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# USAID/TANZANIA MAJI NA USAFI WA MAZINGIRA (MUM)

Infrastructure Scoping and Selection Criteria



# PREFACE

Tanzania's health, economy, and food security depend on sustainably managed water resources. However, water scarcity challenges are growing along with the impacts of climate change, while reliable access to safe drinking water and sanitation services is still beyond the reach of far too many people.

USAID Tanzania's Maji na Usafi wa Mazingira Activity (MUM) will work directly with national, regional and district stakeholders to improve Tanzanian systems for planning, financing, and implementing actions to expand access to WASH and WRM services, using four complementary implementation strategies, namely: Building ownership through continuous stakeholder engagement, strengthening organizational systems and services, applying market-based principles, and learning by doing. Specifically, in 10 districts in four regions of Morogoro, Iringa, Njombe and Rukwa in the Rufiji, Lake Nyasa, and Lake Rukwa basins, the Activity will work to:

- Increase access to sustainable water services managed by the Rural Water Supply and Sanitation Agency and urban water utilities **(Sub-Objective 1)**
- Increase access to finance for water, sanitation, and hygiene **(Sub-Objective 2)**
- Strengthen the market for sanitation and hygiene products and Services **(Sub-Objective 3)**
- Strengthen basin water boards and water user associations to enhance stewardship of water resources **(Sub-Objective 4)**

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# ACRONYMS AND ABBREVIATIONS

BWB	Basin Water Board
CBWSO	Community Based Water Supply Organization
CapEx	Capital Expenditure
CapManEx	Capital Maintenance Expenditure
DC	District Council

LGA	Local Government Authorities
MCA	Multicriteria Analysis
MoW	Ministry of Water
MUM	Maji na Usafi wa Mazingira
NWF	National Water Fund
RUWASA	Rural Water Supply and Sanitation Agency
ODF	Open Defecation Free
OpEx	Operating Expense
SO	Sub-Objective
WSSA	Water Supply and Sanitation Authority
WSDP	Water Sector Development Program

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# INTRODUCTION

The USAID/Tanzania Maji na Usafi wa Mazingira (MUM), Contract No. GS00Q14OADUI38 / 72062121N00001 and Project No. REQ-621-21-000012 under the One Acquisition Solution for Integrated Services (OASIS) indefinitely delivery, indefinite quantity (IDIQ) contract is a five-year (August 2021 – August 2026) Activity funded by the U.S. Agency for International Development (USAID). The purpose of this activity is to expand and sustain the provision and governance of WASH services. Tetra Tech is the prime contractor for MUM and has engaged subcontractors FSG, WISE Futures and Iris Group.

Specifically, the MUM activity is implemented in 10 selected districts of Morogoro, Iringa, Rukwa and Njombe Regions within the Rufiji River, Lake Nyasa, and Lake Rukwa basins, to:

- **Sub-Objective 1:** Increase access to sustainable water services managed by the Rural Water Supply and Sanitation Agency and urban water utilities
- **Sub-Objective 2:** Increase access to finance for water, sanitation, and hygiene
- **Sub-Objective 3:** Strengthen the market for sanitation and hygiene products and Services
- **Sub-Objective 4:** Strengthen basin water boards and water user associations to enhance stewardship of water resources

In the previous USAID/WARIDI supported districts of Kilombero and Kilosa in Morogoro Region and Mufindi, Kilolo and Iringa in Iringa Region, MUM work with RUWASA, Local Government Authorities (in the respective districts), Community-Based Water Supply organizations (CBWSOs) and the private sector to maintain and advance:

- progress made towards water supply services
- access to basic sanitation status
- ODF status of communities achieved because of previous USAID interventions

In the five new districts of Sumbawanga, Kalambo, and Nkasi in Rukwa Region and Ludewa and Makete in Njombe Region, MUM will implement targeted activities where there is greater need for water infrastructure investments. These areas are described in more detail below. If approved, the Infrastructure Scoping and Selection Criteria, which is the subject of this report, will be used in identification and prioritization of water projects which will be implemented under MUM.

# I.0 DESCRIPTION OF THE DELIVERABLE

The identification of targeted water infrastructure investments in the districts selected is one of the priority Tasks (Task 1.8) under SOI. Specifically, during YR1 (FY2022), MUM will begin the planning and preparatory activities to inform the design of water infrastructure in the five districts of Makete, Ludewa, Kalambo, Sumbawanga and Nkasi. Activities to be carried out in FY2022 include.

- a) Development of water infrastructure scoping and selection criteria in collaboration with RUWASA and urban water utilities (WSSAs)
- b) Identification of proposed water infrastructure projects in collaboration with RUWASA and WSSAs
- c) Carrying out scoping (pre-feasibility study) of proposed water infrastructure projects
- d) Preparing a list of priority water infrastructure projects for consideration by USAID

After approval of a priority list of water infrastructure by USAID, in YR2 (FY2023), MUM will undertake a detailed feasibility study of selected projects. The information gathered from the feasibility studies will inform detailed designs for each proposed infrastructure project. These will be submitted to USAID for use in contracting construction work.

This report describes the proposed scoping and selection criteria for the targeted water infrastructure investments in the five selected districts. The report is one of the key deliverables (under SOI) to USAID as stipulated in the contract task order with Tetra Tech. The report is structured in 3 sections.

**Section 1-** Provide a brief background of the deliverable and structure of the report (this chapter).

**Section 2-** Provide a description of the 2 regions (Rukwa and Njombe) and 5 districts (Sumbawanga, Nkasi, Kalambo, Ludewa and Makete) where MUM will select, prioritize, and design infrastructure projects

**Section 3-** Presents the proposed infrastructure scoping and selection criteria. It provides background information and rationale of the proposed criteria based on evidence and experience of implementing water and sanitation projects. It presents the conceptual framework used to develop the criteria and justification of the proposed criteria. It also outlines the next steps that MUM will follow to select and prioritize infrastructure projects.

The references used throughout this report are provided at the end of the report together with Annex which summarize the findings of the MUM field level assessment of the proposed criteria.



# 2.0 DESCRIPTION OF GEOGRAPHICAL LOCATION

## 2.1 RUKWA REGION

The three districts of Sumbawanga, Kalambo, and Nkasi are situated in Rukwa region which is in the southwestern part of Tanzania between 05 and 90 °S and 30 – 33 °E. The region has an area of 28,039 Km<sup>2</sup>, with 23,118 km<sup>2</sup> being a land area, and the remaining 4,921 km<sup>2</sup> covered with water bodies. According to the Tanzania National Bureau of Statistics (NBS), the region has 1,292,423 people (2022 estimates). These three (3) districts are comprised of four (4) Local Government Authorities (LGAs), which are divided into 16 Divisions, 97 Wards and 339 Villages as shown in the table below.

**TABLE 1 RUKWA REGION ADMINISTRATIVE UNITS**

District	LGA	Population	Area (km <sup>2</sup> )	Division	Wards	Villages
Sumbawanga	Sumbawanga Municipal Council-Urban	269,916	1,329	2	19	24
	Sumbawanga District Council-Rural	393,497	8,871	4	27	114
Kalambo	Kalambo District Council	267,223	4,715	5	23	111
Nkasi	Nkasi District Council	361,787	13,124	5	28	90
<b>Total</b>		<b>1,292,423</b>	<b>28,039</b>	<b>16</b>	<b>97</b>	<b>339</b>

Source: Rukwa Regional Commissioners' Office 2022

Rukwa region borders with Zambia to the Southwest, the Democratic Republic of Congo (DRC) to the West across Lake Tanganyika, Katavi Region in the North and Mbeya to the Southeast. The highest point of the region is at Malonje in the Ufipa plateau at 2,461 meters above sea level and the lowest point is Lake Tanganyika at 773 meters above sea level.

MUM activities in the Rukwa Region will focus in the three districts of Sumbawanga, Kalambo, and Nkasi. Data from the RUWASA Service Delivery Management System (RSDMS) shows that about 41 percent of the region's population has access to clean and safe water. The table below illustrates the distribution of water coverage across the three (3) districts.

**TABLE 2 THE STATE OF THE WATER SERVICES IN SUMBAWANGA, KALAMBO AND NKASI DISTRICTS**

<b>District</b>	<b>Kalambo DC</b>	<b>Nkasi DC</b>	<b>Sumbawanga DC</b>
<b>Basin</b>	Lake Rukwa/Tanganyika	Lake Rukwa	Lake Rukwa/Tanganyika
<b>Water service coverage</b>			
Population	276,131	370,265	405,778
Access to basic drinking water services	43.9%	38%	41.2%
Access to basic sanitation service <sup>1</sup>	75%	60%	67%
Open Defecation	(14)12.61%	2%	10%
<b>Status of rural water services</b>			
<b>Number of Villages</b>	111	90	118
-Unserviced villages	37 (33%)	32 (36%)	45 (38%)
-Villages with basic water access	74 (67%)	58 (64%)	80 (62%)
-Villages with piped water supply	45	34	50
-Villages with un-piped water supply	29	24	26
<b>Number of water points</b>	1,300	1274	1701
- Percent functional	92.7%	87%	93.9%
- Functional needs repair	2.15%	3%	0.23%
- Percent non-functional	3.23%	13%	5.9%
- Percent abandoned	1.92%	0.2%	0%

Source: RUWASA Service Delivery Management System (RSDMS), February 2022 (Unverified)

The main source of water in these districts is shallow wells, bore holes, charcoal dams, and surface water such as springs, rivers and rainwater harvesting. As indicated in Table 2 above, various water schemes exist in these districts but some of them do not function due to various reasons including drying up of water sources, deterioration due to old age, and inadequate management capacity-staffs, skills, funds, and lack of adequate systems to support operation and maintenance.

Under the second phase of the Water Sector Development Program (WSDP II) the region is planning to implement 96 water projects, with the target to increase access to improved water sources to 85% by 2025. Currently there are 14 projects under construction. The main sources of funds for these projects are the National Water Fund (NWF), the World Bank's Sustainable Rural Water Supply and Sanitation Program-for-Results and the UK Government's Payment by Results (PbR) program.

<sup>1</sup> Source: National Sanitation Information Management System (NSIMS)-February 2022

## 2.2 NJOMBE REGION

Njombe region which is situated in the Southern Highlands Zone of Tanzania, below the equator between latitudes 8° 40' and 10° 32'. Longitudinally, the region is situated between 33° 47' and 35° 45' East of Greenwich. The Region has a total surface area of 23,208.71 Km<sup>2</sup> out of which 21,172 Km<sup>2</sup> and 2,036.71 Km<sup>2</sup> are covered by land and water of Lake Nyasa respectively. According to the Tanzania National Bureau of Statistics (NBS), the region has 846,618 people (2022 estimates).

The Region is divided into four Districts namely Njombe, Wanging'ombe, Makete and Ludewa, comprising of six (6) Local Government Authorities namely Njombe and Makambako Town Councils, Njombe, Makete, Wanging'ombe and Ludewa District Councils, which are divided into 19 Divisions, 107 Wards and 381 villages as shown in the table below.

**TABLE 3 NJOMBE REGION ADMINISTRATIVE UNITS**

District	LGA	Population	Area (km <sup>2</sup> )	Division	Wards	Villages
Njombe	Njombe Town Council-Urban	161,359	3,212	2	13	44
	Njombe District Council	102,889	3,134	2	12	45
	Makambako Town Council	115,000	883.71	1	12	14
Wanging'ombe	Wanging'ombe District Council	191,851	3,570	3	21	108
Ludewa	Ludewa District Council	163,147	8,397	5	26	77
Makete	Makete District Council	112,372	4,012	6	21	93
<b>Total</b>		<b>846,618</b>	<b>23,208.71</b>	<b>19</b>	<b>107</b>	<b>381</b>

Source: Njombe Regional Commissioners' Office 2022

Njombe region shares borders with Iringa region to the North; Morogoro region to the East; Mbeya region to the West; Ruvuma region to the South and the Republic of Malawi via Lake Nyasa to the Northwest. MUM activities in Njombe Region will focus in the two districts of Ludewa and Makete. Data from the RUWASA Service Delivery Management System (RSDMS) shows that about 85 percent of the region's population has access to clean and safe water. The table below illustrates the distribution of water coverage across the two (2) districts where MUM will implement its activities.

**TABLE 4 THE STATE OF THE WATER SERVICES IN MAKETE AND LUDEWA DISTRICTS**

<b>District</b>	<b>Makete DC</b>	<b>Ludewa DC</b>
<b>Basin</b>	Lake Nyasa	Lake Nyasa
<b>Water service coverage</b>		
Population	112,372	163,147
Access to basic drinking water service	95.60%	75.10%
Access to basic sanitation service <sup>2</sup>	100%	38%
Open defecation	2%	9%
<b>Status of rural water services</b>		
<b>No. Villages</b>	93	77
-Unserved villages	6 (6.25)	17 (22%)
-Villages with basic water access	87 (90.6%)	60 (78%)
-Villages with piped water supply	87	60
-Villages with un-piped water supply	2	0
<b>Number of water points</b>	1,722	2,339
- percent functional	98%	91%
-functional needs repair	1.5%	4%
- percent non-functional	0.50%	5%
-percent abandoned	0%	0%

Source: RUWASA Service Delivery Management System (RSDMS), February 2022 (Unverified)

The main source of water in these districts is surface water such as springs, rivers and rainwater harvesting. As indicated in Table 2 above, various water schemes exist in these districts many of them are functioning as they are largely gravity fed water scheme. However, most of the schemes are old and need major rehabilitation to guarantee long-term service provision. In addition, consultations with RUWASA district teams revealed that while the unserved villages are relatively few compared to other regions such as Rukwa, most of them are in very remote areas with lack of reliable water sources.

Under the second phase of the Water Sector Development Program (WSDP) the region is planning to implement 108 water projects, with the target to increase access to improved water sources to 85% by 2025. Currently there are 34 projects under construction.

The main sources of funds for these projects are the National Water Fund (NWF) and the UK government Payment by Results (PbR) program. Njombe region is not included in the 17 regions which receive funding from the World Bank's Sustainable Rural Water Supply and Sanitation Program-for-Results.

<sup>2</sup> Source : National Sanitation Information Management System (NSIMS)-February 2022

# 3.0 INFRASTRUCTURE SCOPING AND SELECTION CRITERIA

## 3.1 BACKGROUND INFORMATION AND RATIONALE

The rationale for developing the water infrastructure scoping and selection criteria stems from the fact that MUM is required to advise USAID on how to allocate the limited funds allocated for infrastructure development to achieve the project goals. This is important particularly in the context of the water sector in Tanzania where there is already a huge financing gap to meet the investment needs.

The approach to water infrastructure planning and investment in Tanzania has evolved over time largely influenced by changes in the policies guiding water supply provision. Since independence (in 1961), the approach to planning and delivery of water infrastructure has evolved in three (3) phases as briefly described below.

- a) **1960s-1980s- Free water delivery.** Shaped by Ujamaa (socialism) ideology, during this period the delivery of water infrastructure adopted some aspects of community participation (where communities provided labor and local materials for construction), but water was provided for free in which government and donors planned, built, and maintained water facilities. All aspects of decision making largely remained with central government. As a result, communities felt no sense of ownership of the facilities and thus depended on the government to manage and maintain their facilities. Lack of community ownership and funds for repairs meant that many water schemes failed to provide reliable access to water.
- b) **1990s- Village Level Operation and Maintenance (VLOM).** Following the introduction of new water policy in 1991, the new approach was introduced- one in which government and donors continued to build water infrastructure with communities expected to play a central role by contributing costs for repair that can be done at village level. In this approach, it was expected that communities would become owners and managers of the facilities and take a lead in initiating, planning, constructing, managing, and maintaining their facilities. Unfortunately, this top-down approach didn't work well, as many of the installed water schemes failed to provide reliable access to water.
- c) **2000s- Community Ownership and participation.** To address these concerns of poor functionality of water scheme, a new Water Policy was introduced in 2002 to guide planning and delivery of water infrastructure based on the following concepts:
  - *Community Ownership and Management*, where communities initiate, plan, construct, own and maintain their water facilities

- *Demand Responsive Approach (DRA)*, where investments were prioritized to communities which expressed demand for water supplies demonstrated by commitment to full fill their responsibilities in planning, financing, constructing, and managing their facilities
- *Community Contribution*, where communities were required to cover part of capital/investment costs both in cash and in kind for water schemes. Communities were also responsible for covering the full costs for operation and maintenance.

Community ownership approach (as described above) was the main guiding principle in selecting communities/villages that would receive the investments during the first phase of Water Sector Development Program (WSDP I)-2006-2016, through which water supply was developed along with hygiene and sanitation interventions. During this period, the private sector (NGOs, consultants, drillers, and contractors) provided goods and services to support communities in initiating, planning, designing, constructing, maintaining, and managing their water and sanitation facilities. The central government changed its role from being an implementer to a regulator, facilitator, and coordinator, with Local Government Authorities (LGAs) providing support to communities in the development of their water supply and sanitation facilities.

On selecting a specific type of water infrastructure project, the main criteria used during WSDP I was the ‘water supply technology options’ where selected projects were those which were assessed to be both ‘technologically appropriate’ to their physical and social environment, and ‘financially affordable’ both in the investment phase and during the operation and maintenance phase. Box I below gives a more detailed overview of some of the issues that needed to be considered by communities when selecting the type of water infrastructure projects.

<b>Box I</b>	
<b>Feasibility issues</b>	
<p><b>Technical</b></p> <ul style="list-style-type: none"> <li>• Situation analysis of water source</li> <li>• Water demand</li> <li>• Possible technological options</li> <li>• Possible scheme operational system</li> <li>• Technical skills required in O&amp;M</li> </ul>	<p><b>Environmental</b></p> <ul style="list-style-type: none"> <li>• Seasonal variation</li> <li>• Source protection</li> <li>• Risk of negative impact</li> <li>• Water quality</li> </ul>
<p><b>Institution</b></p> <ul style="list-style-type: none"> <li>• Community management capacity</li> <li>• Existence of other institutions and projects and their management capacity</li> </ul>	<p><b>Economical</b></p> <ul style="list-style-type: none"> <li>• Household income level</li> <li>• Capital cost and household contribution</li> </ul>
<p><b>Social</b></p> <ul style="list-style-type: none"> <li>• User preference</li> <li>• Seasonal migration patterns</li> <li>• User organizations and social cohesion</li> </ul>	<p><b>Management capacity</b></p> <ul style="list-style-type: none"> <li>• Sustainable management structures</li> </ul>

Source: WSDP I-Project Implementation Manual

However, while the criteria for use in selecting communities and type of water infrastructure investments under WSDP exists, consulted stakeholders had a view that they are not being used to systematically guide the selection and prioritization of water infrastructure projects. Besides, experience from the implementation of WSDP and consultations with MoW, RUWASA and WSSAs shows that there exist no clear guiding framework or tool to guide RUWASA and WSSA teams in using the criteria above to guide selection and prioritization of the water projects. As such, water infrastructure planning is currently done in an ad-hoc manner characterized by limited and inconsistent use of data and information.

Also, consulted stakeholders indicate that the approach used to promote community participation in the selection and prioritization of water infrastructure was not effective, as it resulted into inequalities in distribution of investments within districts with communities selecting large, piped schemes which proved to be expensive and complex to construct and manage. For instance, during design of WSDP, it was assumed that 55 percent of the rural water supply schemes would be handpumps. However, when it came to implementation, over 80 percent of the schemes constructed under WSDP I, based on community preferences, were deep-boreholes-mechanised-piped schemes (World Bank, 2016a). As a result, the average cost per rural water point beneficiary was roughly US\$59 – substantially higher than the planned cost of US\$36. The high-cost and more complex technologies selected were a significant change from what was envisaged in the design, which not only required additional investment but had implications on the communities’ ability to manage, operate and maintain. Box 2 provide an overview of evidence of Community Ownership and Participation in planning and delivery of water infrastructure in Tanzania.

**Box 2: Evidence of Community Ownership and Participation in planning and delivery water infrastructure**

Evidence and experience gathered in implementation of water projects in Tanzania and other countries in Sub-Saharan Africa reveals several flaws in the assumptions behind the community management approach. On ownership and willingness to pay, available evidence suggests that while most communities can cover costs related to minor maintenance and operation, many struggle with the aspects of long-term sustainability e.g., carrying out major maintenance and eventual asset replacement (Bakalian and Wakeman, 2009; Moriarty et al, 2013; Whaley et al, 2019).

On community participation, it has been reported that in Tanzania, demand-driven development is more likely to favour the wealthier, more educated, more politically engaged, and those having more media access benefiting more (Baird et al, 2013). This leads to the poor losing out. For water provision in Tanzania specifically, political patronage and favouritism are more pronounced at the local level. Within districts, the distribution of new water infrastructure is often skewed to favour localities with higher political influence. Also, there is evidence that wealthier and better-connected communities (those with the resources to express more effectively their demands) are significantly more likely to benefit from new construction. This suggests that “demand-responsive” approaches to water provision can entrench regressive patterns of distribution (Carlitz, 2017).

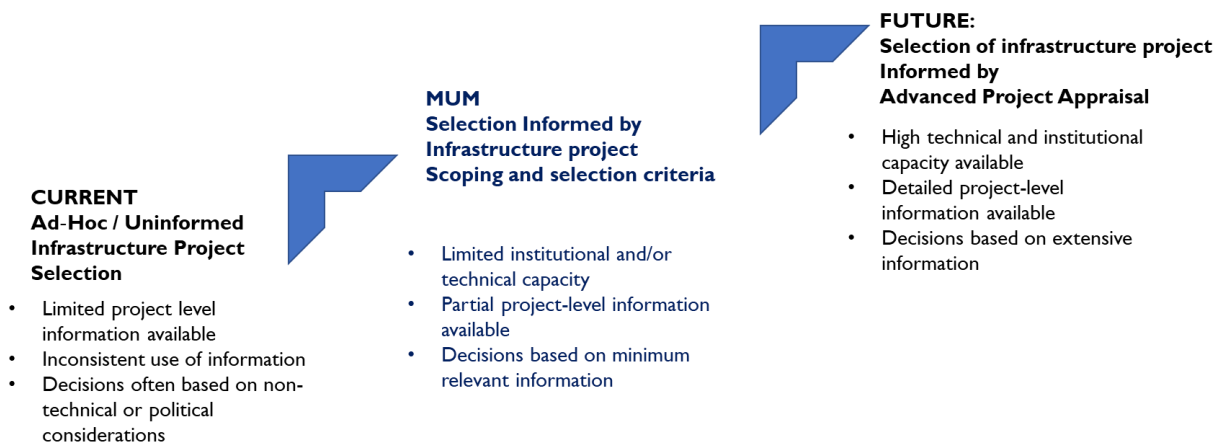
Furthermore, linked to participation, is usually the assumption that communities would make informed decisions by choosing simple technologies that they will be able to operate and maintain. This assumption does not hold in many settings. Experience shows that with increase in incomes, change in lifestyle and expectations, communities in rural and urban areas are aspiring for and demanding more sophisticated technologies that can provide higher levels of service to meet the ever-growing demand for water.

Another challenge was the fact that during WSDP I, the planning and delivery of water infrastructure followed a “10-village schemes” approach, through which local government authorities were supposed to select the 10 neediest villages within their jurisdiction to receive new, WSDP-funded projects. Design and construction of the projects was contracted out to private consultants who were to visit the villages selected and consult with community members to come up with suitable designs. Through a combination of poor coordination and procurement bottlenecks, the design process proved to be extremely time-consuming and expensive. But the main driver of cost inflation was the designs chosen: communities chose (or were encouraged to choose) much costlier technologies than anticipated. It was in the consultants’ interest to design more expensive projects, which would ultimately increase their cut of the funding. As a result, the change in technology selection, meant that the program was able to reach only half of the target population (MOW, 2013).

The design of the second phase of WSDP (2017-2021), aimed to rectify these shortcomings by streamlining the planning and selection of water infrastructure project through the district water and sanitation plans.

Specifically, the ‘10 villages scheme’ approach was stripped off and replaced with a need for comprehensive planning for the whole district that will be implemented in phases. Linked to that, the project selection and appraisal had to follow the approved district water supply and sanitation plans using the most recent data and information collected through the MoW’s Water Point Mapping (WPM) system. Other criteria include giving priority to communities residing near the water sources and existing major water infrastructures. To implement these criteria, the Ministry of Water (MoW) was tasked to prepare and disseminate guidelines for LGAs and WSSAs to prepare comprehensive District Water Supply and Sanitation Plans and ensure resources (mainly funding) to implement water projects are allocated on equitable basis. These measures and criteria aimed at addressing the shortcomings observed during WSDP I (described above). However, the new approach and criteria for water infrastructure planning and investments haven’t been implemented effectively. Most districts still do not have the district water and sanitation plans, and funding allocation to the districts and WSSAs continue to be driven by central government, largely based on political considerations.

There is therefore a strong case for MUM to work with the MoW, RUWASA and WSSA to develop an approach that would help ensure water infrastructure projects are selected and prioritized based on standard criteria and tools, and investment decisions are made based on data and information in a particular context. Given the existing limited institutional and technical capacity in infrastructure planning and delivery, MUM’s proposed approach (see Figure 1 below) is to work in collaboration with MoW, RUWASA and WSSAs to develop and systematically apply appropriate scoping and selection criteria when selecting and prioritizing projects in the five new districts of Sumbawanga, Kalambo, Nkasi, Makete and Ludewa. This approach will be piloted in a limited number of scoped/selected schemes in the MUM focused districts, and then use that information to improve the criteria- with the aim to build the institutional and technical capacity of MoW, RUWASA and WSSAs in basic water infrastructure planning and delivery which is an important step towards applying advanced methods in project appraisal in the future when these institutions will have the capacity to do so.

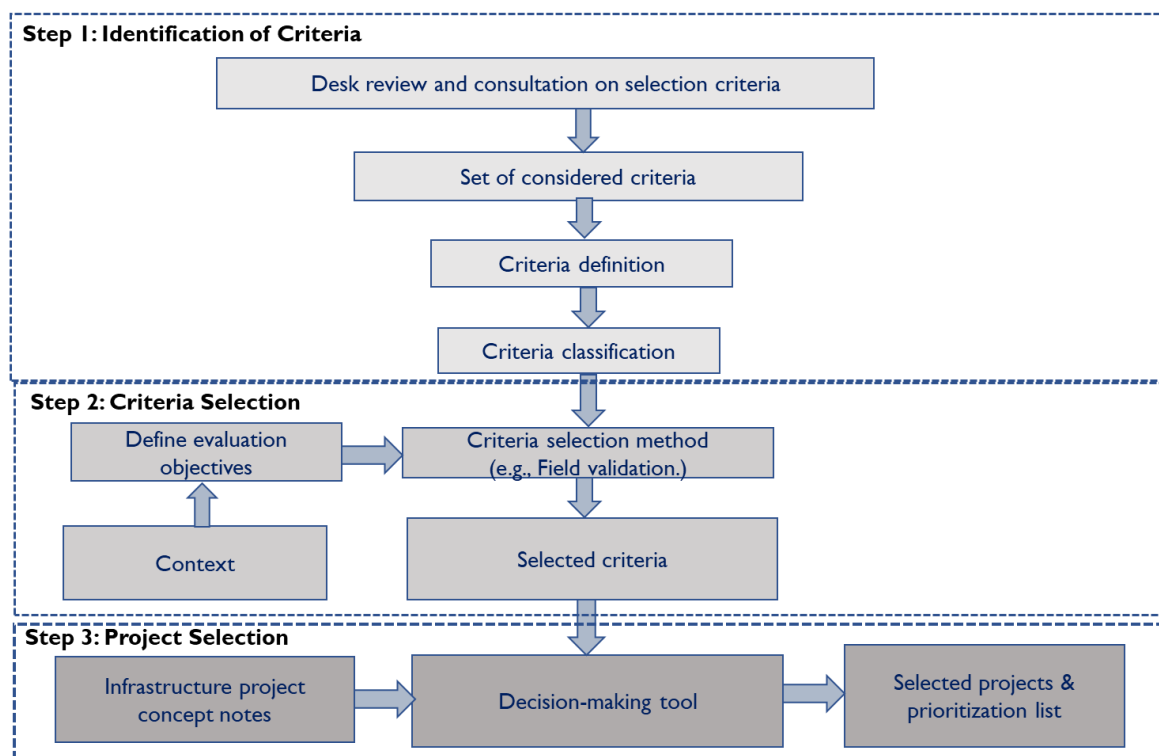


**FIGURE 1 AN INCREMENTAL APPROACH TO INFRASTRUCTURE SELECTION**



## 3.2 CONCEPTUAL FRAMEWORK FOR PRIORITIZATION AND SELECTION OF INFRASTRUCTURE PROJECTS

MUM will follow a three (3) steps process when selecting and prioritizing new water infrastructure projects to be supported by USAID in the five districts of Sumbwanga, Kalambo, Nkasi, Ludewa and Makete. These steps are illustrated in Figure 2, and briefly described below.



**FIGURE 2 CONCEPTUAL FRAMEWORK FOR INFRASTRUCTURE PROJECT SELECTION**

The conceptual framework provided in Figure 2 is developed and adopted based on a systematic review of experience applying a structured model to integrate decision criteria for infrastructure project selection described by Hansen et al, 2019. As illustrated in Figure 2, the adapted MUM’s conceptual framework for infrastructure scoping and selection consists of three steps, namely criteria identification, criteria selection, and project selection.

**The first step – identification of criteria**, has been achieved by MUM in collaboration with RUWASA and WSSAs which reviewed the experience and challenges of water project selection criteria indicated under the WSDP (Phase I & 2) to come up with a new set of criteria to be applied through MUM. The process involved in completing this step includes.

- a) Desk review of evidence and experience of water infrastructure planning and selection in Tanzania (covered in section 3.1 of this report)
- b) Consultation with the MoW and RUWASA on MUM’s approach to project planning and selection in the five new districts.
- c) Synthesis of a proposed set of new criteria (which include criteria definition and classification) based on the literature review and feedback from MoW and RUWASA.

These activities took place in November-December 2021.

**The second step - criteria selection** aimed to filter and evaluate the proposed set of new criteria so that only appropriate criteria will be used to inform selection and prioritization of projects. The process involved in completing this step includes.

- Define evaluation objective for each criterion
- Specify issue of interests (sub-criteria) for each criterion
- Assigning weight for each criterion, so that they are evaluated based on their importance
- Define how each criterion will be verified to ensure consistency in evaluation

These activities involved literature review and consultation with RUWASA and WSSA teams. In addition, a rapid field level validation exercises of the proposed criteria took place from 17-21 January 2022 in the five new districts to test how the proposed criteria would apply in local context. The final agreed list of proposed infrastructure scoping and selection criteria to be used by MUM are presented in section 3.3, below, based on evidence and experience of implementing the WSDP in Tanzania (provided in section 3.1 above) as well as field experience during validation of the tool in the five new districts (details provided the Annex).

**Finally, in the third step – project selection**, after the selection criteria are approved by USAID, MUM will apply a decision-making tool to aid the selection and prioritization of water infrastructure project proposals received from the five new districts. The draft tool is being developed using a Multicriteria Analysis (MCA) technique. The MCA allows systematic assessment of various projects according to the pre-determined criteria and objectives, and rank projects based on their priorities. It is envisaged that the selection and prioritization of infrastructure project proposals (to be concluded in Q4 of FY2022) will be done by calculating and sorting the total score from the highest to the lowest.

### **3.3 PROPOSED INFRASTRUCTURE SCOPING AND SELECTION CRITERIA**

The infrastructure scoping and selection criteria proposed below are based on the assessment that MUM team carried out following the first two steps in a conceptual framework presented in Figure 2 above. The proposed water infrastructure project scoping and selection criteria are grouped into four main categories namely:

- Alignment and complementarities with existing water and sanitation plans
- Contribution towards achieving equitable access to water and sanitation
- Contribution towards meeting the district water and sanitation targets
- Technical feasibility and financial viability.

Below is a brief description of each of the proposed criteria.

#### **3.3.1 Alignment and complementarities with existing water and sanitation plans**

This criterion aims to encourage and incentivize RUWASA and WSSAs to streamline planning and make selection of their water infrastructure projects more in line with the district water and sanitation plans. As described above, using the district water and sanitation plans as the basis for infrastructure selection and prioritization is one of the strategic shifts under WSDP but hasn't happened due to various reasons including lack of technical skills and funding.

As part of MUM's approach to systems strengthening, prioritizing projects that align and/or complement with existing plans is expected to encourage RUWASA and WSSAs to adopt a district wide approach to planning and delivery of services, and help ensure water and sanitation plans are developed and used as guiding framework for coordinating and aligning efforts of all actors towards achieving the desired goal and vision for WASH in the five new districts. When evaluating this criterion, MUM will assess whether the proposed water infrastructure projects are included and approved in the existing RUWASA and WSSA Business Plans.

### **3.3.2 Contribution towards achieving equitable access to water and sanitation**

This criterion aims to encourage equitable allocation of investments within and across the five new districts. As described above, the use of Demand Responsive Approach (DRA) and ‘water supply technology options’ as the basis for selection and prioritization of water projects under WSDP has some limitations, as benefits from new infrastructure tend to favor areas where water sources are readily available and to wealthier and better-connected communities (those with the resources to express more effectively their demands), thereby reducing inequity in access to water within and across districts.

To help ensure equitable allocation of investments, MUM will ensure that projects which contribute towards improving equitable access to water and sanitation within and across the five new districts are prioritized in line with the existing water and sanitation plans. When evaluating this criterion, MUM will consider factors such as existing levels of water and sanitation services coverage between and within districts as well as volumes of investments that districts or communities receive from other government and other development partners.

### **3.3.3 Contribution towards meeting the district water and sanitation targets**

This criterion aims to help ensure the water infrastructure projects supported by MUM contribute to helping RUWASA and WSSAs to meet water and sanitation targets in line with the district water and sanitation plans.

As shown and described above, access to water and sanitation in the five new districts varies and are below the desired national targets of providing access to improved water sources and sanitation facilities to 85% and 80% respectively by 2025. As such, it is imperative that the infrastructure projects to be supported under MUM should help to bridge the gaps in access to water and sanitation in the respective districts.

When evaluating this criterion, MUM will consider factors such as the number of beneficiaries to be served by the proposed projects, availability of water supply in the community and institutions available (e.g., schools, and health care facilities) and the potential contribution of the project towards meeting district and MUM targets across all MUM’s strategic objectives. More specifically, in addition to the potential to contribute towards meeting districts’ water and sanitation targets, projects will be assessed based on their contribution to improving performance of water Service Providers (SP), the potential to leverage additional funding, and their contribution towards improving catchments protection.

### **3.3.4 Technical feasibility and financial viability**

This criterion aims to help ensure the water infrastructure projects supported by MUM are technically feasible and economically viable both in the investment phase and during the operation and maintenance phase.

As shown and described above, various water schemes exist in the five districts but many of them do not function due to various reasons including drying up of water sources, deterioration due to poor design and construction, and lack of sufficient funds for operation and maintenance. As such, it is imperative that the infrastructure projects to be supported under MUM should be technically and financially viable to guarantee long term sustainability of the investments.

When evaluating this criterion, MUM will consider factors such as availability of reliable water sources, unit costs (e.g., Capital Expenditure (CapEx), Capital Maintenance Expenditure (CapManEc) and Operating Expenditure (OpEx)), and the total cost of the project, its cash flow, cost recovery potential, and profitability. In addition, MUM will also assess the level of complexity of the projects assessed in terms of the time and human resources required to ensure effective implementation, the influence and impact of local politics in implementing the project, as well as the technical and managerial skills required to construct, maintain, and sustain the project.

Table 5 below provides a comprehensive list of the Infrastructure Scoping and Selection Criteria. For each criterion, we propose weight factors and factors/sub criteria to be considered during evaluation of the criteria.

**TABLE 5 PROPOSED LIST OF INFRASTRUCTURE SCOPING AND SELECTION CRITERIA**

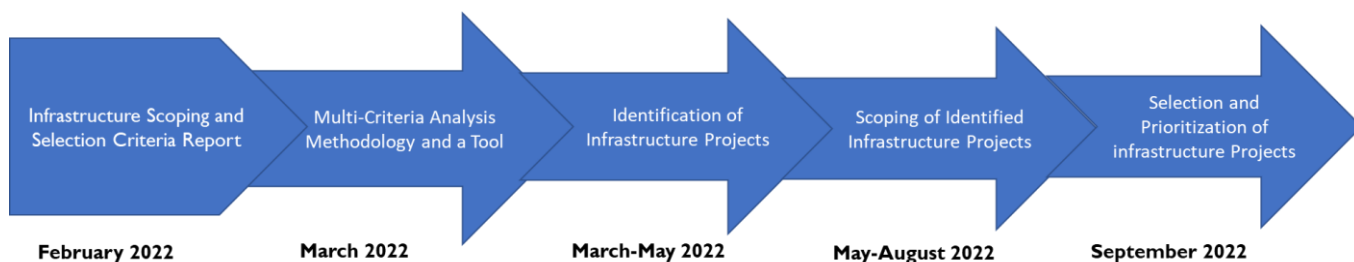
<b>S/No.</b>	<b>Main Scoping and Selection Criteria</b>	<b>Sub-criteria</b>	<b>Sub-criteria weighting - %</b>	<b>Main criteria weight - %</b>
1.	<b>Alignment and complementarities with existing water and sanitation plans</b>	1.1 Inclusion of proposed infrastructure project in the existing water and sanitation plans	5	<b>10</b>
		1.2 Consent or approvals by RUWASA or WSSA boards to construct the proposed infrastructure project	5	
2.	<b>Contribution towards achieving equitable access to water and sanitation within the community and institutions available</b>	2.1 Level of access to improved water sources	20	<b>35</b>
		2.2 Level of access to improved sanitation	10	
		2.3 Likelihood of the project to be supported by Government or other development partners	5	
3.	<b>Contribution towards meeting the district water and sanitation targets</b>	3.1 Number of beneficiaries to be served	10	<b>25</b>
		3.2 Potential to contribute towards improving performance of Service Providers (SP)	5	
		3.3 Potential to leverage additional funding	5	
		3.4 Potential contribution towards improving catchments protection (linked to improving the quality and reliability of bulk water supply)	5	
4.	<b>Technical feasibility and financial viability</b>	4.1 Adequacy and reliability of water source	10	<b>30</b>
		4.2 Necessary, reasonable, allowable, and allocable Unit costs (CapEx, OpEx, CapManEx)	5	
		4.3 Likelihood of O&M cost recovery	10	
		4.4 Level of Project Complexity	5	

### 3.4 CONCLUSIONS AND NEXT STEPS

This report describes the approach and conceptual framework used by MUM to develop the infrastructure scoping and selection criteria in collaboration with RUWASA and WSSAs. It also highlights the process to be used to identify and select the proposed criteria, building on existing evidence, and experience of implementing the two phases of WSDP. A rapid field level validation of the proposed criteria took place in the five new districts to assess the feasibility of applying the proposed criteria in local context (details provided the Annex).

Upon USAID approval of the proposed criteria, MUM will continue with the infrastructure planning process in the five new districts. Next steps and specific timelines are outlined in Figure 3 and will include:

- i. Develop a detailed MCA methodology and a tool that will be used to select and prioritize water infrastructure projects based on the scoping and selection criteria presented in Table 5. This will be completed in
- ii. Identify proposed water infrastructure projects by RUWASA and Urban water utilities. In this aspect, MUM will provide guidance to RUWASA and WSSAs to ensure they prepare concept notes for water infrastructure projects for consideration by MUM.
- iii. Carry out scoping (pre-feasibility) of proposed water infrastructure projects using the approved infrastructure scoping and selection criteria described in this report.
- iv. Use the MCA tool/technique to select and prioritize a list of priority water infrastructure projects and submit in deliverable report for approval by USAID.



**FIGURE 3 TIMELINE FOR SCOPING, SELECTION AND PRIOTIZATION OF INFRASTRUCTURE**

After approval of a priority list of water infrastructure by USAID, in YR2 (FY2023), MUM will undertake a detailed feasibility study of selected projects. The information gathered from the feasibility studies will inform detailed design drawings and technical specifications for each proposed infrastructure project. These will be submitted to USAID for approval before commencement of design work.

# 4.0 REFERENCE

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## ANNEX

### RUWASA REGIONAL AND DISTRICTS INPUTS INTO INFRASTRUCTURE SELECTION CRITERIA AND RAPID FIELD LEVEL ASSESSMENT OF PLANNED WASH INFRASTRUCTURE

#### RUWASA Njombe:

**Date:** January 17<sup>th</sup>, 2022

**Venue:** RUWASA Regional Manager office – Njombe

#### Attendees:

1. Sadick Chakka – Regional Manager – RUWASA Njombe
2. Mlinge Lupetulilo – District Manager – RUWASA Ludewa
3. Innocent Lyamuya - District Manager – RUWASA Makete
4. Muganyizi Ndyamukama - Water Infrastructure Manager – MUM
5. Jackson Mutazamba – Water Services Lead - MUM

#### RUWASA team Orientation and rapid assessment at field level

MUM WASH services Lead introduced the infrastructure scoping and selection criteria tool to participants and its rationale in project scoping and selection process. The Water Services Infrastructure Manager took the participants through the tool step by step and allowed them to ask for clarifications in case there which were not clear to them. There were no changes to the tool, but RUWASA team appreciated that the tool would facilitate fair scoping and selection of projects. Masimbwe village in Ludewa district was proposed for field level rapid assessment.

Masimbwe village was used as an example to test criteria in the meeting and in the field the following day. On January 18<sup>th</sup>, 2022, MUM team, Iringa RUWASA Manager and Ludewa RUWASA district manager visited Masimbwe village which is about 60 kilometres from Njombe along the Njombe to Ludewa road. Masimbwe community leaders were informed on the visit but not given details of the visit. This was done purposely with the objective of testing the tool.

The village meeting was attended by 10 community members including village leaders and water committee members. Testing of the tool indicated that the community had discussed their water issues and submitted request for support to the district. The community shared some evident though not in one complete document due to office handing overs weaknesses from one village officer to another. Through discussions with village community members, it was established that there is low water supply coverage (less than 35%) through an on old gravity scheme which was constructed in 1981 was hardly functioning with many down times. The community seems ready to contribute through in-kind contributions. The team (MUM, RUWASA and community) visited a proposed area for new intake in a community reserved natural forest which is protected from human activities e.g., farming and animal grazing and, local by-laws are being enforced to protect the source. The source was found to have enough water to meet current and future demand for the community at an elevation possible to supply water to the proposed **service area** of five (5) villages with a total population of 10,642 people.



- Masimbwe - 1,750 people
- Mkiu - 1,115 people
- Kiombo - 2,042 people
- Mlangali - 3,090 people
- Lupanga – 2,645 people

**Conclusion:**

- RUWASA team had no comment on the tool. They appreciated that the tool will be very useful in project selection and will objectively select appropriate projects.
- The community and its leadership seem ready and eager to contribute in-kind and financially during project implementation and, O&M of the project e.g., the community are paying for water supply service at the agreed rates of TZS 5,000/- per household/year and TZS 48,000/- HHC/year.
- This rapid assessment shows that the infrastructure scoping and selection criteria tool will give the required results.
- The proposed service area seems to meet the selection criteria



Some evident – Community initiatives of improved water supply



MLANGALI DEVELOPMENT ASSOCIATION



S.L.P 97

Ludewa

TANZANIA (EA)

8 Mei 2020

**KUMB.NA.MLADEA/MVC/MWSSP.VOL.1.34**

Mwenyekiti wa Kijiji

Kijiji cha Masimbwe

S.L.P. 19

**LUDEWA**

**YAH: OMBI LA MRADI WA MAJI YA BOMBA KATIKA KIJJI CHA MASIMBWE**

Husika na kichwa cha habari cha hapo juu.

Asasi ya MLADEA inakiri kupokea barua yenu yenye Kumb.MVC/MWSSP/VOL.1/001 ya tarehe 2 Juni 2018 pamoja na muhtasari wa kikao cha serikali ya kijiji cha tarehe 2 Julai 2018 wa kuiomba asasi ya MLADEA iwatafutie mfadhili/wafadhali kwa ajili ya mradi maji katika kijiji cha Masimbwe.

Asasi ya MLADEA ipo katika mchakato wa kutafuta mfadhil/wafadhili kwa ajili ya mradi huo .Hata hivyo asasi ya MLADEA inashauri kuwa mnatakiwa kuanza maandalizi kwa ajili mradi huo ikiwa pamoja na kuanzisha michango ya fedha kwa ajili :

- 1.Gharama za usafirishaji vifaa vya ujenzi wa mradi kutoka Njombe hadi kijiji cha Masimbwe
- 2.Gharama za kuwalipa mafundi

3. Gharama za ushuru wa forodha (VAT )

4.Vifaa vya ujenzi (local building materials ) kama vile mawe,kokoto,mchanga .

Aidha asasi ya MLADEA inawatakia maandalizi mema .

Emmanuel M Kayombo

(Katibu Mtendaji )

MLANGALI DEVELOPMENT ASSOCIATION  
P.O. BOX 97  
LUDEWA  
TANZANIA (EA)

**MUHTASARI WA MKUTANO WA WANANCHI WA KIJJI CHA MASIMBWE TAREHE 18/7/2021**

**AGENDA**

1. KUFUNGUA MKUTANO
2. KUFUNGUA AKAUNTI YA MAJI
3. KUFUNGA MKUTANO

**AGENDA NA. 1:- KUFUNGUA MKUTANO**

M/kiti alifungua mkutano mnamo saa 10.00 asubuhi, Alianza kwa kuwashukuru wananchi kwa kufika kwenye mkutano huo.

**AGENDA NA. 2:- KUFUNGUA AKAUNTI**

M/kiti amewaeleza wananchi kutokana na uhaba wa maji katika kijiji chetu, kila mwananchi anapaswa kutoa mchango ili tuweze kuongeza huduma ya maji katika kijiji chetu. Pia M/kiti pamoja na wananchi waliteua wajumbe wanne wataka kwenda kutuwakilisha katika kufungua akaunti ya mradi wa maji, wajumbe hao ni kama wafuatao:-

- 1) Blantina Atanasio Mtitu - M/kiti
- 2) Godfrey Jeremia Mwinuka - Katibu
- 3) Lucy Efrem Mtega - Mhasibu
- 4) Edward Samson Mgya - Mjumbe

M/kiti alisema katika viongozi hao waliochaguliwa kundi A watia sahihi Banki

- 1) Godfrey Jeremia Mwinuka
- 2) Lucy Efrem Mtega

Kundi B. Watia sahihi Banki

- 1) Blantina Atanasio Mtitu
- 2) Edward Samson Mgya

Baada ya kupita uchaguzi huo wananchi wote walikubali kuitekeleza Agenda hiyo kwa pamoja na M/kiti aliwapongeza wananchi kwa uamuzi huo mzuri.

**AZIMIO:-** M/kiti pamoja na wananchi waliazimia kuunda jina la akaunti hiyo ilipewa jina la JUMUHIYA YA WATUMIA MAJI MASIMBWE (JUWAMASI)

**AGENDA NA. 3 KUFUNGA MKUTANO:-**

M/kiti alifunga mkutano mnamo saa 7.00 mchana, aliwashukuru wananchi kwa mahudhurio mazuri katika mkutano huo. Baadaye alifunga mkutano kwa sala na kutamka mkutano umefungwa

BLANTINA A. MTITU  
M/KITI

GODFREY J. MWINKA  
KATIBU

Attendance at Community Meeting on 18<sup>th</sup> January 2022

MAHUSHTULIO YA ZIARA YA IDARA YA MAJI KIA USAFI WA MAZINGI		
BA TAREHE 18-1-2022		
JWA	CHEO	SAMHI
1 ERNEST H. MTEGA	M/UTI	Ernest
2 GRETA CHALE	VEO	Greta
3 JACKSON MUTAZAMBA	WET-Lead. (MUM-Ining)	<del>Jack</del> Jackson
4 Muganyizi Ndyamukama	WI-Manager	<del>Jack</del> Ndyamukama
5 Sedick Chakka	Ruwasa - Mkombe	Sedick
6. Muge Nasibu Lupatuli	RWASA - Mkombe	Muge
7 ASFRED AIDARI MWEVE	MKOMBE	Asfred
8 TUBAKWENE MWEVE	M/KI. TIMRADIWA	Tubakwene
9 AIDAN Y. SIMALENGA	MKOMBE	Aidan
10 BLANTINA A. MITU	MHARIBU MAJI	Blantina

## **RUWASA Rukwa:**

**Date:** January 20<sup>th</sup>, 2022

**Venue:** RUWASA District Manager office – Sumbawanga

### **Attendees:**

1. Joseph Mcharo – RUWASA HQ
2. Boaz Matundali – Regional Manager – RUWASA Rukwa
3. Nanyori Gabriel – CDO – RUWASA Rukwa
4. Danford Vassale - Engineer – RUWASA Rukwa
5. Patrick Ndimbo – District Manager – RUWASA Kalambo
6. Jonas Maganga - District Manager – RUWASA Sumbawanga
7. Bahati Haule – Engineer - RUWASA Sumbawanga
8. Shafii Shabani - District Manager – RUWASA Nkasi
9. Jackson Mutazamba – Water Services Lead - MUM
10. Muganyizi Ndyamukama - Water Infrastructure Manager – MUM

### **RUWASA team Orientation and rapid assessment at field level**

MUM WASH services Lead introduced the infrastructure scoping and selection criteria tool to participants and its rationale in project scoping and selection process. The Water Services Infrastructure Manager took the participants through the tool step by step and allowed for questions. There were questions for clarifications but no changes to the tool were proposed. RUWASA team appreciated that the tool would facilitate fair scoping and selection of projects. Wampembe village in Nkasi district was proposed for field level rapid assessment.

Wampembe village in Nkasi district and Msanzi village in Kalambo district were used as examples to test criteria in the meeting. The varying situations in the two proposed project proved that the tool is applicable and responding well with inputs on selection criteria including automatic ranking.

On January 21<sup>st</sup>, 2022, the team Listed above except Bahati Haule visited Wampembe village which is about 140 kilometres from Sumbawanga along the Lake Tanganyika with about 6,000 people distributed in 10 sub villages. Village leaders were informed on the visit but not given details of the visit. This was done purposely for objective testing of the tool.

The village meeting was attended by a village chairperson only as other leaders were not around. Testing of the tool indicated that the community had discussed their water issues but could not get evidence that community had submitted request for support to the district. A quick search through files in the Chairperson's office helped to establish that there was some evidence though not in one complete document due to absence of village Executive officer.

Wampembe village and other proposed villages in the service area (Kizumbi, Ngang'a and Katenge), all along the Lake Tanganyika have no improved water supply service hence falling in category of 0 to 35% water coverage. In 2015 a gravity scheme, intended to serve all 4 villages was constructed under the Water Sector Development Program (WSDP). Unfortunately, the community reported that the scheme did not last long due inferior pipe classes resulting to heavy leakages due to high pressures. No O&M system was established to ensure sustainability of the project Wampembe reported getting water for one day only!! The community is currently heavily depending on Lake Tanganyika for most of water uses and getting drinking water from a hand pump. There is an individual who is getting raw water from Lake

Tanganyika using a small pump for his family use and selling to community members who wish to get water from his supply at 200TZS per 20 litres bucket. The last cholera was reported three years back. The village chairperson admitted that community is not treating drinking water. There have been sanitation awareness campaigns and about 80% of households have improved latrines as a result these villages have not been affected by cholera outbreaks.

According to the village chairperson, Wampembe and neighbouring villages have a great need of improved water and sanitation services; the community is ready to contribute through in-kind contributions and more WPs are needed as the villages have expanded.

The team (MUM, RUWASA) could not visit the proposed intake area due accessibility problem, as they could not cross a bridge due to damages caused by the ongoing rains. RUWASA Nkasi with support from RUWASA regional office have done preliminary works including locating an area for a new intake, designing the project, and conducting water quality testing. Photos and a design report have been shared with MUM team for review. The source seems to have enough capacity to meet current and future demands of water and it is located at an elevation possible to supply water to the proposed **service area** comprising Wampembe, Ng'udwe/Katenge, and Kizumbi villages with a total population of 12,509 people (source: RUWASA design report).

- Wampembe – 6,301 people
- Ng'udwe/Katenge – 3,971 people
- Kizumbi - 2,237 people

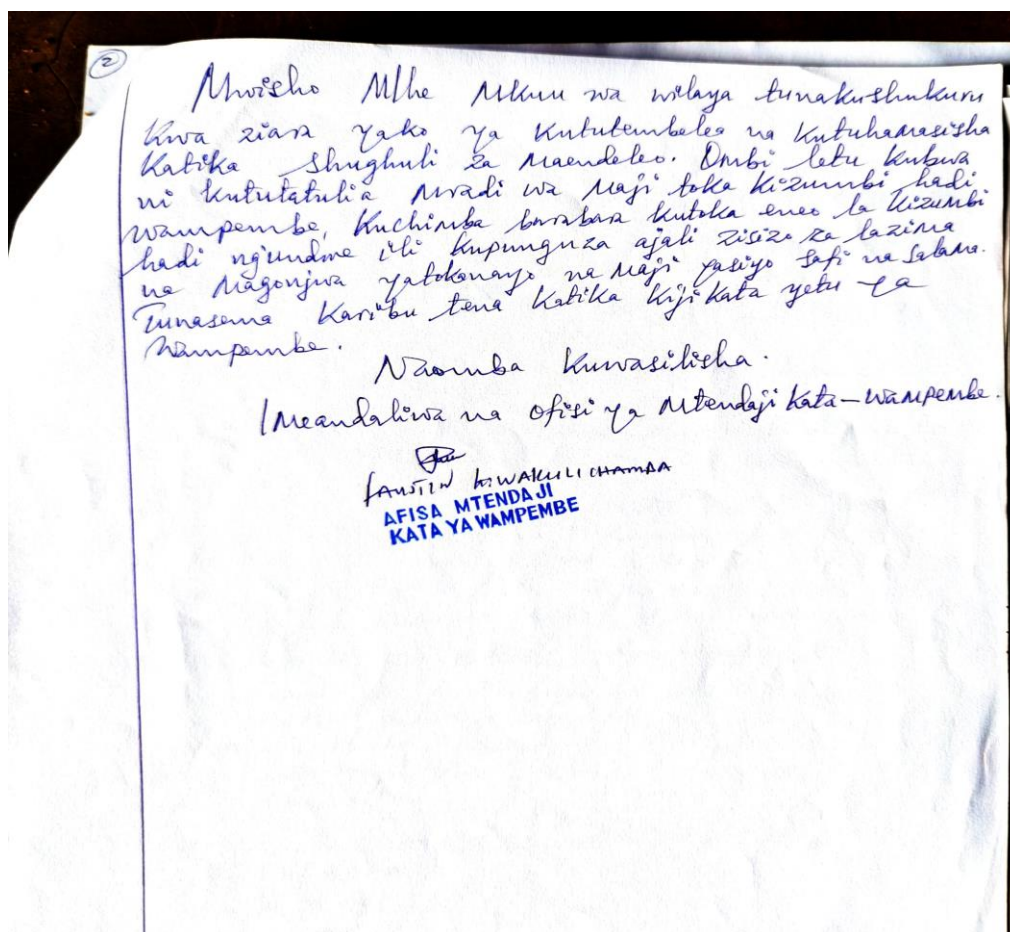
#### **Conclusion:**

- RUWASA team had no comment on the tool. They appreciate that the tool will be very useful in project selection and will objectively select appropriate projects
- This rapid assessment shows that the infrastructure scoping and selection criteria tool will give the required results.
- RUWASA has done some initial works – MUM support will be on reviewing the design report, and other subsequent processes.
- The proposed service area seems meeting the selection criteria. However, if this proposed project passes the scoping and selection process, implementation should be well planned to cope with accessibility challenges.





Some evident – Community initiatives of improved water supply



C. UFYATUZI WA RINGI.

1. Kumlipa Fundi wa Ufyatuzi wa Ringi TSH 210,000/=
2. Kuwalipa waliosafisha sehemu ya kufyatulia Ringi 10,000/=
3. Ununuzi wa masi ndoo 50 @ 200 = TSH 10,000/=
4. Kuwalipa wasombaji wa cmtw 15 @ 1000 = TSH 15,000/= Kuteleka site-
5. Kuwalipa vibarua wa fundi TSH 55,000/=
6. Kuwalipa waliosomba Ringi kuteleka site na kurudisha TSH 12,000/=
7. Kununua kokeo ndoo 154 @ 500 = TSH 77,000/=

Jumla Ndogo TSH 395,000/=

D. UCHIMBAJI WA KISIMA.

1. Kumlipa mihimbaji DHS 220,000/=
2. Ununuzi wa mawe meta ~~TSH~~ 6 @ 10,000 = TSH 60,000/=
3. Kuwalipa waliosukuma Ringi na mfuniko TSH 15,000/=
4. Ununuzi wa kokeo ndoo 67 @ 500 = 33,500/=
5. Kulipa Guest TSH 7,000/=
6. Kuwalipa wasomba mawe meta 6 @ TSH 50,000 =
7. Chaji ya fundi na vibarua TSH 29,000/=
8. Kuwalipa vibarua 2 TSH 40,000/=
9. Nauli ya fundi DHS 20,000/=
10. Ununuzi wa mbarizi TSH 10,000/=

Jumla Ndogo TSH 547,500/=

E. UFUNGASI WA PAMPU.

1. Kumlipa mfunngasi pampu TSH 75,000/=
2. Kumlipa aliyeta bit TSH 10,000/=

Jumla Ndogo TSH 85,000/=

1. Jumla A: DHS 3,265,400/=
2. Jumla B: DHS 220,000/=
3. Jumla C: DHS 395,000/=
4. Jumla D: TSH 547,500/=
5. Jumla E: DHS 85,000/=

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