

Report

Rural water supply in Ethiopia

A political economy analysis

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Cover photo: Women wait in line to fill their jerrycans with water in Tigray, Ethiopia. Photo credit: UNICEF Ethiopia/2014/Tesfaye CC BY-NC-ND 2.0.

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The project team comprises an interdisciplinary consortium of established researchers in physical and social sciences from:

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Acronyms

ADP	Amhara Democratic Party
AMCOW	African Ministers' Council on Water
DGID	UK Department for International Development
EPRDF	Ethiopian People's Revolutionary Democratic Front
FDRE	Federal Democratic Republic of Ethiopia
GIS	geographic information system
GLOWS	Guided Learning on Water and Sanitation
GoE	Government of Ethiopia
GTP	Growth and Transformation Plan
ICAI	UK Independent Commission for Aid Impact
INGO	international non-governmental organisation
JMP	Joint Monitoring Programme
M&E	monitoring and evaluation
MIS	monitoring and information system
NCBU	national capacity building unit
NGO	non-governmental organisation
NWI	National WASH Inventory
O&M	operations and maintenance
ODI	Overseas Development Institute
ODP	Oromo Democratic Party
OWNP	One WASH National Programme
PEA	political economy analysis
PMU	programme management unit
REST	Relief Society of Tigray
RiPPLE	Research-inspired Policy and Practice Learning in Ethiopia and the Nile region
RSU	regional support unit
RWS	rural water supply
RWSEP	Rural Water Supply and Environmental Programme
TPLF	Tigrayan People's Liberation Front
UAP	Universal Access Plan
UNICEF	United Nations Children's Fund
WASH	water, sanitation and hygiene
WASHCO	Water and Sanitation Committee
WHO	World Health Organization

Executive summary

Despite millions of pounds spent by charities, taxpayers and water users to increase access to water, many water points still break down prematurely or provide only seasonal access or poor-quality water to the rural poor in sub-Saharan Africa. The UPGro ‘Hidden crisis’ research project aims to understand why approximately a third of African rural ground water sources fail, delving into the technical, political, mechanical, managerial and hydrogeological conditions that drive either failure or success in rural water supply (RWS) programmes.¹ This study examines the political economy of RWS in Ethiopia, using a literature review and interviews with government staff and water sector stakeholders to unpick systemic obstacles to sustainable access to water.

Rather than ensuring existing water services are well maintained, there is pressure within the Government of Ethiopia (GoE) to expand coverage to people that are not served by improved water services. Achieving Sustainable Development Goal 6 – to ‘ensure availability and sustainable management of water and sanitation for all’ – will indeed require investments in coverage; however, the focus on expanding access has detracted from the imperative to build strong institutions that can quickly identify

and manage water point failure, especially at the subnational level. This research identifies patchy information management systems, insufficient investments in human capacity and local management arrangements, a slow-moving supply chain and a lack of accountability to water users as the major factors constraining more sustainable water services.

Many of these factors hampering sustainable investment in the water, sanitation and hygiene (WASH) sector are not unique to Ethiopia, nor can they be fixed by project-type approaches. Furthermore, the sheer diversity between and within Ethiopia’s regions means that there is no blanket solution to rural water point sustainability. Still, there is room for manoeuvre within Ethiopia’s political and institutional frameworks to improve outcomes for sustainable water supply. One promising avenue is to support efforts for data collection on functionality and to invest into water resource mapping. Another would be supporting local WASHCOs (Water and Sanitation Committees) to become legal entities with clear roles and responsibilities. Lastly, recent experiences of drought have provided a window of opportunity to reframe priorities in the WASH sector for a greater focus on sustainability.

1 See <https://upgro.org/> to learn more about the research project and findings.

1 Introduction

1.1 Background

A major gap in understanding water point functionality is pinpointing the extent to which service failures can be attributed to local institutional arrangements (e.g. Water and Sanitation Committees (WASHCOs)), as opposed to the broader societal structures and dynamics shaping an environment in which failure is more or less likely (i.e. factors beyond the control of communities). This suggests a need to complement the study of water points and their users with a diagnosis of the wider political economy of water governance and service delivery, analysing the workings of plural

institutions operating at multiple scales and the distribution of power and resources among key actors, which have a bearing on service outcomes (Franks and Cleaver, 2007; Mollinga, 2008; Harris, 2011; Pahl-Wostl et al., 2011).

Here we present preliminary findings from the political economy research conducted in Ethiopia in 2016 under UPGro's 'Hidden Crisis' project. Although fairly light-touch, given the time available for fieldwork, the analysis reveals some of the historical features of Ethiopia's development trajectory, motivations and drivers of Ethiopia's rural water supply governance, and WASH institutional characteristics, particularly those which contribute to water point failure.

Box 1 What is political economy analysis?

The acknowledgement that politics matters has been one of the trademarks of international development thinking and practice over the last decade (Matoso, 2016). Several authors have argued that political and economic factors intrinsically influence whether and how reforms happen, and that poor performance cannot be explained by technical or managerial factors alone (Fritz et al, 2009; Hudson and Leftwich, 2014).

Regarding the water sector, Molle (2009) maintains that the development and management of resources is inherently political, characterised by shifting political alignments and contestations. Social and political structures, and differentials in access to various forms of capital, shape power relations, interests and positions and therefore decisions, stakes and claims to water resources (Cabral, 1998; Madison, 2007).

Political economy analysis (PEA) has emerged as a useful approach to understanding the dynamics surrounding national and sectoral policy-making and implementation, and has usefully been applied to the water supply and sanitation sector in a number of contexts (e.g. Harris et al, 2011). PEA provides a 'systematic approach to analysing relationships between key structural factors (such as historical processes and environmental issues), institutions (formal and informal rules, norms and arrangements) and actors in a given country or sector context' (Jones, 2015; see also Landell-Mills et al., 2007; Duncan and Williams, 2012). Such analysis can be used to support more politically and culturally feasible development strategies, helping to set realistic expectations of what can be achieved and identifying potential entry points for intervention (Booth and Golooba-Mutebi, 2009).

Source: Oates et al. (2018)

1.2 Research aim and objectives

The aim of the political economy research component of UPGro project ‘Hidden Crisis’ is to contribute to an understanding of the underlying factors that influence water point (non)functionality, specifically those pertaining to the wider political, institutional and social context of service delivery. Key to this is understanding the motivations and strategies of the actors involved, and the constraints they face in ‘getting the job done’. The research includes investigation of both formal institutions (their mandates and actions) and informal arrangements or interactions that contribute to shaping decisions and determining outcomes.

Our research follows a ‘problem-driven’ approach to political economy analysis (PEA), meaning that the focus is on a specific issue, or set of issues, with a view to identifying ways in which these might be addressed, rather than providing a general analysis of the sector. We adopt the framework developed by colleagues at ODI in which the problem is conceptualised and analysed according to three layers: (1) structural factors; (2) actors’ decision-making logics; and (3) ‘room for manoeuvre’ (described in Figure 1) (see Booth and Golooba-Mutebi, 2009; Harris et al., 2013).

In line with this framework, our research questions are:

1. What are the systemic constraints that actors face in delivering sustainable rural water supply (RWS) services? (Systemic constraints

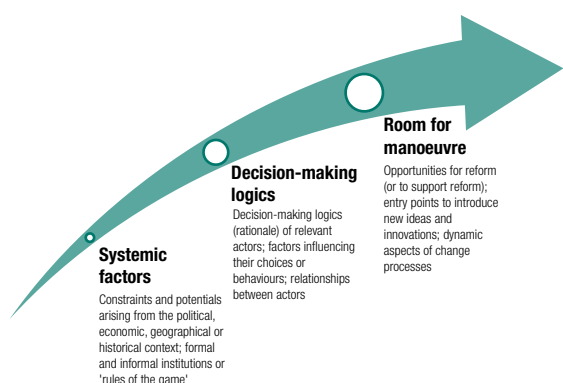
being those arising from historical legacies, institutions (formal or informal) or other contextual factors (e.g. geography).)

2. What power and influence do different actors have over the policy-making and implementation process, and what are their incentives and motivations? What strategies do different actors employ to ‘get the job done’?
3. What are the outcomes for RWS sustainability and what opportunities exist to support better outcomes?

The specific objective of the PEA fieldwork in Ethiopia was to interview a range of key stakeholders in the RWS sector, at national and district level, in order to:

1. **determine the relative significance of bottlenecks in the service delivery chain** – from the enabling environment (policies, planning and budgeting, monitoring) to development of water points (targeting of investments, siting, construction) and their subsequent management (community institutions, backstopping support, supply chains) (see Table 1)
2. **begin to unpick the reasons underlying bottlenecks** – looking at the stakeholders involved (their capacities, motivations, constraints), institutional structures and processes (formal or informal), and the broader political and economic context that has a bearing on RWS service delivery
3. **make recommendations** to the UPGro ‘Hidden Crisis’ team regarding in-country project engagement and communication.

Figure 1 A layered approach to PEA



Source: adapted from Mosello et al. (2017).

1.3 Data collection

Data collection for this report involved the following:

Literature review: a rapid desk-based review of country-specific secondary literature on RWS was undertaken to identify key actors, governance issues and sector bottlenecks. This literature was used to inform interview questions and to strengthen analysis.

Fieldwork: interviews were conducted in Ethiopia in November 2016 and February 2017.

Florence Pichon (ODI) conducted the fieldwork, accompanied by Roger Calow (ODI) and Seifu Kebedu (Addis Ababa University). Additional support for triangulating findings was provided by Gossa Wolde (WaterAid/UPGro).

The team was based primarily in Addis, where WaterAid's office, Addis Ababa University, government ministries, development partner organisations and (I)NGOs are located. Four days were spent meeting regional water bureaus in Bahir Dar, Amhara, the zone in South Gondor, and two *woredas* in Amhara – Kobo and Lay Gaint. These *woredas* were included in the UPGro programme. An additional day was spent with the Oromia Regional Water Offices, based in Addis. The *woreda* governments in Amhara were selected for their experience of water stress during the 2015/16 El Niño drought, during which they were classified as 'Priority 1' through the government's humanitarian response mechanism.

Interviews: 16 semi-structured interviews were conducted with key actors in the sector.² Interviewees were purposively selected based on their current role, knowledge, experience, and willingness to meet. This included representatives from:

- *woreda* water bureaus in Kobo and Lay Gaint;
- zonal water bureaus in South Gonder;
- regional water bureaus in Amhara and Oromia;
- civil servants at the federal level working on water, sanitation and hygiene (WASH) and involved in the WASH Emergency Task Force;
- major NGOs in the WASH sector based in Addis, including Save the Children, Oxfam, World Vision and WaterAid;
- donors funding and implementing water supply projects, including the UK Department for International Development (DFID);

- consultant working on the National WaSH Inventory;
- consultants studying the drilling sector in Ethiopia.

Questions were tailored to the interviewee depending on their area of expertise, covering specific aspects of the service delivery chain and subtly probing to understand the political economy dynamics at hand. We were particularly interested in how participants perceived problems and their own role in addressing them, as well as the ways in which actors 'get the job done' in spite of various constraints. We concluded some of the interviews by asking the participant how the UPGro 'Hidden crisis' research might be useful to their work, which other stakeholders should be targeted, and recommended forums or formats for engagement and dissemination.

Stakeholder mapping: at the end of the fieldwork, a stakeholder mapping exercise was undertaken with three representatives from WaterAid, including members of the policy and programme teams. This exercise helped us to reflect on the interview findings and to visualise the relationships between actors in terms of their relative influence on and interest in the long-term functionality of RWS. The results of the exercise are intended to inform project engagement strategies with different actors (Figure 2).

1.4 About this report

This report presents findings from fieldwork conducted in Ethiopia in 2016. First, the report examines important systemic factors constraining sector performance, including the status of the water sector in national plans and policies; political decentralisation and the subsequent decentralisation

Table 1 Key components of the service delivery chain

Enabling environment	Developing services	Sustaining services
Policy and legislation	Targeting of investments	Waterpoint management, operation and maintenance
Planning and budgeting	The siting process	External support/backstopping
Monitoring and regulation	Waterpoint construction	Supply chains for spare parts

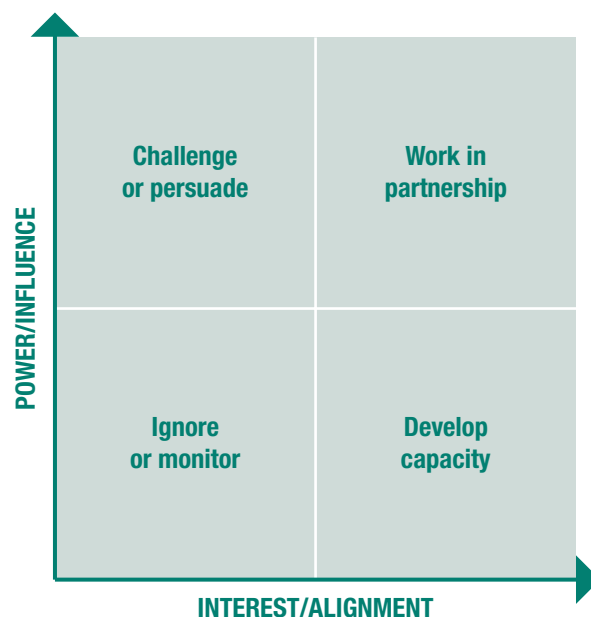
Source: adapted from African Ministers' Council on Water (AMCOW) status overviews.

² All individuals were very willing to participate and showed interest in the UPGro 'Hidden crisis' research.

of service delivery; systems that monitor water point functionality; and significant human and financial resource constraints. Second, the report looks in more detail at the actors involved and their interests and influence on service delivery. This includes national and district government offices, development partners (international non-governmental organisations (INGOs)), the private sector and, to a lesser extent, local communities. Finally, the report provides preliminary conclusions and recommendations to UPGro partners vis-à-vis project engagement in Ethiopia.

The election of a reformist prime minister in 2018 will have significant implications for Ethiopia's political landscape and economy from now into the 2020 elections. These political shifts will affect service delivery in Ethiopia. As of February 2019, the findings in this report on Ethiopia's water sector are still relevant. The results of this study, however, may become out of date as the effects of political reform trickle down to the water sector.

Figure 2 A matrix to map actors' influence on and interest in a given outcome or project objective



Source: adapted from Young et al. (2014).

2 Structural and historical factors

2.1 Recent political history

2.1.1 The rise and dominance of the EPRDF

When it emerged from civil war in 1991, Ethiopia was among the poorest countries in the world, with little to show in the way of basic public service provision and economic output. Rural infrastructure was limited and water supply coverage was virtually non-existent, with only 3% of the rural population accessing drinking water through improved sources (WHO/UNICEF, 2015). The memory of the devastating famine in 1984 was still fresh, and the decade-long conflict had deepened persistent food insecurity in rural areas.

The transitional government was established after the Ethiopian People's Revolutionary Democratic Front (EPRDF) took power, ousting a communist military regime known as the Derg. Though the EPRDF was a coalition of various resistance movements, it was primarily led by the Tigrayan People's Liberation Front (TPLF). The EPRDF's agenda promoted the agricultural peasantry, a group that formed their constituent base during the civil war. Broadly speaking, the EPRDF's position reflected a national ideological persuasion favourable to rural service provision and which institutionalised ethnic federalism.

The EPRDF coalition still comprises four parties (Amhara Democratic Party (ADP), Oromo Democratic Party (ODP), the Southern Ethiopian People's Democratic Movement, and the TPLF), and was controlled by the TPLF until very recently. The election in April 2018 of a reformist prime minister, Abiy Ahmed, marked the first time a leader was chosen from Ethiopia's largest ethnic community, the Oromo (Matfess,

2018). Abiy Ahmed's position represents a historic redistribution power within the EPRDF and opens space for some political competition (Jeffrey, 2019; Gebreselassie, 2018). Abiy Ahmed's tenure to date has focused on issues of national reconciliation, promising multi-party elections in 2020, signing a peace agreement with neighbouring Eritrea, and initiating consultation on laws governing civil society and media that organisations like Human Rights Watch had characterised as 'repressive' (Burnett, 2018).

2.1.2 Nation-building through a new constitution

The transitional government drafted a new constitution in 1994 to decentralise power through an ethnic federalist system with devolved political, fiscal, and administrative power (Lenhardt et al., 2015). The constitution, ratified in 1995, gave responsibility for service delivery to the lowest level of government for the first time. Notably, it also created a political arrangement based on ethnic identity that defined nine new regions and two chartered cities, Addis Ababa and Dire Dawa. The new constitution granted the right of 'self-determination' to the ethnic groups in the country (1995 Constitution, Art. 39), stating:

Every Nation, Nationality and People in Ethiopia has the right to a full measure of self-government which includes the right to establish institutions of government in the territory that it inhabits and to equitable representation in state and Federal governments. (1995 Constitution, Art. 39, No. 3)

The decentralisation process was designed to meet the needs of an ethno-linguistically diverse population and maintain peace after a long civil war. Decentralisation allows regions some autonomy in creating policy and facilitates multi-ethnic representation at the national level. Still, key informants stressed that national targets and priorities do trickle through to regional policies, and local governments are often compelled to follow higher-level directives and help meet nationally-set targets (see section 3.5 for more detail). The recent changes in Ethiopia's political arena have opened space to potentially contest the existing model of ethnic federalism, though to date these thorny questions have not materialised in constitutional changes.

2.1.3 Progress in poverty reduction

Ethiopia's far-reaching constitutional reform has been followed by remarkable development progress. In 2015, Ethiopia was heralded by the international community as one of the few countries that met most of its MDGs. Poverty has declined rapidly, from 63% of the population in 2005 to 26% in 2011. Material conditions improved, with a dramatic rise in GDP per capita from \$111 in 2002 to \$767 in 2017 (World Bank, 2017). Alongside economic growth, the country led gains in primary enrolment education, access to safe water, and reducing under-five mortality (Lenhardt et al, 2015; UNECA et al., 2015). Provided the country maintains its current accelerated pace of economic development, a recent World Bank report predicts that Ethiopia will become a middle-income country by 2025. The report notes that rapid growth in the agricultural sector, a recent boom in the service sector and the Government of Ethiopia's (GoE) public infrastructure investments have contributed to Ethiopia's poverty reduction and economic growth (Moller, 2015).

Underpinning these achievements are Ethiopia's ambitious development plans that place poverty reduction and pro-poor spending at the centre of government strategy. Since 2010, successive Growth and Transformation Plans (GTPs) have guided the country's policy on GDP growth, social development and infrastructure investments. The current (GTP II) plan's vision is

bold, often going beyond the aims of the MDGs or subsequent SDGs. GTP II, which runs from 2015 to 2025, builds on the original GTP's broad-based economic growth, but acknowledges that Ethiopia's economy has not yet achieved the structural change envisaged in GTP I. Through GTP II, the government renews its commitment to inclusive and pro-poor development strategies, with a strong emphasis on developing the manufacturing and agriculture industries and investing in rural service delivery.

2.2 Decentralisation

In 2003, the government instituted a second wave of decentralisation. This created 805 *woredas*, Ethiopia's primary unit of local government that contains important sector departments including health, education, water supply and agricultural extension. Underneath these *woredas* sit *kebeles*, or village areas with a population of about 5,000. In the most populous regions of Ethiopia, zones were introduced as an intermediary administrative body above *woredas* and under the regional governments, though their oversight over *woredas* varies from region to region.

Alongside administrative decentralisation, fiscal decentralisation is relatively well established through transfers of block grants from central to regional governments. On paper, the transfer scheme is based on equity in service delivery for all Ethiopians, and respective allocations are determined by a set of criteria that includes each region's population, expenditure needs and revenue-raising capacities. Regional budgets are still largely dependent on transfers from the central government: the highest share of regional budget coming from internal revenue was 19.95% in 2009/10. The revenue-generating capacity of subnational governments is even more constrained at the *woreda* level due to limited institutional capacity and, in some cases, poor budget control (Ludi et al, 2013).

Fiscal decentralisation at the *woreda* level works similarly to at the national and regional levels. Regions are free to determine their own formula to distribute block grant resources to the *woreda*, as long as resources are allocated in a transparent rules-based manner. In a recent

study, Assefa (2015) found that there has been a gradual increase in the share of government expenditure by regional and *woreda* governments, though, as noted, the subnational governments' limited capacity to raise revenue internally results in vertical imbalances in the fiscal system. Furthermore, budget from block grants does not always enable subnational governments to allocate resources to respond to constituents' needs. A 2008 study found that most block grants to *woredas* were absorbed by recurrent costs. The remaining budget for capital, which amounted to about 5%, was determined from directives from zonal finance and economic development offices, leaving *woredas* with virtually no autonomy over their capital expenditure (Development Finance International, n.d.).

Though decentralisation legally vests power to lower administrative units, national priorities can influence administrative decisions at lower levels of government. Local governments are (in effect) accountable to higher-up bureaucracies, as well as to their constituents. Because the central government retains significant influence on priorities through the EPRDF, subnational governing bodies may lack the discretion to respond to local needs if they are at odds with the dominant political agenda, and lower tiers of government often follow directives and nationally-set indicators (see section 3.5).

2.3 Key WASH sector laws and institutions

Before examining governance factors that affect RWS in Ethiopia, this section provides a brief overview of water point access in Ethiopia and the institutions that are designed to deliver RWS.

The evolution of Ethiopia's formal water sector began in 1995 when the GoE established a Ministry of Water Resources and deconcentrated regional water bureaus tasked with policy, coordination, and regulatory functions. The first water sector policies, articulated in the water sector strategy documents, promote community management and participation of all stakeholders in water resource management. They also advocate for local communities to take full responsibility for operation and maintenance costs. The 2003 water sector strategy states that Ethiopia's water

resources development should be rural-centric and decentralised (OpenWASH, 2016).

These basic tenets are reflected in more modern articulations of Ethiopia's major water policies and programmes – the revised **Universal Access Plan (UAP) II**, and the **One WASH National Programme (OWNP)**. These initiatives operate under the principle of decentralised basic services, with horizontal coordination between relevant ministries and responsibilities for delivering services progressively devolved to lower levels of government.

In 2005, the UAP set out explicit national targets for water supply and sanitation across Ethiopia, for rural and urban areas. The plan was revised to reflect the targets in the GTP II, which aims to provide 85% of the rural population with access within 1.5km to 25 litres per capita per day of potable water by 2020, and 75% of the urban population with access within 250m to 40 litres a day per capita. The revised plan endorses lower-cost technologies and self-supply, in which individual households are tasked with building or improving their water sources (Ludi et al., 2013). Though the plan has not seen the intended results within the ambitious timeframe, there has been substantial growth in rural water coverage since the first UAP was developed. Given Ethiopia's population growth, however, the absolute numbers of those without access to water remains fairly constant (Lockwood and Bekalu, 2016).

More recently, the OWP folded UAP targets into its framework for promoting a well-coordinated approach to WASH in rural, urban and pastoral contexts. The OWP pulls the strategies of previous government water policies into a comprehensive framework to align planning, funding and monitoring for Ethiopia's WASH sector. The programme is designed to promote strategic harmonisation between the finance, water, health and education sectors to meet WASH targets, and establishes a coordination structure at national, regional and *woreda* levels comprising National WASH Steering Committees, National WASH Technical Teams, WASH Programme management Units, and Wash Coordination offices. A two-stage roll-out is planned, with the second phase lasting through to 2020.

Over time, the GoE's rural water strategy has adopted a number of different service

delivery models, now including community contracting (under the CMP project, currently in its third phase) and facilitated self-supply. All are based on a set of community management principles, either explicit or implicit, that place responsibility for operations and maintenance on users. While critics of the voluntary community-based management model refer to it as the state abdicating its responsibility for public services, proponents point to the model as a way of building community ownership for infrastructure and expanding access within the realistic resource and capacity constraints of a low-income country.

2.4 Geography and environment

Ethiopia has relatively plentiful groundwater supplies, but its geology makes drilling challenging compared to river deltas or plains in other countries (Weight et al., 2013). The topography is diverse, with highlands, midlands, lowlands and the Great Rift Valley dividing Ethiopia into two major plateaus. This topography combined with limited road infrastructure renders some rural areas very difficult to access (*ibid.*). In Amhara, regional and district-level officials identified inaccessibility as a serious challenge for expanding RWS. The government may conduct a hydrogeological study and determine that a

borehole should be drilled, but execution remains impossible because drillers cannot transport construction materials over escarpments where roads have not yet been developed.

Climate, too, plays a role in Ethiopia's economic development and in RWS specifically. The GFDRR (2011) links Ethiopia's propensity to drought to five famine events in the past 35 years. The GTP II states that 'unanticipated natural disaster, like that of drought, is likely to be the major threat for achieving economic growth target.' Drought in Ethiopia has serious implications for rural water security; ground water can play a role in buffering the impacts of low rainfall but accessing it becomes problematic when shallow sources like hand-dug wells fail (Calow et al, 2010).

Fieldwork for this report was conducted in November 2016, shortly after a severe El Niño weather event triggered a drought in northern Ethiopia. World Vision conducted a real-time water point monitoring study at the height of the drought (January–March 2016). The study, which was not published, showed that 85% of hand-dug wells had failed by January 2016 (see Box 2 in section 3.3). The 2016 drought highlighted that Ethiopia's investments into improved sources, particularly for low-end technologies, are vulnerable to the country's climactic variability.

3 Bottlenecks to sustainable rural water supply

3.1 Pressures to expand coverage

The first bottleneck to service delivery is low political (and correspondingly poor budgetary) prioritisation of operation and maintenance. Though policy documents like the UAP stress that at least 15% of total financial requirements for achieving WASH goals should be dedicated to ‘rehabilitation and expansion’ of *existing* rural water schemes, the bulk of WASH sector investments are dedicated to creating new schemes.³ As schemes proliferate, there has been no corresponding increase in the budget for rehabilitation work. In the short term, the strategy is effective for enabling the GoE to climb towards the coverage targets set out in the UAP and the GTP II. The focus on expanding access, however, crowds out investment into the softer elements of water provision – the skills, equipment and resources to maintain existing infrastructure – and calls into question the sustainability of the existing strategy.

Regional officials in Amhara and Oromia emphasised that planning rehabilitation of schemes comprised only a small fraction of their work, which was instead largely focused on expanding coverage. Nationwide, capital spending accounts for roughly 80% of the total budget (Lockwood and Bekalu, 2016). At the *woreda* level, capacity to maintain infrastructure is minor, and *woreda* budgets reflect this. In Kobo, only about 4% of budget was allocated to

maintenance, though *woreda* officials mentioned that *kebeles* had consistent issues with water point failure. Investing in rehabilitation is not rewarded by regional or zonal governments. Budgetary allocation from the region can even depend on the *woreda*’s history of investment in new schemes: one key informant at the zonal level explained that more ‘active’ *woredas* (i.e. those that focused on expanding coverage) could receive more budget the following year.

There are a multitude of reasons for unbalanced capital versus rehabilitation expenditure, and the problem is not specific to Ethiopia. In Ethiopia, however, there are four broad reasons for sector-wide investment in new infrastructure. The first, and perhaps most obvious, is to serve the proportion of the rural population that still lacks access to improved services. The water sector attracts resources because it is a key poverty reduction sector, and the EPRDF have shown a continued commitment to rural service provision since taking power in the early 1990s. Water scarcity, too, is a push factor for internal migration by the rural poor. In discussions with *woreda* government officials in SNNPR and Amhara, the government appeared to be trying to limit large-scale relocation of populations by ensuring basic service provision. Water access is clearly important for people’s material conditions, and providing basic services is part of the government’s longstanding rural development strategy.

3 UAP detailed expected financial requirements for new scheme construction, rehabilitation and expansion, and miscellaneous expenses between 2011 and 2015. These expected costs were broken down by region but were not binding.

A second factor in the strong emphasis on expanding coverage is the government's outward-facing ambitions. The GTP II makes clear that the GoE aims to join the ranks of middle-income countries by 2025. Transitioning to middle-income status would be a symbolic victory for the Ethiopian government, distancing it from an international reputation still coloured by the infamous 1984 famine and recurrent food insecurity (such as the severe El Niño drought in 2015). Though middle-income country status is defined in per capita economic terms, and not measured by service provision, ensuring water access for all is one of the GoE's methods of demonstrating broad-based and equitable development. Achieving national targets is a vehicle for international recognition and securing status as a development success story at a time when the EPRDF's hold on power has recently been challenged by pockets of resistance in Oromia and Amhara in 2016.

A third reason for the strong emphasis on capital investment is donor complacency. According to a key informant, donors have done little to demonstrate the value of investing in water point maintenance. Donors hold particular sway in the web of development actors working in the WASH sector, but they have favoured alignment with the GoE-led approach to WASH and are increasingly channelling investments into the Consolidated WASH account. Supporting national institutions reduces fragmentation and duplication across donors and ministries, but pooling funds can also reduce donors' ability to emphasise a sustainability agenda. A 2016 report by the UK Independent Commission for Aid Impact (ICAI) assessing DFID's WASH investments points out that, 'DFID programmes assume that governments will take responsibility for WASH facilities', effectively passing the responsibility onwards rather than undertaking systematic sustainability checks (ICAI, 2016). In a value for money analysis of DFID's WASH 2013–2015 contributions, rehabilitation of water points was not mentioned as a major activity in Ethiopia (though it was in Bangladesh and Nigerian WASH programmes). DFID measured its contribution to progress by tracking 'cost per person who gained access to new public water point' – an indicator that skews programme

achievements towards new investments, rather than investing into existing systems (Oxford Policy Management, 2015).

Last, and perhaps most important, Ethiopia's community management model assumes communities themselves can sustainably manage water points. With operations and maintenance (O&M) costs theoretically covered by communities, there is no need to allocate additional budgets or ensure systems are in place to provide regular servicing or repair of equipment. Though key informants at the federal, regional and *woreda* level admitted rural WASHCOs are often incapable of dealing with technical or financial issues that arise, Ethiopia's rural water provision is dependent on their capacity to maintain water points. *Woreda* water offices are ostensibly responsible for providing backstopping support, but backstopping responsibilities are not clearly defined and *woredas* have limited capacity (human, financial and technical) to provide periodic support to WASHCOs (see section 3.3). The system is governed by a basic rule of thumb: if there is no news from the WASHCO, the water point must be working.

3.2 Patchy monitoring and information

3.2.1 The challenges of designing – and maintaining – a monitoring and information system (MIS)

The emphasis on demonstrating progress towards national WASH targets (see section 2.1) has imbued data collection efforts with a political undercurrent. Accurately tracking non-functional water points may force the government to revise access figures downwards, raising questions about the sustainability of WASH investments that expanded greatly over the past decade. As it stands, WASH results are reported by the government as outputs (schemes constructed, for instance), with no information about the yield, quality and consistency of water access. Beneficiary numbers are estimated from a standard planning format, without verification of the actual number of users benefitting from a particular water point (key informant). The politics of data are not unique to the WASH

sector (demographic data, for example, is also highly sensitive), but in the WASH sector this sensitivity can discourage government authorities from investigating and reporting failure that reduces downstream access.

The primary mechanism through which the government updates data on the functionality of water points is through the National WASH Inventory (NWI). Prior to the first NWI in 2012, the government reported that 79% of the rural population had access to improved sources – a major discrepancy with independent data collected through the World Health Organization (WHO) and UN Children’s Fund (UNICEF)’s Joint Monitoring Programme (JMP). The NWI was a serious upset to the official narrative on water sanitation and access, readjusting Ethiopia’s water access figures down to 52% of the rural population. The NWI audit showed that more than a quarter of existing water points were non-functional. The audit also introduced a new method of calculating access figures, adding the metric of distance to the scheme (Welle, 2013). Users who resided within 1.5 km of the facility were counted as beneficiaries, rather than a lump sum of users that a particular scheme could potentially serve (270 for a hand-dug well, for instance). The combination of discovery of non-functional water points and introduction of a new calculation methods required a substantial downwards revision of Ethiopia’s data on water access.

While useful as a reality check on water access figures, the NWI raised a few concerns. First of all, the first NWI cost \$5 million. Logistically, it was a major undertaking, requiring about 70,000 data collectors (Open University, n.d.). The price tag, human resource demands, and the time required for a one-off inventory limits possibility of integrating the method into ‘normal’ data tracking methods. Secondly, ownership of the results was limited largely to the federal level, where staff had access to computers and were able to understand the database (Welle, 2013). A significant gap remains to achieve universal access that cannot be overcome without subnational governments. *Kebele* and *woreda* governments require access to the same data that informs decision-making at the national level, and will need to integrate a consistent

methodology into their data collection efforts to sustain such an expansive national data set.

A second WASH inventory is planned for spring 2018, and the initiative is designed to build the government’s capacity to maintain the data set themselves. The inventory will track a set of core performance indicators that demonstrate functionality, and which inform government progress towards national targets. As with the first NWI, the initiative is donor driven, and still subject to the same issues of ownership and sustainability that limited the long-term success of the first NWI. When asked, a technician in the *woreda* water office of Lay Gaint was aware of the second NWI undertaking, but was not aware that collecting the data was intended to be a continuous endeavour. The rationale for undertaking a NWI cannot only be understood at the federal level, but must make sense to staff at *woreda* and *kebele* levels of government. Sharing this information combats the mentality that data collection is a one-off effort, or confined to the rhythms of projects.

In the Somali region, the second NWI is moving away from paper-based data collection and adopting smartphone technologies that allow the government to improve data collection. However, this change does not itself make data or results available at the *woreda* level. Expanding objective reporting systems to determine coverage percentages is not the goal of the initiative. Information should be used at the *woreda* level to respond to the estimated 20–40% of schemes that are not working (key informant). At the *woreda* level, there is greater potential to address the nuances of functionality to understand the consistency and quality of water flows. At the national level, the monitoring and evaluation (M&E) system is still reliant on a binary ‘functional’ versus ‘non-functional’ understanding of the water provision that people actually receive at the source.

3.2.2 Siting without mapping

In addition to an incomplete database on functionality, hydrogeological maps for water supply in geologically-challenging contexts are not available to government staff. As of yet, Ethiopia has no aquifer-scale groundwater assessment, and national-level

civil servants cited this as a major constraint to the sustainability of water infrastructure investments. The government has detailed maps of some landscapes for irrigation, but mapping programmes do not meet the needs of the WASH sector (key informant).

When it comes to drilling boreholes and shallow wells, the responsibility falls on the regional water bureau to conduct hydrogeological investigations and oversee drilling operations on behalf of the *woredas*. Regional governments contract work to private or state enterprises, and contracts are based on works completed, which is mostly assessed on the well's depth rather than whether it produces water. Due to contracting arrangements, and because borehole siting and design is completed by regional governments, the drillers are not responsible when boreholes fail to produce.

In many aquifers, yields vary over short distances, which can render siting with incomplete information particularly challenging (UNICEF and Skat Foundation, 2016). Required borehole depth is often overestimated in tender documents to compensate for uncertainty, which raises the costs of drilling. Still, the country has a relatively high drilling success rate, reaching 75–85% in the highlands: regional officials estimated that it was 80% in Amhara in 2015 (RWSN and WSP, 2006; key informant). In the lowlands, the success rate can drop to 60% in areas with low potential (key informant). Information about why boreholes fail is not available, however; this data does not appear to be logged and maintained to inform future assessments. Though improved hydrogeological knowledge may not change success rates in areas where they are relatively high, it could lower costs of drilling by making required depths more accurate.

Though poor siting can result in unproductive boreholes or high drilling costs, in Ethiopia it does not appear to be an opportunity for corruption. In a study of Ethiopia's rural water sector, Calow et al. (2012) do not find any evidence of a siting bias that would demonstrate that regional water bureaus give preferential treatment to powerful actors when choosing where to site boreholes and shallow wells. Regardless, the study recommends strengthening government oversight of drilling programmes to

ensure shallow wells are constructed according to norms and provide sufficient yield.

In the absence of aquifer scale assessments or technical guidance for siting, government staff are left with only a patchwork of hydrogeological information from government irrigation projects and from project-led NGO work. Project-based mapping remains the norm across the country. USAID and UNICEF are using geographic information system mapping (GIS) to create hydrogeological maps for their own projects in Afar and Somali, but the assessments are limited in scale and rely on expertise from outside Ethiopia. Systematic information about groundwater conditions is needed to support better siting and design, improve decisions about suitable equipment, and help mitigate issues of limited technical human capacity in subnational governments.

3.3 Capacity constraints when 'the priority is always drilling'

Lack of capacity, or need to build capacity, is a tired refrain in water sector failure across sub-Saharan Africa. Still, it remains one of the greatest blockages to sustainable service delivery in Ethiopia. The OWNPN identifies capacity gaps at all levels as 'one of the most pervasive threats to the successful implementation of the program' (OpenWASH, 2016). The GTP II reiterates the focus on capacity constraints in the sector, and the implementation strategy for water supply includes capacity development and rehabilitation of water supply schemes. The declaration is a slightly watered-down version of commitments in GTP I, which defines 'capacity building at all levels of water resources management' as a key pillar of its implementation strategy.

3.3.1 Efforts to build human capacity

On paper, there are units dedicated to building capacity for government staff, subnational institutions and WASHCOs. The Ministry of Water, Irrigation and Energy has a human resources management directorate, which plays a role at the federal level but has minimal involvement in capacity building in decentralised ministries at the bureau and office level (Mattila and Worku, 2012). Programme management units (PMUs), responsible for implementing

Box 2 The politics of data: the El Niño drought

Good information alone is not enough to solve the problem of water point failure, and blaming the incomplete patchwork of existing data and the antiquated data collection methods is not a satisfactory explanation. The world's most sophisticated data collection technologies are no substitute for strong political will. Over the course of interviews and discussions with NGOs working in the RWS sector, one recent example encapsulated the shortfalls in putting too much weight on collecting good data.

In the spring of 2016, the GoE faced a severe drought triggered by an El Niño event. Anticipating a pressing water shortage and need to inform the WASH response, the government allowed UNICEF, Oxfam and World Vision to collaborate on a real-time WASH monitoring project. Enumerators collected information about water point functionality, water consumption per person and distance to every water point in the selected *woredas*.

The results of the monitoring project were politically unpalatable. Of the hand-dug wells, which form the basis of the GoE's strategy to expand access to water using low-cost technologies, 50% had failed; 42% of all water point types were non-functional. Worse yet, 43% of people were receiving less than five litres of water per person per day, below even the emergency threshold of six litres per person per day. As one key informant involved in the programme explained, the results were so shocking that 'it was hard to trust what we did.' This sentiment was shared by district- and regional-level governments, who had difficulty accepting the results.

The high rates of failure were radically inconsistent with the government's official narrative about expanding rural water access and progressing towards national targets. Though the data did not reveal which functionality problems resulted from the drought and which predated it, the results were not widely published. The project's second phase was cancelled. According to NGO staff involved in the project, the real-time data was treated as an 'expose' rather than as a tool to improve service delivery.

OWNP plans, operate at federal and regional level to ensure the subnational structures they coordinate and oversee have the necessary information and skills to carry out their respective WASH mandates. At the regional level, each bureau (health, water and education) has a PMU that oversees *woreda* and town sector offices. Additionally, five regions benefit from regional support units (RSUs), which organise capacity development activities with a particular focus on avoiding overlaps between WASH stakeholders (Mattila and Worku, 2012).

The national capacity building unit (NCBU) is responsible for facilitating the OOWNP and coordinating capacity-building efforts. Still, for RWS, only 2.3% of rural water budget is earmarked for capacity building, and that cuts across all programme management processes, including planning, implementation, financing and evaluation of the OOWNP's objectives (Lockwood and Bekalu, 2016). This is compared to the urban water supply, where 12% of the budget is allocated

for capacity building. *Woreda* staff are meant to backstop community management structures, but their ability to provide regular support is restricted by their own staffing and financial constraints.

A number of donor initiatives have been developed to strengthen human resource capacity development in the WASH sector. The GLOWS (Guided Learning on Water and Sanitation) approach, developed by a range of partners including Research-inspired Policy and Practice Learning in Ethiopia and the Nile region (RiPPLE), MetaMeta, SNV, IRC, the Technical and Vocational Training Centres and Hawassa University, is designed to train *woreda* staff and WASHCO members in a range of participatory modules. Practical course modules are a step in the right direction, but on-the-job training is indispensable to improve rural WASH software, particularly in areas that are relatively isolated and have chronic issues with water point failure.

One 2017 pilot in Tigray led by the Relief Society of Tigray (REST), called the *Wahis Mai*

Maintenance Program, invested significantly in subnational capacity to maintain water points (Butterworth, 2016). The initiative intended to ensure 93% of water points were functional at any time, and set a 30-day time limit for repairing broken water points. The scheme covered 4,704 water schemes in 30 *woredas*. Some of the schemes involved had sensors installed to send messages when water flow was compromised, while others depended on data collected during regular monitoring visits by technicians. The project had reportedly surpassed its functionality target. This success is attributed to the project's initiative to assign water technicians to the *kebele* level, where there is usually no full-time staffing of water technicians. At the cluster level, units were created to handle repairs that were beyond the capacity of the *kebele*- or *woreda*-level government. This additional capacity and regular monitoring is a major boost to scheme functionality, suggesting that targeting support to the subnational government units responsible for delivering RWS is a costly but effective way of improving functionality in the short term.

3.3.2 'The priority is always drilling': why general capacity constraints remain

Though these programmes are designed to improve technical capacity, they reveal a major gap in the necessary skills and human resources to effectively deliver and maintain WASH services. Government officials at the federal, regional and *woreda* level and NGO staff corroborated the need for experienced staff with technical skills, and consistently identified this as a bottleneck to service delivery. Still, the capacity constraints are so daunting and pervasive that they are often ignored in favour of measurable, visible progress. As one regional official explained, 'Human resources support is not a priority. The priority is always drilling.'

At the *woreda* level, staffing technical roles is particularly challenging. Government positions are not well remunerated compared to positions in the private sector and rural postings are not attractive to highly skilled professionals. In 2013, the OWNPP cited a shortfall of 40% of technical staff – meaning 47,000 unfilled posts (FDRE, 2013). In Lay Gaint, a *woreda* in Amhara, there

were 30 staff positions in the *woreda* water office and 13 were unfilled, including engineers, data experts, team leaders and geologists. Experienced staff are particularly difficult to come by. A technician in the *woreda* office explained, '[Skilled] people with experience don't want to live out here.' Filling staff positions in emerging regions like Somali and Afar is even more difficult (key informant).

High staff turnover is another serious constraint to service delivery. For NGOs (e.g. WaterAid), having to replicate and refresh trainings every 1.5 years due to staff changes is unsustainable, particularly when this process must be repeated in all *woredas* where they operate. High turnover reduces the *woreda*'s ability to support WASHCOs, as institutional memory of community-level capacity-building needs is lost when staff move on. Furthermore, promotion of technical staff is reportedly associated with political loyalty, which can further reinforce skills gaps (see section 4.2). As Ethiopia's political landscape changes under Abiy Ahmed's leadership, this tendency may change.

These human resource constraints have a direct impact on service delivery. Key informants agreed that limited supervision of drilling and construction was common, as the necessary skilled staff were not always available. Furthermore, the time lapse between the study of and subsequent construction of a water point is often long enough that *woreda* staff leave in the interim, leading to costly delays for the drilling company (key informant). Any changes in the design or construction that were agreed verbally between *woreda* staff and the drilling company are lost when there is *woreda* staff turnover (drilling contracts are held at the regional level, so verbal changes are common when drillers negotiate with *woreda* water offices).

In the WASH sector, human capacity constraints are intimately tied to financial limitations: even where skilled staff are available, *woredas* struggle to provide effective backstopping support to WASHCOs. In many cases, *woreda* water offices do not have vehicles or sufficient budgets for fuel. In these circumstances, routine visits are impossible without support from NGOs. Government staff in Oromia and Amhara identified insufficient

finances in the WASH sector, particularly at the woreda level, as a constraint to their ability to monitor RWS.

This study did not conduct an inventory of rehabilitation equipment held at the regional and zonal levels in Amhara and Ethiopia, but the (un)availability of equipment is an important factor in how responsive the government can be to rehabilitation requests. Regions have thousands of schemes to maintain, and but have very few cranes and hoisting machines to repair boreholes if the pump fails and needs to be replaced. Oromia, for instance, has 18 zones, and only 7 cranes. Regional officials stated that the minimum should be one crane per zone, given the large distances involved. While contracting new wells goes through formal procurement that may involve the private sector and state drilling companies, there is no appetite from the private sector to get involved in major scheme rehabilitation. Whether a major scheme breakdown is repaired depends on the availability of equipment at the zonal or regional level.

3.4 A slow moving supply chain

Without a functional supply chain, even menial repairs can incapacitate a water point for months. Ethiopia's WASH supply chain is constrained by availability of spare parts, which are imported primarily from India or China. Importing materials drives up the cost – hand pumps and equipment are subject to VAT, import tax (5–15%) and withholding tax (2%) (RWSN and WSP, 2006). Key informants in regional government stressed that these materials were expensive and that supplying spare parts was one of their O&M primary challenges due to shortage of foreign exchange to pay for materials. The problem is further exacerbated because hand pump importers prefer to import complete units rather than separate spare parts. Challenges in sourcing spare parts have an impact on the length of time taken to complete construction.

A number of WASH supply chain projects have been trialled in Ethiopia without long-term success. The Rural Water Supply and Environmental Programme (RWSEP) in Amhara is a particularly relevant example, as the project's ambition was to test whether it would be possible to create a public supply chain

through the regional government. In 2004, the RWSEP programme supported the regional water bureau to import a stock of spare parts in bulk from abroad. RWSEP trained woreda staff on preparing budgets and needs assessments for spare parts and then sponsored the distribution of spare parts to 19 *woredas* in Amhara. A 2007 assessment of the programme found that there was high demand for spare parts, but no action was taken to restock when parts ran out. Although they had been trained to do so, the *woreda* water offices did not carry out needs assessments or allocate budgets to replace spare parts that were out of stock. For WASHCOs, the procedures to request to buy subsidised spare parts from the *woreda* were cumbersome and bureaucratic. Furthermore, the Regional Water and Energy Resource Development bureau was not able to re-procure spare parts in bulk because of strict financial regulations from the regional government (Mihretie, 2009).

Though demand for spare parts was high, the private sector did not move systematically in areas where public attempts at facilitating the supply chain failed. Regional officials explained that it was expensive to hold onto stocks of equipment, which discouraged private sector from entering the market. Ordering specific fittings through local suppliers could be expensive and cause extended delays. In Amhara and Oromia, the challenge of sourcing spare parts was exacerbated by insufficient budgetary allocations for maintenance. The extent to which the supply chain is an obstacle to water point functionality is likely to vary between regions.

3.5 Accountability to whom?

3.5.1 Community management model has weak ability to hold to account

In theory, provision of water supply is a public responsibility, and politicians and government officials can be held accountable by their constituents for providing access to water (or not). In practice, the rise of community management models has passed this responsibility in part onto the constituents themselves. Community management encourages local ownership and puts volunteer WASH Committee members, or WASHCOs, in charge of

scheme sustainability. Community management is the dominant model in the government's RWS strategy and is designed to promote 'genuine participation and planning in facilities that respond to real needs' to move people further along the water technology ladder (UAP II).

Yet the rhetoric of ownership and empowerment often falls short in reality. For shallow and deep borehole construction, the regional government is responsible for procuring, contracting and overseeing construction of schemes.⁴ In a *woreda*-managed project, the scheme is handed to the WASHCO after construction is completed. Communities are then expected to fund and organise routine maintenance through water tariffs paid by users. In practice, key informants reiterated that WASHCOs were far too frequently incapable of maintaining functional water points. As one national civil servant explained, the oversight capacity of WASHCOs is 'unsophisticated', and *woreda* offices lack adequate operating budgets to travel to water points for systematic checks. Oromia regional officials confirmed this, lamenting the difficulties of rural wash and the need for backstopping:

A region has thousands of pumps, most of them with failures. Somebody has to follow up, but it is nearly impossible for us. In towns, people can be self-sufficient and self-administrating, but in rural areas we have to give some support. It's difficult with population increase and increasing water needs. The situation is getting beyond our control.

Despite these challenges with community management, the RiPPLE research programme in Ethiopia found that *woreda* staff were often *unaware* of O&M problems experienced by WASHCOs. WASHCOs' primary route to hold government accountable for service provision

is to approach local government offices directly about a specific problem. Unless it is approached by the WASHCO or members of the community, the *woreda* water office assumes the scheme is functional. Information asymmetries can quickly arise when WASHCOs choose not to approach the water bureau about malfunction, either because the WASHCO lacks confidence in the *woreda* water office's capacity to act, cannot afford to travel to the bureau, does not understand what kind of support to request, or because water users have the option to shift to other (often unimproved) sources.

Training WASHCOs is important not only for improving management capacity, but also for improving WASHCOs' ability to hold *woredas* to account. In government-managed schemes, training of WASHCOs is at best minimal. A *woreda* water technician explained that NGO- or donor-managed schemes have a stronger emphasis on training than *woreda*-managed schemes, generally with better results.⁵ Of all government-sanctioned modalities for rural WASH, the CMP approach in particular stands out as focusing intensively on building WASHCOs' capacity to manage schemes. CMP WASHCOs are in charge of all steps of water scheme planning and implementation, including procurement, so that the WASHCO acts as 'project manager'. According to key informants, the emphasis on training is vital to improve the community's awareness of the kinds of technical support *woredas* can and should provide. As one key informant in the NGO sector (not working on CMP specifically) described:

When communities are reluctant, or do not understand the process, they are not able to report to the *woreda*. Their water point can collapse and they will not report it. If we strengthen WASHCOs, [reporting] will happen. When we invest into the community at the grass roots level, the system works.

4 For shallow wells and boreholes, retaining this responsibility at the regional level is logical. Regional governments have greater capacity and can batch together contracts to achieve economies of scale, though they do not always do so.

5 The Finnish government-funded CMP programme has a very strong emphasis on WASHCO training at all steps of water scheme planning and implementation. To build a sense of ownership, WASHCOs act as 'project manager' of the water scheme during construction.

Information asymmetries about functionality are exacerbated because WASHCOs and communities have no systematic feedback role in the M&E system. Except in the CMP model, WASHCOs are not granted a broader role in participatory planning or budgeting in the *woreda*. Their inputs did not seem particularly valued, either; as the zonal official explained, WASHCOs are ‘weak’, often lack legal status and operate without technical expertise. Though the government has shown commitment to expanding rural water coverage, investing into WASHCOs’ management capacity and including them more systematically in data collection has not been prioritised. Partly because of this, accountability between service users (through WASHCOs) and *woreda* water bureaus is generally weak.

3.5.2 Upward-facing accountability

‘Upward-facing’ accountability within government bureaucracy is a feature of Ethiopia’s service delivery, in which *woreda* governments are responsible for implementing a vision developed primarily at the national level (WaterAid, 2016). The political establishment remains the primary instrument of change, and subnational governments’ political and administrative decisions are strongly influenced by the national government’s objectives. In the water sector, this plays out through a target-driven approach, in which *woreda* governments contribute to the national goal of achieving 98.5% RWS coverage.

The target-driven approach create pressures for civil servants to show that they are delivering WASH services to their constituencies in rural areas, and this pressure results in distortions in the data that are relayed up by subnational

governments through the government bureaucracy. Inconsistencies in the WASH access data are manifold. Conversations with regional officials in Oromia focused on the high levels of scheme failure; yet Oromia’s official data on scheme functionality in 2016 showed a 7% failure rate for shallow wells and a 4% failure rate for hand-dug wells. Though the survey was completed at the end of August, towards the end of the second rainy season, the rate of failure seemed exceptionally low – particularly given the admission that ‘nearly all pumps have [some form of] failure’ and that providing backstopping support in rural areas is ‘nearly impossible’ (key informant).

Data is distorted in both directions: functionality and access are over- and under-reported. Access figures can be tied to funding, though the criteria for fund allocations vary depending on the region. In some cases, local government units may under-report access to water points in order to receive more funding. Alternatively, local government units could over-report access by ignoring non-functional schemes, helping to demonstrate strong progress towards targets and gain favour from higher levels of government. This may have been the case in Oromia, though regional officials could not explain the discrepancy. Data can be massaged at multiple levels – *kebele*, *woreda*, zone, regional or federal – and tracing back inconsistencies gets caught in a tangle between ‘real’ data and ‘official’ data. Key informants believed that the government has the capacity to make decisions based on accurate information but chooses to do this only behind closed doors. Even when transparency and accuracy could improve service delivery, the government is not willing to compromise the image of Ethiopia’s progress that it projects internationally.

4 Actors' roles and interests

Examining the role of different actors in Ethiopia's WASH is woven throughout section 3 of this report, but this section makes explicit the roles of different actors in the process.

4.1 WASHCOs and the community

Ethiopia's water sector is founded on a community management model (see section 3.1). On paper, the most important actor for ensuring functionality is the WASHCO, which collects fees, defines by-laws, liaises with local administration and manages water access for each individual water point. In practice, however, WASHCOs are only as strong as their members; those that receive more training and support may be more effective, but the *woreda*-managed water bureaus do not (and often cannot, given their available physical and financial resources) provide this support. It is important to note that major repairs, such as those to hand pumps involving repairs to pipes, cylinders and concrete works, require more manpower, funding and know-how than a WASHCO is trained to provide.

Through WASHCOs, communities are responsible for covering O&M costs. Major rehabilitations easily outstrip rural communities' ability to pay and WASHCOs' capacity to perform repairs. For smaller maintenance works, there is evidence that WASHCOs can raise these funds locally. The 2007 evaluation of the WASH supply chain (see section 3.4) found that communities could pay for spare parts but, in the absence of strong private sector involvement, the government was not capable of maintaining a supply to match demand. Communities also participate in water point development and management by providing cash or other contributions; in all modalities, communities

are expected to contribute cash, labour or other in-kind contributions of at least 15% of the project's capital cost (FDRE, 2011).

WASHCOs work on a voluntary basis and the system for re-electing committees and holding them to account is difficult to establish. Though some WASHCOs are capable of fulfilling their roles, there is a growing body of research that shows that there are limits to what can be realistically achieved through volunteerism (Moriarty et al, 2013; Chowns, 2015). The WASHCO system operates under an implicit assumption of common interest and community cohesion; over the course of this research, we found that two WASHCOs in drought-affected *woredas* in Amhara had been disbanded after significant conflicts over water during the 2015 El Niño event. In places where water availability is in question, it is likely that disagreements over water access and use make it even more challenging for volunteer WASHCOs to effectively manage water points (Moriarty, 2013; Chowns, 2015).

4.2 Woreda water offices

Woreda water offices have limited room for manoeuvre, given their limited budgets and capacity (see section 3.3), but *woredas* are nonetheless essential for providing support to WASHCOs and sharing information with higher levels of government on issues that WASHCOs cannot be reasonably expected to fix. In *woreda*-managed projects, *woredas* administer the funds on behalf of WASHCOs. *Woredas* also play a key role in channelling procurement and contracting requests for shallow wells or boreholes to the zonal or regional level. *Woredas* often oversee the drilling of boreholes, though the limited

availability of technical staff and frequent turnover can compromise the quality of their oversight.

In theory, *woredas* are indispensable for alerting regional and zonal governments to water point failure or water stress in their locality. In practice, however, even collecting this information can be a top-down endeavour. When water points were failing in Lay Gaint *woreda* in Amhara, it was the zonal official who requested regular information from water-stressed *woredas* so that he could help regional-level officials plan an appropriate response. *Woreda* officials can be politically motivated to report (or not report) information upwards, and reporting failure has the potential to affect career prospects or the following year's water office budget. However, including *woreda* water offices in data collection on water point functionality is key to ensure they maintain an overview of the situation and connect regularly with water users. The ownership of any data collection process is not sustainable nor does it ensure uptake if it is held outside of the decentralised water management structure. Without better information about post-construction needs, issues of supply chains and insufficient investment in rehabilitation cannot be rectified. In the case of shallow wells, much of this reporting will be directed up to zonal or regional governments, who have the equipment to repair shallow wells and the economies of scale to bundle together reparation work.

4.3 Donors and UN agencies

Donors and UN agencies have scope to influence the national WASH agenda, though as more funds for the WASH sector flow through the government systems, including the Consolidated WASH Account, donors' roles are concentrated in the Joint Technical Reviews and Multi-Stakeholder Forums. These meetings of WASH sector partners are held at regular intervals and serve as a platform for coordinating with the government and other stakeholders on work towards GTP II targets, and on aligning planning and investments. The core WASH donors are DFID, the World Bank, African Development Bank, UNICEF and the Government of Finland, who have all demonstrated some commitment to a multi-sectoral approach led by the GoE. Still, follow-up

from these meetings is often lacking, which reduces their policy influence (key informant).

In their efforts to show return on investments for taxpayers at home, donors can inadvertently uphold the status quo. In most cases, donors report WASH results by outputs, because downstream measurement of outcomes would be time-consuming and costly. Instead, donors end up counting water systems constructed, and use these figures as a basis for assumed service level outcomes (ICAI, 2016). Though donors are concerned with verifying results, they have not shown the same interest in testing results and adapting programmes (Calow et al, 2013).

The closest donors have come to promoting a system that tracks sustainability was the first NWI, which was a donor-driven exercise with 'a clear bias in both the design and implementation of the NWI process towards interests at the central level, namely sector donors' (Welle et al., 2012). The original design of the survey was based on a UNICEF pilot project rather than on the information needs of subnational government entities delivering WASH. Though the NWI was perceived as useful to attain more accurate figures about coverage, the results were not easily accessible for *woreda*-level governments to use in quotidian water point management. It remains to be seen whether the second NWI will be another one-off data collection effort or be integrated with daily *woreda* water management practices.

Donors can influence the choice of technologies and the areas where investments are concentrated, as evidenced by the recent El Niño drought response. In the wake of high levels of water point failure, UNICEF has promoted a move towards investing into multi-village reticulated schemes in drought-affected *woredas*, relying on deep boreholes or high-yielding springs that are more resilient to climate stresses. UNICEF's five-year strategy includes a much greater emphasis on these multi-village schemes, and meetings with regional-level officials in Oromia revealed that UNICEF was the main partner pushing for more focus on investing into sustainable water supply in low-lying areas frequently in 'emergency' mode. Because they supplied equipment and budget, donors and UN agencies were perceived by regional government as key for rehabilitation and sustainability in more challenging hydrogeological areas.

4.4 Private sector

Though the government explicitly acknowledges the role of the private sector in the One WASH National Programme Document (2013) and in the GTP II, there is a limited market for the private sector in rural areas beyond service contracts for project implementation. Private sector enterprises that distribute parts and repair systems in rural Ethiopia face significant challenges, including disbursed communities, high transportation cost; and limited availability of financial and telecommunication services (Calow et al, 2013; Defere, 2015).

For shallow wells and deep boreholes, regional governments commission drilling through private drilling companies or parastatal enterprises. Though the drilling sector has grown in the past decade, with the number of licensed private drilling companies expanding from 25 in 2005 to 96 in 2014, the industry is still characterised by a mix of state, NGO and private operators (Defere, 2015). Six of Ethiopia's regions (Tigray, Amhara, Oromia, SNNPR, Somalia and Afar) have enterprises engaged in borehole drilling, while some of the same regions and two others (Benishugul-Gomuz and Gambella) maintain drilling capacity within their water resource bureaus (Calow et al, 2012). Calow et al. (2012) point to the potential for unequal terms between private and state enterprises, due to the opaque circumstances under which state enterprises compete or are single-sourced for bids.

Due to contracting arrangements, drillers are not responsible when boreholes fail to produce. Regional governments conduct borehole siting and design, though NGO-led projects can include separate hydrogeological assessments. For more complex projects, such as rural piped schemes, it can be challenging to hire independent contractors in rural areas. The projects are reportedly not financially attractive and end up being deprioritised by those companies. This can result in delays and difficulties securing a provider.

While contracting new wells goes through formal procurement, there is little appetite from the private sector to get involved in major scheme

rehabilitation. Whether a major scheme breakdown is repaired often depends on the availability of equipment at the zonal or regional level.

4.5 NGOs

Although they play a significant role in providing and supporting WASH services, particularly in marginalised or arid *woredas* such as in Afar and Somali, NGOs receive very little mention in the One WASH programme policy documents. Across interviews, key informants stressed that NGOs provide more consistent and better quality capacity building than that provided by the government WASH sector to its own staff and to WASHCOs, due to financial and physical capacity constraints (see section 3.3). According to key informants in the NGO sector, WASHCOs that received training through the CMP or another NGO model were better able to hold *woreda* water offices to account for O&M issues.

One key informant in the NGO sector felt that NGOs were under pressure to spend resources on equipment and infrastructure rather than on capacity building. In liaising with the government, one NGO was encouraged to buy vehicles and equipment rather than spend time and money on training government employees. However, no other NGO representatives interviewed reported feeling this pressure, though they did state high turnover of government officials made it difficult to organise training.

Under certain circumstances, such as the 2016 El Niño drought, NGOs are perceived by government officials as important for maintaining or restoring scheme functionality. The drought's impacts on water access transformed rehabilitation from an overlooked activity into a critical emergency response (See Box 2, section 3.3). UNICEF and NGOs supported scheme rehabilitation in badly affected *woredas* in an effort to avoid the exorbitant expense of water trucking, which was among the most expensive components of the entire emergency response. NGOs formed a core part of the official WASH cluster for humanitarian response and helped feed information into the government's response strategy.

5 Recommendations for sector stakeholders

Many of the factors that hamper sustainable investment in the WASH sector are not unique to Ethiopia, nor can they be fixed by project-type approaches. Furthermore, the sheer diversity between and within Ethiopia's regions means that there is no blanket solution to rural water point sustainability.

Still, there is room for manoeuvre within Ethiopia's political and institutional frameworks to improve outcomes for sustainable water supply. One promising avenue is to support efforts for data collection on functionality and invest into water resource mapping. Another would be to support WASHCOs to become legal entities with clear roles and responsibilities. Lastly, recent experiences of drought have provided a window of opportunity to reframe priorities in the WASH sector for a greater focus on sustainability.

Inform and build on the 2018 NWI

Data collection efforts in the WASH sector must shift from one-off measurement of coverage to developing a more consistent and comprehensive system that can track services delivered over time. The rollout of the second NWI is a major opportunity to refocus on functionality and consolidate efforts to create a platform through which information can be fed directly to decision-makers. This will be a major challenge, however, and staff turnover at the *woreda* level means that sustained participation of WASHCOs and *kebele* officials is required for the data collection.

In practice, the first NWI was a centralised, donor-led effort with little ownership from subnational governments. To ensure the second NWI is more dynamic, sector stakeholders should advocate for the NWI to be treated

as skeleton for more detailed regional data systems to respond to local data needs. The NWI will maintain key performance indicators regarding functionality, water access, WASHCO management, water quality and women's participation in the WASHCO, among others. Regional systems, however, can include more detailed and practical information, such as the specific make and model of the water point to help plan for sourcing spare parts.

The roles of the *kebele* and WASHCO in data collection and assessment must be strengthened. Poor links between WASHCO, *kebele* and *woreda* often result in information breakdown; WASHCOs get discouraged if they ask for support once and do not receive it; and *kebeles* and *woreda* governments have little capacity to provide spot checks and backstopping support (see section 3.3). With the emergence of mobile technologies, however, a tool as simple as an SMS could help improve communication. Supporting *woredas*, *kebeles* and WASHCOs to test different methods of maintaining communication on the condition of infrastructure and the technical performance of facilities is essential for ensuring the NWI responds to the information needs of subnational governments – and not only of officials at regional and national levels. The second NWI aimed to update the inventory annually, but a more sustainable system requires a tool that can be updated in real time by *woreda* governments.

Invest in water resource mapping and monitoring

Siting sustainable water points will become more difficult as the government increases its efforts to provide service to harder-to-reach populations. Good knowledge of the resource conditions,

through aquifer-scale groundwater assessment, would improve the sustainability of investments in water infrastructure. Where this information exists, it is in the form of project-based mapping (generally for NGO projects or government-led irrigation initiatives), making it challenging to piece together a coherent picture of resource conditions. As mentioned in section 3.2, the government mapping programme does not meet the needs of the WASH sector.

This information is a public good, and there is a role for donors to help fund its provision. The One WASH national programme could provide a good platform to coordinate efforts to map groundwater availability from regional to *woreda* level. Stakeholders should combine efforts on systematic mapping of locally productive zones in the aquifer. If the sector is to operate under ‘One Plan, One Budget, One Report’, why not also ‘One Map’? Accurate information about groundwater conditions for each region will enable better siting and design and potentially help governments plan for future water demand as populations grow and surface water sources become increasingly unreliable.

Support legalisation of WASHCOs and aim to improve accountability

As mentioned in section 3.5, many WASHCOs still lack formal legal status. Though WASHCOs do not necessarily have to be legal entities to perform their role, the legalisation of WASHCOs can reinforce their legitimacy and enhance accountability to users. Without legal status, WASHCOs are prevented from managing funds through bank accounts and circumvent formal audits by *woreda* finance offices. The only real oversight mechanism communities have is a widely neglected rule that they should report to communities on income and expenditure.

All regions have issued proclamations for WASHCO legalisation, situating the issue squarely within the national and regional priorities (JTR, 2015). SNNPR is leading the trend, with other regions following suit. A 2015 Joint Technical Review claims that legalisation of WASHCOs improved tariff collection and savings. Furthermore, legalisation equips WASHCO members with knowledge of their responsibilities.

If WASHCOs are also expected to help maintain up-to-date information on the state of WASH infrastructure, legalisation could help clarify their role in keeping an accurate inventory.

Leverage drought events to reframe the conversation

The drought associated with the ongoing El Niño climate event raised questions around the resilience of services and pre-drought functionality. By the peak of the drought, the GoE reported that around 10 million people across six regions were in need of emergency assistance; of these, around six million (in more than 160 priority *woredas*) were affected by acute water shortages (HRD, 2016). UNICEF’s pilot survey of RWS in hotspot *woredas* showed that half of all water points had failed (See Box 2). Due to water shortages, rehabilitation of water points was a major part of the official response.

Disaster risk reduction literature has long noted that disasters can provide a window of opportunity for major institutional and organisational change (Birkmann et al., 2010). During a drought event, the sustainability of water supply comes into sharp focus, along with the potential political will to mobilise resources. As drought features in GTP II as a major threat to Ethiopia’s economic growth, stakeholders would do well to highlight that sustaining water point functionality in climate stress depends on better monitoring, siting and maintenance during ‘normal’ years.

5.1 Conclusion

Ensuring sustainability of services post-construction remains a challenge in Ethiopia’s WASH landscape. National-level policies have prioritised a coherent WASH framework, bringing together ministries working on water, health, education and finance, and created a single consolidated account to channel donor funds for WASH investments. Still, much remains to be done to support *woreda*-level governments to provide post-construction backstopping support to WASHCOs.

In the absence of significantly more funds, equipment and training available to subnational governments, there are a few areas in which to focus advocacy and investment. Improving

the data available to *woreda* and regional governments to map resource availability and providing governments with a platform to track waterpoint functionality are crucial steps towards supporting the rural WASH sector to better site and maintain water points.

Reaching Sustainable Development Goal 6, to ‘ensure availability and sustainable management of water and sanitation for all’, will not be possible without moving away from a singular focus on expanding coverage and concentrating instead on building strong institutions that can

deliver sustainable water services. Focusing on the institutional ‘soft plumbing’ of the WASH sector, rather than on the infrastructure only, has potential to improve cost-recovery and reduce down-time when water points are broken. Two methods of doing so are focusing on legalisation of WASHCOs and engaging with the needs of *woreda* WASH offices. If well-implemented, these efforts can improve WASHCO and *woreda* offices’ accountability to communities and their ability to deliver sustainable water services – now and in the face of increasing climate stresses.

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