The Water Point Mapping Updating Methodology

A Guide by WaterAid Tanzania
Accurate information on water points is critical in order to provide sufficient data for planning and budgeting. Clarity of data means that it can be used to identify priority areas for investment as well as ensuring sustainability of existing water point infrastructure. However, data needs to be kept up to date if it is to be useful.

The main purpose of this guide is to outline the basics of the updating process in an attempt to address the challenges associated with water point mapping process and allow the methodology to be replicated. The tool is a paper-based approach that follows the Government of Tanzania’s usual reporting hierarchy.

This method involves reporting of water point status from the Water Point to be included in the Data Base. The information flow starts with the Community Owned Water Supply Organizations (COWSOs) who send the reports to the Village Executive officer (VEO). The VEOs then send the reports to the Ward Executive officer who forwards them to the District Water Engineer (DWE) to verify and enter the data into the Water Point Mapping System. The DWEs then submit to the Ministry of Water for verification.

The overall responsibilities of the Ministry of Water in this process are to ensure quality control and to upload mass data from the DWE on to the system. The role of the Installer/Contractor is to collect details for the new Water Points and send them to the DWE for uploading to the system. In the course of reporting, new innovations around ICT are meant to strengthen the paper based especially timely reporting on functionality.

The method is reliable, accurate and cost effective. It is also not very consuming and is user friendly for those working within the government structures and systems. It is also affordable for LGAs because it uses existing staffs that are already paid a salary by the Government.

This guide reflects WaterAid Tanzania’s experience in pioneering Water Point Mapping updating in Tanzania. WaterAid has built up a reputation as an expert on WPM and has accumulated considerable experience through its involvement in a range of different mapping activities in East Africa and elsewhere.
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<tr>
<td>CMT</td>
<td>Council Management Team</td>
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<tr>
<td>COWSOs</td>
<td>Community Owned Water Supply Organizations</td>
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<tr>
<td>CSO</td>
<td>Civil Society organization</td>
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<tr>
<td>DC</td>
<td>District Commissioner</td>
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<td>DED</td>
<td>District Executive Director</td>
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<td>DWEs</td>
<td>District Water Engineers</td>
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<td>ICT</td>
<td>Information Communication and Technology</td>
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<tr>
<td>LGAs</td>
<td>Local Government Authority</td>
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<tr>
<td>NBS</td>
<td>National Bureau of Statistics</td>
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<tr>
<td>NGOs</td>
<td>Non Government Organizations</td>
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<tr>
<td>VEOs</td>
<td>Village Executive Officers</td>
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<td>WAT</td>
<td>WaterAid Tanzania</td>
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<td>WEOs</td>
<td>Ward Executive Officers</td>
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<td>WPM</td>
<td>Water Point Mapping</td>
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<td>WPMS</td>
<td>Water Point Mapping System</td>
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1 Background

1.1 What is Water Point Mapping?
Water Point Mapping (WPM) is the process of locating water infrastructure and collecting related information for various uses using any available technology. A water point mapping system is an integration of all the hardware, software, methodologies, data, processes and users dedicated to collecting, storing, processing and analyzing water related information in this mapping process and giving feedback for public use. Water Point Mapping System’s are required to support local level planning and can improve accountability for water sector performance at local and national levels In rural areas WPM is often used to highlight issues of equity and functionality levels of water points at district level. WPM supports the process of establishing a baseline of initial water supply coverage and regular reporting as part of sector performance monitoring. While performance-monitoring frameworks intend to measure changes in access, it is often impossible to know whether access levels have changed based on simply adding up the number of schemes constructed. Showing the spatial distribution of water facilities and overlaying this point data with information about population and administrative boundaries, a picture about differences in levels of access to water supply services can be easily obtained.

1.2 Benefits of WPM

Water Point Mapping systems can be used to highlight the following:

- **Water Supply Service status**: Giving current data on provision and service delivery of clean and
safe water to the community

- **Service sustainability issues**: Displaying non-functional/semi-functional water sources as well as areas where cost recovery and technical backup support is lacking

- **Equity and transparency**: Displaying the distribution of improved water supply services so that inequalities in service levels may be identified

- **Access levels**: Displaying the distance that communities must walk or travel to the nearest improved water source

- **Financing needs**: Locating areas where investments in water supply services are required and quantifying those investments

- **Planning needs**: Identifying water source types and areas where improved sources are required

- **Water quality**: Community perception on water quality even though high risk contaminants can be mapped

- **Monitoring and evaluation trends**: Displaying project and programme performance data

- **Water point management**: Provision of existing model on the water point facilities and management and acts as a base to guide the adoption of new management approaches

### 1.3 WPM in Tanzania

Tanzania is leading the way in East Africa in Water Point Mapping (WPM). In 2004, WaterAid and other development partners piloted the concept in 52 districts in order to support planning for equitable and sustainable water supply service provision at the local government level (Welle, 2006). Following adoption by the Ministry of Water, a total of 74,250 water points from 132 LGAs have been uploaded from the nationwide data. Geodata, a local private sector company, was contracted to collect this data.
2 Water Point Mapping Updating

All public water points are supposed to have been mapped, each with a unique water point code, including their location, scheme type (source, extraction and distribution systems), functionality and reasons for non-functionality (where the water point is non-functional), and ownership/management but the use of the mapping facility in Tanzania has been limited for a variety of reasons. Despite the existence of a reporting system from sub-village to district and ministry levels, districts rarely have up to date information on water point distribution and functionality or use such information for planning and allocation of resources.

The problem is that regular reporting has not been fully operationalized and there is no updating mechanism in place for the uploaded information. Without up to date information on existing water points and their functionality, the challenge of equitable planning and resource allocation will remain. Lack of an effective monitoring tool for water point functionality has been mentioned as one of the factors contributing to this situation. The need for a water point data updating mechanism is clear, as it will ensure water point distribution and functionality data are up to date and readily available at the district level.

Although all water points in Tanzania are supposed to have been mapped, the data is not useful if it is not kept updated which makes it useless for planning. A water point data updating mechanism is required and would fit into the water point mapping system as shown in the diagram below:

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Diagram 1 – The 10 Steps to WPM Updating

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2.1 Updating at National Level

2.1.1 Building National Consensus

In order for any water point mapping updating process to be successful, it is critical to get all stakeholders at the national level on board to ensure all views and concerns are incorporated. This involves consultations with the Ministry of Water, NGOs and donors. A task force on water point mapping should be formed within the Development Partners Group with one organization assigned to pilot the paper based updating option and give feedback to the sector. The purpose of building consensus is to create a harmonized updating option that will be used by the Ministry of Water across the entire Country.

Although the initial mapping exercise in Tanzania was completed in 2012, key stakeholders raised concerns during the WSDP dialogues about how best to ensure the database information was kept up-to-date. Although many players have expressed interest on the subject, there hadn’t been an updating option that had been tested and proved successful until WaterAid was assigned the role.

2.1.2 Building Trust

In order to create ownership of the findings and methodology, the Ministry of Water needs to be engaged from the beginning. A thorough sharing process of the entire exercise has to be established to ensure that the Ministry continues updating after the inception period is over. This should be done through meetings with the Directorate of Rural Water Supply. GeoData were commissioned to undertake the water point mapping exercise by the Ministry of Water and once completed, the Ministry retained ownership of the database system.

2.1.3 Aligning Partnerships

The water point updating processes should be done in partnerships with various users at various levels. This should include the Ministry of Water, the software consultant who will install the system, the PMO RALG and other like-minded donor organizations and NGOs. Forming such partnerships will ensure that the updating mechanism has the full support of the relevant stakeholders and that they will take ownership of the process in the long-term. Such partnerships should be made formal with the signing of a MoU.
2.2 At the Regional and District Level

2.2.1 Training
The primary users of any Water Point Mapping system at the LGA levels are the District Water Engineers. They should be given the responsibility to update the system by collecting data on any new water points and editing the status of the existing points. DWEs are the ones legally responsible for the management of water supply services and infrastructures in their area of jurisdiction. According to the existing structures the Ministry is responsible for coordinating water supply services through DWEs. To ensure successful operation of the system, it is essential that the DWEs are given sufficient capacity building and training. Additional participants to be considered for the training should be the COWSO registrars, as they have a crucial role in the formation of these organizations, and the DWEs assistant, who will require skills in the event of the DWEs absence.

2.2.2 Validation and Verification
Validation should happen in parallel with the training session for the LGAs users and the DWEs can learn by entering the newly validated data into the system. The first step towards developing an updating mechanism is to assess the extent of discrepancies in the data. This is important in order to understand what the key issues are and to give justification as to why the database need updating.
Part of the verification and validation exercise should involve comparing the data in the online Water Point System database with the raw data held by the district engineers. This data comparison should be conducted in collaboration with the DWEs to give them ownership of the process and ensure they understand how to carry out similar activities in the future. The exercise involves extracting data from the simple query analysis in the WPMS database which is available online.

The verification process can be done through physical observation or interviews with communities conducted by COWSOs and the Ward and Village Executive Officers. Together they will go through the dataset using WPMS and offline data to identify if there are any anomalies. In this regard, the verification tool (see below) has to be introduced and made available to the Participants.

### 2.2.3 Water Point Verification tool to be used by WEOs and VEOs

<table>
<thead>
<tr>
<th>LGA NAME</th>
<th>STATUS</th>
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<tr>
<td>WARD</td>
<td>VILLAGE</td>
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**Source: Developed by WaterAid, Geodata and MoW**

### 2.2.4 Water Point updating tool to be used by WEOs and VEOs

<table>
<thead>
<tr>
<th>Water point name/Jina la Kituo</th>
<th>Water point code/Na. ya Kituo</th>
<th>Status/Hali ya Kituo</th>
<th>Recording Date/Tarehe ya kuhakiki</th>
<th>Management/Msimamizi wa Kituo</th>
<th>Payment/Utaratibu wa malipo</th>
<th>Remarks/Maelezo ya ziada</th>
<th>Na. Simu ya msimamizi wa Kituo</th>
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Signature/Sahihi
2.3 Awareness raising to decision makers at LGAs levels

After the training, the District Water Engineer in collaboration with water sector stakeholders should meet with key decision makers in the District to discuss the WPMS and explain what the data can be used for. It is important that all the relevant Government people are invited and the list should include the District Commissioner (DC), District Executive Director (DED), Councilor Chairman, Council Management Team (CMT) and Water, Health and Education Committee. From this engagement, administrators will be aware of the existing water point’s infrastructure and their service level. They will commit staff for the updating exercise and ensure that the data is used for the intended purpose.

2.4 Updating Process

The District Water Engineer, their assistants and the COWSO registrar should meet all ward executive officers in the District. DWEs need to bring the WEOs in one place for a one-day meeting to explain the Water Point Mapping System, the updating tools and their roles in the system. Together they will compare the dataset from the online database with the data contained in their own records within the Ward to identify if there are any anomalies. At the end of the training the WEOs should be able to identify the anomalies and highlight them to the DWEs so they can be edited and updated accordingly. There should
be an action plan developed about the updating and timelines for reporting. WEOs should be equipped with the updating and verification tools (see below)

Diagram 2 – The Paper Based Updating Mechanism

Once this is completed, the WEOs need to meet the VEOs from all the villages in their ward and go through the same process in a one-day meeting. As the WEOs will go through the data set with the VEOs it needs to be distributed to all participants as a printout from the district, which clearly shows the status of water points in their village and sub villages. This will allow the participants to identify any anomalies in the data set as part of the verification process. The VEOs also need to be equipped with an updating tool and the guidelines on reporting about water points and should develop an action plan for which they can work closely with the COWSOs in this process. All updated information needs to be submitted to the WEOs and then forwarded on to the DWEs for uploading on to the system.
3 Promoting Demand and Community Voice

Through Local CSOs and COWSOs, communities have legitimate power to hold the Government to account, undertake sector monitoring and provide constructive criticism. However, this has remained an unutilised opportunity for many CSOs due to internal capacity gaps. The Water Point Updating mechanism is a good opportunity for local CSOs and communities to gain knowledge on government systems and develop their capacity to analyse information, thus allowing them to challenge the authorities. They have good understanding of local context and are better positioned to provide feedback about functionality and other relevant information about the WPs. Communities therefore have an important role to play in promoting the accountability of LGAs from village to district level so that supply becomes demand driven and the community members take ownership of their water supply rather than being passive recipients.

4 Considerations
1. Ministry of Water and PMO-RALG should produce guidelines about the use of WPM data for equitable planning at LGAs levels
2. WPM evidence should form the basis for national and local level planning
3. Important facilities such as GPS should be available at District levels
4. Ensure Government users have adequate training to fully utilize the paper based updating mechanism and WPMS
5. WPM data should be collected, assimilated, verified, analysed and presented
6. The updating process needs to be sustainable
7. Dedicated staff are required to report on the status of water points