WaterAid

Strategic review of WaterAid's water point mapping in East Africa

Based on a review of Ethiopia, Tanzania, Kenya and Uganda

Front cover image: WaterAid/Marco Betti
Three pupils at their school's water point, Ethiopia. The school has taps and girls' and boys' latrines, as well as a sanitation club. The pupils clean the compound every Friday, and the sanitation club perform regular plays to educate the pupils about sanitation and hygiene.

Acronyms

GIS	Geographic Information System
GLAAS	Global Annual Assessment of Sanitation and Drinking Water (UN)
GPS	Global Positioning System
HEWASA	Health through Water and Sanitation Program
ISF	Ingeneras Sin Fronteras (Engineers without Borders)
JMP	Joint Monitoring Program
JSR	Joint Sector Review
M&E	Monitoring and Evaluation
MIS	Management Information System
MoWE	Ministry of Water and Environment (Uganda)
MoWI	Ministry of Water and Irrigation (Tanzania, Kenya)
MoWR	Ministry of Water Resources (Ethiopia)
NGO	Non Governmental Organisation
OECD	Organisation for Economic Cooperation and Development
SIMS	Sector Information Management System
SPM	Sector Performance Monitoring
SWAp	Sector-Wide Approach
WAE	WaterAid in Ethiopia
WAT	WaterAid in Tanzania
WAU	WaterAid in Uganda
WASH	Water Supply, Sanitation and Hygiene
WPM	Water Point Mapping
WSP	Water and Sanitation Programme

Summary

Water Point Mapping (WPM) is a tool for monitoring the distribution and status of water points and can be used to inform planning of investments to improve water supply coverage. In rural areas WPM is most often used to highlight issues of equity and functionality levels at district level. WPM supports the process of establishing a baseline of water supply coverage and regular reporting as part of sector performance monitoring. As such WPM activities can be seen as part of a broader strategy among WaterAid country programmes to engage with and influence sector dialogue on permanent sustainable rural water supply services at local, national and regional levels.

In December 2009, WaterAid's East Africa region undertook a strategic review of the evolution of WaterAid's approaches to WPM in East Africa. This involved a review of literature, short country visits to Tanzania, Uganda and Ethiopia (where the author is currently based), and telephone interviews with Kenyan stakeholders and international experts.

The review focuses on the 'policy space' determining the prospects for WPM in each country, as well as the evolving 'activity space' for country programmes, taking account of the activities and approaches of other sector stakeholders. This analysis provides the basis for strategic recommendations regarding WaterAid's future strategies and comparative advantage vis-à-vis other agencies, and identification of entry points for future engagement at country and regional levels.

Progress with WPM to date

WaterAid's country programmes are at different stages of WPM. In **Tanzania**, based on WaterAid's initiative, a substantial administrative area, 52 out of 133 rural districts, were mapped using broadly the same WPM methodology in 2009. WaterAid used evidence from WPM to feed into discussions at national sector review meetings, most notably through the 2008 and 2009 equity reports of TAWASANET, to which WaterAid provided very substantial inputs. By 2008, Wateraid was successful in getting rural WPM accepted as a useful monitoring tool with other NGOs and development partners and, most importantly, with the Ministry of Water and Irrigation.

In **Uganda,** the Ministry of Water and Environment was itself very pro-active and keen on using WPM as a tool to improve targeting its interventions below the district level. WaterAid in Uganda's achievement in rural WPM consisted of its on-the-ground experience with the implementation of the tool and, particularly, its successful support in testing and sustaining a

regular updating mechanism in one of the districts, Masindi. The Directorate of Water Development, which spearheaded the national water supply survey in 2010, therefore saw WaterAid as a partner who can help it to overcome bottlenecks with the use and updating of WPM information.

In **Ethiopia**, WaterAid's strategic engagement with WPM was more recent. It established a task force in mid-2009, which conceptualised WPM as part of its wider engagement with supporting sector monitoring. At the time of this review, WaterAid's WPM was not yet established as a tool to inform planning at the *woreda* level. In the Ministry of Water Resources, the development of an MIS was underway in early 2010, possibly including geo-referenced data.

In **Kenya**, WaterAid's policy engagement only started in 2009 and it was therefore too early to identify any particular achievements based on WaterAid-supported activities.

Challenges to WPM

The specific problems which country programmes are trying to address through WPM range from simply improving the *availability* of reliable information, to improving *access* to information for all relevant stakeholders, and to encouraging the *use* of WPM information in sector decision-making processes.

All four country programmes are facing similar difficulties in institutionalising WPM within routine local and national government planning and monitoring processes, and in establishing sustainable mechanisms for regular updating of WPM data. The major ongoing challenges to WPM can be broadly categorised as follows: i) *technological*, mainly related to the use of GIS, ii) *operational*, namely procedures for regularly updating and reporting WPM information and iii) *governance-related*, namely wider challenges associated with SPM – such as weak accountability structures and the absence of performance incentives - that impact on WPM but cannot be overcome through WPM alone.

The emerging picture regarding 'policy spaces' for engagement shows different opportunities across the region. In Ethiopia, entry points for working on sector monitoring present themselves mainly by working closely with the government via capacity building to support implementation of the WASH inventory and Management Information Systems at regional and local government level. In Tanzania, where the sector has been slow to take forward commitments to improve sector monitoring, using alternative feedback channels to pressurise higher government levels while also challenging local government decision-making processes offers increased leverage. In Uganda, where the ministry has taken a strong lead and requested support, there are significant opportunities for increased engagement by actively working with the government on the challenges identified.

Summary of strategic recommendations

Overcoming technological challenges: WaterAid's strategic objective should be to ensure that WPM technologies are appropriately adapted to the needs and capacities of those tasked with using them. For example, WaterAid's Spreadsheet Water Point Mapper could be used by East Africa country programmes to make map production more user-friendly. At the same time, WaterAid should aim to shape the ongoing development of Sector Information Management

Systems (SIMS). With regard to mobile-to-web updating, WaterAid should take on the role of critically engaging with current pilot initiatives.

Overcoming operational challenges: WaterAid's strategic objective should be to build the capacity of governments and their development partners to make appropriate use of WPM tools, and to integrate WPM evidence within relevant sector decision-making processes at different levels. For example, at the sub-national level, WaterAid should trial updating and regular reporting mechanisms for WPM so as to ensure timely generation of reliable information which is relevant to operational decision-making. At the national level WaterAid should continue to use WPM evidence to draw attention to issues of equity and sustainability in sector dialogue and review processes. Where appropriate, WPM could also go beyond the narrow lens of SPM to address wider social and environmental issues that influence access to water supply.

Overcoming governance-related challenges: WaterAid's strategic objective should be to use WPM as an entry point for improving sector governance and accountability of government and donors for progress on WASH. WaterAid should analyse in more depth at country level the existing accountability structures within and beyond the sector that enable or constrain SPM. WaterAid country programmes could further leverage their own work in this area by creating alliances with NGOs and research organisations across different sectors. To link accountability analysis back to WPM, WaterAid country programmes could analyse the contribution of WPM evidence to increased transparency and accountability and break down the different steps that are necessary to enhance sector governance at different levels.

WaterAid's comparative advantage
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. On this basis the review identified the following areas of comparative advantage:

Learning and knowledge sharing: WaterAid country programmes in East Africa have substantial experience working on different aspects of WPM and have an important role to play in documenting lessons and sharing them with staff in other country programmes involved in WPM activities. For example, important lessons relate to the relevance and appropriateness of different approaches, the development of updating mechanisms and the use of data to address issues of equity and sustainability.

Capacity building: WaterAid country programmes have a strong track record of providing capacity building support to those involved in WPM at different levels and are well placed to support the institutionalisation of WPM and to shape the development of Sector Information Management systems to ensure that they are appropriately adapted to the needs and capacities of end users.

Enhancing governance and accountability: WaterAid country programmes are increasingly using WPM data as an entry point for engaging government and donors in dialogue on how to improve sector performance and accountability for progress on WASH. Country programmes

could further leverage their own work in this area by creating strategic alliances with NGOs and research organisations working outside the WASH sector on issues such as capacity building, transparency and anti-corruption. The extent to which WaterAid can and should push more challenging messages relating to governance depends on the 'openness' of the policy space in each country.

Working in partnership: As other agencies adopt and scale up WPM approaches, WaterAid country programmes are increasingly playing an intermediary or advisory role. Whereas previously WaterAid was directly involved in the implementation of WPM activities, country programmes are now using that experience in order to influence the WPM approaches of other WASH sector agencies. WaterAid is an attractive partner for international mapping initiatives (such as the WSP 'WATSAN Portal' and the Google funded h2.o project) as it has the credibility and capacity to work at both national and regional levels. Development of strategic partnerships with other agencies involved in mapping at national and regional levels will enable WaterAid to more effectively influence the evolving 'mapping landscape'.

Linkage to international debates: WaterAid's Policy Team in the UK is actively involved in wider debates around SPM, including the ongoing development of the UN Joint Monitoring Programme (JMP), the WHO Global Annual Assessment of Sanitation and Drinking Water (GLAAS) and the WSP-AMCOW Country Status Overviews (CSOs). The Technical Support Unit in the UK is also actively involved in international debates on the appropriateness of different technologies including GIS and mobile-to-web applications. The East Africa regional team is well placed to link with UK teams and help facilitate dialogue among country programmes and partners on how to strengthen sector performance monitoring processes in order to maximise their relevance for decision-making at different levels.

Contents

Figures

1 Introduction

In the last decade or so, decentralisation has gained prominence as an expressed goal or as an actual pursuit in all countries in East Africa. Moreover, since independence, several countries have experimented with decentralisation with varying degrees of success. Most of the countries have set ambitious targets for increasing water and sanitation coverage and access. These reforms and targets demonstrate that political will exists in the sector. However the challenge of achieving these targets and obtaining reliable data on coverage exists due to the low capacity of decentralised government.

WaterAid has a wide ranging experience in water and sanitation mapping for advocacy.[1] In WaterAid's sub-Saharan Africa country programmes, including in the East Africa region[2], mapping approaches are most developed for rural WPM. In East Africa, the main focus of rural WPM activities to date has been on improving targeting of marginalised communities below the district level, and increasing sustainability i.e. the functionality rates of water points. The purpose, scope and strategies of mapping in urban areas are more varied, some activities also involving sanitation mapping in Tanzania and Uganda. More information and references on the individual mapping activities, including urban and sanitation mapping, can be found in the country-specific annexes and related references. Overall, however, this report focuses on rural Water Point Mapping.

The report is divided into three parts. Section 2 starts with a short background on where WPM sits within the wider context of Sector Performance Monitoring (SPM) and describes recent developments in the three countries and initiatives that intend to support SPM in East Africa. Section 3 portrays the development, purpose and scope of WPM activities in each of the visited countries highlighting successes and challenges in each country. With regard to challenges, a distinction is made between technical, logistical/operational and governance-related issues. Section 4 outlines entry points for WaterAid's future engagement in WPM in East Africa. The section reviews WaterAid's comparative advantage vis-a-vis other actors, it analyses the policy space in each country and distinguishes between formal and alternative channels to support sector monitoring. Based on this, recommendations are made for an engagement strategy at regional and country level.

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[1] See (Welle 2007b) for more details.
2 WaterAid's East Africa region comprises Ethiopia, Tanzania and Uganda with a new country programme soon to open in Rwanda and policy-focused work currently being explored in Kenya.

2 Water Point Mapping and Sector Performance Monitoring

In all four countries that are part of this review, efforts were underway to improve Sector Performance Monitoring (SPM). Water Point Mapping is not an end in itself but can be seen as a tool that helps to improve SPM and thus is also part of broader strategies of WaterAid country programmes to engage within sector dialogue and review processes. In this section, therefore, a short background is provided on SPM and recent developments in East Africa on this before discussing the role of rural WPM in SPM.

2.1 Definition and background to SPM

The Development Assistance Committee of the OECD defines performance-based monitoring as *"A continuous process of collecting and analyzing data to compare how well a project, program, or policy is being implemented against expected results."* (OECD-DAC 2002: 30)

The OECD definition clearly points out the focus of performance-based monitoring: compared to traditional project and programme Monitoring and Evaluation (M&E), which is primarily concerned with implementation aspects – inputs, activities and outputs – performance-based M&E focuses on results – the outputs, outcomes and impacts of a project or programme.

The concept of performance-based monitoring originates from the private sector in the 1920s. It was introduced to increase profitability and productivity by measuring financial performance of production lines based on objectives or results. In the public sector, performance-based monitoring started in the 1980s with the aim to increase the efficiency and accountability of the bureaucracy and to make governments more "entrepreneurial" (Mayne and Zapico-Goni 1997). In international development, results-based management appeared first in relation with project-based aid, through the logical framework, which creates a project hierarchy descending from project goals down to activities and inputs (Rebien 1996). Today, performance-based monitoring is at the heart of the Aid Effectiveness agenda, which dominates recipient country – development partner relationships including in the four study countries. One of the five principles underlying Aid Effectiveness is 'Managing for Results' (High-Level-Forum 2005). At sector level, Managing for Results is measured via performance monitoring frameworks that are increasingly being developed as part of the ongoing shift towards sector-wide approaches (SWAps)[3]. An important rationale for encouraging performance measurement as part of SWAps is to ensure accountability and value-for-money to the public. SPM is also

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[3] Sector-wide approaches aim to establish a single policy and expenditure programme within which all sector stakeholders operate, and in some cases involve pooling of funds and direct support to government budgets.

being pushed by the need of donor organisations to demonstrate to their own constituencies that aid money yields results.

2.2 Recent developments towards SPM in the water sector in East Africa

Traditionally the water sector measures financial inputs and activities. This means that, on a yearly and multi-year basis, water ministries monitor the use of financial resources allocated to them and the progress of water supply construction activities within a given period of time. Often, ministries have a regular reporting mechanism on inputs and activities and conduct internal progress reviews.

In addition, the sector captures outputs through occasional surveys of improved water supply schemes. However, such surveys are costly and time-consuming and therefore not carried out on a regular basis. In some cases, for instance in Tanzania, water point output monitoring is also included in regular local administration monitoring exercises from the village upwards. Outcomes, ie access to water supply services, are most easily captured through household surveys. These tend to be carried out by agencies outside the sector eg by national statistical agencies at differing intervals. Because outputs (water schemes constructed) and outcomes (access to water supply) are different, there is often a discrepancy between the data obtained from household surveys and data from water scheme surveys with the former showing lower levels of access to water supply[4].

Performance-based monitoring links financial inputs to results, mainly in the form of outputs or outcomes in the water sector. In principle, the Millennium Development Goals at the international level and equivalent national-level access targets establish an entry point for performance-based monitoring. However, in practice, the shift towards SPM is still in process in many countries and there are a number of obstacles that make the relationship between financial inputs and results less than straightforward.

In Ethiopia, Kenya, Tanzania and Uganda, governments and donors set up Joint Sector Review (JSR) mechanisms as part of their ongoing efforts to improve sector performance. A key conclusion from early JSRs in East Africa was that existing sector information was generally inadequate as a basis for results-based management. Problems related to both the type and quality of data collected and ensuring that it was accessible to all relevant stakeholders in a format suitable to inform decision-making at different levels within the sector.

In Ethiopia, Tanzania and Uganda, improving performance monitoring was therefore identified as a key undertaking of JSRs (n.a. 2008). In January 2010, all four countries were undertaking efforts to improve their Sector Information Management Systems (SIMS) and – except for Kenya – intended to, or were in the process of, conducting baseline surveys to feed into new or reviewed databases. In Ethiopia, Tanzania and Uganda, the databases under development were intended to allow the display of geo-referenced information. Ministries were also considering using a web-based interface to display sector information and, in Tanzania and Uganda, ministries were aware of mobile-to-web technologies as a potential tool to update information.

These national sector efforts were complemented by two regional initiatives in East Africa, namely the 'WATSAN Portal' and the h.2o initiative. Both initiatives aimed to support

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[4] WaterAid recently held a regional workshop with government partners in Southern Africa to discuss the issue of data reconciliation and harmonisation (Ross and Bostoen 2010).

performance monitoring and to strengthen independent user feedback on levels of services in rural and urban water supply.

The 'WATSAN Portal' is a free water and sanitation sector performance monitoring tool supported by the Water and Sanitation Programme (WSP), which was developed in conjunction with government representatives from East and West Africa. The portal consists of a database and a website, which is supposed to be linked to sector MIS. The portal can store, manage and report data on water and sanitation outputs including representing information about access to water supply in a spatial format. The intention is that, by making information on access to water supply and sanitation publicly available, transparency and accountability in the sector will be augmented (WSP 2009). Among the countries participating in the design of the tool, Ethiopia and Uganda were suggested as pilot cases in East Africa.

The h2.o Inform and Empower Initiative, a consortium of google.org and UN-Habitat, intends to increase accountability from below by making information available to citizens with the help of new technologies. The initiative uses geo-referenced data on service delivery, benchmarking of service providers and participatory monitoring techniques to develop a methodology that puts information in the public domain (Google.org and UN-Habitat 2009). It uses a new software called Fusion Tables with different end users in mind who can share datasets from different sources. This means that users will be able to retrieve information on access to water supply and sanitation based on the collation of different sources of data. The initiative was in a pilot in 2010 with the aim to test the workability of Fusion Tables with data from consortium members such as Majidata, UN-HABITAT's Urban Inequity Surveys and others by June 2010.

2.3 The role of WPM in SPM

WPM is a tool that can help to visualise different aspects related to access to water supply. As shown in Figure 1 below, WPM supports the process of establishing a baseline 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. By 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 easily be obtained.

The strength of water point maps is that they carry a clear message on who is and is not served. One person described the power of the message carried by a map compared to descriptive information by referring to the television compared to the radio. The draw-back of water point maps, however, is that they are only as accurate as the underlying information and often leave out various parameters but still convey a seemingly clear picture.

While rural WPM can be used to support different types of analyses, it is most often used to highlight equity issues and schemes' functionality levels below the district level. Non-functionality is an important obstacle to access to rural water supply. A recent report estimates that non-functionality in sub-Saharan Africa averages around 35% (Harvey and Reed 2007).

Figure 1: Role of Water Point Mapping in Sector Performance Monitoring

WPM can also be used to capture other information that informs access to rural water supply, which goes beyond the immediate concern of regular monitoring but may, nevertheless, be important. For example, WPM can be used to support monitoring of seasonal water availability levels, which may become more important if climate variability and population density increases in certain geographic areas. Examples for different uses of mapping with regard to water supply is documented in a recent RiPPLE report (MacDonald et al. 2009).

It is important to note that WPM is a tool that helps to increase transparency. If information is made accessible to policy officials, citizens or pressure groups, WPM can help them to point out issues and demand improvements in services. However, while WPM information has the potential to help improve accountability in service provision, it is not sufficient, in itself, to eliminate the influence of other factors on these services.

To summarise, WPM is a tool that strengthens the basis of sector information by visualising data, particularly at and below the district level. WPM information shows results of investments in water supply and can thereby help to track performance of investments in the sector and it is used to highlight issues beyond narrow results-based monitoring such as equity and sustainability of services. In East Africa, water sector ministries are undertaking reforms towards establishing sector performance monitoring frameworks. These efforts are complemented by independent initiatives for making sector performance data more publicly available. WPM is increasingly thought of as a way to display this information. The next section turns to WaterAid's WPM activities in East Africa.

3 WaterAid's WPM in East Africa

This section summarises the WPM-related activities in Tanzania, Uganda, Ethiopia and Kenya. It highlights the similarities and differences between WPM activities focusing on WPM purpose, scope and its embeddedness in national monitoring systems. The section then draws out the major achievements and challenges of WaterAid's WPM activities by country. Rather than going into detail about the progress in each country, this section takes on a regional perspective. Detailed information about each country can be found in the annexes. The challenges are subdivided into technological, operational and governance-related challenges and discussed in more detail with examples from country programmes of how to address them.

3.1 WPM progress by country

In **Tanzania**, WaterAid started WPM in 2004 in order to support planning for equitable and sustainable water supply service provision at local government level (Welle 2006). It developed a strong partnership with a local private sector company, Geodata, which professionalised and routinised geo-referenced data collection and processing including the production of mapping outputs. Five other NGOs followed WaterAid's example and, by 2008, WaterAid and other NGOs had mapped 51 out of 133 rural districts in Tanzania (MoWI n.d.). During the 2008 joint sector review meeting, WPM gained the support from the Ministry of Water and Irrigation (MoWI) who committed to taking over WPM in the remaining rural districts of Tanzania. However, by January 2010, implementation of WPM by the ministry was still pending.

In **Uganda**, WaterAid's engagement in mapping was preceded by the Ministry of Water and Environment's (MoWE) production of national water atlases in 1998 and 2001, which already then had the aim to support planning at district level (MoWLE 2001). WaterAid carried out rural WPM in five districts starting from 2004 and then, again, in four districts through its local partner HEWASA starting from 2007/8, also with the objective to support planning for water supply at district level and below. Which other NGOs carry out WPM was not well known in the sector, although these activities may well be substantial. In 2009, the MoWE took initiative and launched a country-wide survey to update the national water atlas with a strong emphasis on creating ownership at district level to use WPM information for planning (DWD 2009). This exercise was expected to be completed in September 2010 and the ministry looked to WaterAid in Uganda to support it in the area of updating and addressing non-functionality based on its experience in WPM.

In **Ethiopia**, WaterAid conceptualised WPM as part of establishing a rural Water Supply, Sanitation and Hygiene (WASH) database (WaterAid in Ethiopia 2009a, b). It collected geo-

referenced information in three districts between 2006 and 2009 but did not always produce maps. Other NGOs also carried out WPM, but this experience was not shared widely across the sector and the total scope of WPM was therefore difficult to estimate. Starting from 2009, the Ministry of Water Resources (MoWR) undertook to develop a sector monitoring framework and, as part of that, intended to carry out a national inventory of water supply and sanitation facilities in 2010. It intended to collect geo-referenced information for those *woredas* (districts) that formed part of a pilot study for implementing a Management Information System (MIS).

In **Kenya**, rural WPM was carried in eight districts between 2001 and 2007 with funding from the European Commission's humanitarian programme ECHO and UNICEF. In one district a Water MIS, which contained a function to produce maps, was established to support district planning. The same MIS was later also installed at one of the Water Service Boards (WSBs), the institutions responsible for rural and urban water supply provision below the national level. The Water Services Regulatory Board, the agency with the mandate to carry out performance-based monitoring for rural and urban water supply, had established a MIS called WARIS. However, reporting on rural water services via WSBs was not yet fully operationalised in early 2010. At the same time a number of other government agencies had established other, partly overlapping, MIS in the sector. In January 2010, discussions were underway on how to harmonise the different monitoring systems with SNV and WaterAid focusing on how to integrate and build on rural WPM experience to date.

3.2 Similarities and differences

The purpose for WaterAid's rural WPM was similar across the four countries. It always aimed at supporting decentralised planning of water supply services with an emphasis on improving equitable distribution of water supply schemes and increasing functionality rates. Ultimately, WPM aimed to increase transparency and, through this, accountability of service delivery. WPM was complemented by the increasing work of WaterAid country programmes to improve SIMS. The idea of using WPM to support decentralised planning was picked up to various degrees by other organisations, which are described in the country annexes. In addition, there was also some evidence in each country that an unknown number of non-governmental actors carried out WPM mainly for internal project purposes.

WaterAid started rural WPM both in Tanzania and Uganda in 2004 and, at a small scale, in Ethiopia in 2006. The parameters in Tanzania and Uganda were similar – WPM focused on improved water point schemes, mapping outputs showing differences in coverage levels and functionality rates between sub-districts. In Tanzania, school WASH mapping was started as a separate activity in 2008/9.

However, strategies and geographical scope of WPM differed. While, in Tanzania, WaterAid collaborated with a private sector company for carrying out mapping, in Uganda, WaterAid worked directly with the district administration and regional government support units to produce maps. In Tanzania, WaterAid decided to push WPM at a large scale, and, with the leverage of other NGOs, covered just fewer than 50% of the rural districts in Tanzania by 2008. In Uganda, in contrast, WaterAid did not engage strongly to expand WPM to many other districts after 2006. In Ethiopia, WaterAid did not explicitly make WPM part of its policy- and advocacy work until 2009.

Partly because of the geographic scope and partly because of the reliance on a single private sector company for data collection, inputting and analysis, there was a high level of harmonisation of WPM approaches of different organisations in Tanzania, while the parameters, strategies and awareness about different WPM activities were more varied in Uganda and Ethiopia. There was not enough detailed information to clearly assess the differences between individual WPM activities in Kenya.

Furthermore, the country contexts differed. Unlike in Tanzania where WPM is planned to be carried out for the first time nationwide, in Uganda, the MWE was undertaking it nationally for the second time. In Ethiopia, there was no explicit intention by the MoWR to carry out WPM at a national level in 2010. WaterAid's input differs based on this background.

3.3 Achievements of WPM

The achievements and challenges of rural WPM are related to the different sector and country-contexts of the country programmes. This section outlines the achievements of WaterAid's WPM by country.

In **Tanzania,** based on WaterAid's initiative, a substantial administrative area, 52 out of 133 rural districts, were mapped in 2009 using broadly the same WPM methodology. WaterAid used evidence from WPM to feed into discussions at national sector review meetings, most notably through the 2008 and 2009 equity reports of TAWASANET, to which WaterAid provided very substantial inputs (TAWASANET 2008, 2009). By 2008, Wateraid was successful in getting rural WPM accepted as a useful monitoring tool with other NGOs and development partners and, most importantly, with the Ministry of Water and Irrigation.
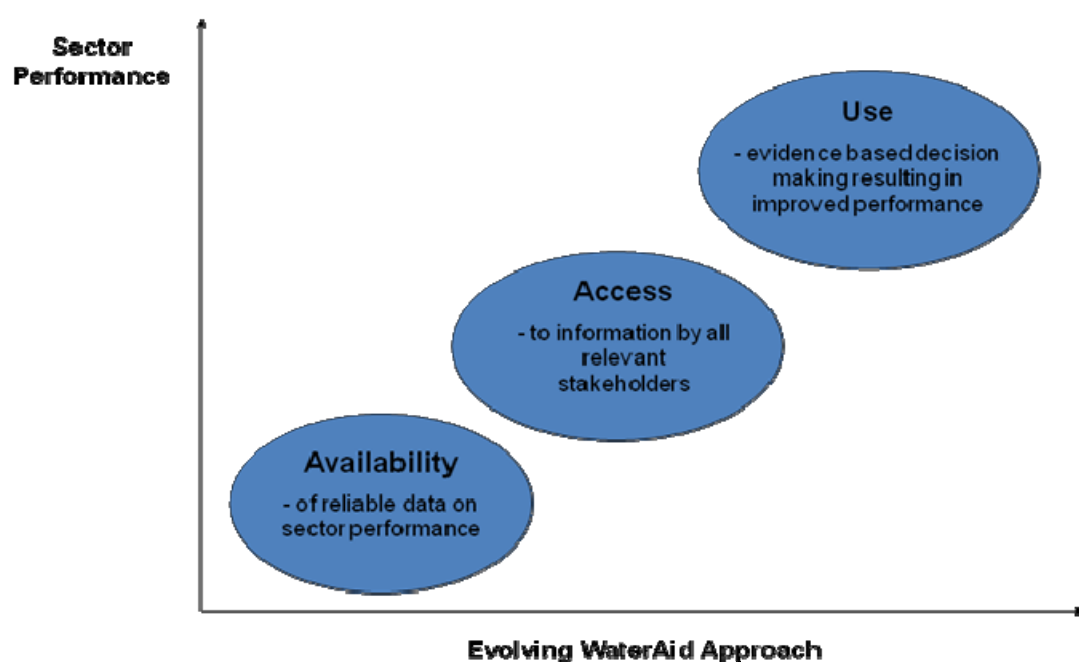
In **Uganda,** the Ministry of Water and Environment was itself very pro-active and keen on using WPM as a tool to improve targeting its interventions below the district level. WaterAid in Uganda's achievement in rural WPM consisted of its on-the-ground experience with the implementation of the tool and, particularly, its successful support in testing and sustaining a regular updating mechanism in one of the districts, Masindi (WaterAid n.d.). The Directorate of Water Development, which spearheaded the national water supply survey in 2010, therefore saw WaterAid as a partner who can help it to overcome bottlenecks with the use and updating of WPM information.

In **Ethiopia,** WaterAid's strategic engagement with WPM was more recent. It established a task force in mid-2009, which conceptualised WPM as part of its wider engagement with supporting sector monitoring. At the time of this review, WaterAid's WPM was not yet established as a tool to inform planning at the *woreda* level. In the Ministry of Water Resources, WPM was not considered as an important tool for future monitoring of rural water supply access levels.

In **Kenya,** WaterAid's policy engagement only started in 2009 and it was therefore too early to identify any particular achievements based on WaterAid-supported activities.
One could therefore conclude that the WaterAid country programmes are at different stages of WPM. The broad trajectory of WaterAid's evolving approach towards engaging with sector performance monitoring was discussed at a Regional workshop in Dar es Salaam in October

2009 (WaterAid 2010a). The stepped approach, illustrated in Figure 2 below, progresses from improving the availability of information, to increasing access to information, to strengthening the use of information to take decisions that improve performance.

Figure 2: Evolving WaterAid approach to SPM[5]

In Ethiopia, WaterAid was at the first step of the ladder, namely in a situation where evidence based on WPM still needed to be developed. In Uganda, information based on WaterAid's WPM was available in some districts, and in other districts it was being collected by the ministry, as well as by a local partner of WaterAid for some sub-districts. However, how to make government WPM data accessible to all relevant stakeholders was not yet clear in early 2010. WaterAid in Uganda's situation could therefore be classified as somewhere between step 1 and 2. In Tanzania, WPM data covered a substantial part of rural districts, but, for those districts that had been mapped in 2004/5, one could also argue that the information is outdated and can therefore not really be considered as being available. Equity studies by TAWASANET showed that WPM data was not always made available at district level and often not used. In January 2010, a programme by the Tanzania-based organisation Daraja was launched, aiming at massively increasing access to WPM information at district level via the distribution of maps and through complementary radio programmes. In Tanzania, therefore, WaterAid's WPM activities were making headway towards step 2. In both, Tanzania and Uganda, efforts towards encouraging the use of information for decision-making, step 3 in Figure 2 above, were also underway.

[5] Musaazi (2009)

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3.4 Challenges related to WPM

The differences in achievements or stages of implementing rural WPM notwithstanding, the major challenges were similar across all four countries. In all country programmes, WaterAid struggled with making WPM evidence the basis for planning at the district level. At the same time, the regular updating of WPM data remained a challenge. This created a vicious circle: the more outdated WPM information became, the less useful it became for future planning purposes.

The underlying reasons for these two major challenges can be broken down into technological, operational and governance-related. These issues are each discussed in turn in more detail below.

3.4.1 Technological challenges

In all four countries, WPM outputs were produced using ArcGIS software. The challenges related to ArcGIS are well-known. The software is expensive and, more importantly, it requires advanced GIS skills, which cannot easily be transferred via short trainings. It is the exception rather than the rule that district staff trained in GIS are subsequently able to use the software.[6] Retaining GIS skills for WPM at district level had already previously been reported as a problem in Malawi and Tanzania (Welle 2006), in Ghana and Nigeria (Welle 2007a) and in Ethiopia (MacDonald et al. 2009) and was also repeatedly mentioned as a key challenge in interviews during this review. More generally, in the political geography literature, GIS has also been criticised as an elitist technology that can cement rather than overcome existing power structures by polarising between users and non-users of the technology (Corbett et al. 2006; Harris et al. 1995; Pickles 1995).

At the same time, there are now a number of new technological developments that reduce the financial and skill-input of GIS for producing certain custom-made or pre-defined maps (see Figure 3 below for more details). The rapid development of new technologies, which enable non-GIS skilled users to produce certain types of maps with one mouse-click, offers an increasingly viable alternative to GIS for a spatial visualisation of water point data. Some examples of these new developments in field tools for producing mapping outputs are outlined in Figure 3 below.

Figure 3: Development of field tools for producing mapping outputs

There are now a number of tools that enable users to produce maps without the use of complex GIS software. These can be used to establish updating mechanisms and carry out sub-national level data analysis. They can generate data outputs which are compatible with the national level tools described in Figure 4 and national level inventory databases.

WaterAid's Southern Africa region together with the organisation's Technical Support Unit developed a tool called "Spreadsheet Water Point Mapper". This tool consists of an Excel spreadsheet, which is used in combination with Google Earth. It does not require an internet connection to run and can be used remotely on a laptop or desk computer. The tool can process water point data collected using a simple hand held GPS unit into powerful maps showing

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[6] One such exception was the water office staff in Masindi district in Uganda.

coverage, access, functionality, water source type, dry boreholes, water quality and static water levels. It can be used to display pictures of water sources and record historical details of developments at a water source. Users do not need any knowledge of GIS to conduct different types of analysis. Maps are produced by simply ticking the desired parameters and pressing enter. Users can save the map files that are generated to the desktop as an image (e.g. jpeg). The images can then be inserted into performance reports. The maps can show analysis of two administrative levels at a time – for example district and sub-district (or district and sub-county, or *woreda* and *kebele*). An example of a map is shown below; it displays the distribution of water point locations as well as average functionality levels by sub-district for one district in Zambia.

A beta version of the mapper and user manual are available for download here: www.wateraid.org/mapper.

In Malawi, WaterAid and Engineers without Borders also tested a pivot table spreadsheet for mapping. The excel spreadsheet uses pivot tables to summarise water point data by administrative unit. It then assigns colours to different administrative units on a pre-drawn map based on the level of water source coverage or functionality in the unit. It is completely self-contained in Excel and does not require any GIS software or internet connection. The user only needs to pre-draw the administrative unit boundaries in a spreadsheet and link them to the pivot tables.

Sources: (WaterAid 2010b), personal communication with V Casey, WaterAid in the UK

The new technological developments thus have a strong potential to overcome the technological bottleneck related to updating maps at district level.

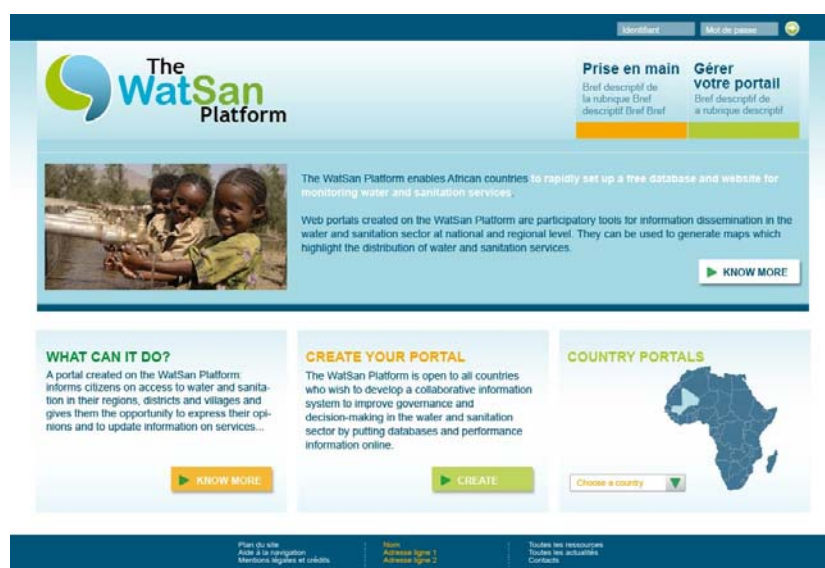The other technological bottleneck, which became apparent during this review was the lack of skills to update complicated sector databases. One person put forward that any application that requires more than 30 minutes training was already too complicated. User friendliness is obviously a critical component of any database tool. Figure 4 summarises recent developments in relation to national level sector performance monitoring tools.

Figure 4: Development of national/sector level databases

Ongoing initiatives to support the development of national/sector level databases were described briefly in section 2. WSP-Africa is developing a web-based water and sanitation platform from which maps can be produced (the WATSAN Platform) and the h2.0 initiative will have a mapping application at the heart of its web-based data sharing service. Both government and non-government sector web-based databases emerging in the East Africa region are likely to have an option to display data in the form of a map.

The WATSAN Platform

The WATSAN Platform will be a website where governments and agencies working in the water and sanitation sector can download a national inventory database which can be configured to host and analyse sector performance monitoring data. The database can be linked to a country specific web front end which is also downloaded from the WATSAN Portal. Clients (sector ministries) can customise the indicators in the database to the national context and can format their country websites with national colours and branding. The database can take feeds from mobile-to-web data collection mechanisms or it can interface with paper form-based updating mechanisms. Data relating to rural, urban and peri-urban services can be displayed on maps within the country website. This tool will be able to incorporate data from existing water point inventory databases and will be fully compatible with mobile-to-web updating mechanisms which have been put to the test in Senegal.

Google / UN-Habitat h2.0 Initiative

The h2.0 initiative will make use of Google's visualisation and data management tools to display information relating to water and sanitation services. The initiative has produced a beta tool called "Grubbs" which displays information on urban water and sanitation services in parts of Kenya. This makes use of the Google Earth API, Fusion Tables and Google Charts together on a single interface. Pilots using mobile telephone based updating mechanisms are currently underway in Zanzibar.

3.4.2 Operational challenges

Operational challenges relate to problems of putting a policy or procedure into practice. With regard to WPM, regular updating of information was a particular problem across Kenya, Ethiopia, Tanzania and Uganda.

One issue related to the lack of updating was that, in WaterAid's previous WPM initiatives, the emphasis was first of all on the process of collecting, analysing and presenting information, while making the process sustainable tended to be an afterthought.
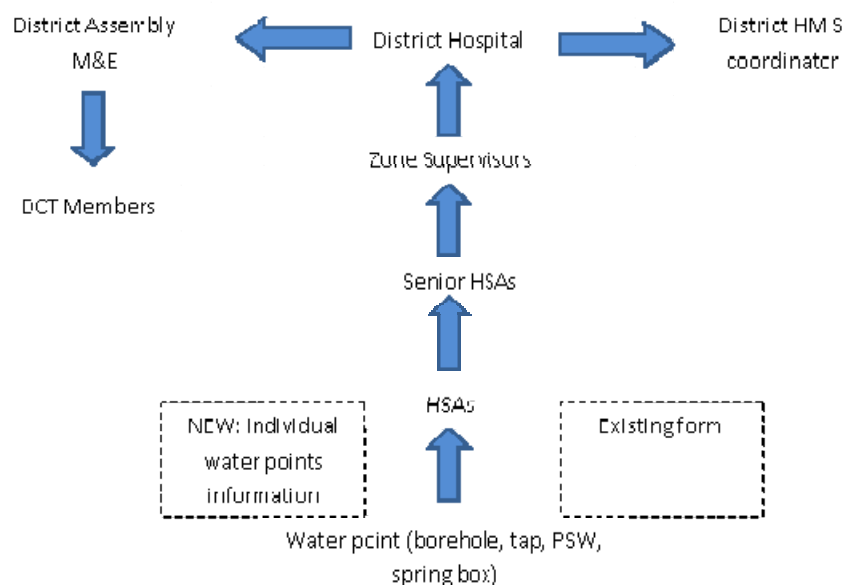
Second, in the water sector, reporting structures below the district were weak compared to health, education and agriculture in Ethiopia, Tanzania and Uganda. Regular reporting was more difficult because the water sector did not have dedicated extension workers based at sub-district level who could regularly report on the status of water supply schemes and related issues. For water officers at district level, visiting schemes on a regular basis was logistically challenging because of the number and geographical dispersion of water schemes and because of very limited operational budgets and transport available to them.

Third, regular reporting on the functionality of water schemes had never been operationalised in the sector in some countries. In Ethiopia, for example, no reporting formats and procedures were in place to enable water office staff to regularly report on functionality. Similarly, development partners and NGOs had often not established structures to report on scheme functionality and other data beyond project completion. This situation is partly related to an ambiguity of scope in defining results. As scheme ownership is handed over to communities after project completion, the government or NGOs are, in a narrow sense, not responsible for monitoring functionality rates. This point also relates to governance issues and will be discussed in more detail in section 3.4.3 below.

In order to overcome operational updating challenges, WaterAid and other organisations have been experimenting with institutionalising regular WPM reporting mechanisms and SIMS databases at the local government level. The boxes below contain examples from Malawi, Tanzania and Uganda that have had some success in establishing a regular reporting mechanism. Every case has its own merits: in Malawi, Figure 5, updating used of the regular reporting structure of the health sector; in Tanzania, Figure 6, water officers used a combination of telephone follow-ups and meetings at sub-district level; while in Uganda, Figure 7, the water office contracted local hand pump mechanics.

From a wider SPM perspective, the approach in Malawi is particularly interesting because it makes use of existing government monitoring structures and requires therefore the least additional efforts and resources for regular monitoring. Furthermore, relying on the health sector reporting structure offers the potential to link water sector information on outputs and outcomes with health sector information on outcomes and impacts. Combining information this way offers the opportunity to better understand the linkages between access to improved services and the health of the local population.

Figure 5: WPM updating in Machinga District, Malawi

In Machinga, a representative from Engineers without Borders Canada worked together with the district water office in 2009 to develop a water point monitoring system that can be routinely performed without external assistance or funding. As a starting point, the team identified a list of bottom-line indicators: location, type, and functionality of the water point; and reporting frequency as quarterly / bi-annual. They then examined the existing reporting mechanisms below the district level that the water sector could use without having to send out its own personnel for data collection. They found that, in the health sector, health surveillance assistants based in health facilities and responsible for 1,000 households each, already had an indicator with regard to water supply, which was included in quarterly reporting formats to the district health office (see figure above). Necessary changes were thus limited to developing an additional format and to forwarding filled-out forms quarterly from the health office to the water office at district level. Using the WaterAid Spreadsheet Mapper (see also Box 1), the district water office can display results visually on a map, without using GIS software.

While this system can be implemented with minimal additional efforts and costs, the report from Engineers without Borders cautioned that the sustainability of the reporting system is contingent on the quality of regular reporting in the health sector and on the level of collaboration between health and water offices at district level. It suggested that incentives for regular reporting could be enhanced if the regional and national level actively demanded such data and standardised reporting.

Source: (Rabbani 2010)

Figure 6: WPM updating in Same District, Tanzania

In Same District, Engineers without Borders Spain (ISF) had supported WPM in 2006. However, no regular monitoring system had been put in place in the district with the result that the WPM data was not used and not updated. In June/July 2009, ISF, together with Same District water office, trialled a simple method to update WPM information, taking into account the time and budget constraints of the water department. Rather than using the existing WPM database, which was bulky and unfamiliar to water department staff, a simplified Excel datasheet was prepared, organising water facilities under villages, the second lowest administrative unit in Tanzania. In the Excel sheet, the water department distinguished between administrative areas for which it had up-to-date information (based on a well-known programme or recent visit) and those for which reliable information was not available. Rather than conducting another survey in those latter areas, the district water office decided to make visits to sub-district administrations (in some cases at ward, in some cases at village level) where local leaders were called to report on newly built water points and functionality rates of existing points. The simplified approach meant that the level of effort could be significantly reduced – the field visit for updating could be completed within 10 days – but that some areas had to be compromised, for example, GPS locations of newly built water points could not be taken. The results of this simple updating exercise were worthwhile for the district water department: it showed that the number of water points increased substantially within three years. However, because of population growth and a decrease in functionality rates from 75% to 64%, from 2006 to 2009, overall access levels only increased from 43.4% in 2006 to 52.5% in 2009 in Same. Based on the updated information, the water department prepared a plan prioritising areas for future interventions and rehabilitations in the district.

In principle, the simplified procedure enables the water department to repeat this exercise in the future. However, without a clear demand for such data from the central government, convincing the district government of the relevance of regular updating will be more difficult for the water department.

Source: (Jimenez 2009), (Same District Council 2009), personal communication with A Jimenez

Figure 7: WPM updating in Masindi District, Uganda

In Masindi, the district water office had regularly updated information on water supply schemes for the past four years. This information helped the district, inter alia, to increase the functionality rate of water points from 65% in June 2006 to 80% in September 2008. In Masindi District, the water office was well acquainted with the database for entering and analysing water scheme information but the regular collection of information posed a challenge. To overcome this, Masindi District water office trained local hand pump mechanics to report basic scheme data on a monthly basis. In January 2010, there were 24 hand pump mechanics in

Masindi, one mechanic being responsible for around 20-50 water schemes. Each mechanic was equipped with a bicycle, grease for maintaining the water point and received a small per diem upon handing in a monthly monitoring report. While mechanics close to the district capital reported directly to the water office, others sent reports via sub-districts. According to the district water officer, the pump mechanics' regular visits of water schemes increased their visibility with water user committees and provided them with a small additional income by carrying out repairs at a price regulated by the district water office. The district water officer said that the regular reporting mechanism had worked well for several years in Masindi, even though the hand pump mechanics closer to the district office were more motivated than those further away. Despite of some reporting delays for distant sub-districts, the district water staff felt that they were well informed of the water supply conditions across the district based on this mechanism.

Source: (WaterAid n.d.); field visit to Masindi district, January 2010

In addition, there is now a lot of enthusiasm about the use of mobile phone technology and web-based databases to overcome challenges related to paper-based reporting. Mobile-to-web reporting is being tested in various sectors in East Africa and beyond. In the water sector, two initiatives are currently piloting the use of mobile phone technology to increase access to information for water users. The Tanzania-based organisation Daraja focuses on rural water supply schemes while the h2.o initiative in Zanzibar pilots feedback mechanisms in urban water supply. In Senegal, the private sector company Manobi, together with WSP, pilots scheme management services for medium-sized water supply schemes (see also Figure 8 below).

Figure 8: Examples of mobile-to-web technology use to increase transparency in water service delivery

In Senegal, the private sector company Manobi together with WSP trialled the use of text messaging to support individual water scheme operators in scheme management. The service focuses on three parameters: daily water bulk production of the scheme, balance of user account and system down-time since last report.

In Zanzibar, the h2.o initiative pilots mobile-to-web reporting in the urban water sector, to increase water authority's accountability to urban water supply customers. Water users can report faults in water supply systems via mobile phones and then track the response of the utility in maintaining the facility via a web-based information system. An interesting point that came out of the pilot work done in Zanzibar under h2.o was that men are frequently the asset holders/mobile phone owners whereas women collect water from the pump.

In Tanzania, the NGO Daraja intends to use mobile phone text messaging in the rural water sector to enable citizens to give feedback on the state of their water supply schemes. This information will be forwarded to relevant government authorities so that they can respond quickly to breakdowns. It will also be

forwarded to the media, i.e. used in regular radio programmes that Daraja plans to broadcast on water supply and sanitation.

Sources: (PEPAM et al. 2009; WASH News Africa 2010); personal communication with D Taylor and B Taylor, Daraja and with T Fugelsnes;
http://www.unhabitat.org/content.asp?typeid=19&catid=635&cid=7662

However, some caution is in order concerning the penetration and potential of mobile phone technology to overcome existing reporting hurdles. A recent survey of ICT access and usage in Africa found that mobile-phone uptake was highly concentrated in urban areas and among wealthier households (Gillwald and Stork 2008).

While mobile phone technology can overcome some of the hurdles related to paper-based reporting such as copying errors, it does not, in itself, overcome wider structural problems that weaken existing reporting structures such as incomplete information. While the technology may speed up the process of passing information up to the central level, it does not solve the problem of making data available at decentralised level unless the office is regularly able to update its own database on the internet. Yet, a major concern in the water sector is the use of data for decision-making at the district level and below.

3.4.3 Governance-related challenges

The governance-related challenges to WPM are linked to the wider sector situation that WPM intends to address and the use of WPM for planning is contingent on progress made on these wider challenges. As described in section 2, WPM is a tool to support sector performance monitoring. However, in all four countries, these monitoring structures are in transition and incentives for accurate and timely reporting are weak.

One issue is the weak relation between the targeting of inputs (in the form of financial allocations) and the reporting of results (for example, levels of access to water supply in a district). There are at least four different bottlenecks:

a) *Parallel financial channels prevent consistent planning*: Often, there are multiple channels for financing rural water supply projects and not all of them may be captured in the national sector budget. Bi- and multilateral donors are increasingly reporting their financial resources through the national or sector budget, but the allocation of their financial resources is not always aligned with government allocation rules. Furthermore, investments of NGOs remain mostly outside the sector budget. This leads to parallel financing mechanisms with different formula that can become an obstacle to coherent sector planning and performance-based management. In Ethiopia, for example, there were at least eight parallel financing modalities for rural water supply in 2009 (World Bank 2009).

b) *There is no accurate and timely data on performance to allow for targeting of resources:* Agencies working in the sector such as different sector ministries, development partners and NGOs often collect different information and analyse data in different ways for reporting progress on their activities. The lack of harmonisation of reporting may lead to gaps in progress reporting on coverage as, for example, NGOs do not always report their activities to the government. In Ethiopia, for example, only a very rough calculation of the NGO contribution of NGOs to the sector was possible (WaterAid 2007). Lack of alignment of regular reporting also results in contested coverage figures as government, partners and NGOs use different indicators to calculate access based on the respective national definition of access. Second, parallel reporting systems tend to use the same government officials for information collection, which may lead to a duplication of efforts and put an unnecessary burden on extension staff. The challenges here are to harmonise processes and reconcile data.

c) *Ambiguity of scope in defining results:* Development results encompass a hierarchy of i) outputs, ii) outcomes and iii) impact. In rural water supply, this hierarchy translates into a) water supply schemes constructed, b) people with access to improved water supply schemes and c) people enjoying an improved health status, time savings etc, based on access to water supply. In many developing countries, the principle of community ownership, and community responsibility for scheme operation and maintenance (O&M) applies. This means that the responsibility of the state extends primarily to the provision of improved facilities while it is the responsibility of the users to sustain the services. In a narrow sense, therefore, the ministry's reporting responsibilities relate only to outputs. Most national development plans include targets which focus on development outcomes (ie access to services) but the roles and responsibilities of different line ministries in contributing to these outcomes are not always clearly defined. This ambiguity may have contributed to weak reporting mechanisms on access on the side of the government. It may partly explain, for example, why regular updating of scheme functionality is often not part of the sector monitoring framework or poses a logistical challenge for water sector staff. Furthermore, there is wider assumption that, once inputs are provided, outcomes and impact will follow automatically. Consequently the bulk of water supply expenditure is budgeted for capital expenditures.

d) *Formulae for allocating financial resources exist but may not be used in practice or create incentives for under-reporting:* In order to plan based on performance, the sector needs to have a clear formula for allocating investment between regions, districts and sub-districts. In Uganda, this formula is embedded in a conditional grant, the district water and sanitation development grant (MWE 2008). The distribution of this grant between districts is based on a formula that mainly takes into account past investments and existing service levels. One problem is that the formula creates an incentive for districts to under-report on their existing service levels so as to increase the amount of funding they receive under the grant. In Ethiopia, there is a formula for allocating block grants to *woredas* (districts) but the bulk of these grants are used for recurrent costs.

Donor and NGO funding for rural water supply infrastructure still follows a project-type financing modality in which *woredas* do not have a say in decisions regarding financial allocations (Aboma 2009). In Tanzania the two main government transfers in the water sector are the block grants and development grants. The system of water intergovernmental transfers based on formulas was introduced in FY 2005/06. The formula is based on a combination of indicators including coverage rates, technologies used and poverty incidence. The formula is not being applied consistently though (see van den Berg et al 2009). The District is then responsible for developing investment plans and budgets for the water and sanitation sector that integrate village plans.

A second issue is the degree to which governments are prepared to make information freely available. This is particularly relevant in the context of the 'WATSAN Portal' supported by WSP, which intends to make sector performance information available on the internet. Each government who participates in this initiative will have to decide how much information to release and how often to update it. Donors could use the information as a basis for investment decisions while Civil Society Organisations could use it to hold governments and development partners into account. Similar issues apply for making information available at district level. In Tanzania, for example, making information on investments available at district and sub-district level is recommended by various policy documents but not enshrined in law. A WaterAid review of four districts found that information was sometimes pinned on public notice boards at district level but that it was often outdated and not very visible (Taylor 2009).

A third issue is political influence below the district level: In both Tanzania and Uganda political interference in the allocation of water supply projects at sub-district level was reported as being substantial. Evidence from research on inter-ward equity in Tanzania illustrates the influence that Members of Parliament have on planning decisions below the district irrespective of differences in existing distribution of water points. Furthermore, those communities with easy access to the district administration eg via tarmac roads and physical closeness tended to be better served then more marginalised communities (TAWASANET 2008, 2009; Taylor 2009). In order to ensure that political influence does not simply reinforce existing inequalities, service delivery decisions should be based on facts and following a transparent set of criteria. The important contribution of WPM is to improve transparency around current patterns of investment. This provides a stronger evidence base for discussion among politicians and between politicians and their constituents. Maps provide a first step to addressing the accountability gap but independent scrutiny is essential as they are themselves also subject to interpretation and manipulation just like any other form of information.

This section has provided an overview of WaterAid in East Africa's evolution of WPM mapping approaches, its major achievements and challenges. Broadly, WaterAid's WPM is at different stages in the country programmes with some country programmes still needing to increase the evidence base of WPM while others need to focus on making such information accessible and increasing the use of the information for targeting investments in water supply. The challenges related to WPM are three-fold: they are i) technological, mainly related to the use of GIS, ii) operational, namely mechanisms for regularly updating and reporting WPM information and iii)

governance-related, which relates to wider gaps in SPM. The next section focuses on how to address those challenges.

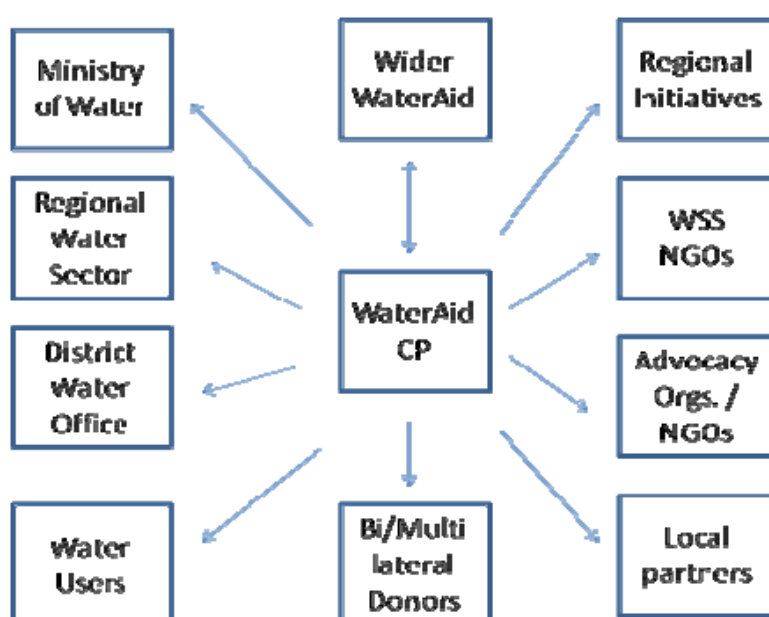# 4 Entry points for WaterAid in East Africa's future engagement

This section identifies entry points for WaterAid in East Africa's future engagement with WPM. The entry points here are made for WaterAid's East Africa programme as a whole. Country-specific recommendations are contained in the annexes.

The section starts by discussing WaterAid's comparative advantage on WPM in East Africa compared to other organisations. It then briefly analyses the degree of openness of the policy space in each country. Based on this, different entry points are identified, which WaterAid can use through WPM to influence SPM. A distinction is made between responding to technological, operational and governance challenges. Finally, recommendations are made and a matrix for a future engagement strategy is presented, which distinguishes between topics and strategies WaterAid can use to engage with different types of actors. This matrix should help country programmes to develop their individual engagement strategy.

4.1 WaterAid's role in WPM compared to other stakeholders

In country, WaterAid's comparative advantage in relation with rural WPM relates to the more general position it holds in the sector. WaterAid has access to many different actors at different levels in the sector, which play to its advantage when it comes to WPM.

Figure 9: WaterAid's role in WPM compared to other stakeholders

WaterAid has access to various different levels of government as shown on the left-hand side in Figure 9. This means that, through its experience with implementing WPM at decentralised levels, it can add value to the conceptualisation of WPM at national level. In Uganda, for example, the Directorate for Water Development explicitly asked WaterAid to support it with certain implementation challenges related to WPM and regular updating. At the same time, it can also inform its local partners who support WPM processes at the local level about the latest developments on sector monitoring at national level.

The right-hand boxes in Figure 9 exemplify that, at the country level, WaterAid has access to activities by non-governmental organisations with relevance for WPM. These actors can also help WaterAid to further leverage its own activities in WPM. For example, through local partners it can support WPM implementation and use at district level and below. By collaborating with organisations that work on policy and advocacy issues, WaterAid can leverage the dissemination of WPM information. In all four countries, for example, SNV had programmes that supported planning processes at district level, in most cases particularly addressing the water sector. In Tanzania and Kenya, civil society organisations like Daraja and Twaweza who focus on transparency and the right to information, can put forward bolder, more challenging messages than an international NGO like WaterAid, based on WPM evidence. Through formal and informal NGO sector networking, WaterAid is also in a position to encourage bi- and multilateral donors, as shown at the middle-bottom box of Figure 3, and NGOs working in the sector to take on its approach and expand the geographical scope of districts that have been mapped or it can seek alliances to push the sector to institutionalise the approach. The fact that it can draw on experiences in WPM from different countries gives WaterAid authority on WPM with other NGOs, development partners and the government at country level.

The top-bottom box in Figure 9 illustrates the comparative advantage WaterAid country programmes obtain through experience-sharing across the organisation and technical support. The technological support provided by WaterAid's Technical Support Unit in the UK in developing tools like the Spreadsheet Mapper and sharing experiences on the latest technologies such as mobile-to-web updating helps country programmes to actively inform and influence WPM approaches at country level. Country programmes can also benefit from WaterAid in the UK's active involvement in wider debates around sector performance monitoring including the ongoing development of the Joint Monitoring Programme, the UN's Global Annual Assessment of Sanitation and Drinking Water (GLAAS) and other regional SPM-related initiatives in sub-Saharan Africa like h2.o and the WATSAN Portal.

At a regional level (and possibly beyond), WaterAid has built up a reputation as an expert on rural WPM. Because of its WPM data and experience with approaches, WaterAid is an attractive partner for regional initiatives like h2.o or the WSP WATSAN Portal. One of the reasons why h2.o would like to work with WaterAid is because it would like to be able to access WPM data to trial its new software. For WSP, WaterAid is a valuable partner because it has the credibility and capacity to closely follow up on the use of the WATSAN Portal with national sector governments. WaterAid's existing track-record on WPM also made it a very attractive partner for SNV in Kenya to take forward WPM as a tool to support sector performance monitoring.

In a nutshell, WaterAid's comparative advantage with WPM lies with its role as an intermediary. Its role is more that of an advisor to the government than an organisation that pushes for radical change. At the same time, as illustrated above, through its wider networks in and beyond the sector, WaterAid can make sure that stronger messages based on WPM evidence stir wider debates on equity and sustainability of water supply services. Strategic alliances for WaterAid are other organisations working in the water sector, which can leverage WPM by using the same methodology to support their interventions and government SPM, and organisations that focus on capacity building like SNV or on improving access to information or anti-corruption eg Twaweza and Daraja in Kenya and Tanzania. However, how much WaterAid can push challenging messages depends on the openness of the policy space in each country, which is discussed in the next section.

4.2 Policy space analysis

The policy space analysis gives an indication about the level of advocacy-related engagement that is possible in the rural water sector in each country. This analysis can be helpful in prioritising WPM entry points. Based on Gaventa (2006), a distinction is made between closed, invited and created spaces for participation (see Figure 10 below).

Figure 10: Policy space

Space	Description
Closed	State-based decision-making behind doors, decisions are made without consultation or involvement of non-state stakeholders
Invited	Spaces where different stakeholders are formally invited to participate but the scope (how and what) is controlled by the state; eg by invitation such as a one-off consultation, or by right
Created	Spaces created or claimed by less powerful actors to challenge more powerful actors; those spaces may be created out of a common identification or concern. In addition to collective action, spaces can also be created by CSOs and by other non-state institutions such as donors, faith-based organisations or political parties.
Source: Gaventa (2006)	

When analysing the policy space for this review, three different aspects were taken into consideration: formal opportunities for engagement from the side of NGOs in the water sector, whether these opportunities had been taken up, and the general strength of NGO policy and advocacy work in the sector. Figure 11 below summarises the situation in each country based on a rapid review. The results should be taken as indicative only and could be developed further at country level.

Figure 11: Policy spaces in Ethiopia, Tanzania and Uganda

Country	Policy Space	Explanation
Ethiopia	Closed with limited invited spaces for engagement	The policy space in the Ethiopian rural water supply sector was mainly closed with a limited number of opportunities for engaging in non-controversial, invited spaces. Human rights work was strongly discouraged by the government with NGOs self-censoring their activities. Sector consultation mechanisms were open to CSOs but opportunities for active contributions were limited. Opportunities for engagement were felt to be higher at *woreda* (district) and regional level. SNV had supported strategic WASH plans in six *woredas*, which indicates that supporting local level planning is potentially possible.
Tanzania	A mixture of invited and created spaces	The policy space in the Tanzanian rural water supply sector showed a mixture of invited and created spaces. Sector consultation mechanisms were open to CSOs and the space was taken up by presenting challenging evidence through equity reports, which stirred some discussion in the sector. However, government initiative in the thematic working group on performance monitoring, where issues on monitoring could be addressed, was felt to be lacking. At the same time, various NGOs engaged in planning processes at the local government level and produced radio programmes to improve citizens' access to information. Additional advocacy activities such as a wide distribution of posters with information on equity in water supply service delivery were underway.
Uganda	Invited, particularly in the water sector	The policy space in the Ugandan rural water supply sector was an invited space, particularly at the sector level through DWD who actively encouraged WaterAid's support in operationalising the national water supply survey. Sector consultation mechanisms were open to CSOs and the space was taken up by actively participating in the review. WaterAid and its local partner HEWASA engaged in planning processes at the local government level and below. They also produced radio programmes to support access to information but here, messages had to be carefully balanced. The closure of several radio programmes in the recent past indicated that the possibility of moving beyond the 'invited space' was limited.

The emerging picture from the different spaces for engagement shows different opportunities across Ethiopia, Tanzania and Uganda. In Ethiopia where policy space was closed with some invited spaces at sector level, entry points for working on sector monitoring presented themselves mainly by working closely with the government via capacity building to support the implementation of the WASH inventory and MIS at regional and local government level. In Tanzania, where spaces for engagement were relatively open but the was sector slow to take forward sector monitoring, using alternative feedback channels to pressurise higher

government levels while also challenging local government decision-making processes indicated to have the highest leverage. In Uganda, where the dynamic DWD requested support, WaterAid might go furthest by actively working with the ministry on the topics identified by DWD.

4.3 Formal and alternative channels towards strengthening SPM

WPM provides data about the distribution of water supply services at sub-district level and about the functionality of individual schemes. The visual display of information clearly points out priorities for water supply interventions below the district level. It thereby helps to strengthen the link between financial inputs and results, which is the main aim of performance-based monitoring. But WPM also goes beyond SPM by explicitly highlighting equity issues. The availability of WPM evidence in itself, however, does not bring about any changes. The information needs to be made accessible to different actors and its use be encouraged as illustrated in Figure 2 earlier in the report. This is how WPM can enhance transparency and accountability.

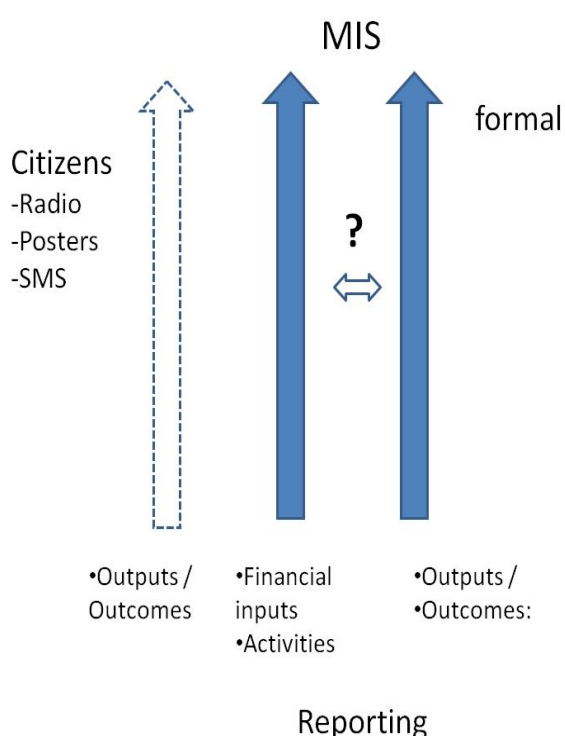## Figure 12: Different influencing channels

Figure 12 to the left shows different ways through which a WaterAid country programme can use WPM information to strengthen the link between information and results. Country programmes can do this by supporting formal sector monitoring processes such as regular reporting based on evolving SPM approaches. These are represented by the two blue arrows on the right. In addition, country programmes can support alternative feedback mechanisms, represented by the white arrow on the left. Alternative feedback mechanisms refer to feedback independent of the government eg through radio programmes, newspapers, citizens using text messaging to report on service gaps or the use of maps displayed on posters to inform citizens and other relevant stakeholders about the service situation in their area. In either of the two channels, WaterAid country programmes can choose a combination of addressing technological, operational and governance challenges, depending on which stage they are in WPM and on the openness of the policy space in the country. In the following two sections, entry points for engagement are illustrated first for formal and then for informal channels.

4.3.1 Supporting formal, government monitoring mechanisms

For supporting formal monitoring processes, WaterAid could distinguish between addressing technological, operational or governance-related challenges.

Technological challenges relate to the use of GIS. The latest development of WaterAid's Water Point Spreadsheet Mapper and the Excel mapping tool from Malawi provide an ideal starting point that WaterAid could use to pilot alternatives to GIS. This is also an activity through which WaterAid could increase exchange between different country programmes. Support to overcome technological challenges is an activity that is feasible even in closed policy environments provided the sector is interested to explore WPM.

In addition, the WSP WATSAN Portal, which will contain a mapping application independent of GIS, is a promising tool with the potential to reach a wide audience with an interest in SPM. It can help governments and WASH agencies to collate, analyse and disseminate water point data at national and sub-national levels. WaterAid could actively support the incorporation of WPM into the WATSAN Portal in those countries that choose to participate in the pilot exercise.

Operational challenges centre on updating of WPM information or of non-functional water points. There are now a number of positive examples of possible updating mechanisms across different country programmes that can be used as a starting point by WaterAid country programmes. The fact that updating poses a key challenge across all four countries points to the urgency in making this a key objective in any future WPM engagement by WaterAid. Updating is also an area where sector governments have already expressed demand (Uganda) or are likely to require support in the future. It may thus be a relatively uncontroversial area of engagement including in closed policy environments.

While there is a lot of enthusiasm now about introducing mobile-to-web technology to overcome existing reporting problems, some caution is in order. Mobile phone network coverage and use differs widely between the four countries and using mobile phone technology for updating may not yet be appropriate in each country context. More importantly, a focus on developing technological solutions may overlook the underlying structural problems that hinder existing paper-based reporting mechanisms in the sector. As long as these problems are not addressed, new technologies are not likely to have a strong impact.

Governance-related challenges are mainly related to the use of WPM information for planning. Adverse incentive structures, as explained for example for Uganda, partly explain delays and inaccuracies in regular reporting. Addressing governance issues via the formal channel shown in Figure 4 is probably most realistic by providing support at the district level and below. There are a number of options, some of which are illustrated here based on suggestions obtained during field visits: in various districts in Tanzania and Uganda, WaterAid not only conducted feedback meetings to share WPM outputs but also subsequently supported the development of a district water supply (and sanitation) strategic plan and its implementation. This type of further engagement centring on the use of WPM results should become a focus across WaterAid's WPM. Furthermore, there is scope to work more intensively with sub-district structures to increase awareness about data obtained from WPM. In districts, where WaterAid

does not have resources to provide dedicated policy support, it could more openly lead by example eg by demonstrating/presenting to district staff how it uses WPM information for planning its interventions below the district level.

4.3.2 Supporting alternative feedback channels

Working through alternative feedback channels is implicitly governance-related. This type of work may not be possible in all country programmes as indicated in the policy space analysis in section 4.2 above.

At the national level where WPM evidence is available and documented, there is scope to use this evidence more creatively and in more diverse ways to influence policy. This means that advocacy work could go beyond the annual joint sector review mechanism and the usual sector government stakeholders; there may, for example, be opportunities to target parliamentarians or other stakeholders that can put pressure on the sector. WaterAid could seek alliances with CSOs in sector performance monitoring that go beyond the sector level. In Tanzania, for example, where the Ministry of Local Government holds a key role with regard to improving planning and budgeting at local government level, WaterAid could develop partnerships to move its policy analysis and advocacy work across sectors. In order to identify entry points for advocacy work, WaterAid could analyse accountability structures influencing SPM in the sector and identify which ones they could be strengthened.

The other obvious alternative feedback mechanism on service provision is via citizens. In Tanzania and Uganda, WaterAid already uses radio programmes to increase awareness based on WPM evidence. Yet, since the strength of WPM is the visual representation of data on a map, visual media could be further explored. In Tanzania, Daraja will make posters available at the sub-district level. In addition, the use of the internet eg via the h2.o initiative or the WATSAN Portal may be promising in this regard.

Using mobile phone text messages to feed back on service breakdowns was in discussion in Tanzania and Kenya. However, the incentives for users to text and the response channels from the government side were not yet fully explored. If the use of such technologies will be tested by WaterAid, emphasis should be put on the operationalisation of the feedback mechanism. For example, at district level, what is the scope for district staff to respond to messages of non-functionality? How will the complaints be made available to decision-makers? At first sight, it appears that text messaging is more promising where there is a clear accountability structure between users and service providers, eg in urban service provision in some countries or in cases like Senegal (see Figure 7 on Manobi) for specific services or for schemes which are managed by paid employees and relatively tightly controlled by the government.

5 Recommendations and developing a WPM strategy

WaterAid has reached different stages in its WPM engagement in the different countries. In Ethiopia, an evidence base of WPM still needs to be established. At the same time, all East Africa country programmes need to continue their efforts in moving from stage one to stage three of Figure 2. In other words, WaterAid country programmes need to enhance activities to make information accessible to different stakeholders and to encourage the use of WPM information for targeting interventions. This direction is in line with discussions held at a Regional Influencing Meeting (RIM) held in October 2009.

The scope of engagement depends on the degree of openness of the policy space in each country. Where the policy space is relatively closed, engagement will need to focus on supporting formal monitoring and reporting channels and on supporting the government in overcoming technological and operational hurdles of monitoring. Based on a country-level policy space analysis, country programmes could identify which channels and topics are most effective in their case. In addition, the level of commitment to WPM by the government will also guide country programmes in their activities.

The most important challenges identified across country programmes in East Africa were related to updating and using WPM information for targeting service delivery interventions. The underlying issues were broken down into technological, operational and governance-related challenges. Recommendations are organised along those three categories. Detailed recommendations by country can be found in the individual annexes.

5.1 Recommendations

Summary of key recommendations

1. *Overcoming technological challenges*: WaterAid's strategic objective should be to ensure that WPM technologies are appropriately adapted to the needs and capacities of those tasked with using them.

2. *Overcoming operational challenges:* WaterAid's strategic objective should be to build the capacity of governments and their development partners to make appropriate use of WPM tools, and to integrate WPM evidence within relevant sector decision-making processes at different levels.

3. *Overcoming governance-related challenges:* WaterAid's strategic objective should be to use WPM as an entry point for improving sector governance and accountability of government and donors for progress on WASH.

Regarding **technological** challenges, the use of GIS software was an important hurdle to updating and using WPM information, particularly at local government level. WaterAid has developed a tool called the Spreadsheet Water Point Mapper, which could be used by all East Africa country programmes to make map production more user-friendly.

Another technical hurdle preventing regular updating and use of water point information for planning was the complexity of databases in Tanzania. At the same time, steps towards developing web-based databases were being undertaken in Ethiopia, Tanzania and Uganda. Ongoing advice on making database management more user-friendly could therefore be of use to all countries. In relation to this, WaterAid's East Africa region could also consider increasing experience exchange on the user-friendliness of (web-based) databases and their actual use for planning across countries. This could tie with WaterAid's engagement with WSP's WATSAN Portal and the h2.o initiative.

Mobile-to-web technology is an innovation that is being piloted in different sectors to support government reporting and independent citizen feedback on different types of services. Here, WaterAid's added value would be in the role of critical engagement. WaterAid could examine questions related to how the mobile-to-web technology works in practice to support existing reporting structures. For example: mobile-to-web updating involves sending a text message directly to a web-based database. How does that affect existing reporting structures and feedback mechanisms linked to them? How easy is it for local government staff to get access to such information? What incentives are there for users to send text messages about service levels? In which situations and for what services is mobile-to-web technology more useful? Where is it less useful? Findings from such analysis are likely to be useful across different sectors and countries. They could initially be linked to WaterAid's engagement in Kenya where there is a lot of enthusiasm for using this technology, and inform WaterAid's work in other countries.

The use of mobile-to-web updating described above also relates to overcoming **operational** challenges. Another entry point for overcoming operational challenges is the experimentation with different government updating mechanisms from the scheme to the district level. Here, a number of examples were provided in Figures 4-6. WaterAid's country programmes could use those examples as a starting point for trialling updating mechanisms in their respective settings. Again, this is an area where experience sharing across countries would be useful.

To tackle **governance-related** challenges, an entry point could be to analyse in more depth wider accountability structures at country level that relate to SPM. These are likely to encompass government-internal, citizen-government, pressure-group-government, donor-recipient etc relations. In order to strengthen internal government monitoring structures, better understanding the bottlenecks to internal government accountabilities might provide entry points for strengthening certain actors and processes. Such type of analysis is likely to be relevant across different sectors. WaterAid's country programmes could therefore leverage their own work by creating alliances with NGOs and research organisations across different sectors. To link accountability analysis back to WPM, WaterAid's country programmes could analyse the contribution of WPM evidence to increased transparency and accountability and break down the different steps that are necessary to enhance sector governance at different levels. Such type of

analysis could be done in a regional workshop based on country-level analysis of accountability structures.

WaterAid is increasingly linking its different advocacy activities. Tanzania is a positive example where WaterAid used WPM evidence to influence national level sector review processes via the annual equity report. The country programmes should be encouraged to continue this trend – eg in Uganda, there is scope to challenge the sector on whether it is reporting and taking decisions based on all the ten golden performance indicators. In other countries WPM could be used to highlight the need to establish clear performance indicators. In the above paragraphs, a number of suggestions were made with regard to learning across the region. Such learning events are useful for all country programmes but particularly important for experience sharing with Kenya, where WaterAid itself does not have any service delivery interventions and its input is relatively limited. Another way of enhancing experience sharing could be to create stronger partnerships with SNV and Twaweza who work on similar issues but across sectors in East Africa.

Furthermore, WPM should also go beyond the narrow lens of SPM. For example, unless explicitly specified, SPM does not necessarily encourage equity in distribution. In addition, there may be other issues that influence access to water supply that are not captured by SPM. These issues can be related to the physical availability of water and to other socio-economic and cultural factors that determine the use of the resource. WPM can be used to draw attention to challenges related to these wider parameters. For example, rural WPM could help to better understand seasonal groundwater variability, a topic that might become more important in relation with climate change. Or, it could focus on particular issues such as fluoride or faecal contamination in areas that are prone to cholera; even financial allocations to specific areas can be illustrated on maps; in a nutshell, most topics can be visualised using a map. It is up to the country programme to think creatively about representing issues on a map. The TSU at WaterAid could pilot different applications to provide examples – as it already does using water quality and coverage data.

Finally, a caution about maps: while they are very useful in drawing attention to particular issues and thereby support decision-making, they also inevitably reduce information to certain, pre-selected parameters. WaterAid should continue to evaluate its own approaches to WPM and whether information is unduly reduced in the process.

5.2 Developing a WPM engagement strategy

Two broad typologies can help country programmes in identifying entry points for future engagement:

- The stage of WPM in the country, which ranges from making information available, to increasing access to information and encouraging the use of information for decision-making.

- The policy space in the country, which can be closed to NGOs, contain certain limited invited spaces or created/widened by NGOs and citizens through pro-active engagement.

Based on these typologies, country programmes can develop an engagement strategy as displayed in the matrix in Figure 13 below. The strategy distinguishes between different

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stakeholders on the horizontal axis. Some stakeholders are those that WaterAid wants to influence eg the government at different administrative levels while others can help WaterAid in this task such as advocacy CSOs. On the vertical axis, the matrix differentiates between topics and strategies for engagement. A topic of engagement is, for example, the use of WPM to support equity in distribution at the district level or the use of WPM to address other specific issues such as fluoride, which is relevant in parts of Ethiopia, Kenya and Tanzania. A topic could also be improving updating mechanisms related to WPM or working on making WPM used at district level for investment decisions. The different topics also respond to the distinction between responding to technological, operational and governance-related channels used in this report.

The strategies of engagement refer to the ways in which WaterAid can choose to engage on a particular topic, the 'how' of engagement. In the report, a distinction was made between supporting formal government monitoring processes and alternative feedback mechanisms. Formal monitoring relates to the evolving SPM frameworks that are currently being established across countries in East Africa. Using alternative feedback mechanisms refers to supporting citizen feedback, using the media, eg the radio, through the support of WaterAid's local partners and other advocacy organisations such as Daraja and Twaweza in Tanzania and Kenya.

Figure 13: Model for a WPM engagement strategy

	Government - Ministry -regional / local government water	Non-government - local partners - sector NGOs - advocacy NGOs
What (topics of engagement)	Technological: supporting sector governments to develop user-friendly (web-based) databases; critically reviewing the use of mobile-to-web technologies for strengthening reporting systems Operational exploring different models to regularly update functionality of water points and other relevant information at local government level Governance: constructive engagement with sector stakeholders on equity, sustainability and other relevant issues based on WPM evidence	Technological: using the spreadsheet water point mapper and other user-friendly tools to support local partners such as HAWASA in Uganda Operational: encourage other NGOs to trial different models for updating WPM information Governance: seek partnerships beyond the sector to better understand and address governance issues that are beyond but impact on the water sector; encourage the use of WPM beyond narrow sector performance monitoring issues e.g. exploring wider sustainability issues
How (strategies for engagement)	Formal monitoring: providing technical support to sector governments in carrying out baseline surveys, developing a database and improving updating and use of information. Alternative feed-back: Provide constructive feed-back to government through independent analysis using WPM information. Examples for this are the equity reports in Tanzania or the use of radio features in Uganda and Tanzania.	Formal monitoring: influence other NGOs to support formal monitoring processes such as the national inventory exercise in Ethiopia Alternative feed-back: seek alliances with like-minded NGOs to support initiatives that make information available to citizens such as Daraja's activities in Tanzania via radio programmes and the dissemination of printed water point maps.

6 References

Aboma, G. (2009). *Think local, act global. Ethiopia: Effective financing of local governments to provide water and sanitation services*. WaterAid, London.

Corbett, J., G. Rambaldi, P. Kyem, D. Weiner, R. Olson, J. Muchemi, M. McCall, and R. Chambers. (2006). Overview: Mapping for Change - the emergence of a new practice. *Participatory learning and action* **54**:13-19.

DWD (2009). *Water Atlas Up-date Project (WATSUP). Summarised Project Document*. MoWE, Kampala.

Gaventa, J. (2006). Finding the Spaces for Change: A Power Analysis. *IDS bulletin* **37**(6):23-33.

Gillwald, A., and C. Stork (2008). *Towards Evidence-based ICT Policy and Regulation: ICT access and usage in Africa*. researchICTafrica.net.

Google.org, and UN-Habitat (2009). *h2.o Consortium Meeting*, 17-18 December 2009, Dar Es Salaam.

Harris, T., D. Weiner, T. A. Warner, and R. Levin. (1995). Pursuing Social Goals Through Participatory Geographic Information Systems. Redressing South Africa's Historical Political Ecology. Pages 196-222 in: J. Pickles, (ed). *Ground Truth. The Social Implications of Geographic Information Systems*. The Guilford Press, New York, London.

Harvey, P. A., and R. A. Reed. (2007). Community-managed water supplies in Africa: sustainable or dispensable? . *Community Development Journal* **42**(3):365-378.

High-Level-Forum. (2005). *Toward Enhanced Aid Effectiveness*. High-Level Forum: Harmonisation, Alignment and Results, Paris, 28 February - 2 March 2005. http://www.aidharmonization.org/download/253238/ParisPressRelease_1.pdf. Accessed on 4th April 2008.

Jimenez, A. (2009). *Basic Update of Water Point Mapping Information Same District*. Ingenieria Sin Fronteras.

MacDonald, A., B. O'Dorchartaigh, and K. Welle (2009). Mapping for Water Supply and Sanitation in Ethiopia. *RiPPLE Working Paper 11*. Accessed on XXXXX.

Mayne, J., and E. Zapico-Goni. (1997). Effective Performance Monitoring: a Necessary Condition for Public Sector Reform in: J. Mayne, and E. Zapico-Goni, (eds). *Monitoring Performance in the Public Sector. Future Directions from International Experience*. Transaction Publishers, New Brunswick; London.

MoWI (n.d.). *ToR for Provision of Consultancy Services on Water Point Mapping for Rural Water Supply Monitoring System*

MoWLE (2001). *The National Rural Water Supply Atlas 2001*. Kampala.

Musaazi (2009). *East African Regional Influencing Meeting Minutes, September 30th - October 3rd 2009*, Dar Es Salaam, unpublished report.

MWE (2008). *Water and Sanitation Sector Performance Report 2008*. GoU, Kampala.

n.a. (2008). *Water and Sanitation Joint Sector Reviews - do they work?* Internal report prepared for WaterAid.

OECD-DAC (2002). *Evaluation and Aid Effectiveness. Glossary of Key Terms in Evaluation and Results-Based Management*, Paris.

PEPAM, Manobi, and WSP (2009). *Mobile-to-web technologies. A basic rural water scheme monitoring service in Senegal*, A briefing note prepared for the workshop "Lessons from Around the World - Building and Indonesian Framework for Water and Sanitation Sector Monitoring & Evaluation".

Pickles, J. (1995). Representations in an Electronic Age. Geography, GIS and Democracy. Pages 1-30 in: J. Pickles, (ed). *Ground Truth. The Social Implications of Geographic Information Systems*. The Guilford Press, New York; London.

Rabbani, E. (2010). *Water Point Monitoring System in Machinga District, Malawi. Design and Development*. Engineers without Borders Canada, Report written for WaterAid in Malawi.

Rebien, C. R. (1996). *Evaluating Development Assistance in Theory and in Practice*. Aldershot: Avebury.

Ross, I., and K. Bostoen (2010). *Data Reconciliation in Southern Africa. Report of a regional workshop looking at monitoring approaches in the water and sanitation sector*. WaterAid, UNICEF and WHO

Same District Council (2009). *New Water Supply and Sanitation Services Priorities*.

TAWASANET (2008). *Water: more for some... ...or some for more? Monitoring equity in water and sanitation*. Tanzania Water and Sanitation Network.

TAWASANET (2009). *Out of sight and out of mind? Are marginalised communities overlooked in decision making? Water and sanitation equity report, 2009*. Tanzania Water and Sanitation Network.

Taylor, B. (2009). *Water Point Mapping, Planning and Obstacles to Equity in Rural Water Supply. A review in Mpwapwa, Kongwa, Iramba and Nzega*. WaterAid Tanzania, Dar Es Salaam.

Van den Berg, C; E. Burke, L. Chacha, and F. Kessy (2009): Tanzania Public Expenditure Review. Dar Es Salaam, September 2009.

WASH News Africa. (2010). *Tanzania, Zanzibar: Google and UN-HABITAT partnership to improve data collection*. Accessed on 10 February 2010.

WaterAid (2007). *Assessment of Civil Society Organisations to the WATSAN Sector in Ethiopia, 2002-06*, Addis Ababa.

WaterAid (2010b). *Spreadsheet Water Point Mapping Tool*, see also: www.wateraid.org/mapper.

WaterAid (n.d.). *Management Information System in Masindi District*. WaterAid Uganda.

WaterAid Ethiopia (2009a). *Draft Revised ToR for WASH Inventory Database System Task Force*.

WaterAid Ethiopia (2009b). *Taking forward the WAE Rural Inventory Database and Water Point Mapping experience - Recommendations and Action Points*. Internal note.

Welle, K. (2006). *WaterAid water point mapping in Malawi and Tanzania. WaterAid Learning for Advocacy and Good Practice*. WaterAid; ODI, London.

Welle, K. (2007a). *Water and sanitation mapping in West Africa. Report of findings from visits to Ghana and Nigeria*. WaterAid, London.

Welle, K. (2007b). *Water and sanitation mapping: a synthesis of findings*. WaterAid, London.

Welle, K. (2010). *Strategic Review of WaterAid's Water Point Mapping Activities in East Africa Region. Workplan*.

World Bank (2009). *Ethiopia Public Finance Review*. Report No. 50278-ET.

WSP (2009). *WatSan platform database manager meeting for rapid development and hosting of country internet portals*, Nairobi, Kenya, June 10-11, 2009.

Annex 1: Terms of Reference
for a strategic review of WaterAid water point mapping activities in the East Africa region

Background: Water Point Mapping (WPM) approaches have been pioneered by WaterAid country programmes and offer the potential to contribute to improved sector monitoring and accountability. Rural Water Point Mapping was rolled out nationally in Uganda in 2000 but there have been challenges updating it. The Government is now in the process of updating the maps with input from WaterAid and WSP. In Tanzania, mapping was initiated by WaterAid, and has now been adopted by the Government to be scaled up nationwide as part of the sector information management systems. Mapping in Ethiopia it is still at pilot stage with RiPPLe and other stakeholders implementing it in a few Districts. Urban Poverty Mapping in Tanzania and Uganda is also taking shape, the former mainly using GIS, while Uganda is more of a participatory approach.

However, despite recent progress there are still challenges regarding the updating of maps at different levels, effective analysis, dissemination and utilisation of the data for advocacy and planning, and involvement of relevant government officials especially at local level. The WPM concepts developed by WaterAid have been taken up by WSP which is planning to work with governments to scale it up across the region. While WA is committed, in principle, to supporting this initiative, we need to ensure that it is informed by lessons from our own experience. We also need to review our comparative advantage and identify an appropriate role and focus for future WaterAid activities in this area.

Purpose: To conduct a rapid review of the evolution of WaterAid's approaches to mapping in East Africa and identify future strategies and comparative advantage vis-à-vis other agencies.

Project objectives:

1. To review and summarise the recent evolution of WaterAid's approach to mapping in Uganda, Tanzania and Ethiopia[7] in terms of purpose and scope.

2. To examine the successes and the challenges faced and identify key lessons learned to date from WaterAid's mapping.

3. To review and briefly summarise current and proposed mapping initiatives by other agencies in the region.

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[7] Mapping in Ethiopia is much less advanced than in Uganda and Tanzania.

4. To make recommendations for future country and regional strategies which build on recent experience and take account of WaterAid's comparative advantage vis-à-vis other agencies.

Project activities:

In collaboration with WaterAid staff, the consultant will:

1. Review existing internal documentation on mapping approaches available at country, regional and international level (WaterAid to provide).

2. Conduct phone interviews with relevant staff from the East Africa Regional Desk, Technical Support Unit and Policy and Campaigns Department.

3. Develop and agree a workplan/methodology for analysing experience to date and identifying key lessons learned from WaterAid's mapping approaches

4. Conduct visits to Uganda and Tanzania to hold discussions with country programme staff and other relevant stakeholders

5. Facilitate discussion and validation of findings with country programme staff stakeholders in each country

6. Produce a synthesis report summarising key findings and recommendations relating to the evolution of mapping approaches within the region (with separate Annexes containing specific recommendations for each country). The report itself should be suitable for publication for an external audience whereas the annexes could be kept for internal consumption.

Annex 2: Persons consulted

Tanzania

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Dominick De Waal	WSP Africa Region
Julie Perkins	UN-Habitat
Thomas Fugelsnes	Finance Specialist, WSP Senegal
Vincent Casey	Technical Support Manager, WaterAid in the UK
Tom Slaymaker	Senior Policy Advisor (Governance), WaterAid in the UK
Yunia Musaazi	WaterAid in East Africa

WaterAid

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