

Changing relationships: ICT to improve water governance

Wednesday 4 September 2013
World Water Week in Stockholm

Information and communications technology (ICT) has transformed how people communicate. ICT is quickly changing relationships, facilitating the measurement and monitoring of interventions, and enabling practitioners at a local level to use evidence to guide decision making for the equitable and sustainable extension of water, sanitation and hygiene (WASH) services.

Despite this promising outlook, several challenges exist to use the full potential of ICT. Is there sufficient knowledge to apply the new technologies effectively? What has worked and how? Who has access to the information and are incentives in place for using information to improve services? What are the associated costs?

The seminar, ICT to improve water governance, provided a platform for discussion. Three sub-topics were presented. This briefing note summarises the key points.

What is ICT?

Established **information and communications technologies (ICTs)** include radio and television, while new ICTs relate specifically to mobile phones and the internet. Within WASH and development, ICT often represents the mobile network, and the mobile tools used for data collection and analysis, and the technology (hardware, software and services) that expedites the data flow and the use of that data.



Chair
Ton Schouten, Senior Programme Officer,
International Water and Sanitation Centre (IRC)

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Key question:

Is the water sector using
ICT at its optimum?

Opening keynotes

The opening keynotes discussed the two theme questions: constraints and opportunities of using ICT within the sector.

What are the opportunities to increase governance, efficiency and impact of WASH services? What are the opportunities to improve?

Ned Breslin

CEO of Water For People

- It will become easier to collect information and gain access to everyone's voice.
- But can organisations handle the data and do they know what to do with it?
- We must identify the interventions we are doing and what is working well. We must also identify what is not working well and plan what we will do about that: **critical reflection of organisations is needed.**
- We need a key dramatic shift towards programmatic improvements and building organisations in new ways, so they are able to take information and make it useable and actionable so we can improve.
- People on the ground are speaking, we need to listen. ICT offers us the potential to do that.
- Customer feedback means governments will be forced to listen.
- People responding through SMS can drive programme improvements.

"We need a fundamental change in our cultures... organisational, government cultures and donor cultures."

What are the constraints for using ICT on a large scale within the sector?

Jaehyang So

Manager of the Water and Sanitation Programme (WSP), a multi-donor partnership administered by the World Bank

"We are not even at the tip of understanding the full potential of technology."

- The extent that technology can be used is limited by core development factors.
- These are the same factors that limit the development of society as a whole.
- However, despite the challenges, technology has the power to change the world.
- Every time one of the programme's projects involves ICT, the results always far exceed expectations.
- Getting feedback direct from populations enables instant feedback and will change the ways things work.
- It will provide the fastest and most direct way for governments to be in touch with their populations.



susanna smets @susannasmets

@WSPWorldBank ICT to support governance and real time customer feedback can transform the sector #wwweek #ict

4 Sep



Ned Breslin @NedBreslin

Open and "big" data will be transformative in development cooperation starting in 2014 says @bjelkeman #wwweek #ict

4 Sep



Sub-topic keynote

Open data and accountability



Speaker: **Thomas Bjelkeman-Petterson**,
Co-founder and Co-Director of Akvo Foundation

“Open and ‘big’ data will be transformative in development cooperation in 2014.”

Thomas Bjelkeman, 2013

Financing in the water sector is not transparent. Reporting is ineffective and often paper-based. It is often unclear where funding has been spent. But we have the technology to fix this.

Why should we improve? Because at the moment we do not know where the money is spent and if, why or when it is effective. Other sectors, such as business, are already using the tools we must adopt.

Populations must engage and be part of ICT. Governments must learn what to do with the data in order to use it effectively. This is critical because the amount collected will only increase in the future. It must be collected efficiently and used effectively.

Successful societies own their own infrastructure and the same must be applied to ICT. Countries must have: Open data. Open source software. Open content.

The reasons for open data:

- ✓ More effective
- ✓ Less expensive
- ✓ Future proof
- ✓ More democratic
- ✓ Drives innovation



Policies and procedures can safeguard for situations when open data is not possible. The challenge is when data has been released which subsequently needs to be retracted for security or privacy reasons that were not initially apparent. Solutions for this are difficult and more discussion is required to identify a solution. This does not mean that data should not be open. We should remember that most data can be published freely without concern.



Tanzania: ICT can provide updates straight from the field.

Case study

Why Open UN-Habitat had to happen?



Speaker: **Pontus Westerberg**, UN-Habitat,
Project Manager for UN-Habitat's open data and transparency initiative

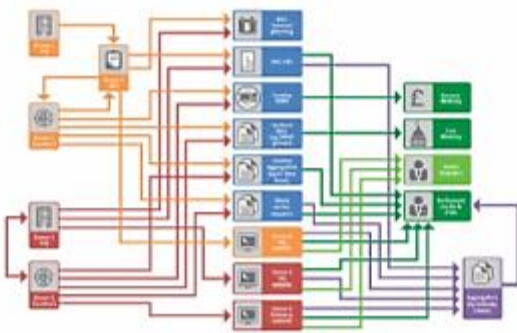
A major issue within the sector is lack of information:

- **Donor governments** don't know what other donors are spending or planning to spend.
- **Recipient governments** struggle to know how much aid is spent in their country. Budget planning is therefore difficult and accountability is damaged because citizens do not know how much their government is spending.
- **Civil society**, including NGOs, legislators and citizens, has the right to know what aid is coming into the country and what it's being spent on.

Of \$32 billion pledged by the United States of America to Afghanistan for 2001-2008, less than 20% is recorded in the government's aid database. This means Afghans have no way of knowing where the rest of the money (\$26 billion) is spent within their country.

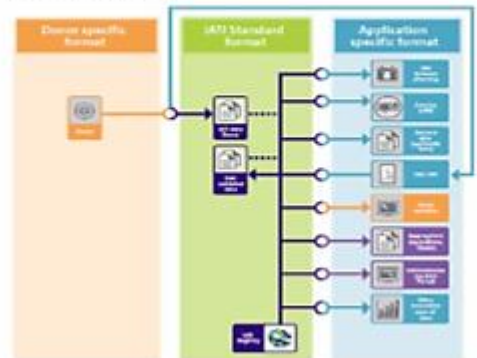
The problem: Lots of different donors provide finances and resources within a country but no one shares information about where, what and how much they are spending. Recipient countries often do not know what is being spent within their country by outside sources. Donors may record what they spend, but this is not made public or easily accessible.

The problem



Lots of different donors recording finances
in different ways

The solution



Everyone using one system

The International Aid Transparency Initiative (IATI) was created to provide the solution.



This provides a standard for aid reporting and creates one place where all data is held.

For the first time, departments now know what other parts of an organisation are doing. 145 have published so far, including donor countries, NGOs, and other similar organisations. However, there is no reason why private companies could not access the database.

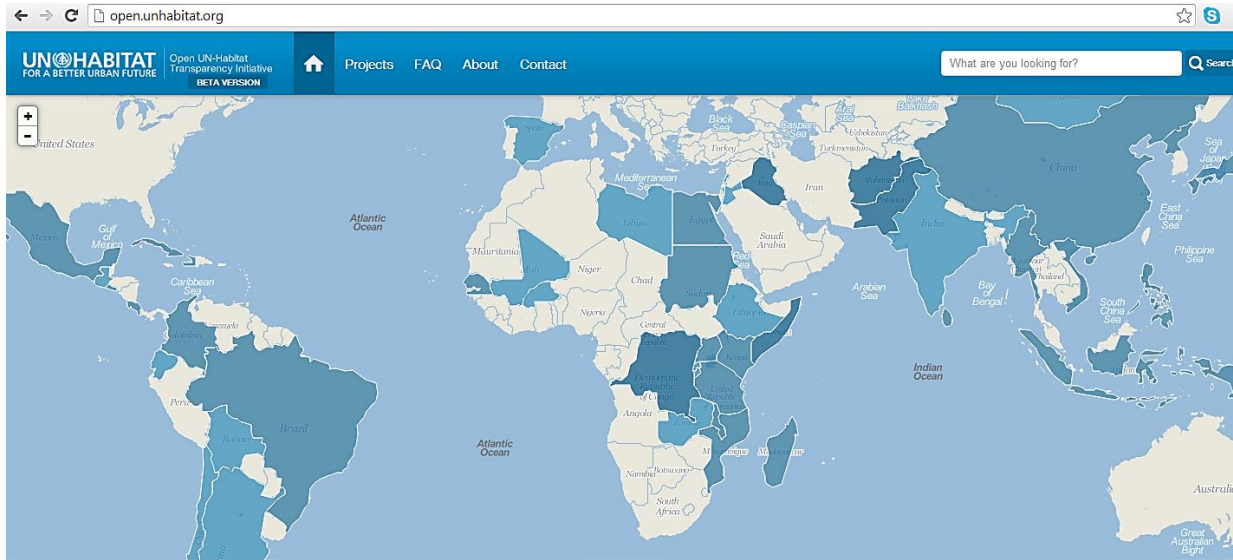
Publishing is easy:

1) provide XML file of the money donated 2) publish it on the IATI Data Registry website

Challenges with IATI:

- Initial fear of transparency (although some data may be sensitive, this amount is very small)
- Paper culture (often projects have lengthy paper systems)
- Quality assurance
- Project funding allocation (ensuring funding is clear and timely)
- Updating of the database (making it a priority)
- Mapping data

UN-Habitat is a publisher. It has developed its own database so it can add easily to the IATI Data Registry. It has produced an easy to use website (<http://open.unhabitat.org/>) and initiated staff training and updated internal policies and procedures.



Case study

The challenges with open data



Speaker: **Ravi Narayanan**, Adviser at Arghyam Foundation, India

India Water Portal (IWP)

The IWP, launched in 2007 by the Arghyam Foundation, is an attempt to engage the wider public with the story of water and sanitation. It is **“an open and inclusive web-based platform that connects water sector practitioners and the public”**. It looks at existing data sets and compares and contrasts between different sources on a temporal and spatial basis.



- Maps may be produced that show that lots of money has been spent but do not reflect the reality on the ground, i.e. the map does not show if the money has been spent ineffectively.
 - The IWP enables comparison of investment with reality on the ground.
 - The Arghyam Foundation has linked with the Government of India to establish how the tool can aid government-provided projects.
 - It is clear that the decision-making process must be understood in order to create change. Engagement must be tailored.
 - The idea of the project is to: take the existing data, convert it to a user-friendly format visually, and engage the different layers of government (national to local) with customised data.
 - Citizens must also be engaged. Engaging citizens will be more difficult than governments because they will be unfamiliar with the forms of data. We should think outside of the box and remember that data visualisation may be presented in different forms, such as stories.
 - A community interest should be developed, using initially one person to cascade to others in their community. A strong driver in India is citizens being aware of the right to information.
 - The next step is working on ground water and ensuring quality and quantity. One company cannot do this alone, so we must develop a culture change so that organisations work together. **“Only when we work with systems, capacities and technologies all together can we achieve change.”**
- The Arghyam Foundation, funded by a private donor, grants funds to organisations that implement and manage groundwater and sanitation projects in India.
 - Arghyam works on two main projects: the data project (working on water) and the state of sanitation (working on sanitation).



Nicolas Dickinson @waternote

4 Sep

"No one organisation can do this. We need a culture of networks. We cannot be lone rangers." Ravi Narayanan @indiawater
#ict #wwweek

Sub-topic keynote

Mobile participation



Speaker: **Johan Hellström**, PhD student at University of Stockholm

- Despite some regional differences, there has been a dramatic increase in the use of mobile phones.
- This is largely due to reductions in cost (of the underlying technology as well as handsets).
- However, despite the hope, this large increase in use can be misleading.
- There is a clear difference between mobile ownership and actual phone ownership and use (or access).
- Having lots of mobile subscribers in a country does not necessarily mean those people can be accessed.

hope
vs
hype

In East Africa

Issues and problems:

- People tend to have more than one SIM card and often these are pay as you go.
- Reverse billing and premium SMS services (where the message recipient rather than the sender is charged for the SMS) is problematic in a prepaid environment because often people only top up when they need to, and without credit the mobile has no service.
- Increasingly, people are using mobiles to talk, rather than for sending SMS texts.
- Support system or customer care for usage is non-existent.
- Hidden costs (maintenance, charging phone often more expensive than airtime for people outside power grid).
- The majority of handsets in circulation in East Africa are basic models (80%).
- Access to networks can be difficult – lack of 3G, especially outside of the cities.
- Women can be disproportionately challenged.
- Many users do not know what services exist or how to access them.
- Users are not given the full picture or they are excluded from the feedback loop.
- Pilot projects are too often labelled success stories despite lacking a recipe for scaling up.
- Clear benefits need to be established for users. Capacity of institutions to act on information generated through ICT must be built before people are expected participate.



Many services available but potential users:

KNOWLEDGE - do not know about the service

BENEFIT - do not see the direct benefit

TRUST - do not trust the service (is users' data properly protected?)

AFFORDABILITY - cannot afford to participate (Repetitive SMS services can cost a lot. Who pays?)

Failure as well as success stories are needed. We need continued critical reflections on promising and challenging practices and factors.

“We must establish what is working and what is not.”



Despite these issues, these case studies show it is possible for potential to be reached:

	Usage area	Example
Transparency	Awareness raising on water issues among citizens through information campaigns	Text to Change www.texttochange.org
	Transparency in water service delivery	M-Maji mmaji.wordpress.com
	Billing, payment , meter reading, sales points, smart metering and consumption tracking	Maji Mashinani www.nairobiwater.co.ke
Accountability	Mapping/monitoring water sources to improve local planning and accountability	M4W m4water.org
		Field Level Operatives Watch (FLOW) waterforpeople.org/flow-mapping
Participation	Participatory budgeting	Ugatuzi ugatzi.info
	Citizen reporting	MajiVoice www.wsp.org

Case study

MajiVoice in Nairobi, Kenya



Speaker: **Stephen Mbugua**, Commercial Director, , Kenya

Five key attributes of good governance:

Transparency, responsibility, accountability, participation and responsiveness to the people's needs

Majivoice met these key aims

Nairobi Water is the biggest supplier of water in Kenya, supplying a city of four million inhabitants across 700km². Majivoice is software that aims to use technology to improve water services in Nairobi by making it easier for customers to report complaints.

The situation:

Nairobi City Water and Sewerage Company pioneered the adoption of MajiVoice, a system developed in Kenya to improve accountability in taking consumer feedback into account. The Water Services Regulatory Board of Kenya (WASREB) observed that nationwide utility response times and compliance in dealing with complaints, especially those from poor people in the informal settlements, was weak and unreliable. WASREB and the Water and Sanitation Program designed a national complaint handling system that would deploy ICT tools and strengthen links between utility providers and customers, and enable oversight by the regional board and Regulator.



The solution:

There are 30 million users of mobile phones in Kenya. To tap into this potential, the regulatory authority WASREB developed a mobile-centered platform - MajiVoice - which is now being pioneered in Kenya's capital by Nairobi Water. MajiVoice allows consumers to send in feedback using their mobile phones, to check complaint status at any time, and also provides utilities and regulatory authorities with an efficient system to process and analyse incoming complaints.

What can be achieved through MajiVoice?

- Customers can report an issue, such as a leak, or ask a question by text, through a simple mobile phone complaints menu, website, or calling or visiting a local office.
- Staff can deal with complaints easily using an online site, which provides customer background, history of complaints and can highlight ongoing issues to managers.
- Customers can be sent updates by text, including photos from engineers when they repair a leak.
- Majivoice has a programmed deadline that, if action is not taken, can escalate a case; complaints must be dealt with within 48 hours and the Commercial Director is notified if action is required.

The result:

Number of reported leakages has doubled since the introduction of MajiVoice.

Improved service performance through greater accountability:

- **Helping customers** voice critical service issues more easily (without needing to attend an office)
- **Enabling staff** to process and resolve complaints faster
- **Strengthen management and regulator** through better data (because it provides customer service data)

Challenges:

MajiVoice server is in the UK, but there are now local servers in local offices.
Some worries over security of the system, but was tested and shown to be secure.

In the future:

Hope that the system will be expanded and used by other utility providers in Kenya.



Joseph Pearce @josephpearce

MajiVoice ICT system spurs 50% increase in citizen feedback, water leakage reports to Nairobi Water #wwwweek



4 Sep

Case study

Video volunteers

Speakers: **Arundathi Vishwanath** and **Margaret Joeji**, India



VideoVolunteers
Empowering community voices

We train marginalised communities to produce

News, Watch It, Take Action & Devise Solutions.

Working across 23 states in India, the project is about supporting people to make videos about social justice and using these videos to bring about social change.

The project believes in the power of social change through media. It supports individuals to capture their voices and create impact.

Support of the community is vital for change. Community correspondents take videos with small, portable cameras, often capturing images during their everyday life. Local government is presented with the footage. Government can be grateful for issues being presented in a visually clear way that enables action.

Challenges:

How can you ensure the person comes through in footage?
People can often become camera shy or the camera does not do the person or situation justice. Films are presented as important as any news story. Getting people to recognise this is sometimes difficult.

Example: street cleaners, working for the government, were forced to clear canals without proper safety equipment. Margaret took a film and sent it to the project. The footage was reported to local government, providing tangible, visual evidence.

Sub-topic keynote

Using data for equity and sustainability

 Speaker: **Vincent Casey**, Technical Support Manager, WaterAid

Huge amounts of data can be collected, but how do we ensure it is used effectively?

It is vital to use data for decision making so the sustainability and quality of WASH services can be improved. Data can provide us with information about the reality of the situation on the ground.

Theory:

If data is collected, there will be improvement to WASH services because data can inform evidence-based decision making for extending WASH service delivery.

Reality:

There is yet to be a proven link between collection of data and improved services. The primary focus of the new ICT innovations is the collection of data, via smartphones or remote monitoring. Interpreting the information into knowledge and action, in the way of improving WASH, is an afterthought.

To achieve real impact, local government authorities responsible for the planning, rehabilitation and extension of water supply services must be involved.

Problems hindering the improvement of WASH services:

- Lack of focus of government-led monitoring at district level.
- Data collection is often well funded but rarely are there funds to support the local analysis, interpretation and transferring of knowledge into use.
- Local governments do not have budget for monitoring.
- Lack of reliable data to identify areas most in need and support evidence-based planning.
- Lack of access to appropriate instruments to support decision making.
- Lack of tools needed for decisions to be taken at district level.
- Lack of financial support, political will or external support .
- Often data will be collected, a map will be produced, but the project will stop and the potential to improve services will be missed.
- Often it will be clear what needs to be done, but no decision will be made.

“Water access and functionality data, especially in rural areas, is at best an estimate.”

Ato Tesfaye, 2009

Why do we need data?

“Nobody can tell water coverage at this point in time.”

F Kyengo, 2010



Nicolas Dickinson @waternote

Move from coverage to broader concepts of services #ict
#wwwweek result from IRC symposium: Vincent Casey



4 Sep

Solution:

LOCAL GOVERNMENT

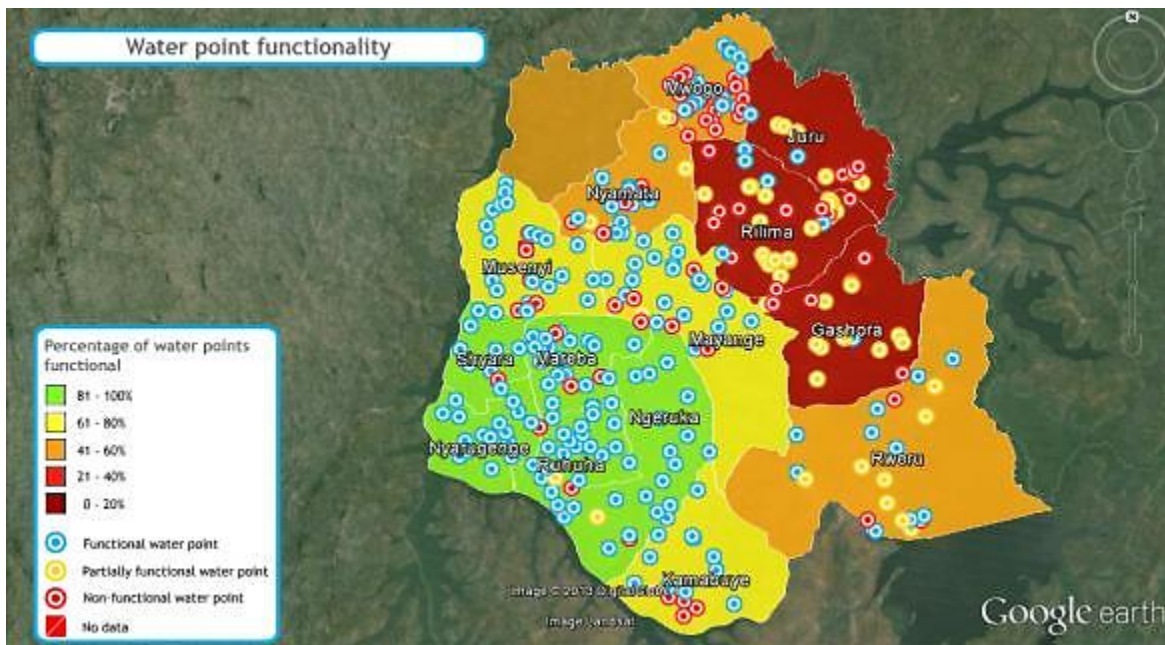
- Involve local government from the beginning.
- Data must be analysed by those responsible for decision-making.
- Regular data update to a central monitoring system where information can be continually used to inform planning and decisions.
- Produce maps (and similar) that clearly indicate where investment is required, ensuring they can be used easily at district level.
- Simplify the tools and make them appropriate for district capacity.

ACCESS

- Accessible to all stakeholders vital to encourage its use.
- Potential data users include citizens and water user committees.
- Ensure access to the data collected is transparent and available at the district level. It is crucial that data is in the public domain.

“Ultimately the value of mapping depends on the extent to which individuals and communities, as well as governments themselves, can use it for political and social mobilisation.”
Joseph Pearce, 2013

Rwanda: an example of success



Maps were generated by the **District WASH Coordinator** using the Water Point Mapper, a spreadsheet based tool.

The maps have been used to:

- increase the priority of WASH in district spending and planning
- increase external funding
- inform government and NGO resource allocation
- plan for rehabilitation and extension of water supply services

Case study

Informing mobilisation, planning and resource allocation in rural Ethiopia

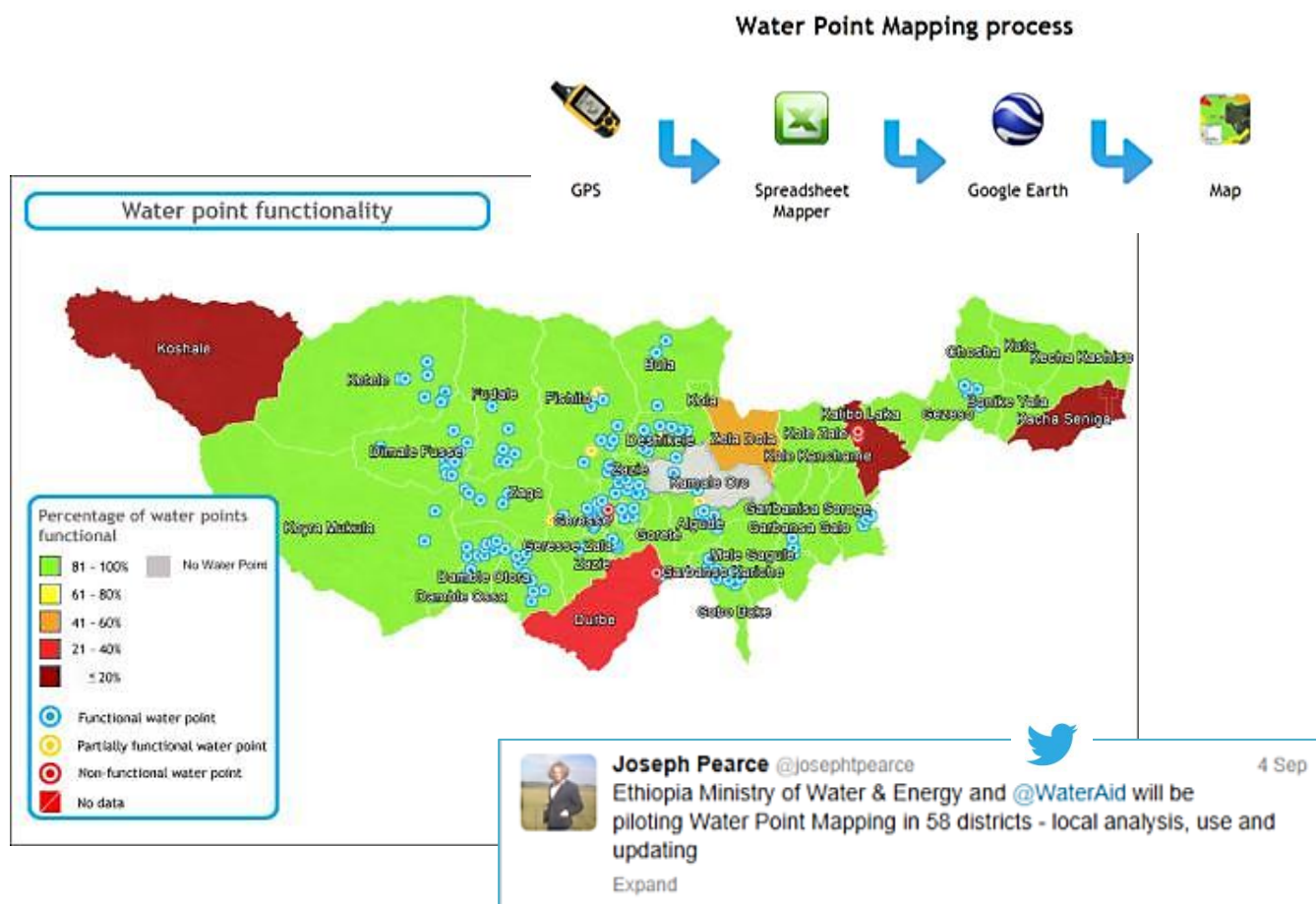
WaterAid Speaker: **Abera Endeshaw**, Senior Policy Officer, WaterAid

Government-led monitoring in Ethiopia aims to meet the Universal Access Plan 2015 to provide safe and sustainable water, sanitation and hygiene for all by 2015. The National WASH Inventory is a monitoring tool for the Universal Access Plan. There is some district government access of water point data but a limited capacity for analysis, interpretation, use and updating.

Water Point Mapping (WPM)

Monitoring has been developed by WaterAid Ethiopia to support government-led collection, analysis, use and updating of water infrastructure data. There has been a pilot in 14 districts during 2011-13.

Analysis, including maps, is created from the data collected, which helps demonstrate where investment is required, e.g. identifying the areas of greatest need or the main reasons for water point failure. WaterAid is delivering technical training so district staff can analyse the data collected.



Challenges and lessons:

- High and frequent turnover of technical staffs at district level
- Regular updating of the data (consensus that the district office should be responsible for updating)
- Accessibility of reliable internet for consumption
- The average investment cost for one woreda is 2,158 USD
- Close supervision and proper verification for quality issue

WPM results: using the maps and analysis to improve service delivery

- Decision makers are informed on where to spend funds in the coming year based on the functionality of water points.
- Districts are now well informed to plan effectively.
- The Government of Ethiopia has mainstreamed Water Point Mapping in the One WASH National Programme, signifying further support and success.

John Feighery @rocketboy76 4 Sep
Abera Endeshaw from @wateraid Ethiopia shows concrete examples of #ICT #water point mapping mobilizing funding to improve services #wwwweek

Specific examples:

North Achefer woreda (district in northern Ethiopia): The local government approved 1.4 million ETB for construction of new water points. In a country where 80-90% of treasury sources are used for staff salaries, this shows significant support. Using data effectively has also attracted external donors.

Bonke woreda (district in Southern Ethiopia): The district has mobilised 1.2 million ETB from the Canada Embassy by using the maps as evidences in their proposal.

Amanda Stevens @amandajulias 4 Sep
The service provider needs to be committed to acting on the data they receive. That's what's missing in #WASH #ICT - @wateraid #wwwweek

Post-implementation monitoring surveys (PIMS)

WaterAid has prioritised the sustainability of its interventions as part of its growing concern and commitment to providing service provisions that last. Post-implementation monitoring surveys across its country programmes enable WaterAid to monitor and assess water and sanitation services, and ensure these improvements, implemented through local partners and governments, have lasting benefits for all.

The development of the PIMS process has enabled WaterAid's country programmes to identify weaknesses, gaps in data, and challenges to the sustainability of the services they have delivered.

WaterAid has gained valuable insights into the benefits and challenges of using such technology to monitor the sustainability of services and it is hoped that through collaboration, knowledge sharing and collective learning, ICT can be developed to mitigate the numerous challenges of project monitoring within the WASH sector.

Case study

Rural piped water schemes monitoring in Senegal, Mali, Benin and Niger: Mwater



Speaker: **Fadel Ndaw**, Senior Water and Sanitation Specialist, Water and Sanitation Programme (WSP)

mWater is a mobile to web platform tested in Senegal, Mali, Benin and Niger for the monitoring and regulation of 252 water schemes. It focused on small towns, which are defined as between two to ten thousand inhabitants.

Piped schemes are mainly operated by private companies in these areas. These companies often have poor operational performances with a lack of knowledge about maintenance of the pipes or level of assets in the area. High water tariffs and poor coverage is common. There is also weak accountability, with no reporting to the regulator.

There are more than 3,000 private schemes providing water to ten million people. ICT was used as a tool to better monitor these schemes. Three layers of services were developed from data collected using mobile phones, leading to water operators improving their operations and enabling regulators to monitor the performance of water schemes. Information that was not available before is now available to be used by decision-makers. If you give value of the tool to operators this will help to ensure data is updated and a sustainable business model is created.



Fatou D. @LebouPrincess

"@fadel_ndaw: regulators use mwater to benchmark performances of water operators to better understand how the schemes are working" #wwwweek

Retweeted by World Bank Water



4 Sep

Senegal

Water points were referenced quickly, and data was transferred and integrated into the platform, which resulted in a 30% reduction of data collection costs. Regulators were able to identify priority sites with low saving capacity vs daily output.

Customers send 3 SMS per week detailing:

1. Reading of bulk water production meters
2. Balance of current and savings accounts
3. Number of malfunction days for the month



mWater creates a monthly report for each customer using the information received

Benin

Providers did not have as-built plans of assets but were able to develop a plan using the mWater tool and could better monitor and manage their expenses and identify the proportion of energy or maintenance costs. Mandatory reports to regulator were generated automatically.

In the future

1. The ICT platform should be linked to national regulation, monitoring and evaluation systems.
2. Financing of ICT services requires the development of a business model taking into account economy generated and avoiding increase of water tariff.
3. ICT services should be accessible to operators at local level (capacity building, proximity services and financing services).

Synthesis

One word: cooperation

But a unique form of cooperation: losing your operational name, working with blurred organisational lines, working together without competition, outside of our comfort zones.

John Sauer, Water For People

Successful ICT is about two things:

- 1) The people being able to understand the information, use the information, and act on the information.
- 2) Services: having a long-term vision for your ICT and WASH: finance? link to performance management? regulation?

KISS (Keep it to Services Sweetie)

Nick Dickinson, IRC

Conveners of the session

akvo.org

