



Measuring factors that predict if WASH services are sustainable

An initiative to monitor sustainability factors in towns in Ethiopia for the ONEWASH Plus Programme has completed its first round of data gathering and analysis. This document presents the methodology and results from the sustainability check.

What's the problem?

The sustainability of water, sanitation and hygiene (WASH) services is of widespread concern in Ethiopia. Many systems provide lower than expected levels of service or break down before the end of their lifespan.

The ONEWASH Plus Programme provides support to eight towns, surrounding villages and institutional facilities. Annual checks will monitor conditions considered to be critical for sustainable services.

A baseline survey showed relatively poor levels of service despite high levels of access to 'improved' facilities. Plans are being developed to ensure sustainable services without environmental or socio-economic damage.

“Planning for sustainability has helped to clearly identify urban sanitation challenges and come up with sustainable solutions.”

Abdulrahzaq Mohamed,
Manager Jigjiga Town
Beautification and Solid
Waste Agency

First round of checks raise questions about sustainability of services

A sustainability check on WASH services in small towns and surrounding villages in Ethiopia raises serious questions about how far conditions are in place for the services to be sustainable.

The first round of data for ONEWASH Plus sustainability checks has been collected and analysed. This is a kind of stress test on services and the supporting environment, to see how well services can continue to be delivered into the future. The check, performed at the beginning of the programme, found serious challenges on financial, environmental, social and technical grounds to water and sanitation services in towns, villages and institutions (e.g. schools and health facilities).

At national level the enabling environment is not adequate to ensure the sustainability of WASH services. None of the national benchmarks for environmental, financial, technical and institutional sustainability were met. There is a lack of enforcement of national standards and norms for sanitation in urban areas.

But there are also concerns at the service authority level – town water boards and woredas in rural areas – and at service provider level – town water utilities and village WASH committees (WASHCos).

Overall, financial sustainability seems to be the biggest challenge, followed by environmental, social and technical sustainability. Towns and rural areas score highest on institutional sustainability, but lack finance resources, staff and skills.

This learning note explains how the sustainability checks are carried out, the standards on which indicators and targets are based and the methodology for understanding and scoring the results. It also delivers the first results – while understanding that there are still lessons for improving the methodology and process.

Methodology for the sustainability check framework

The sustainability check framework sets sustainability and service level indicators at national, service authority (woreda /district) and service provision levels. It covers water services (piped schemes in towns and point sources in rural areas); sanitation services (liquid and solid waste management) and WASH services in schools and health facilities.

The draft framework was discussed with stakeholders, including representatives from government, non-governmental organisations and development partners, and refined following consultation workshops at national, regional (Oromia) and town (Welenchiti) levels. It is used to conduct a systematic assessment to determine the degree to which conditions for sustainable WASH service provision are in place.

Based on these checks, sustainability plans will be developed to ensure that infrastructure and systems provide sustainable services. The plans list interventions and measures to address shortcomings in sustainability factors.

The sustainability check framework is adapted from tools developed and tested internationally. In Ethiopia, the tool is being used in eight small towns and satellite villages in surrounding rural areas as well as institutions such as schools, health facilities and prisons.

Framework looks at five key areas for sustainability

The sustainability framework looks at five key areas:

- *Institutional sustainability*: policies, strategies and management arrangements.
- *Technical sustainability*: mechanisms to ensure sustainable service provision including spare part supply, technical support etc.
- *Financial sustainability*: to ensure WASH services are financially viable over time.
- *Environmental sustainability*: to ensure that WASH services do not have a negative impact on the environment.
- *Social sustainability*: measures to ensure that everyone can benefit.

Each factor is considered at three levels:

- *Service provision*: day-to-day management, including operation and maintenance (WASHCo or Town Water Utility).
- *Service authority*: woreda (and regional) level that sets the enabling environment.
- *National*-the overall enabling environment.

Service level indicators

Water

Water points are assessed for *reliability*, *crowding*, *distance*, *quality* and *quantity* based on the following standards as in the first Growth and Transformation Plan 2011-2015.

- Water points accessible within 500 metres (urban) and 1,500 metres (rural).
- Functioning at least 85% of days in a year (six days a week); at least six hours a day.
- No more than ten people queueing even at the busiest times.
- Providing at least 15 litres per capita per day (lpcd) in rural areas and 20 lpcd in urban areas.
- Provides water quality that meets international (WHO) standards for E.coli and is of acceptable colour, smell and taste.

Sanitation

Sanitation is assessed for *privacy* (a door and walls without holes), *cleanliness* (no excreta on slab and few flies), and *separation between user and excreta*. Schools also have a 'crowding' indicator; no more than 40 girls per latrine, and no more than 75 boys per latrine.

Mini-scenarios and scores

A range of possible situations 'mini-scenarios' is described for each sub-indicator. These are scored from 0, where the standard is not met at all, to 100, where it is met in full. The basic minimum acceptable level for each indicator is set at 50. This qualitative information system (QIS) turns value judgements into numerical scores. If an indicator is below the benchmark, this can prompt action, such as training, to strengthen sustainability.

Technical indicators						
Indicator	Score 0		Score 25	Score 50 (BM)	Score 75	Score 100
Availability of information on quality of infrastructure	No information available	Some information available	All system information available	All system information available, inspected, but in poor condition	All system information available, inspected, but in good condition	
Non-revenue water (NRW)	NRW is not known	NRW>20%	NRW 10%<20%	NRW 10%<20%, action developed for reducing on NRW	<10%	
Adequate supply of spare parts for minor maintenance (pipes, fittings etc.)	No spare parts available	Spare parts available, but takes more than 3 days	Spare parts available within 3 days	Spare parts available within day	Store available with adequate pipe and fittings for a month or there is PS which delivers within 24 hours	
Effective maintenance system in place	Utility has no capacity to execute simple repairs	Utility has capacity to execute simple repairs, but does not do so within 24 hours.	Utility can execute all repairs within 24 hours	Utility executes all repairs within 24 hours and executes periodic maintenance.	Utility executes all repairs within 24 hours and executes monthly periodic maintenance	
Water quality management and disinfection	No disinfection of reservoir(s)	Disinfection of reservoir(s) but less other than monthly	Monthly disinfection of reservoir(s) by qualified operator	Disinfection of reservoir(s) by qualified operator and intermittent quality check (chemical, bacteriological, physical) on network	Disinfection unit in place with qualified operator and periodic (at least monthly) check (chemical, bacteriological, physical) on network	

Table 1: Indicator, sub indicators and scores: Urban water at service provision level

Table 1 shows mini scenario indicator scores for urban water points at utility (service provision) level. There are also indicators covering the institutional, financial, environmental and social aspects of sustainability. For sustainable services all factors should score 50 or more at every level (national, service authority and service provision).

Data collection

The first round of data was collected in June 2015 in seven towns in Amhara, Oromia, Somali and Tigray Regions. Data was collected at:

- Regional Water Resource Bureaux
- Regional Health Bureaux
- Regional Education Bureaux
- Town Water Supply and Sewerage Enterprises/Utilities
- Town Municipalities
- Woreda Water Offices
- Woreda Health Offices
- Woreda Education Offices.

Data collected from households and service providers as part of ONEWASH Plus baseline survey was also used. Sector staff will increasingly become involved in data collection, analysis and corrective action.

Table 2 Rural water supply sustainability scores – service authority level			
Indicator		Score	
I	Woreda WASH Team	75	50
	Woreda Water Office	0	
	Woreda level plan	75	
	Regional standard WASHCo by laws	50	
T	Checks on construction quality	100	75
	Monitoring of O&M and WASHCo performance	25	
	Scheme inventory and maintenance plan	100	
F	Woreda water office annual recurrent budget	50	37.5
	Woreda water office logistics	25	

Table 2 shows scores for rural service supply at woreda level around Sheno town in Oromia region. Figures in red show where the benchmark has not been met. The Woreda Water Office does not have sufficient staff or logistics to meet its responsibilities.

Figure 1: Sustainability scores for urban sanitation at service authority level

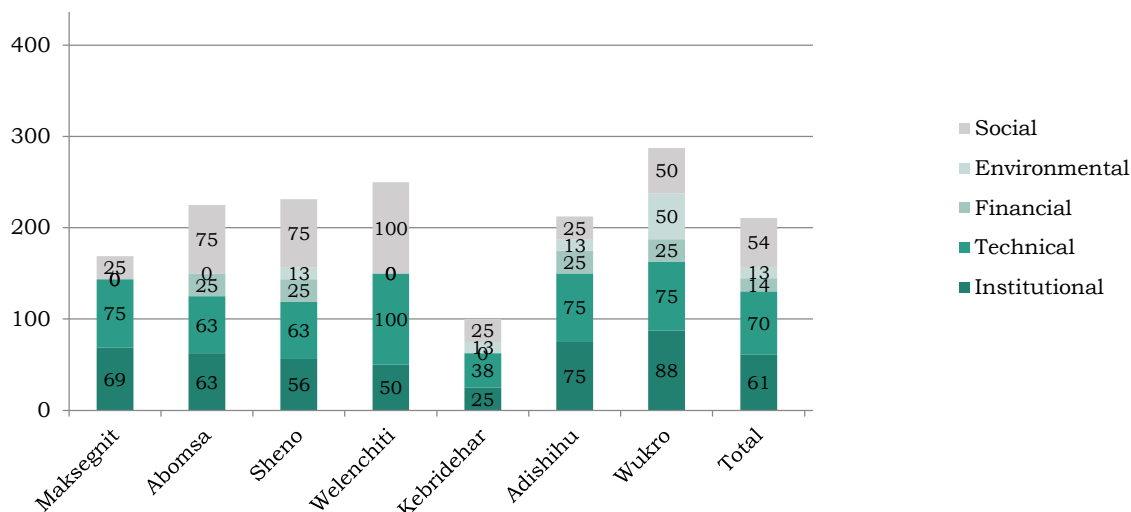


Figure 1 shows the overall results for urban sanitation at service authority level in the different towns. For several towns, institutional, technical and social factors all score more than 50 overall suggesting these are on track for sustainability. Environmental and financial sustainability factors are particular problems – for each of these indicators two towns score zero and the overall scores are well below expected level for sustainability. Kebridehar scores considerably lower than the other towns.

Figure 2: Scores from six towns on one indicator – Composition of WASHCos

Indicator SP-I-1: Well-composed and functioning WASHCo								
Town	n (# of WASHCos)	score					% benchmark met	Average score
		0	25	50 (BM)	75	100		
Maksegnit	18	6%	11%	61%	17%	6%	83%	51
Abomsa	2	0%	0%	100%	0%	0%	100%	50
Sheno	32	39%	13%	23%	19%	6%	48%	35
Welenchiti	4	0%	50%	50%	0%	0%	50%	38
Adishihu	6	0%	0%	67%	17%	17%	100%	63
Wukro	19	5%	0%	74%	16%	5%	95%	54

Figure 2 shows how WASHCos scored for their composition and ability to function across all the towns and shows results for 81 WASHCos. Most met the minimum benchmark score for sustainability (50). In Sheno slightly fewer than half of the 32 WASHCos achieved this and more than a third scored 0. Sheno and Welenchiti are in greatest need of institutional strengthening.

Figure 3: Aggregate scores for sustainability factors in Wukro town, Tigray region

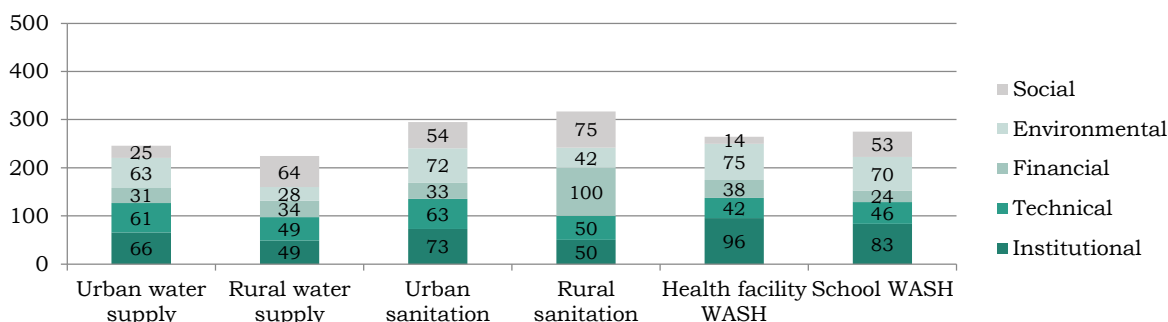


Figure 3 shows aggregate results for all five sustainability factors in Wukro Town in Tigray Region covering urban and rural water supply and sanitation as well as WASH facilities in health centres and schools. If all factors were perfect then each bar would reach the 500 score. Urban and rural water supply overall score less than half that amount, meaning that they are not reaching an average sustainable score. Institutional and technical factors score best and, for most services, financial and social factors score worst. However, there are exceptions. Rural water supply is below the 50 mark for both institutional and technical sustainability indicators, while rural sanitation scored a perfect 100 for financial factors and achieved a high mark for social sustainability. The Wukro Town Audit statement highlighted the need for social equity issues to be addressed in towns through shared yard connections and for better management of public latrines. It recommended addressing the needs of girls for WASH facilities in schools and health facilities.

Enabling environment at national level falls short

The national enabling environment is not presently strong enough to ensure the sustainability of WASH services. In this first check none of the national benchmarks for environmental, financial, technical and institutional sustainability were met.

Water

- The water sector national database is not regularly updated.
- National support to regional, zonal, woreda and town levels is not systematic.
- There is no regulatory agency for urban water supply.
- National norms and standards for rural water services are not widely known at regional, zonal, and woreda level.
- The budget cannot meet the huge demand.
- Awareness and enforcement of environmental standards are low.

Sanitation

- An up-to-date national monitoring database for rural sanitation is used for

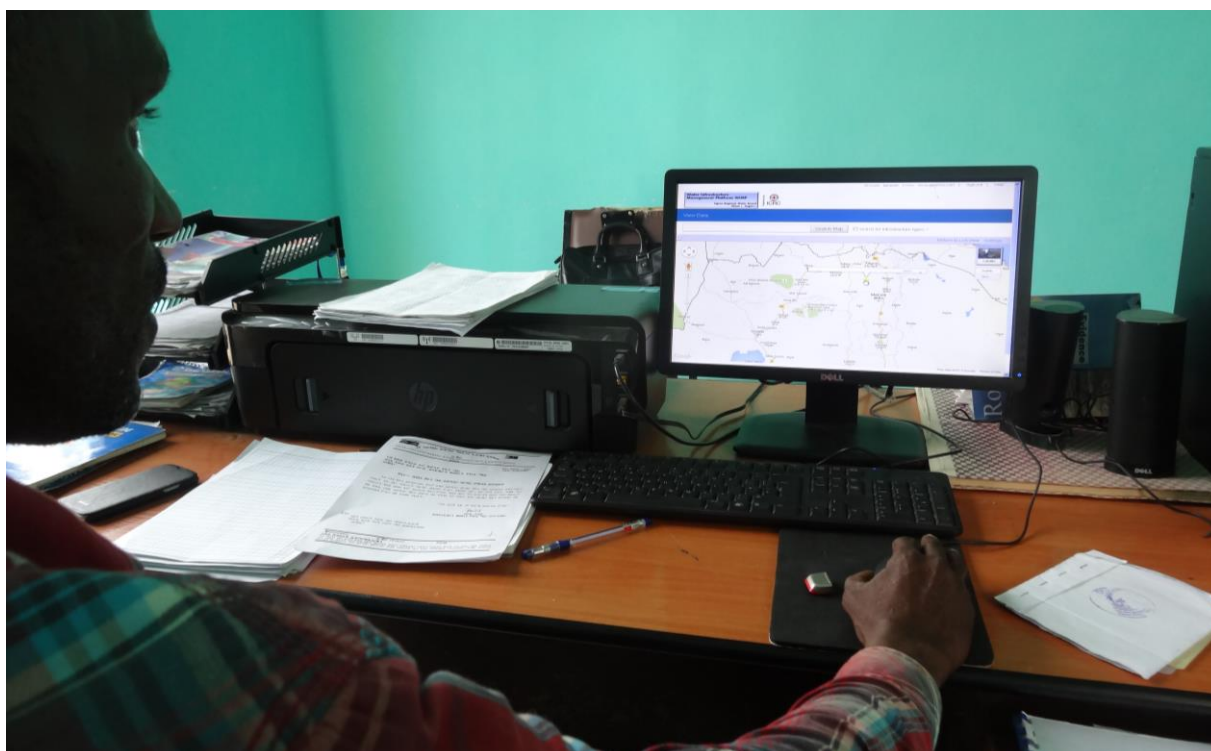
strategic planning – but the urban database only covers household latrines.

- National support to regions, zones and towns for urban sanitation is ad-hoc and unsystematic.
- There is a lack of enforcement of national standards and norms for urban sanitation.
- The budget cannot meet demand.
- Awareness and enforcement of environmental standards is low.
- A national strategy for urban sanitation is still in preparation.

Institutional WASH

- National databases for WASH in schools and health facilities are updated regularly and used in planning.
- National support is ad hoc. Standards and norms could be better enforced.
- The budget cannot meet demand.

The sustainability of urban, rural and institutional WASH services was also checked at service provision level and at the woreda and regional authority level.



Water services: coverage is high but other factors are weak

URBAN

With the exception of Kebridehar, town water supply coverage is very high. However, only a small proportion of people can access reliable and accessible water services of acceptable quality and quantity. None of the public taps met all the criteria for quality, quantity, reliability and accessibility. Almost all (90%) public taps provided water of acceptable colour, taste and odour. However, only in Adishihu did at least half the public standpipes pass sanitary inspection.

Service provision level

None of the Town Water Utilities met institutional benchmarks. Most performed poorly on technical indicators related to water quality management. They were all confident of carrying out repairs within 24 hours but scored poorly on asset management.

Service authority level

All but one town met institutional and technical benchmarks – such as having staff to support Water Utilities but none had developed a catchment plan.

RURAL

Access to functional water points in rural areas was high – in some areas over 90%. However, only one in ten water points met all basic service criteria.

Service provision level

WASHCos lacked skilled WASH artisans and a spare part supply chain and achieved low levels of preventative maintenance.

Most had a pump attendant or caretaker but less than a quarter had 50% female members.

Two thirds of WASHCos have set a tariff and adopted by-laws for water points, but only a quarter had up-to-date financial records and only one in six expected to cover their costs.

Service authority level

Financial sustainability was the biggest challenge at woreda level – with a low annual budget and a shortage of resources. Most woredas had drawn up plans and circulated model by-laws to WASHCos. Two woredas did not have enough trained staff.



Sanitation: coverage does not translate into quality

URBAN

Urban sanitation coverage is considerably higher than in rural areas. Less than one in three households defecate in the open. However, this high coverage does not translate into high quality. Less than one in five households has a clean, private and safe latrine.

Service provision level

All towns have artisans with the capacity to construct and repair latrines and in all but one pit and septic tank emptying services are available, although there may be delays in emptying. Waste management services are patchy. Only Sheno has an adequate number of public latrines. In only two towns can sanitation providers access funds at reasonable terms.

Service authority level

Environmental sustainability is low – only Wukro used monitored and regulated sites for disposing of both liquid and solid waste. All the towns said they deliver effective hygiene education. However, only half carried out sufficient checks on the quality of latrine construction. Most towns have trained staff for sanitation and hygiene promotion, and all except two have annual plans. However, sanitation roles and responsibilities were not clearly understood in three of the seven towns.

Three towns in Oromia scored high for social sustainability by having public latrines accessible for vulnerable people.

Institutional WASH: schools lack clean, private, safe toilets

Few schools have sufficient sanitation facilities for boys and girls, and they lack clean, private and safe toilets. Open defecation was prevalent in Kebridehar, Maksegnit and Sheno. No school in Kebridehar has improved sanitation.

Schools have clear roles and responsibilities related to cleaning, minor maintenance of latrines, pit emptying and desludging. However, three schools had placed latrines within 30 meters of a ground water point which poses an environmental risk.

Technical, social and financial sustainability is challenging. Although six in ten schools had regular cleaning programmes, they scored much lower on hygiene facilities for hand

RURAL

There is a contradiction in the findings: Sanitation coverage is very low in rural areas around project towns. In fact, only 14% of rural households has access to improved latrine facilities (including shared facilities), but none of the sampled households had safe, improved, clean and private sanitation facilities. However, sustainability indicators at service provision and service authority level are relatively high. Possibly, benchmarks have been set too low, woreda health offices have overstated the level of support, or the enabling environment is in place but missing critical elements.

Service provision level

In rural areas around project towns, more than half of the households practise open defecation, which presents a potential environmental sustainability challenge. Sanitation facilities are said to be affordable with the exception of Adishihu, where it is believed subsidies are needed. Only two areas have communal latrines for the poorest families.

Service authority level

In general, these areas met the institutional benchmarks for roles and responsibilities, sanitation and hygiene promotion, and woreda WASH plans. Logistical support was a challenge mainly due to lack of motorbikes

washing, anal cleaning and menstrual hygiene.

More than half of schools (58%) had separate latrines for boys and girls, but only 11% had suitable facilities for people with disabilities.

Service authorities provide support. However, there are delays in septic tank emptying. Few have transport to visit schools.

Almost half the schools are not paying for their water supply or for major repairs, posing a potential risk to financial sustainability. In Maksegnit and Kebridehar half the schools have no improved water supply.

Health facilities scored high on institutional and environmental factors, but low on technical, financial and social indicators.

What next? The way forward

The way forward towards sustainability in the eight ONEWASH Plus towns lies in developing and implementing sustainability plans based on the data from sustainability checks. The framework and methodology for these checks needs to be adjusted so that it can be used by staff at woreda and regional level for an annual sustainability audit. By being involved in data collection and analysis staff will be in a better position to act on the results.

The government is adopting even higher standards for service delivery within the 2nd Growth and Transformation Plan (2016-2020). Sustainability checks in 2016 will take account of these higher requirements.

Other actions to institutionalize sustainability checks into WASH are proposed:

- Include sustainability factors in national WASH monitoring and evaluation (M&E) indicators, woreda strategic plans and utility performance agreements
- To review potential for synergy between sustainability checks and plans and water safety plans which are being promoted.
- Link investment and budget allocations to sustainability scores
- Train WASH staff and stakeholders in sustainability checks

A national workshop is planned to share and review the methodology and findings from these ONEWASH Plus sustainability checks.

Challenges in conducting sustainability checks

Obtaining accurate and up-to-date operational data is a particular challenge in relation to budgets at woreda, regional and national level and production at utility level.

Experts with a good understanding of WASH issues are required to collect high quality data and conduct sustainability checks.

Some questions require subjective answers which may prove unreliable especially when considering coordination and integration and levels of awareness of policies and strategies.



It was useful to bring important stakeholders of the town and woreda to discuss WASH issues and focus on “sustainability of services” rather than only planning new facilities. The workshop promoted a group-planning approach and exchange of ideas among woreda and town officials.

Ms. Ayantu Tadesse, Kimbibit Woreda, Health Office, Regulatory Desk

Learning to do better...

ONEWASH Plus learning notes promote the sharing of experiences from innovations within the ONEWASH Plus Programme, which is funded by the UK Department for International Development (DFID) and implemented by UNICEF, with government and other partners, to help fill specific gaps within the Government-led One WASH National Programme.

This learning note is based on a report written by Marieke Adank, Eyob Defere and John Butterworth (IRC). The note was prepared by Peter McIntyre (IRC) with inputs from Michele Paba (UNICEF).