity is implemented in thirty-six woredas across Afar, Somali, Oromia, and South Ethiopia regions. In these woredas, USAID RTI approach intended to result in over 620,000 with access to new or improved water services and support for over 215,000 people to access to and use of sanitation and hygiene including Menstrual Health and Hygiene (MHH) products and services and adapt to the effects of climate change. CR WASH Activity serves thirty-six woredas in nine zones in four regions. Out of these woredas, this activity will be rolled out only in two regions in 23 Woredas.

USAID CR WASH Activity is committed to improving the efficiency and effectiveness of water service asset management and facilitate WASH service data collection and uploading using advanced digital data collection and visualization tools. The mWater application has been identified as a suitable platform for data collection, analysis, and visualization We are seeking a qualified short-term assistance to implement the mWater application and develop interactive dashboards that will support real-time monitoring and management of water service asset and WASH service M & E.

### 3. Methodology

In undertaking the above assignment, the STTA will integrating the mWater /Kobotool application for data collection and creating customized dashboards for data visualization can significantly enhance the management system of water service assets and WASH Service M & E. Here are detailed methods to achieve this: -

#### 1. Preliminary Assessment and Planning

- Identify data requirements: determine what specific data is needed for effective asset management, including asset conditions, maintenance schedules, and WASH performance system of measurement or key performance indicators.
- Clearly outline the objectives of integrating the mWater application and creating dashboards, aligning them with organizational goals.
- Develop a detailed timeline for the implementation process, including key milestones and deadlines as per the given timeline, mentioned below in the deliverable part.

#### 2. mWater Usage Application

##### 2.1 Customization and Formation

- Set up mWater: Configure the mWater application to match the specific data collection needs of the organization, including creating routine forms for various types of water service assets.
- Standardize Data Collection: Develop standardized data collection protocols based on the national and regional standards to ensure consistency in the data collected.

## 2.2 Integration with Existing Systems

- Data Migration: Integrate existing asset data into the mWater application. This may involve cleaning and formatting data to ensure compatibility.
- Establish Data Flow: Create procedures for continuous data updates and synchronization between mWater and other management systems.

## 3. Dashboard Development

### 3.1 Design User-Friendly Dashboards

- Identify Key performance indicators: Determine the key performance indicators (KPIs) that need to be visualized on the dashboards.
- User-Centric Design: Design dashboards with a user-centric approach, ensuring they are intuitive and easy to navigate for different user groups.

## 4. Training and Capacity Building

### 4.1 Develop Training Materials

- Comprehensive Guides: Create detailed user manuals and training guides that cover both the mWater application and the dashboards.
- Interactive Training: Develop interactive training sessions, including hands-on practice and Q&A segments to ensure thorough understanding.

### 4.2 Conduct capacity building training

- Training: Conduct training workshops for all relevant partners and staff, ensuring they are capable in using the mWater application and interpretation dashboard data.

## 5. Documentation and Reporting

### 5.1 Comprehensive Documentation

- **Document Processes:** Maintain detailed documentation of all configurations, data collection protocols, and dashboard development processes.
- **Final Report:** Prepare a comprehensive final report summarizing the project, including challenges encountered, solutions implemented, and recommendations for future improvements.

## 4. Deliverables: -

- Configured mWater application with customized data collection forms.
- Fully functional dashboards with real-time data integration both for **Water scheme asset management** and **WASH indicators management**.
- Training materials and records of training sessions conducted.



- Final report with documentation of all work performed and recommendations for sustainability.

#### Deliverables and time for submission

| Deliverables  | Due date                       |
|---|--------------------------------|
| <b>Task CC.:</b> Strengthen <b>water service asset data collection and management system and WASH indicators</b> and review and update curricula for capacity building support on use of mWater application both.   |                                |
| <ul style="list-style-type: none"> <li>• <b>Present inception report</b></li> </ul>   | August 12, 2024                |
| <b>Identify data requirements:</b> Determine what specific data is needed for effective water asset management, and WASH performance system of measurement or <b>key WASH performance indicators.</b> <ul style="list-style-type: none"> <li>• Clearly outline the objectives of integrating the mWater application and creating dashboards, aligning them with National and CR WASH goals.</li> </ul>  | August 13 to August 17, 2024   |
| <b>Set up mWater: Configure the mWater application</b> to match the specific data collection needs of the organization, including creating routine forms for various types of water service assets and WASH Service M & E. <ul style="list-style-type: none"> <li>• Standardize Data Collection: Develop standardized data collection protocols based on the national and regional standards to ensure consistency in the data collected.</li> <li>• Create survey form standard on mWater application</li> </ul> | August 18– August 21, 2023     |
| <b>Develop Training Materials and provide training.</b> <ul style="list-style-type: none"> <li>• Comprehensive Guides: Create detailed user manuals and training guides that cover both the mWater application and the dashboards.</li> <li>• Training: Conduct training workshops for all relevant partners and staff, ensuring they are capable in using the mWater application and interpretation dashboard data.</li> </ul>   | August 22 – September 4, 2024. |
| <ul style="list-style-type: none"> <li>• Final report with documentation of all work performed and recommendations for sustainability.</li> </ul>   | September 7, 2024              |

#### Estimated Budget: filled by STTA

#### Supervision and Reporting Arrangement

The STTA will work under the overall technical supervision of the Enabling Environment Advisor and Deputy Chief of party. The day-to-day coordination of activities with regional managers based at field offices and local partners.

#### Payment Schedule

The payment schedule is indicated below.

| S. N | Deliverables              | Invoicing |
|------|---------------------------|-----------|
| I    | Inception report approved | 20%       |

|   |   |     |
|---|---|-----|
| 2 | Configured mWater application with customized data collection forms and fully functional dashboards with real-time data integration.                            | 30% |
| 3 | Training materials and records of training sessions conducted and final report with documentation of all work performed and recommendations for sustainability. | 50% |

**5. Expected Qualifications, Experience, Specialized knowledge/skills, and competencies.**

To deliver the above-stated deliverables, the STTA needs to possess the key qualifications, knowledge, skills, professionals, competencies, and required expertise listed below: -

**Qualifications:** a master’s degree in a relevant field can be a significant advantage and may include: (MSc) in information technology, (MSc) in computer science or data science, (MSc) in geographic information systems (GIS), engineering (Meng) in civil or environmental engineering or (MSc) in water resources management or related fields.

Certifications or training in specific software and tools relevant to the assignment, such as:

- "Certifications in Power BI or Tableau for dashboard development are advantageous."
- "Specific mWater training or certification, if available, will be highly valued."

**Professional Experience:** The ideal candidate should have:

- Proven experience with mWater application configuration and data management.
- Expertise in designing and developing interactive dashboards using tools like Power BI, Tableau, or similar platforms.
- Ability to create visualizations that are intuitive and informative.
- Experience in integrating data from various sources into dashboards, ensuring real-time data flow and synchronization.
- In-depth understanding of water service asset management practices, including asset inventory, maintenance schedules, KPI, and lifecycle management.
- Experience in developing training materials and conducting training sessions for diverse groups, ensuring that staff are proficient in using the mWater application and dashboards.
- Good communication and documentation skills.

**Competencies**

- Proficiency of the fundamentals and best practices of WASH Service M & E and asset management for water services, including asset lifecycle management, maintenance, and inventory.
- Statistical Analysis: Competence in applying statistical methods to analyze data collected through mWater.
- Data Analysis, Data Interpretation: Strong skills in interpreting data to identify trends, patterns, and actionable insights.

- Geographic Information Systems (GIS): Proficiency in GIS application for water service asset mapping and spatial analysis.
- Capability to produce thorough training materials, such as user manuals and guidelines.

## 6. Questions Due date

Any questions regarding this application may be sent to [procurement@cr-wash.org](mailto:procurement@cr-wash.org) by July 28, 2024, and responses for submitted questions will be posted on <https://www.rti.org/current-opportunities> website by July 30, 2024.

## 7. How to Apply

Only Individual contractors but not consulting firms can apply. To apply for this assignment, any interested individual contractor/service provider who qualify to do this assignment in Ethiopia can submit technical and financial proposals in separately and email to [procurement@cr-wash.org](mailto:procurement@cr-wash.org) by August 1<sup>st</sup> 2024 before closure of the business.