

No-one left behind

Putting the water sector to work
for inclusive growth and sustainable
industrialisation



Water Sector Equity Report 2019

Tanzania Water and Sanitation Network
(TAWASANET) March 2019





The Tanzania Water and Sanitation Network (TAWASANET) is the network of Tanzanian civil society organisations working in the water and sanitation sector. The network works to increasing sharing between civil society organisations, promote partnerships between civil society and other sector stakeholders, build the capacity of civil society in the water and sanitation sector, and to strengthen the voice of civil society in national policy debates.



Shahidi wa Maji is a Tanzanian NGO working with government, communities and the private sector towards sustainable and equitable water resource management for a fair water future. Shahidi leads the Uhakika wa Maji programme in Tanzania which uses social accountability monitoring with citizens, evidence-based advocacy with civil society, water stewardship with private sector and capacity building with government to improve the responsiveness and performance of water governance.



SIMAVI is a Netherlands based International NGO, believing health is the first step out of poverty since 1925. With good health, one can look after oneself and one's family and lift oneself out of poverty. That is why Simavi works towards a healthy life for all through WASH and SRH programs. Simavi is registered in Tanzania, working in collaboration with local NGO's, private sector and government partners on WASH in Health, SRH and Social accountability interventions.



WaterAid is an International Non-Governmental Organisation, with a vision of ensuring Safe Water Sanitation and Hygiene (WASH) for Everyone, Everywhere by 2030. Since its inception in 1983, WaterAid has been working in partnership with the Tanzanian Government, Development Partners, Civil Societies, Communities and the Media to improve WASH services access to the most vulnerable populations in Tanzania.

This is Tanzania's tenth report on equity in water and sanitation. TAWASANET has committed to prepare such a report on an annual basis, as per the mandate provided to it at the 2008 Joint Water Sector Review.

Cover photograph: Water collection from the Yaeda River, Mbulu District, SWM 2016.

Acknowledgements

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Executive summary

This year's Water Sector Equity Report focuses on the role of improved water sector performance in realising Tanzania's goal of reaching semi-industrialised, middle-income status by 2025. It draws on evidence from TAWASANET members, community monitoring, published research, recent analysis by the World Bank, and other reliable sources to highlight opportunities for the water sector to stimulate and sustain an inclusive and water secure economy.

Our report is set in the context of Tanzania's second Five Year Development Plan and its emphasis on growth in water dependent sectors, alongside our new status as a water stressed country facing an uncertain future climate. We examine performance across five themes which will have a major influence on the success of our economic transition: **the adequacy of water, sanitation and hygiene (WASH) for a healthy and skilled workforce; water stewardship by the private sector; water secure towns and cities; sector financing and accountability.** In each, we explore what is working well and what needs to change. Based on this we put forward eleven clear recommendations for what needs to change to ensure sustainable development where no-one is left behind.

Adequate WASH for a healthy and skilled workforce

Healthy people and with access to safe water, sanitation and hygiene will be the drivers of economic growth. As well as improving health, wellbeing and educational standards, improving access to WASH can save the economy TSh 521 Billion per year, or 1 percent of GDP of lost productivity related to waterborne disease.

Around 60% of Tanzanians now have access to improved water, although levels of access vary. Over 50% face collection times of over 30 minutes, time that could be spent in school or work. Only 60% of water points are functional. Other persistent problems include water quality, reliability and affordability: Tanzanians typically spend 5% of their household expenditure on water compared to the global norm of 2%.

Improvements in access to sanitation in rural and urban areas are promising, though access to proper handwashing facilities is still only at 50% for rural and 72% for urban population. **Worryingly, across all these indicators, gains made have been experienced by the wealthiest. The poorest wealth quintiles have seen minimal gains or even declines in improved access.**

The government of Tanzania has a strong commitment to improving WASH in schools. Data from 2014 indicated that only 74% of schools had improved latrines and only 24% of rural schools had a handwashing station. School WASH guidelines have not been fully implemented because of limited funding and disbursement of budgets.

Sustainable WASH services in health care facilities (HCF) are critical for a healthy population and strong workforce. Data from 2014 show that 67% of HCFs have access to improved water supply and 70% have access to improved sanitation. However, 53% of HCFs reported routine severe shortages, one third lack proper handwashing facilities, and water available to HCFs is often unsafe, showing signs of faecal contamination.

Adequate WASH in our communities, health facilities and schools are a bellweather of progress. By prioritising improved WASH for the poorest communities, in schools and HCFs the water sector can play a leading role in delivering sustainable and inclusive development.

SEE RECOMMENDATIONS 1 and 2.

Water stewardship for inclusive and sustainable industrialisation

Water stewardship is the use of water that is socially equitable, environmentally sustainable and economically beneficial. Tanzania's economy is water dependent, so water stewardship practice by the private sector is particularly important. To illustrate this we contrast case studies of good water stewardship with cases of water abuse by business, and through this generate lessons for the future.

Evidence shows that good water stewardship supports inclusive and sustainable economic growth, by ensuring efficiency, legal compliance, and resilience planning on farms and in factories, and by mobilising investment and innovation to help communities, smallholders and supply chains. Conversely, **poor water stewardship spells disaster**. Our case studies show how the textiles and mining sectors risk economic disaster and health impacts for millions of people because of irresponsible practices and industrial pollution. We also document how regulatory enforcement has failed to control this industrial pollution over the past 10 years. Based on this analysis propose ways to promote good, and to eliminate bad water stewardship in Tanzania. Action is needed now to ensure new investment is sustainable, to reverse impacts on vulnerable communities, and to ensure that Tanzania avoids the 5-10% GDP costs seen in India and China as a result of industrial pollution.

SEE RECOMMENDATIONS 3 and 4.

Water secure and resilient towns and cities

With the sixth fastest rate of urban growth anywhere on earth, Tanzania's economic wellbeing will be determined by how well we can meet the water security needs of our growing towns and cities. We draw on household survey data to explore how limited access, poor water quality, sanitation, pollution and flooding influence inequitable urban growth.

Unreliable access to water poses serious problem for 49% of households surveyed in Dar es Salaam and 77% in Morogoro. It interrupts daily activities, school and work, and means walking long distances, ill-health, poor hygiene and extra costs. These rates are typical of other urban areas in Tanzania.

In some wards water quality is a major problem. In Morogoro, over 50% of surveyed households reported quality problems due to objectionable taste, salt, smell, colour which contributed to extra costs for treatment and ill health. As many as 35% of community water sources in Dar and 52% of those in Morogoro showed signs of faecal contamination.

Sanitation can be a problem for as many as two thirds of households in some wards, causing pollution, disease and nuisance. In Dar es Salaam 57% of human excreta is discharged untreated to the environment and 2164m³ of raw sewage are discharged into Dar's waters each day, enough to fill a ten-story building. Such grim statistics contribute to the costly waterborne disease burden in Tanzania where since August 2015 we've seen 33,421 cases and 542 deaths from cholera.

We show the catastrophic impacts of urban flooding which will be a major contributor to a predicted 2% reduction to GDP growth due to climate impacts by 2030.

These problems impact on livelihoods, income generation and education and are disproportionately felt by the poor who face 'hydraulic exclusion': paying as much as 5 times more for water services than those in more affluent parts of town.

Improving urban planning and the provision of sanitation, reliable, affordable and good quality water supply, solid waste management and flood protection in towns and cities will benefit businesses, the poor and our economy. Given the scale of the challenge and its importance for inclusive growth, we urge a 'new deal' for urban water security which matches strong leadership, enforcement and sectoral co-ordination with the strategic investment needed to ensure that no-one is left behind by our rapid urbanisation.

SEE RECOMMENDATIONS 5 and 6.

Appropriate financing for strong water institutions

Adequate financing is a pre-requisite for improved performance by water sector institutions. As water demands grow, sector funding must keep pace to ensure provision. Our analysis reveals some worrying trends:

- ◆ **Water sector budget allocations have been cut by 25% overall and 20% for Water Resource Management (WRM) since 2016/17** – a period when government budgets have increased overall.
- ◆ **Ongoing problems with disbursement and expenditure mean that as little as 28% of allocated budget is being spent.** It is not clear why. As well as difficulties with absorptive capacity, in previous years this mismatch has been the result of non or late disbursement.
- ◆ **The WRM Financing Options study shows that the WRM subsector is starved of the human and financial resources it needs to operate.** Only 18% of the funds needed to deliver water resource management are available. Some BWBs receive as little as 3% of the resources they need, and typically they have less than half the professional staff required to deliver their important duties.
- ◆ **Basin Water Boards are working hard to generate revenue through fees and charges, but against a total annual need of US\$42 Million/year for WRM in Tanzania, user fees are generating only 3.3%.**
- ◆ **Tanzania should be spending between 0.64 % to 1.4 % of its GDP on the provision of safe water, sanitation, and water resource management.** Cuts since 2016 mean that we are falling well short of such targets with only 0.57% of GDP allocated, and as little 0.16% spent.

Budget cuts and low spend across the sector will undermine efforts towards economic growth and poverty reduction in Tanzania. Massive underinvestment in water resource management at the basin scale has very significant implications for the country's water security, equitable growth and future prosperity.

SEE RECOMMENDATIONS 7, 8 and 9

Accountability at the centre of improved water sector performance

Effectively holding institutions, organisations and people to account is a key step towards a fairer water future in Tanzania. Stronger accountability can ensure that solutions can be targeted quickly, cost-effectively and fairly, and that no-one is left behind. Our analysis shows:

- ◆ Most households surveyed are not aware of their own rights and responsibilities, or the duties of government on water issues. This stops them from taking positive action themselves or demanding action from others to solve water problems.
- ◆ Some authorities in the water sector itself don't play by the rules. In some basins UWASAs do not hold valid water use permits for around half of the water abstractions they use, do not have wastewater discharge permits or comply with discharge standards at their treatment ponds, and are paying only 13% of the water user fees owed to the BWBs. Such low accountability within the sector limits revenue, credibility and exposes the public, the environment and water users to major risks.
- ◆ It isn't clear how well water stakeholders, such as the private sector are performing because this performance isn't systematically documented or disclosed. A major driver for good performance is therefore missing.
- ◆ Whilst our sector dialogue process and JWSR are mechanisms to be proud of, improving them further through stronger mechanisms for mutual accountability will pay dividends.

SEE RECOMMENDATIONS 10 and 11.

Whether it is through adequate WASH in our schools and hospitals, stopping environmental abuse by business, ensuring water security for towns and cities, or proper financing and accountability, the water sector has a leadership role to play in economic growth which does not hurt or lock out the poor. The message is clear. **Businesses, communities and government have common cause: to drive sustainable and inclusive development we all need a well performing, properly resourced and accountable water sector.**

By drawing on evidence from the field, case studies and research we make this case for why a strong and functional water sector which prioritises inclusion and equity must be at the centre of sustainable industrialisation in Tanzania. Industrialisation can be an important step towards poverty reduction, through job creation, value addition and export revenue but only if it is supported by water sector which can provide services, protect the vulnerable, ensure resilience to shocks and enforce the rules.

If we learn from the mistakes of other countries and act now, a strong water sector can accelerate economic growth and poverty reduction. Analysis shows particularly strong links between better water management and economic growth in Tanzania. TAWASANET members look forward to close collaboration to deliver our recommendations, to help shape a vibrant water sector which will better serve all Tanzanians and our economy.

Tanzania Water Sector Equity Report

Recommendations 2019

1. **Budgets for improved WASH, the implementation of the National Guidelines for WASH in Health Care Facilities and Schools need to be increased, and barriers to disbursement and spend of approved funds urgently addressed.** Strong coordination between implementing agencies, the Ministry of Health and Ministry of Education, Science and Technology under leadership from the Ministry of Water will be necessary to meet the SDGs. A targeted mechanism such as a Sanitation and Hygiene Fund may help to address the funding blind spot on improved sanitation and hygiene.
2. **Baselines, indicators and monitoring of WASH performance in schools and health care facilities are required to inform national learning, accountability and tracking** against targets including the National Sanitation Campaign, WSDP II and SDG 6.
3. **Establish good water stewardship as the norm for all business and investors in Tanzania.** The Ministry and BWBs can encourage water stewardship through for example: explicit promotion of water stewardship via policy and statutory guidance; setting favourable tariff structures for those demonstrating water stewardship credentials; liaison with Ministry of Finance and Planning, Tanzanian Investment Centre, Growth Corridors and others so that water stewardship is established as a condition of business operations; and further collaboration among sector stakeholders and Universities to nurture Tanzania as a regional hub of water stewardship practice.
4. **Ensure effective enforcement to eradicate poor water stewardship.** Urgent attention is needed to address the flagrant and ongoing breaches of water law by business which impact on community livelihoods, public health, the economy and government credibility. Options include: immediate prosecution of test cases to send a clear signal of intent; training and equipping of enforcement staff within the BWBs; clearer delineation of responsibilities between BWBs and NEMC; public disclosure of compliance data for water users; enforcement guidelines and incident reporting mechanisms; and implementation of the very powerful polluter pays provisions in Tanzania law.
5. **New strategic investment in urban water security.** The Ministry of Water, sector stakeholders and partners should clearly set out the economic costs and benefits of urban water security in Tanzania. The future infrastructure needs, level of investment, and levels of return on that investment, required to equip our cities with strategic water supplies, sanitation, waste water treatment and flood protection must be clearly set out to stimulate and guide action and investment.
6. **Revitalised regulation and enforcement for urban water security.** The laws and regulations required to address the causes of urban water insecurity lie dormant. Powers to control abstraction, protect catchments, enforce standards of service on reliability, water quality, prevent encroachment and dumping of waste, ensure sewage collection and treatment are all in place. The regulatory stimulus of enforcing these rules can generate economies of scale and investment required to reverse growing water insecurity and hydraulic exclusion. As an immediate step, water quality monitoring and regulation of informal and private sector water providers upon whom many urban poor rely should be prioritised.

7. **Strong sector leadership is needed to reverse the worrying trend of year on year declines in water sector budget allocations.** Future allocation should better reflect our commitment to deliver inclusive growth and meet the SDGs - typically of at least Tsh 790 billion per annum (0.64% of GDP) on water supply and sanitation, and at least a five-fold increase in budgets for WRM.
8. **Urgent action is needed to address limited budget dispersal or low absorptive capacity.** The reasons for the sector spending less than 30% of allocated budgets need to be understood and acted on as a priority, and the results and recommendations presented to the JWSR.
9. **The WRM financing strategy outlined by the MoW in 2019 should be implemented as a priority once its pro-poor credentials have been verified.** It is likely to be a lifeline for the sector.
10. **Water sector actors and authorities should develop and implement plans to help the public understand their roles, responsibilities and statutory duties, and establish working, transparent and time-bound mechanisms for 'customer' reporting and response.** A national water 'hotline' is a potentially cost-effective mechanism to improve government responsiveness to the needs of citizens and water users.
11. **A review of the systems and strategies in place to ensure mutual accountability for water security by all stakeholders should be delivered, with detailed recommendations for stronger accountability at the JWSR 2020.** This should be comprehensive and explore how to improve the performance review frameworks for the private sector, UWASAs, COWSOs, WUAs, BWBs, Ministry Departments as well as NGOs and donors. In the immediate future, a programme of work to ensure that the UWASAs comply with provisions under the WRMA 2009 and its daughter regulations would help maintain the credibility of the sector.

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Acronyms and abbreviations

BWBs	Basin Water Boards
BWOs	Basin Water Offices
CAG	Controller Auditor General
CBHCC	Community Based Health Care Council
CCI	Centre for Community Initiative
DAWASA	Dar es Salaam Water Supply and Sanitation Authority
DAWASCO	Dar Es Salaam Water Supply Company
EMEDO	Environmental Management and Economic Development Organisation
GoT	Government of Tanzania
JMP	Joint Programme Programme
LGAs	Local Government Authorities
MAMADO	Maji Maendeleo Dodoma
MKUKUTA	National Strategy for Growth and Poverty Alleviation
MoFEA	Ministry of Finance and Economic Affairs
MOHSW	Ministry of Health & Social Welfare
MOWI	Ministry of water and Irrigation
NBS	National Bureau of Statistics
NWB	National Water Board
PEVODE	People's Voice for Development
PMO-RALG	Prime Minister's Office, Regional Administration and Local Government
RWSS	Rural Water Supply and Sanitation
SWA	Sanitation and Water for All
SWAP	Sector Wider Approach to Planning
SWAUM	Sustainable Water Access Use and Management
SwM	Shahidi wa Maji
TAWASANET	Tanzania Water and Sanitation Network
USD	United States Dollars
UWASAs	Urban Water Supply and Sanitation Authorities
WASH	Water and Sanitation Hygiene
WRM	Water Resource Management
WSDP	Water Sector Development Program
WWI	Water Witness International

1. Introduction and background

1.1 The focus of this year's Water Sector Equity Report

This year's Water Sector Equity Report focuses on the central role of water management in realising Tanzania's ambition of inclusive growth to become a semi-industrialised, middle-income country by 2025. We draw on evidence from across Tanzania generated by TAWASANET members, citizen monitoring, published studies and academic research to highlight the opportunities and challenges for the nation's transition to a prosperous and water secure economy which is truly inclusive: where no-one is left behind.

Through our health check on the sector we diagnose some critical problems and flag priorities for action, new investment and improved performance. We heed feedback from previous years by pointing to success stories to emulate, and provide constructive suggestions to ensure a water sector fit to support progress for all Tanzanians. We set out the case for why investing in water management isn't just good for people and the environment but that it is essential for job creation and the strong economy we seek.

Specifically, based on robust evidence, we identify the urgent priorities for:

- ◆ Adequate WASH for a healthy and skilled workforce
- ◆ Water stewardship for inclusive growth and sustainable industrialisation
- ◆ Water secure and resilient towns and cities
- ◆ Appropriate financing for strong water institutions
- ◆ Accountability at the centre of improved water sector performance

The opportunities we flag cannot be delivered by the water sector in isolation. The water security needed for pro-poor growth will require strong leadership from the Ministry of Water which must influence, incentivise and control the way water is used in all sectors and by all stakeholders. Some of our advocacy messages and calls to action have been heard before. This is because on some topics nothing has changed despite high-level commitments during the sector dialogue process in previous years. This highlights a pressing need for stronger accountability across the sector, including a process for tracking formal commitments made by donors, government and civil society at the Joint Water Sector Review.

Our civil-society network supported by citizen monitoring and Tanzania's growing academic capacity is ready to provide the constructive oversight needed for a fairer water future. We are also reaching out to those in the private sector which share our concerns and who join our call for change on water. Together we want to collaborate with government to ensure a water sector fit for a prosperous future for all Tanzanians.

The overall objective of this report is to support progress towards universal water security¹ in Tanzania by promoting open debate about how well we are performing on water, sanitation and hygiene and water resource management, and the social equity implications of this performance for Tanzania.

Our report is structured into seven chapters. Chapter 1 provides the context and rationale for the focus of this year's report. The chapters which follow set out the evidence and analysis of performance in the priority areas set out above, and lessons and recommendations are distilled in Chapter 7.

The report presents data in user friendly formats to encourage general debate and is based on authoritative data and clearly referenced evidence, supplemented by case study examples and stakeholder testimony.

¹ Water security is defined as the reliable availability of an acceptable quantity and quality of water for production, livelihoods, health and ecosystems, coupled with an acceptable level of risk from hazards including droughts, floods, pollution and conflicts. Grey and Sadoff, 2005

1.2 Where are we now? the context of this year's equity report

Tanzania's drive for sustainable industrialisation

"If we are truly to develop a sustainable economy, there is no other way but industrialization. This is what will give flight to our economy and transform people's lives. The National Development Vision of 2025 has drawn the map towards making our country a middle-income economy. We can get there, and all indicators show that we can get there. But, there is the danger of getting there only in statistics but which will not reflect the reality on the ground. ...My wish and in fact the efforts of the Fifth Phase Government will be geared towards achieving this goal so that the lives of most Tanzanians would truly reflect the middle-income picture of the country."

President of The United Republic of Tanzania, His Excellency John Pombe Joseph Magufuli, Dodoma, 20th November, 2015²

Tanzania's second Five Year Development Plan (2016-2021) 'Nurturing Industrialisation for Economic Transformation and Human Development' reflects this vision and has a dual focus on economic transformation and poverty reduction. It seeks to build on annual GDP growth of 6.5% over the past decade by fostering industrialisation, human development and an improved environment for business and enterprise³. Flagship projects include further establishing Development Corridors, special economic zones (SEZs), export processing zones (EPZs) and industrial parks. Target sectors for growth include agriculture and agro-processing (cotton to clothing, textiles and garments, leather); petro-chemicals; pharmaceuticals; construction; coal; and iron and steel⁴.

The FYDP II recognises that improved water supply and sanitation, urban planning, and good resource governance need to go hand in hand with industrial development and that a 'business unusual' spirit is needed to ensure effective implementation and strategic partnerships. Our analysis will show how the FYDP II and its pro-poor credentials are highly water dependant, and therefore that 'business unusual' must extend to much more judicious water management. The urgency of this message is reinforced by the conclusion of the World Bank's Economic Outlook for Tanzania in 2017:

"All indications suggest that sub-optimal water management is already having a negative impact on Tanzania's economy."

p. iv, World Bank, 2017, Tanzania Economic Update

Tanzania's new status as a water stressed country

The FYDP II and its reliance on water security need to be considered in the context of Tanzania's changing water environment. Since the last equity report, Tanzania's per capita water demand has increased to the extent that we have crossed the threshold to become a water stressed country (see Figure 1.1)⁵. Over the last 25 years the population has doubled, the size of the economy has tripled, but water availability has remained the same. Growing demand on a finite resource has resulted in water stress – with water resources dropping below 1700 cubic metres per capita – projected to decline further to 1400 cubic metres per capita by 2025⁶.

² <http://tz.one.un.org/media-centre/statements/186-the-speech-by-h-e-john-pombe-joseph-magufuli-officially-inaugurating-the-11th-parliament-of-the-united-republic-of-tanzania>

³ World Bank. 2018. Reaching for the SDGs: The Untapped Potential of Tanzania's Water Supply, Sanitation, and Hygiene Sector. WASH Poverty Diagnostic. World Bank, Washington DC.

⁴ National FYDP II (2016), Ministry of Finance and Planning

⁵ World Bank 2017

⁶ World Bank 2017

National water demand is already at 150% of accessible supply in dry seasons and regular shortages limit production. Dry season demand could rise to as much as 216 percent of supply by 2035⁷. Figure 1.2 shows current water deficit months – the number of months when some users need to go without water – per basin during a dry year.

Agriculture currently uses the lion’s share of our water resources accounting for 89 percent of abstracted water. 10 percent is used for domestic consumption and 1 percent for industry⁸. A major challenge will be controlling water demand in agriculture so that there is enough for other uses, particularly given that the National Irrigation Masterplan of 2018 targets a massive increase in the area under irrigation: at least a doubling by 2025. Meeting such ambitious targets in ways which are sustainable, and which don’t impact negatively on communities, smallholders and environment will be a huge test for our water resource managers and water institutions. Given that agriculture accounts for 31% of the country’s GDP⁹, 85% of exports¹⁰ and 68% of employment¹¹, ensuring that water management is fit enough to enable irrigation expansion and agricultural sector development seems like a sensible priority.

Future climate projections for Tanzania

‘State of the art’ projections of future climate have significant implications for Tanzania’s growth plans and inclusive development (see Figures 1.3 and 1.4). Results from the latest available climate models suggests that¹²:

- ◆ By 2040 there will be warming everywhere by on average up to 1.8°C, and up to 5°C by 2090.
- ◆ Warming will lead to higher levels of evaporation and water demand everywhere and will be greater inland.
- ◆ Some models predict more rain, others less rain - there is no clear signal.
- ◆ By 2040 the number of days when the average temperature exceeds 30°C will increase from about 10 a year to 80 days a year.
- ◆ There is a higher likelihood of dry spell (droughts), and intense rainfall (floods) in future.

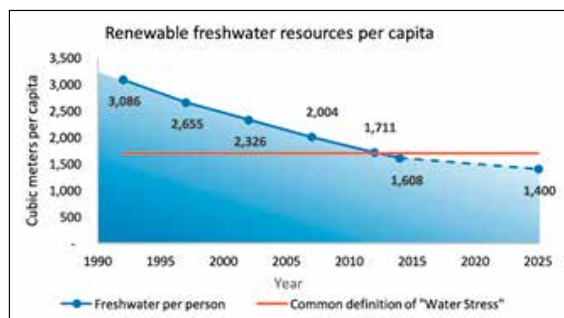


Figure 1.1 Renewable water resource trend, Tanzania. Source World Bank 2017

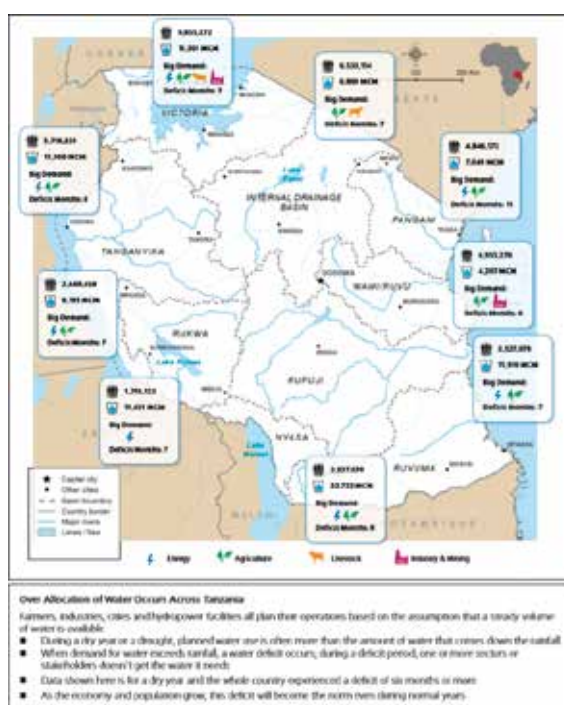


Figure 1.2 Water deficit months by basin, Source World Bank 2017

⁷ 2030 Water Resources Group 2014. Tanzania Hydro-Economic Overview

⁸ World Bank, 2017. Tanzania Economic Update – Managing Water Wisely. Washington DC

⁹ 2016 Agriculture, Value Added (% GDP) data from World Bank Open Data <http://data.worldbank.org/>.

¹⁰ CIA (Central Intelligence Agency). 2017. The World Factbook. <https://www.cia.gov/library/publications/the-world-factbook/geos/tz.html>.

¹¹ 2014 Employment in Agriculture (Total % of Employment) data from World Bank Open Data, <http://data.worldbank.org/>.

¹² Conway, D., et al. 2017. Future climate projections for Tanzania. FCFA Programme Country Climate Brief. 12pp.. The Future Climate for Africa (FCFA) programme has analysed 34 Global Climate Models that provide projections for Tanzania to distil key trends to help planning and decision-making.

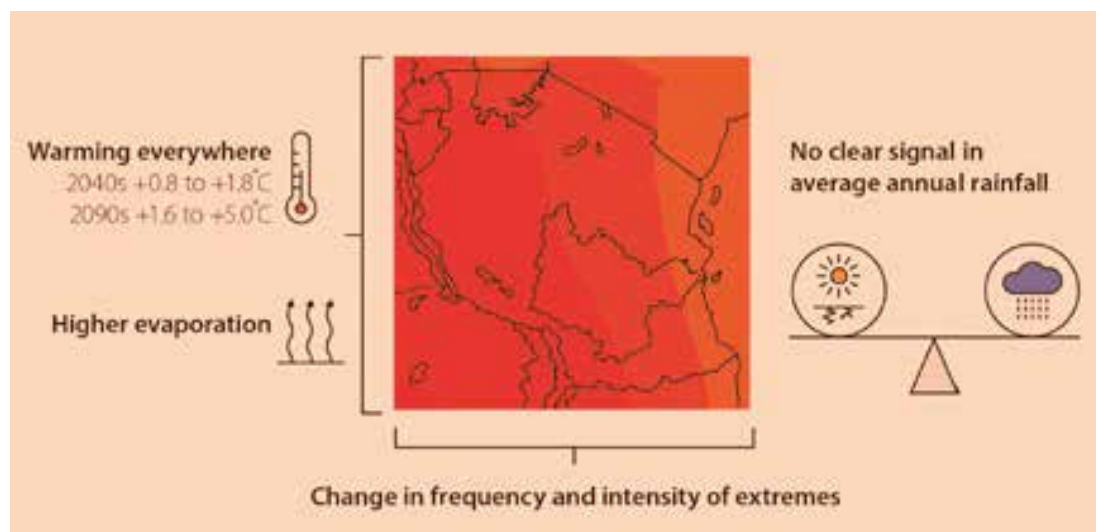


Figure 1.3 Summary of future climate changes in Tanzania (Conway et al. 2017)

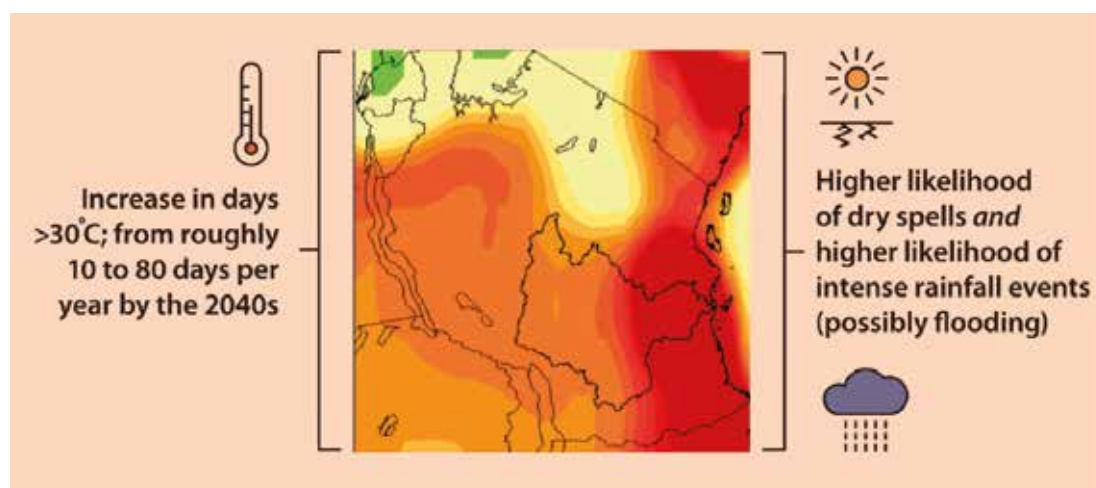


Figure 1.4 Summary of changes in extremes across Tanzania (Conway et al. 2017)

Increased water demand because of higher temperatures will drive conflict and scarcity among sectors sharing already stressed resources. Higher frequency droughts and floods, which already cost Tanzania's agricultural productivity an estimated US\$200 million in annual losses¹³, will have major impacts on urban and rural infrastructure, health, wellbeing and productivity. It is very clear that the water sector, through resilience within water supply and sanitation and water resource management which adapts to climate change and manages droughts and floods effectively, must play a central role in mitigating the negative impacts of climate change on Tanzania's people and economy.

Getting to grips with the SDGs

Tanzania has ratified the UNs Sustainable Development Goals, or Global Goals, a suitably ambitious set of targets for social and economic progress by 2030. The Goals set out in SDG 6 on water provide an important reference point for sector priorities in the coming decade.

¹³ World Bank 2017. *ibid.*

GLOBAL GOAL 6 TARGETS

- ◆ By 2030, achieve universal and equitable access to safe and affordable drinking water for all.
- ◆ By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations.
- ◆ By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally.
- ◆ By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity.
- ◆ By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate.
- ◆ By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes.
- ◆ By 2030, expand international cooperation and capacity-building support to developing countries in water- and sanitation-related activities and programmes, including water harvesting, desalination, water efficiency, wastewater treatment, recycling and reuse technologies.
- ◆ Support and strengthen the participation of local communities in improving water and sanitation management.



Joining the dots between growth, climate, equity and water sector performance

As TAWASANET members our mandate and greatest concern is to ensure that the water security needs of the nation's poorest and most vulnerable people are met as a priority, and that development is truly equitable. Considering the contexts set out above, this year's equity report makes the unequivocal case that:

- ◆ In order to meet Tanzania's development goals, in the face of escalating water stress and climate change, priority must be given to rapidly improving water sector performance, both on urban and rural water supply, sanitation and hygiene, and water resource management.
- ◆ A failure to do so will lead to slowed growth, missed targets, and greater inequity.
- ◆ By far the gravest negative consequences will be felt by those who are already poor, marginalised or disadvantaged. If we don't act on water now we will leave many people behind in our pursuit of economic growth.
- ◆ Constructively, we provide evidence to show how investing in equitable access to adequate WASH services, and effective systems for sustainable WRM will pay huge dividends through accelerating Tanzania's economic growth.

Below we set out the mechanisms through which better sector performance supports both inclusion and economic development.

<p>Adequate WASH for a healthy and skilled workforce Chapter 2</p>	<p>Healthy people and communities with access to safe water, sanitation and hygiene, will be the drivers of economic growth.</p> <p>Investing in WASH, especially for the poorest 40% makes excellent economic sense. Improved sanitation alone could save Tanzania US\$206 million per year or 1% of GDP through better health and productivity - more time for people to be at school, work, and lower health care costs¹⁴.</p> <p>Adequate WASH in our health facilities and schools are a bellweather¹⁵ of progress. Those being educated to lead the economic transition should not fall sick when doing so for want of water, toilets or cleanliness. Health facilities must have adequate WASH so that they can get the sick back on their feet and productive in their homes, schools and workplaces.</p>
<p>Water stewardship for inclusive and sustainable industrialisation Chapter 3</p>	<p>Water stewards use water in ways that are socially equitable, environmentally sustainable and economically beneficial¹⁶. Our priority growth sectors are water dependent. To create jobs and drive economic growth water needs to be available for agriculture, energy and industrialisation.</p> <p>At the same time industrial and agricultural water users must also demonstrate water stewardship. Externalising costs on the environment and the poor through pollution, resource depletion and degradation will inevitably leave many behind and cost the economy dearly.</p> <p>Harnessing the influence and resources of the private sector through water stewardship can help avoid negative impacts of industrialisation and deliver water security for all.</p>
<p>Water secure and resilient towns and cities Chapter 4</p>	<p>Industrialisation and growth depend on water secure and resilient towns and cities.</p> <p>When water shortages, drought crises, disease epidemics and flood disasters regularly hit our urban centres it is inevitably the poor who suffer most.</p> <p>Improving urban planning and the provision of sanitation, reliable, affordable and good quality water supply, solid waste management and flood protection in towns and cities will benefit businesses, the poor and our economy.</p>
<p>Appropriate financing for strong water institutions Chapter 5</p>	<p>Under-resourced water management institutions are bad for everyone. Businesses, farmers and communities all need water managers which can monitor, plan, implement and enforce common rules and standards for water allocation, access, use and protection.</p> <p>When weak water institutions function poorly it is the most vulnerable and marginalised - including women, children and the poor who suffer. Proper resourcing of water institutions and fair cost sharing, to provide a strong foundation for economic growth and poverty reduction is the central priority.</p>
<p>Accountability at the centre of improved water governance Chapter 6</p>	<p>The water crisis is primarily a crisis of poor governance¹⁷.</p> <p>At the heart of better water governance lies strong accountability: the obligation of one actor to provide information and to justify action to another actor who has the power to make demands and apply sanctions for non-compliance. In short it is about keeping promises and being answerable for performance.</p> <p>Accountability is important for everyone: governments; utilities; private sector; donors; WUAs; NGOs; the media; as well as communities. Stronger accountability will benefit business and economic growth, but it is the poor and marginalised who will benefit most, as they are least able to demand accountability and suffer most when it is weak.</p>

¹⁴ World Bank 2018, *ibid*.

¹⁵ the leading sheep of a flock, with a bell on its neck. Something that leads or indicates a trend.

¹⁶ Alliance for Water Stewardship 2014.

¹⁷ UNDP 2006. World Development Report

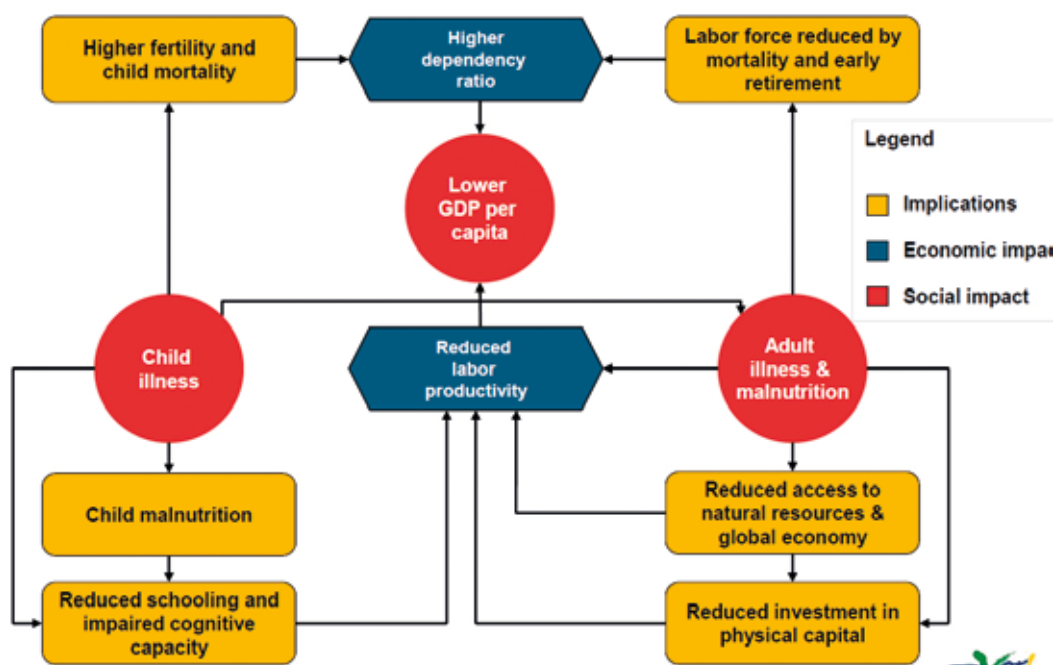
2. Adequate WASH for a healthy and skilled workforce

2.1 The importance of WASH for health, education and economic growth

Access to clean drinking water and improved sanitation are, on average, improving for Tanzanians, including for the poor and rural populations. Tanzania’s GDP growth remains one of the highest in the region, and progress has been made on reducing poverty levels. Improved health and education have played a key part in this progress¹⁸. However, inadequate WASH is estimated to cost the Tanzanian economy US\$206 million each year through health impacts on our people and lower productivity¹⁹. Disparities in access to basic services, coupled with rapid population increases may undermine inclusive growth and lead to an increase in the absolute number of poor. Sustaining pro-poor growth will require improved basic services, education, health and water.

In this chapter we reflect on progress on improving WASH performance and look specifically at WASH provision in health facilities and schools given the importance of education and good health for economic growth. The impacts of poor health on the economy are set out in Figure 2.1.

Poor health reduces GDP per capita by reducing both labor productivity and the relative size of the labor force



SOURCE : International Public Health, "Health and the economy"

Figure 2.1 Poor health reduces GDP per capita by reducing labour productivity

¹⁸ World Bank 2017, Tanzania's Economic Outlook. Managing water wisely. The urgent need to improve water resource management in Tanzania.

¹⁹ World Bank. 2018. Reaching for the SDGs: The Untapped Potential of Tanzania's Water Supply, Sanitation, and Hygiene Sector. WASH Poverty Diagnostic. World Bank, Washington DC.

Progress on water services

Based on the most recently available household data from 2016²⁰:

- ◆ Around 60% of Tanzanians have access to improved water, a 6% increase from 1990;
- ◆ Levels of access vary with access to improved sources in urban areas at 87% and in rural areas of 48% (see Figure 2.2). Better rural access is a big achievement given 21% coverage in 2000. Limited improvement in access for urban areas is a consequence of high urban growth.
- ◆ Over 50% of the population experiencing over a 30 minute collection time - time that could be spent in school or work (see Figure 2.3).
- ◆ When the new SDG indicator of safely managed water is used, coverage could drop to <8%.
- ◆ Only 60% of water points are functional against the 85% target by 2020²¹, with highest concentrations of non-functional water points in the poorest areas (See Figure 2.4).
- ◆ In 2018 the regional urban utilities recorded an average of 33% of non-revenue water due to leakage, unauthorized connections, overflow etc.

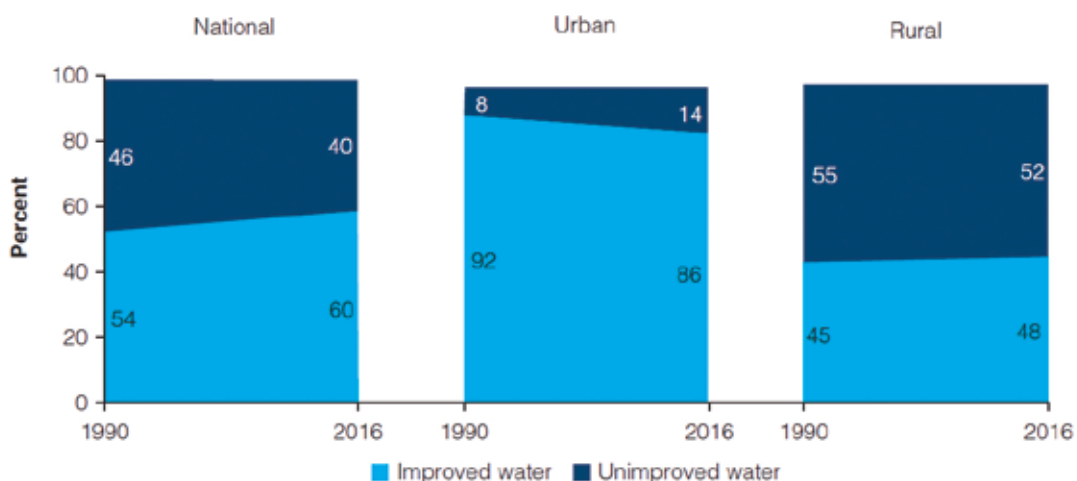


Figure 2.2 National, urban and rural improved water access (Tier 1), 1990 - 2016 (source: JMP/World Bank 2018)

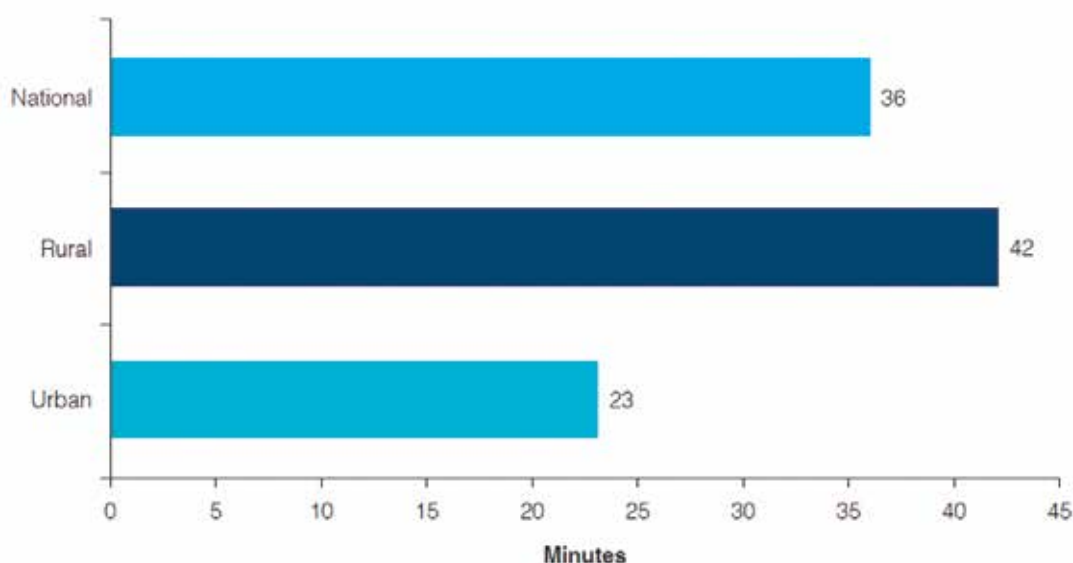


Figure 2.3 Average time to collect household water, round trip in Tanzania (source: DHS data in World Bank 2018)

²⁰DHS data reported in World Bank. 2018. Ibid.

²¹ Joint Supervision Mission, thematic areas 3 Water supply and Sanitation service delivery progress report, 27 February, 2018

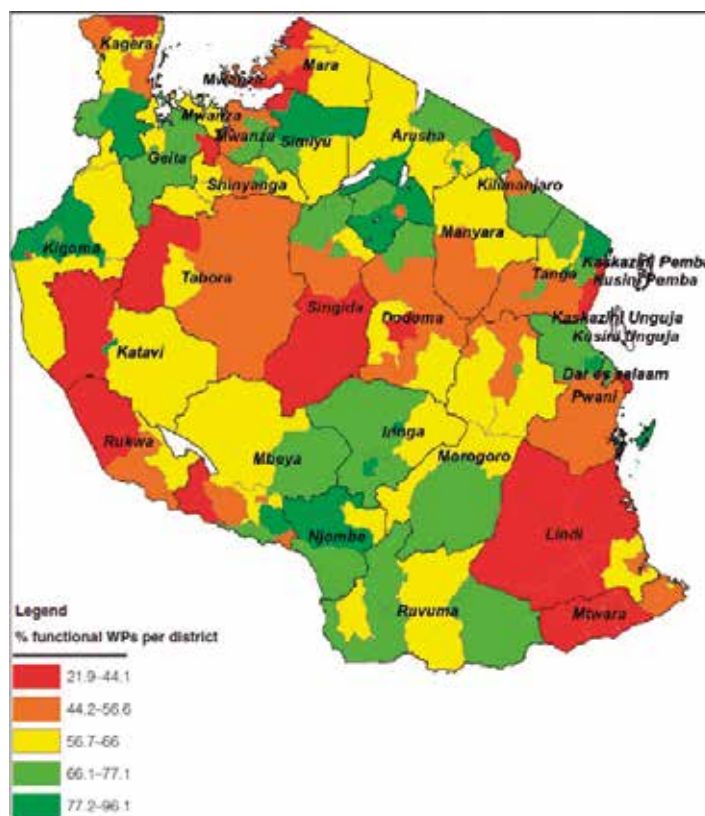


Figure 2.4 Functional water points by District, (Source: MoWI, Water Point Mapping Data, 2016)

Some of the major challenges include:

- ◆ **Sustainability.** Analysis in 2018 seeks to understand the factors behind water point failure and identified hydrological factors (groundwater depth and production); technology choice; management arrangements as key factors. Recent reviews point towards 'endemic problems in the sustainability and scalability of the community management models, which are too reliant on voluntarism and informality'²². Village committees seem less able to manage their water points sustainably compared to water board, governments or private providers. Energy costs are also reported to be a challenge and efforts are being made to put in place solar power to enhance sustainability.
- ◆ **Affordability.** Particularly in urban areas where Tanzanian households are spending 5% of their expenditure on water compared to a typical level of 2% globally²³.
- ◆ **Water quality.** Although data are hard to find, available studies show water quality is an ongoing problem in urban areas. MCC (2014) found that 27 % and 23% of household water in Dar and Morogoro respectively shows signs of faecal contamination.
- ◆ **Reliability.** Interruptions to water supply affect people in rural and urban areas - DHS data in 2015 showed that 63% of those surveyed reported a full day of no water in the previous 2 weeks. The problem is more severe in urban (66%) vs rural settings (56%).
- ◆ **Funding.** Other challenges include limited funding to execute projects which is exacerbated by the delay or non-disbursement of funds²⁴. The decision to switch from basket funding to earmarked funding by donors is problematic. Earmarked funds are likely to drive fragmentation, increase transaction costs and undermine strategic planning.

²²Hutchings, P., Chan, M.Y., Cuadrado, L., Ezbakhe, F., Mesa, B., Tamekawa, C., Franceys, R., (2015), *A systematic review of success factors in the community management of rural water supplies over the past 30 years*. *Water Policy*, 17(5), 963-983

²³World bank 2018, *ibid*.

²⁴Joint Supervision Mission, thematic areas 3 Water supply and Sanitation service delivery progress report, 27 February, 2018

Progress on sanitation and hygiene

The National Sanitation Campaign aims to improve sanitation and hygiene in households, communities, health care facilities, schools, and public places. Sanitation coverage in major cities is more impressive than in small towns and rural areas. Figure 1.1. indicates sanitation and hygiene trends based on NSMIS data in 2018.

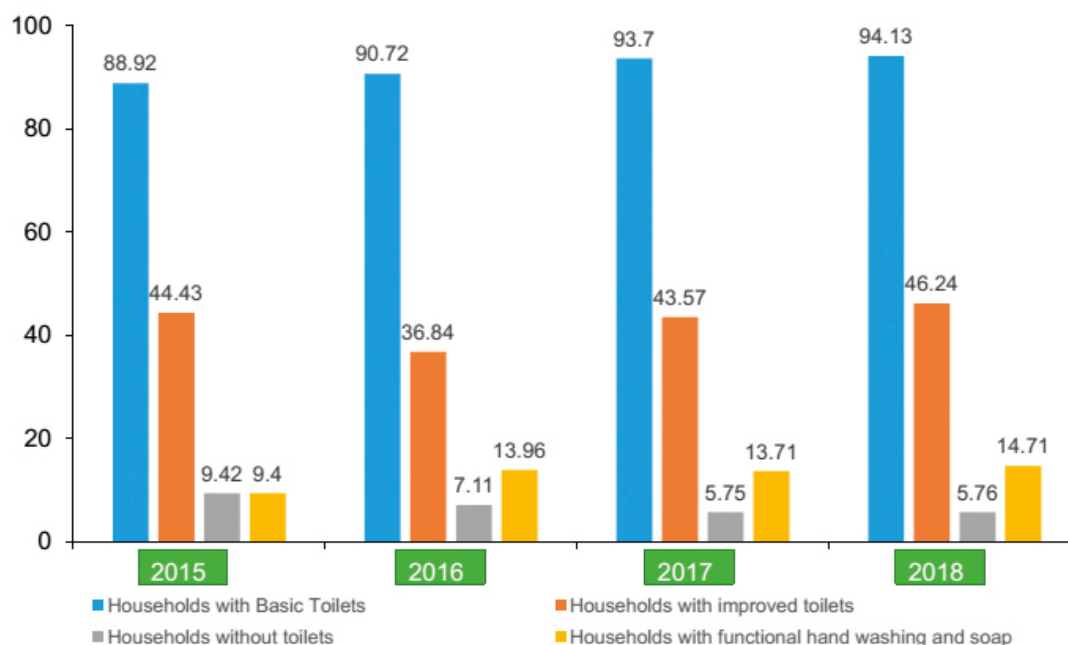


Figure 2.5 Sanitation and hygiene trends, Source: NSMIS 2018

According to JMP 2017 the trend shows some promising improvement where urban basic sanitation increased from 22% (2000) to 69.39% (2016 estimate). Rural basic sanitation: increased from 6.2% (2000) to 35% (2016) and unimproved sanitation decreased from 80.7.2% (2000) to 51.9% (2015). Access to handwashing facilities with water and soap is estimated at 50.1% for the rural population and 71.8% for urban population²⁵.

Progress on sanitation and hygiene in Tanzania still faces serious challenges. These include financing, where expenditure for Sanitation and Hygiene is not clearly visible in district and ministerial plans or budget lines. Sanitation and Hygiene tends to lose out to water which seems more politically appealing to decision makers, despite the strong evidence for the health and economic benefits of hygiene and sanitation. Where funding is available the emphasis tends to be on new building, not on rehabilitation of the existing infrastructure.

Progress for who?

Across all these indicators, gains made have been experienced by the wealthiest. The poorest wealth quintiles have seen minimal gains in improved access, with the poorest rural residents experiencing a decreasing trend in improved water access. Similarly gains in sanitation have benefited richer populations. Consistently, when water and sanitation problems arise it is the poor who lose out. The lack of supportive inclusive policy, legislation and regulatory framework on Sanitation and Hygiene, that takes into account the rights of marginalized groups in access to services, remains a challenge. Unless this is addressed Tanzania's economic development will inevitably leave many behind. The burden of water insecurity on communities - rich or poor - will hinder their contribution to economic productivity, in particular through impacts on their health and educational outcomes.

²⁵JMP (2017), *Estimates of the use of water, sanitation and hygiene in the United Republic of Tanzania*. <https://washdata.org/data/household>

Access to safe, functional, and improved water points remains too low.



Only **60%** of Tanzanians get their drinking water from an improved source.

In 2016, **40%** of water points were reportedly **non-functional**, with many failing in the first year after construction. About **two-thirds** of all piped water users in urban areas reported that they were **unable to access water** for at least one day in the previous two weeks.

The sanitation sector achieved gains in coverage in recent years, but still has a long road ahead.



Though almost all Tanzanians practice fixed-point defecation, over **80%** of rural Tanzanians rely on **rudimentary, unimproved sanitation** facilities.

In urban areas, despite a **13%** increase in total improved sanitation, overall coverage of sewerage networks remains **low** with less than **2%** coverage in 2016.

Hygiene promotion and WASH in schools and hospitals remain neglected goals.



About **22%** of households and **75%** of schools lack a functional hand-washing facility with available soap and water.

Over **half** of health facilities report routine water shortages, which can interfere with hygienic care.

Rurality and wealth have a notable impact on access to WASH services.



Rurality explains **45%** of lack of access to improved water, while poorer wealth status explains **50%** of lack of improved sanitation access.

Only **13%** of the population practices open defecation. However, of those, **75%** are in the **B40** of the wealth distribution.

Poor WASH undermines public health and human development.



Waterborne diseases stemming from poor WASH are an issue of concern. In 2017 some **4,985** cholera cases, including **99** deaths, were reported in Tanzania Mainland and Zanzibar.

Lack of WASH can interrupt healthy childhood development by increasing risk of enteric infections and reducing retention and absorption of essential nutrients. In Tanzania, **35%** of children under age five are stunted.

Figure 2.6 A snapshot of WASH performance in Tanzania (Source: World Bank 2018) N.B.B40 means the bottom 40% of the population when ranked by wealth.

2.2 WASH in schools

The SDG target to achieve ‘universal WASH access’ by 2030 implies all settings, not only households, but also schools, health care facilities, workplaces and other public spaces.

Safe, adequate sanitation and water infrastructure are integral components of a school. This is highlighted in the Public Health Act 2009 which clearly states that any school (private or public) should have adequate, functional sanitation and water facilities to support and maintain a healthy environment for children while in schools. Evidence very clearly shows that school WASH is very important for education outcome. It leads to improvement in cognitive and attention, reduces days that a child misses school as a result of WASH related diseases such as diarrhoea, worms, schistosomiasis, or urinary tract infections. 40% of childhood diarrhoea is transmitted at school²⁶. Lack of adequate facilities for girls during menstruation, leads to lower educational attainment for girls because of absenteeism, and impacts their dignity and safety^{27,28}.

The government of Tanzania has a strong commitment on School WASH, demonstrated by the establishment of a standalone School WASH programme to attract government and donor funds. A number of policy documents have been developed including School WASH guidelines that has set minimum standards for Water, sanitation and hygiene (WASH) in Primary and Secondary Schools, alongside this WASH tool kit and SWASH strategy.

Baseline data is limited. Mapping carried out by UNICEF, SNV and WaterAid in collaboration with the Ministry of Education, Science and Technology in 2009 in 16 districts of Tanzania indicated that: only 11% of schools surveyed meet the “minimum” standards of 20 girls and 25 boys per drop hole. 20% of schools have more than 100 pupils per drop hole and 6% of schools have no latrines at all. 96% of schools do not have facilities that are suitable or accessible to children with disabilities. 2% of girls latrines did not have doors providing dignity and privacy.²⁹

RWS data from 2014 based on a survey of 3000 schools in 24 regions indicate that³⁰:

- ◆ 26% of schools don’t have improved latrines;
- ◆ 60% reported that there was no water at the school;
- ◆ Only 32% of latrines were clean;
- ◆ 76% of rural schools lack any handwashing station.

To address this unacceptable situation, under WSDP II (Sanitation and hygiene component), a total of 3500 latrines were targeted to be built, including hand washing facilities and formation of sanitation clubs by 2021; and 700 latrines rehabilitated, including provision of hand washing facilities and formation of clubs³¹. However, there is no data available regarding progress against these targets.



Plate 1.1 A newly installed water point at Kakora Primary School in Geita.

²⁶ UNICEF 2010.

²⁷ SNV, Unicef, WaterAid; school WASH in Tanzania <https://washmatters.wateraid.org/publications/improving-wash-in-schools-in-tanzania>

²⁸ Lamdin, D.J. Evidence of student attendance as an independent variable in education production functions. J. Educ. Res. 1996, 89, 155-162.

²⁹ SNV/ UNICEF/ WaterAid School WASH Mapping Report, 2011

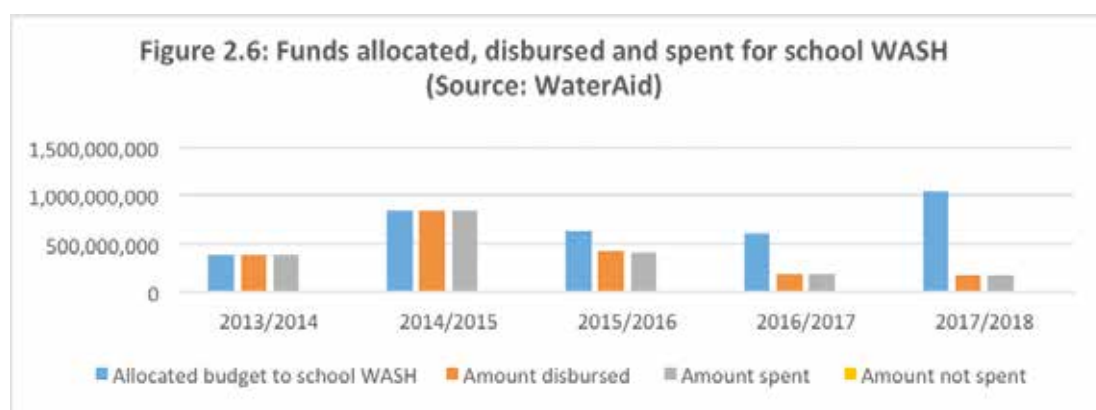
³⁰ Reported in World Bank 2018, *ibid*.

³¹ Water Sector Development Program Ph II (WSDPII) 2014/2015-2018/19

A priority is therefore to establish baseline measures to inform national and global monitoring of the National Sanitation Campaign II targets relating to WASH in schools.

According to Water Status Report, 2017, The School Water, Sanitation and Hygiene (SWASH) had met its annual target of constructing 452 improved latrines³². However, working at such a pace will mean the target of 3500 will be missed.

The School WASH Programme is funded through basket and earmarked funding. The current trend reported in the WSSR shows a decline in the amount disbursed and spent against the approved budget (See Figure 2.6). By the end of FY 2016/2017, only 36% of the annual allocation was released which comprised of TZS 205 billion from GoT and TZS 117 billion from DPs (both basket and earmarked projects)³³. This trend has implications for the pace of implementation and meeting both national and international targets.

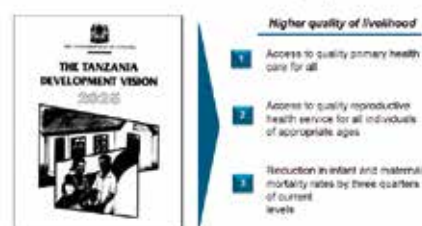


2.3 WASH in health care facilities

Sustainable water, sanitation and hygiene (WASH) services in health care facilities (HCF) are critical for providing safe, quality health care and subsequently for a healthy population and strong workforce. However, many health care facilities lack even the most basic water, sanitation and hygiene services which compromises the ability to provide basic, routine services and the ability to prevent and control infections. Without improved WASH services in HCF, we will not reach universal access to WASH, or achieve health-related SDGs, including universal health coverage, ending preventable new-born deaths and reducing maternal mortality (JMP, 2018)³⁴.

- Globally, health-care associated infections are a major cause of death: a 'spread of infections in the very place in which patients are seeking care'³⁵.
- Up to 30% of patients develop new infections during a stay in hospital³⁶.
- To prevent these infections, the 'availability of water, sanitation, hygiene, energy, and waste management' are necessary to create 'safe and adequate environmental conditions'³⁷.

In 1999, Tanzanian Government launched Tanzanian Development Vision 2025 and healthcare has been one of the primary focus...



³²Water Sector Status Report, MOWI, 2017

³³WaterAid school WASH budget analysis preliminary findings, 2019

³⁴JMP (2018), *Core questions and indicators for monitoring WASH in health care facilities in the Sustainable Development Goals*. World Health Organization (WHO) and the United Nations Children's Fund (UNICEF) 2018.

³⁵WHO (2015), *Water, sanitation and hygiene in health care facilities Status in low- and middle-income countries and way forward. WASH in HEALTH CARE FACILITIES* for better health care services. World Health Organization (WHO) and the United Nations Children's Fund (UNICEF), WHO Document Production Services, Geneva, Switzerland.

³⁶Adams, J., Bartram, J., Chartier, Y., (2008), *Essential environmental health standards in health care*. WHO Press, World Health Organization, Geneva, Switzerland

³⁷Cronk, R., Bartram, J., (2018), *Environmental conditions in health care facilities in low- and middle-income countries: Coverage and inequalities*. International Journal of Hygiene and Environmental Health, 221(3), 409-422

However, conditions at health care facilities in the region are far from safe and lack adequate environmental conditions. Recent data collected in Tanzania show that³⁸:

- ◆ 67% of HCFs were connected to an improved supply within 500 metres of the premises, 70% of HCFs have improved sanitation³⁹.
- ◆ Regional variation in access to improved water and sanitation in HCF is high (See Figures 2.7 and 2.8).
- ◆ Reliability is a problem. 46% of facilities reported that they can't access water on every day of the week⁴⁰.
- ◆ 53% of HCF reported routine severe shortages or lack of water. In Tabora this went up to 78%⁴¹. This leads to insanitary conditions and delayed or cancelled surgery.
- ◆ Based on DHS-SPA data, only 2/3rds of HCFs had proper handwashing facilities with running water and soap, or alcohol based detergents.
- ◆ NIMR research found that water samples taken in seven district health facilities showed signs of faecal contamination.

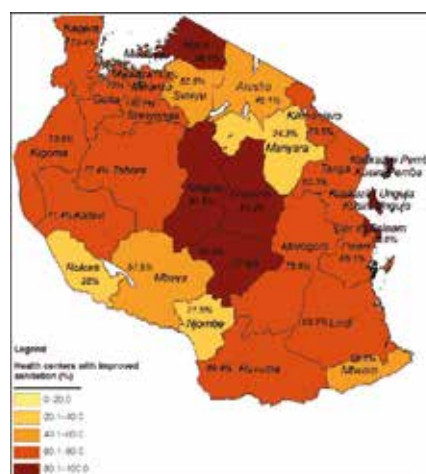
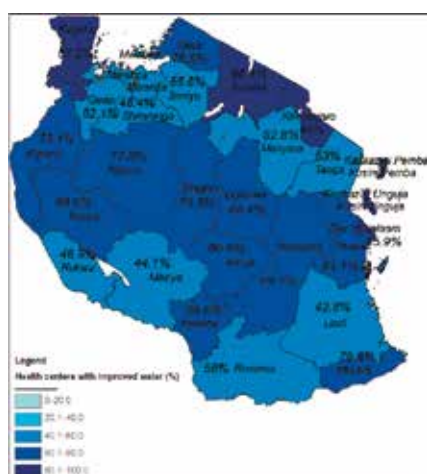


Figure 2.7: Left. Percentage of HCF by region with improved water

Figure 2.8: Right. Percentage of HCF by region with improved sanitation

Source: DHS-SPA 2014 in World Bank 2018.

An assessment of 186 rural dispensaries and health centres in the seven districts of Dodoma in Tanzania in 2014 revealed that only 2% of these facilities had water supply on the premises, through a rainwater harvesting installation⁴². The other 98% of the facilities needed to fetch water from shallow wells and boreholes as far as 2km away from the health facility or buy water from water vendors.

It is challenging to install on site water supply systems in rural health facilities, since they serve small numbers of people and cost-effectiveness is a problem. This is acknowledged by the Tanzania government in the 4th Health Sector Strategic Plan for the period up to 2020, where it is stated that 'community water supply systems will continue to be the main source of water supply for public primary health care facilities in the coming years' (HSSP IV, 2015)⁴³. Hence, rural public primary health care facilities will depend on community water supply systems for their water intake in the coming years.

³⁸Reported in World Bank 2018.

³⁹DHS-SPA data 2014.

⁴⁰National Institute for Medical Research. 2016. "Water, Sanitation and Hygiene Situation in Health Care Facilities in Tanzania Mainland and Way Forward." National Institute for Medical Research, Dar es Salaam, Tanzania.

⁴¹National Institute for Medical Research. *ibid*

⁴²Simavi, (2014), *Upgrading Water Supply in Primary Health Facilities in Dodoma Region- Maji Kwa Afya ya Jamii(MKAJI), ProDoc Implementation Phase MKAJI Project* - March 2014. Simavi, Haarlem, The Netherlands.

⁴³United Republic of Tanzania, (2015), *Health Sector Strategic Plan July 2015 - June 2020. (HSSP IV) Reaching all Households with Quality Health Care*. Ministry of Health and Social Welfare, Dar es Salaam, Tanzania

However, existing water supply systems in many rural communities in Tanzania are not fit to meet water demands of the institutions within their boundaries, like health facilities, schools and other public buildings. A baseline by Simavi (2014)⁴² and WaterAid (2017)⁴⁴ of Dodoma Region illustrated this and found that none of the 186 health care facilities in Simavi's baseline, and only 35 health care facilities in WaterAid's baseline of 2017 found access to an improved water source⁴⁵. Where connections do exist, the intake of water at the facility suffers from poorly functioning systems in the community⁴⁴, with intermittent water supply as a result.

Government and development partners currently join forces and resources to upgrade WASH infrastructure at rural health care facilities. Mismatches between planning and implementation of WASH resources and tools between MoH and MoWI can be a problem. In particular, it seems there is no tool for planning and budgeting of WASH infrastructure at public primary health care facilities that guarantees water supply flowing into the infrastructure.

To sustain the gains of current and future investments by government and donors in WASH in HCFs, and to secure value for money strong coordination between the Ministry of Water and the Ministry of Health is needed.

2.4 WASH in schools and healthcare facilities: key messages and recommendations

Improving the provision of adequate WASH in schools, health care facilities and for the poorest in society will play huge dividends through stronger and inclusive economic growth. As well as improving the health, wellbeing and educational standards of the nation's workforce it will save US\$206 million, or TSh 521 Billion through higher productivity. In order to support Tanzania's development goals, new priority must therefore be given to improving performance on WASH, and in particular in schools and health facilities.

Access to adequate WASH services in schools significantly improves education and health of children by reducing absenteeism. The Ministry of Education Science and Technology (MoEST) has been working with stakeholders to push the school WASH agenda to ensure a good learning environment and better health for pupils. School WASH guidelines have been developed, however these have not translated into effective action, partly because of limited funding and disbursement of approved budgets. Baseline data and reporting are limited and will limit learning and tracking of progress against the SDGs. An increased focus on WASH in Schools and HCF in support of the 2030 Agenda, will help to raise the profile of these key areas of performance.

- 1. Budgets for improved WASH, the implementation of the National Guidelines for WASH in Health Care Facilities⁴⁶ and Schools need to be increased, and barriers to disbursement and spend of approved funds urgently addressed.** Strong coordination between implementing agencies, the Ministry of Health and Ministry of Education, Science and Technology under leadership from the Ministry of Water will be necessary to meet the SDGs. A targeted mechanism such as a Sanitation and Hygiene Fund may help to address the funding blind spot on improved sanitation and hygiene.
- 2. Baselines, indicators and monitoring of WASH performance in schools and health care facilities are required to inform national learning, accountability and tracking against targets including the National Sanitation Campaign, WSDP II and SDG 6.**

⁴⁴WaterAid (2017), *Baseline report upgrading water supply and sanitation (WASH) in primary health care facilities in Dodoma Region: Maji Kwa Afya Ya Jamii (MKAJI Project)*. WaterAid, Dar es Salaam, Tanzania

⁴⁵Access to water by the health facility means that the health facility has water within convenient distance, but not adequacy (WaterAid, 2017)

⁴⁶Ministry of Health, Community Development, Gender, Elderly and Children, (2017), *The National Guidelines for Water, Sanitation and Hygiene in Health Care Facilities*

3. Water stewardship for inclusive and sustainable industrialisation

In this chapter we look at the role of the private sector in building our water secure and inclusive economy. We show that good water stewardship by business is vital for social and economic development.

Businesses which use water responsibly, contribute to better sector governance, and support communities and supply chains, are strong pillars of growth and important contributors to development. Those which produce goods at the cost of human health and ecosystem degradation through pollution and unsustainable resource use are a drain on our economic and social wellbeing, and exploit our people. Tanzania boasts some of the best, and the worst examples of water use by business anywhere in the world. We draw on these case studies to generate important lessons.

In light of Tanzania's water dependent economy, the concept and practice of water stewardship is particularly relevant for Tanzania. It is introduced here, ahead of case study analysis and recommendations.

What is water stewardship?

Water stewardship is the use of water that is socially equitable, environmentally sustainable and economically beneficial. Stewardship is about taking care of something which you do not own, and water stewardship provides a pathway for the private sector to use water responsibly and to fulfil its roles in supporting delivery of the water SDGs. Stewardship comes from the recognition that business faces risks if water is not well managed (regulatory, reputational and financial) and that economic opportunities are greater for everyone when water is well managed. Stewardship is simply making real the water user participation envisaged as an essential part of Integrated Water Resource Management. It is nothing to do with water privatisation and focuses on supporting government to implement policy, ensuring compliance and looking at ways in which companies can join collective action at community, catchment and supply chain scales to improve water security for all.

Initiatives such as the **2030 Water Resources Group, the International Water Stewardship Programme and the Alliance for Water Stewardship (AWS)** have been active in Tanzania to demonstrate the value of water stewardship.

The AWS has led development of a global standard which guides and differentiates responsible water users in the private sector through auditing their performance against best practice. Implementers **work through 5 steps to assess** and take effective action **toward 5 outcomes**. To demonstrate credibility to communities, government, investors and customers AWS sites can be 3rd party certified to obtain the AWS label.

Implementation globally, and in Ethiopia, Kenya, Tanzania, Zambia, Malawi and South Africa demonstrates benefits for:

Private sector and investors:

- ◆ A cost-effective framework for safeguarding against water related threats.
- ◆ State-of-the-art guidance and benchmarking against global best practice.
- ◆ Due diligence and risk mitigation across investment portfolios and supply chains.
- ◆ Improved stakeholder relations, investment & social/statutory licence to operate.



Government, smallholders and communities:

- ◆ Proactive compliance with laws and policies, and the 'do no harm' principle.
- ◆ New engagement on shared problems including WASH, climate & financing.
- ◆ New investment & political profile for sector priorities, governance & advocacy.
- ◆ Safe working conditions, sustainable use, pollution control & conflict resolution.

3.1 Good water stewardship as a driver of inclusive growth

Businesses, the Ministry of Water, and TAWASANET members Shahidi wa Maji have been working with the AWS standard to explore the benefits of the water stewardship for Tanzania. The following two cases lift lessons from stewardship implementation by Olam in Ruvuma Basin, and by Serengeti Breweries Ltd in Moshi documented in participatory evaluation reports supported by GIZ⁴⁷ and NM-IST⁴⁸.

CASE 1. Olam Coffee Plantation, Ruvuma Basin

A challenging water context for business

Like many investors in Tanzania, Olam faces a complex mix of water challenges which threaten their operations, financial viability, and licence to operate. Their Aviv Tanzania coffee plantation near Songea irrigates 2000 ha of coffee, employs 1250 people and contracts 1100 out-growers. The site faces regular flood and drought events, conflict due to growing basin demand, unregulated water use, degradation and depletion, and limited investment and basin governance to address these issues. The company pioneered the use of the AWS standard to see if it could help. Following implementation and a 3rd party audit they became the first certified water stewards in Africa.

⁴⁷Water Witness International 2016, Mitigating water risk and creating shared value: Lessons from implementing the Alliance for Water Stewardship standard in Africa, IWASP, Tanzania.

⁴⁸WWI and NM-IST, 2018, Maji SASA! Water stewardship action for small-holders in Africa Participatory R&D to mitigate risk and embed water stewardship within small-holder supply chains, IWASP Tanzania.

Positive change driven by water stewardship



Stronger stakeholder participation in basin management will improve water security for all



Improved WASH provision will improve worker wellbeing, health and productivity



New protocols for monitoring water use and abstraction will drive efficiency & compliance



Erosion control planning will reduce impacts on and off site

Outcome	Summary outcomes of AWS Stewardship implementation	Benefits		
		Community & basin stakeholders	Site & company	Water governance institutions
Good water governance	<ul style="list-style-type: none"> Support for basin governance Investment in establishing Upper Ruvuma WUA Investment in improved WASH for workers Proactive approach to conflict resolution Greater transparency and disclosure 	✓	✓	✓
Sustainable water balance	<ul style="list-style-type: none"> Establishing a site water balance and targeting more efficient and productive use Review of water use permit to support sustainable resource use 	✓	✓	✓
Good water quality status	<ul style="list-style-type: none"> Comprehensive pollution prevention planning & control Investment in water quality monitoring and analysis Improved erosion control Addressing priority water quality risks in the basin 	✓	✓	✓
Healthy water ecosystems	<ul style="list-style-type: none"> Demonstrating compliance and protection of environmental flow needs Improved management of the Ruvuma River corridor 	✓	✓	✓

Table 3.1 Multi-stakeholder benefits of AWS standard implementation at Olam’s Aviv Coffee Plantation

Stakeholder testimony:

“Implementing water stewardship has opened our eyes to the risks we face. There were issues we hadn’t seen...we weren’t making best use of our resources, and this was risking productivity, impacts on the environment as well as regulatory and reputational problems.”

Jeremy Dufour, Environmental and Social Manager, Olam

“It is clear that water stewardship through the AWS standard can improve water security for investors and local communities alike and help implement government policy on water.”

Jane Joseph, Manager, Shahidi wa Maji NGO



Plate 3.1 Aviv Coffee Plantation

CASE 2. Serengeti Breweries and MAJI SASA!

Water stewardship driving full compliance at site level, collective action in the basin...

Serengeti Breweries Ltd have implemented the AWS standard at their Moshi brewery. This has ensured: full regulatory compliance; continual improvement in water use efficiency; improved pollution control; action to protect groundwater resources; and collaboration with basin stakeholders on wastewater treatment and watershed protection.

...and resilience for small-holders farmers in supply-chains

Stewardship is also driving action on the water problems being faced by communities many miles away working in the supply chain of the brewery. Stewardship has required SBL to ‘understand and improve its indirect water use’, that is, the water used to grow its raw materials. That means working with SME barley farmers across Northern Tanzania.



Figure 3.1 SBLs barley supply chain; Figure 3.2. Ranking of water challenges by location; Plate 3.2 Barley farmer, Likamba, Arusha

Barley farming communities face problems with erratic rainfall, floods and droughts, pollution and catchment degradation, regulatory non-compliance, water conflict, and the inadequate of WASH. In SBL launched Maji SASA! to work with farmers to improve their water security and the resilience of their SMEs⁴⁹. Almost 1000 training days were provided on: conservation agriculture; climate resilient agronomy; rights, obligations and empowerment; weather-indexed insurance; entrepreneurship; financial risk management; and WASH. Interim evaluation shows that farmers:

1. Value the support and report that it will enable increased barley production and coping in dry years.

⁴⁹Maji SASA! was managed by Water Witness International in collaboration between Serengeti Breweries Ltd, the NGOs Shahidi wa Maji, Trias, the Selian Agricultural Research Institute (SARI) and Tanzania’s Ministry of Water and Irrigation, Ministry of Agriculture and District Governments of Arusha, Hanang and Siha, and Nelson Mandela Institute of Science and Technology. with funding from Diageo plc., GIZ’s International Water Stewardship Programme (IWaSP) and the Scottish Government.

2. Plan to adopt conservation agriculture, improved agronomy, business planning and insurance services.
3. Can make better decisions, plan for profits, and understand how to deal with risks like climate change.
4. Face structural barriers including: insecure land tenure limited access to affordable finance, farm inputs, machinery and technical advice which need to be addressed by government.

Further evaluation is required in future to see if these benefits translate into farmer productivity and resilience.

“There is a lot of new and valuable knowledge here: the stewardship standard, weather insurance and how to minimise shocks for farmers. This will add value to our work as a practical example of Climate Smart Agriculture and action in supply chains.”

Jane Marwa, Environmental Engineer, Ministry of Agriculture

“I will use this knowledge to ensure production is uplifted and will use ideas such as soil and water conservation. If we can get more easily available drinking water we’ll have more time for farming rather than fetching water.”

Samwell Satian, Farmer, Likamba

3.2 Poor water stewardship: a break on development and driver of inequality

The previous two case studies demonstrate the contribution of responsible business to a water secure future for all. The following cases show the toxic effects of irresponsible business practice on water for the poor and the economy.

CASE 1. Pollution from the textiles sector in Morogoro and Dar es Salaam

Textiles and garments are a flagship sector for Tanzania’s growth. However, our evidence shows that the textile sector’s current performance on water externalises costs onto the public, the environment and the poor. Tracking these cases of pollution since they were first reported to the JWSR in 2014 reveals important lessons for the efficacy of our water institutions.

Pollution of the Mzimbazi: business immunity to enforcement and blindness to community suffering

Severe pollution of the Msimbazi River imposes significant health risks for in excess of 250,000 people in Dar es Salaam⁵⁰. Although the sources of pollution are many, perhaps the most dangerous of all is that from NIDA Textiles Ltd along the Kibangu in Kigogo Ward. A 2014 study found pH levels below their outfall to be as high as 12 (which exceeds the Tanzanian legal limit of 8.5, and will burn the skin), and levels of Chromium VI, a dangerous cancer causing chemical used in textile dyeing, at 75 times the legal limit⁵¹. Local health professionals report that this pollution has profound health impacts on people, especially children who regularly come into contact with the river water.



Plate 3.3 Polluted Msimbazi River



Plate 3.4. Nida Textiles Discharge

⁵⁰Oxford Policy Management, 2014. Evaluation Report: Uhakika wa Maji. Shahidi wa Maji/Water Witness International

⁵¹Water Witness International/Shahidi wa Maji, 2014, Field report: Msimbazi Case study, Uhakika wa Maji Programme. Samples were taken and analysed by qualified personnel and underwent photometric analysis in a calibrated Wagtch Potolab,

Laboratory analysis confirms that *'due to the discharge of industrial wastewater water and soil around Msimbazi River has lead, chromium and copper concentrations higher than the permissible limit set by the EPA and TBS. In order to protect the health of the people, Msimbazi water should not be used for vegetable irrigation and wastewater should be treated before discharging to the river'*⁵².

Such pollution is an offence under the Water Resources Management Act 2009 and the Environment Management Act 2004, punishable by heavy fines or prison. However, there is a history of ineffective action to control this pollution:

1. Communities have been reporting the issues since 2005. Letters requesting action, and a formal report on the pollution were submitted to the Directorate of Water Resources, Basin Water Board and NEMC in 2014²⁵. At the Joint Water Sector Review 2014, the Minister of Water committed to address the problem.
2. In May 2017 NEMC and the WRBWB declared their intention to take further action. The Minister of the Environment set a deadline for effluent treatment to meet Tanzanian regulatory standards and for pollution to end by September 2017. NIDA were fined 30 Million shillings.
3. Site visits in 2018 and 2019 show that NIDA Textiles is still causing pollution by discharging untreated effluent. There has been no visible improvement in the severity of the pollution in the 14 years since it was reported.

Pollution of the Ngerengere: clear winners and losers from ineffective regulation

The story is similar along the Ngerengere River downstream of Morogoro. Here, it's not just the domestic water supplies of local communities which are being polluted with industrial and sewage waste - it is the strategic water supply for Dar es Salaam.

As reported at the JWSR in 2014 and 2016, communities have made formal complaints to the BWB and NEMC about untreated industrial and municipal waste contamination of the Ngerengere River. Pollution sources include Morogoro industries such as 21st Century Textiles Ltd, and human waste from MORAWASA's dysfunctional ponds. The pollution has severe impacts on downstream communities who have no alternative irrigation source or domestic water supply⁵³. Some have no option but to use the polluted river water for drinking and washing. The situation also poses a strategic risk to DAWASAs main supply from the Ruvu. Farms and industries using the river have been forced to wind up because the water is too polluted to use⁵⁴. Despite this, there has been no effective action to stop the pollution despite visits by the authorities. Plates 3.5 and 3.6 show the ongoing pollution in December 2018.



Plate 3.5. Polluting discharge from industries in Morogoro



Plate 3.6. Ngerengere River - the source of Dar es Salaam's drinking water.

⁵²Chanzi, G. 2017. Heavy Metal Pollution Assessment along Msimbazi River, Tanzania. Journal of Scientific Research & Reports. 17(5): 1-8, 2017; Article no.JSRR.38526

⁵³Research by IWASH 2013, found bacteria in the river at 8000 times safe levels set by the World Health Organisation because of the pollution

⁵⁴WWI 2018, Uhakika wa Maji, Phase II Evaluation report.

CASE 2. Impacts of uncontrolled gold mining on our water environment

Artisanal Small-scale Gold Mining (ASGM) is big business in Tanzania. ASGM produces 10% of national gold output, and provides work and livelihoods for up to one million people⁵⁵. This case documents the absence of water stewardship within this key economic sector, and the devastation this causes for human health and water resources.

Shahidi wa Maji worked with mining communities in Mbeya Region from 2016 to help them understand water risks, legal rights and environmental obligations. The community reported significant pollution of the Lupa River by mining activities, despite the Lupa river being the main source of water for local people. Key findings include:

Pollution through mining threatens Lake Rukwa Basin with catastrophic impacts

- ◆ ASGM causes serious pollution through the use of mercury in gold extraction, and via the escape of mercury into rivers where it can enter the food chain.
- ◆ Mercury is a toxic heavy metal and causes kidney problems, decreased intelligence, birth deformities and death⁵⁶. Mercury bio-accumulates in animals over time and so the poisoning hazard for humans eating fish exposed to mercury are significant.
- ◆ Researchers found that upto 3000kg/yr of mercury are released in the Lupa Basin by ASGM²⁶. They sampled the hair of residents and found levels of 236 ppm: comparable with highest levels found globally because of ASGM. They concluded that mercury contamination is extremely high and that mercury use should be prevented to avoid further impacts.
- ◆ **The big public health risk is bio-accumulation of mercury in the fish of Rukwa.**The Ministry of Livestock and Fisheries Development (2013) report that **Rukwa produces 3.6 million kg of fish for market annually** in a fishery which employs 3500 people, and provides food for millions⁵⁷.
- ◆ A study by Sokoine University (2015) analysed fish and sediments in Rukwa and found concentrations of mercury above World Health Organization (WHO) permissible limits, indicating that fish are not safe for human consumption⁵⁸.

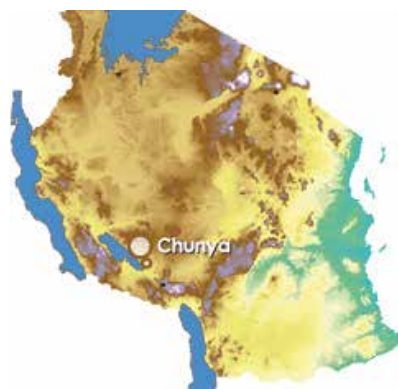


Plate 3.7. Use of mercury in ASGM



Figure 3.3 Case study location: Chunya in Rukwa basin

⁵⁵UNEP 2012, Analysis of formalization approaches in the artisanal and small-scale gold mining sector based on experiences in Ecuador, Mongolia, Peru, Tanzania and Uganda. Tanzania Case Study, June 2012.

⁵⁶IPEN Heavy Metals Working Group, 2013. ASGM sites: Matundasi and Makongolosi mining areas in Tanzania, IPEN Mercury-Free Campaign Report, AGENDA, Arnika Association and IPEN

⁵⁷THE UNITED REPUBLIC OF TANZANIA, MINISTRY OF LIVESTOCK AND FISHERIES DEVELOPMENT FISHERIES DEVELOPMENT DIVISION, FISHERIES ANNUAL STATISTICS REPORT- 2013. Fisheries Statistics Section MAY, 2014.

⁵⁸Mshana, J G, 2015. Mercury and Lead Contamination in Three Fish Species and Sediments from Lake Rukwa and Catchment Areas in Tanzania. Journal of Health and Pollution: June 2015, Vol. 5, No. 8, pp. 7-18.

Responsible authorities unable to respond

- ◆ According to the **Ministry of Water** they have been **unable to effectively monitor and assess mining pollution** problems because of a lack of facilities⁵⁹. No water quality monitoring is carried out to track the risks.
- ◆ When the community wrote for help from the authorities mandated to regulate ASGM the response was a silence.

“Pollution is a big problem along the Lupa River because of both small and large-scale miners. Their activities are threatening the existence of our river which thousands of people depend on. Small-scale miners should be educated about the impacts of mercury. The authorities are not doing enough to protect our water.”

Mawazo Kayola - Secretary, Lupa Water Users Association

Despite good laws, policies and guidance to control the impacts of mining, implementation is very weak. A lack of funding and low prioritisation means that miners are not receiving the support they need to operate safely – even when they ask for help. The result is a ticking time-bomb of health, environmental problems and economic impacts for millions of Tanzanians.

3.3 Water stewardship: Key messages and recommendations

Our examples show that some businesses undermine rather than support economic and social progress in Tanzania through the way they use and abuse water. As the case of polluting textiles factories shows, lack of investment in wastewater treatment results in ill-health and economic hardships for the public. Pollution is not an inevitable result of industrialisation – it can be avoided through proper water treatment by at site or by the UWASAs. The costs of pollution are much higher than the costs of treatment. Uncontrolled pollution from industrial activities costs China 5.8% of GDP through premature deaths, disease, crop and ecosystem damage and costs to business of treating water⁶⁰, in India, pollution costs one tenth of GDP⁶¹.

Strong environmental regulation is an enabler not an impediment to growth and enforcing the rules on water resource management makes good economic sense. So, why then aren't the rules being enforced in Tanzania?

Tanzania's water resource managers (the BWBs) and Environmental Regulators (NEMC) have very significant legal powers to control unsustainable water resource use by business. These cases show some of the difficulties they face. Even when enforcement action is taken, industries carry on polluting regardless. The consequences of ineffective enforcement include, a): slower growth due to degraded natural resources, health impacts and conflict; and b) erosion of government credibility because communities assume the cause to be corruption.

Drawing on evidence from across Tanzania, this chapter shows that:

- ◆ Good water stewardship by the private sector benefits the economy, can improve job and livelihood security and environmental protection. It is cost-effective and good for business, and the inclusive growth it delivers is good for poverty reduction and equitable growth.
- ◆ Poor water stewardship and non-compliance by businesses, large or small, leads to disaster. Not only does pollution and mismanagement of water impact on communities downstream, it stores up expensive problems for public health, the public purse and government support.

⁵⁹pp. 68 United Republic of Tanzania, Ministry of Water, 2016. Lake Rukwa Basin IWRMD Plan: Final Report, Volume II (b): Songwe Sub-basin Water Resources Management and Development Plan. WREM International.

⁶⁰World Bank, 2007. Pollution in China – an economic estimate of physical damage, World Bank, Washington DC.

⁶¹World Bank, 2018. Costs of Pollution Report, World Bank, Washington DC.

Considering this we make two recommendations:

1. Establish good water stewardship as the norm for all businesses and investors in Tanzania.

Water stewardship is a valuable for Tanzania, driving alignment with policy and legal compliance as well as collective action and investment on shared problems. The different ways in which the government and water sector can encourage water stewardship should be explored and acted on. For example:

- ◆ Explicit promotion of water stewardship via policy and statutory guidance through liaison with Ministry of Finance and Planning and others.
- ◆ Setting favourable tariff structures for those demonstrating water stewardship credentials.
- ◆ In some countries, including China, alignment with water stewardship standards has been specified in business licencing processes. Is there an opportunity for the Ministry of Water to coordinate with other government agencies (such as Tanzanian Investment Centre, Growth Corridors) so that water stewardship is established as a condition of business operations?
- ◆ Collaboration among sector stakeholders and Universities to nurture Tanzania as a regional hub of water stewardship expertise and practice.

2. Ensure effective enforcement to curtail poor water stewardship. Urgent attention is needed to address the flagrant and ongoing breaches of water law which impact on community health and the economy. Constructive options include:

- ◆ Immediate prosecution of test cases to send a clear signal of intent, and to stimulate investment in treatment technologies.
- ◆ Training and equipping of enforcement staff within the BWBs, and a clear and transparent delineation of authority and responsibilities between the BWBs and NEMC.
- ◆ Public disclosure of compliance data for all water users and establishment of enforcement guidelines and incident reporting mechanisms.
- ◆ Implementation of polluter pays powers. Given the costs of enforcement action, one immediate option to generate resources and drive change on the ground is to activate the very powerful polluter pays provisions in Tanzania law:

Using our law to make the polluter pay, instead of the poor...

Both the Environment Management Act 2004 and WRMA 2009 hand the authorities considerable powers to stop and remedy the pollution, and to assign costs to the polluting entity.

In WRMA 2009 under S.39 and S.40 the BWBs have sweeping powers: to 'direct any person' and to take 'all measures' to prevent and remedy pollution, and to 'recover all reasonable and justifiable costs' incurred in taking measures to remedy the situation. Under Section 105, compensation of losses for any harm suffered can be awarded and order that remedial measures be implemented.

Under the EMA 2004, pollution of the environment can result in a fine of Tsh 50M or imprisonment for up to twelve years.

- ◆ Full costs for controlling and remedying pollution can be recovered.
- ◆ Environmental Protection orders requiring works to be carried out can be imposed, with high fines or imprisonment where that person fails to comply with a requirement specified in the prevention order. A person failing to comply with a required order shall be liable to a fine not exceeding one hundred thousand shillings for every day or part of a day after the date specified in the order during which the offence continued.

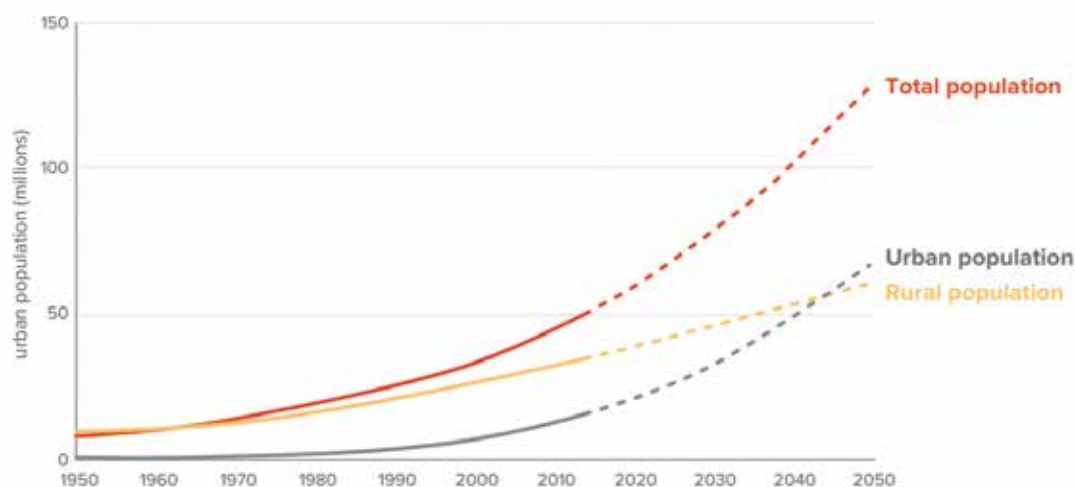
In effect, these considerable powers permit the authorities to redirect any and all costs involved with controlling or responding to a pollution problem to the polluter. This is a powerful disincentive yet to be used.

4. Water secure and resilient towns and cities

4.1 Urban centres as the engines of growth

Tanzania has the sixth fastest rate of urban population growth anywhere on earth⁶². 1.4 million additional people are living in our towns and cities each year, and in 25 years half the population will live in urban areas. As shown in Figure 4.1. By 2050, Tanzania's urban population is expected to reach 68.6 million people - a fivefold increase in a 40-year period.

Figure 4.1 Tanzania's total, rural and urban population (millions), 1950-2050.



Source UN DESA/World Bank 2018

Rapid urbanisation presents a huge opportunity for countries moving from low-income to middle-income status because:

- ◆ Urbanisation reduces the investment needed for the provision of core infrastructure, such as power and sanitation per capita.
- ◆ Urbanisation brings structural transformation, through a shift in jobs from agriculture to industry and services.
- ◆ Clustering of firms and workers can enhance labour productivity, stimulate innovation and a diverse economic base to increase incomes and resilience to shocks³².

However, if it is not well managed through diligent investment, planning and good governance rapid urbanisation can reverse or slow economic development and drive social exclusion. Equitable growth needs to be sustained by the provision of basic services and urban resilience to water related shocks including disease outbreaks, droughts and floods. In this chapter we examine the evidence for how well the water sector is keeping pace with the rapid rise in the urban population and draw on this to signpost future priorities.

⁶²Worrall, L. et al., 2017. Better Urban Growth in Tanzania: Preliminary Exploration of the Opportunities and Challenges. Coalition for Urban Transitions, London and Washington, DC.

4.2 Data sources and analysis

This chapter draws on multiple sources of evidence including recently published studies by the World Bank WASH Poverty Diagnostic⁶³, the National Bureau of Statistics (NBS)⁶⁴, and the Coalition for Urban Transitions³². As well as these secondary sources we also draw on new primary data collected by Shahidi wa Maji through the Uhakika wa Maji Programme, approved for publication by the NBS.

In 2018 Shahidi wa Maji undertook a large-scale household questionnaire survey to explore water security within six wards in Dar es Salaam (Vingunguti, Kigogo and Chamazi) and Morogoro (Tungi, Mkundi, and Mlali) (n=522). The objectives of this survey were to provide an accurate picture of the water related problems facing citizens in relation to: water access, water quality, sanitation, environmental pollution and flooding; and to explore how well citizens understand and are able to enact their rights and obligations. The aim was to generate evidence for where changes is needed to accelerate delivery of the country's Development Vision and attainment of the SDGs for urban communities.

The key insights provided by the data (which is based on a statistically significant sample of each Ward⁶⁵) are presented here and other sources are drawn on to support interpretation of the findings.

4.3 Water access and reliability

As in all of our towns and cities, there is large variability in how people obtain water in Dar es Salaam and Morogoro: from piped water, public taps or standpipes, tubewells, boreholes, and protected or unprotected dug wells and springs. In Kigogo Ward, 95% of the population are served by piped water from DAWASA, whilst in Vingunguti Ward only 28% have access to piped water from the utility. Similarly in Morogoro, 87% of Tungi's population are served by piped water by MORUWASA whilst in Mkundi less than 5% use a piped supply. Against this backdrop of diversity, key findings regarding water access and reliability include:

- ◆ Even in areas of high coverage by piped supply from the UWASAs, the reliability of water supplies is highly variable. For example, in Kigogo, 58% of households faced shortages of drinking water in the month prior to the survey, with 64% facing shortages in Vingunguti.
- ◆ On average, 50% of those questioned in Dar, and 77% in Morogoro had been unable to access drinking water at some time in the previous month. A third of Morogoro respondents said that available water was not adequate to meet their needs.
- ◆ 49% of households in Dar and 77% of those in Morogoro reported that access to water poses serious problem for their families. The impacts include interruptions to daily activities, school and work, walking long distances, ill-health, poor hygiene and costs.

These findings are consistent with a 2016 study which found that 66% of the population in all urban areas had been unable to obtain water on at least one day in the previous two weeks⁶⁶. The cumulative economic impacts of this low reliability on such large numbers of people is likely to be very significant. Despite gradually increasing urban water supply coverage in Tanzania, reliability is variable and places economic and social impacts on urban populations. Urban centres outside Dar es Salaam are particularly affected as illustrated by the widespread water shortages of 2015 and ongoing problems of reliable supply in Morogoro.

⁶³World Bank. 2018. Reaching for the SDGs: The Untapped Potential of Tanzania's Water Supply, Sanitation, and Hygiene Sector. WASH Poverty Diagnostic. World Bank, Washington DC.

⁶⁴Tanzanian National Panel Survey 2014-2015 (NBS, 2017:11)

⁶⁵See Shahidi wa Maji, 2019, Baseline report on household water security in Morogoro and Dar es Salaam, Uhakika wa Maji Programme, Tanzania. 522 households were questioned representing wards with a total population of 305,683 providing a 95% confidence limit and 12% margin of error.

⁶⁶DHS, 2016, in World Bank 2018.

4.4 Water quality

Households were asked whether they found the quality of water at their main source acceptable for household purposes.

- ◆ 42% of households in Vingunguti, and 8% in Chamazi and Kigogo found their water quality unacceptable.
- ◆ In Morogoro water quality was a more consistent problem with 36% (Mlali), 38% (Mkundi) and 46% (Tungi) of respondents finding their main source of water to be unacceptable. The main complaints were about objectionable taste, salt, smell and colour.
- ◆ Around a third of households in Morogoro said that water had caused them ill-health, and 18% of those in Vingunguti said the same. Water quality problems were linked to diarrhoea and cholera.

It appears that water supplied by DAWASA in Kigogo, and sourced informally in low density areas like Chamazi is of relatively better quality than in Vingunguti where 64% of households reported water quality to be a problem. In Morogoro, over 50% of households reported that water quality was a problem, even in Tungi where MORUWASA is the main supplier.

These findings suggest that ensuring good quality water supplies remains a serious challenge, and that this imposes health risks and an economic burden. Because of their limited ability to treat water, or to source from alternative supplies, it is the poorest urban communities who will be impacted most as a result.

Experiences of poor water quality are likely to reflect water contamination, including by pathogenic material and faecal matter associated with the high levels of unimproved sanitation and lack of proper faecal sludge disposal. Although widescale water monitoring data are not available, a recent study based on 1000 water quality tests found that 27% of households in Dar and 23% of households in Morogoro face unsatisfactory risk from E.Coli, and that 35% of community sources in Dar and 52% of those in Morogoro showed signs of faecal contamination (See Figure 4.2)⁶⁷.

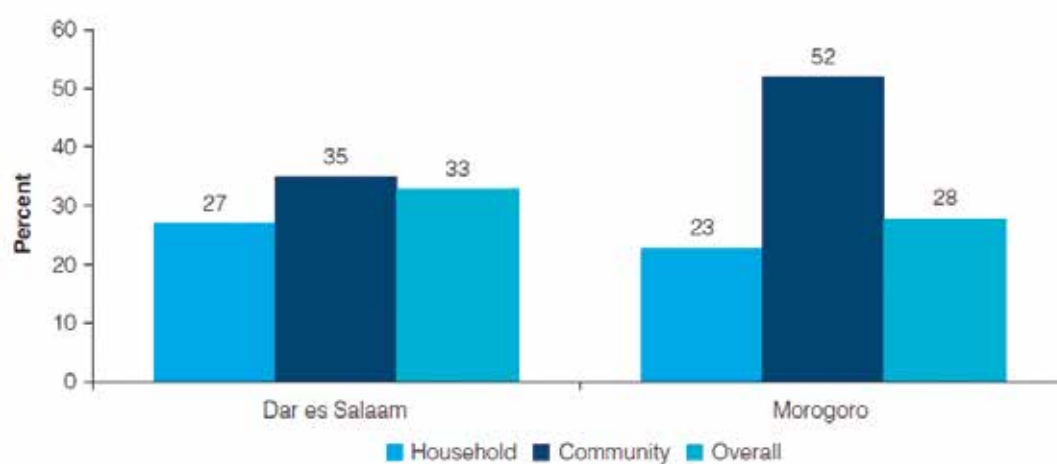


Figure 4.2. Community and household E.coli contamination - percentage of samples with an unsatisfactory risk rating (Source: MCC 2014)

⁶⁷Rostapshova, O., D. Roumis, J. Alwang, and C. Pendley. 2015. "Impact Evaluation Baseline Report of the MCC Tanzania Water Sector Project (WSP)." Millennium Challenge Corporation, Washington, DC

4.5 Sanitation, waste management and pollution

- ◆ Households reporting poor sanitation as a problem varied between 44% and 63% in wards surveyed in Dar es Salaam, with problems arising cited as pollution, disease and smell.
- ◆ In Morogoro sanitation is an issue in Tungi where 31% of households say it is a problem.
- ◆ Use of formal waste collection services is highly variable across wards surveyed: between 6% and 83% coverage.
- ◆ Pollution is a major problem for 49% of households in Kigogo and 34% in Vingunguti. In Morogoro that percentage was 22% in Mkundi and 18% in Tungi.

From 1990 to 2016, improved sanitation coverage in urban areas in Tanzania jumped from 6 to 43%. Whilst this is a big achievement, the urban sanitation challenge will grow alongside the urban population. Access to improved toilet technologies and a reduction in the proportion of toilets shared between households will lead to better health outcomes (particularly for the poor), but problems associated with improper faecal sludge management also need to be addressed.

Most human sewage in Tanzania is not treated before discharge to the environment. Studies show that only 43% of human excreta is safely managed in Dar es Salaam (see Figure 4.3) and that in Moshi, the figure is as low as 18%. This is tied to the limited coverage of sewerage and treatment systems (20% coverage in Dar Es Salaam) and such low figures will undoubtedly add to the annual disease burden and risk of water borne disease outbreak. From August 2015 to January 2018, Tanzania recorded 33,421 cases of cholera and 542 deaths from the disease⁶⁸.

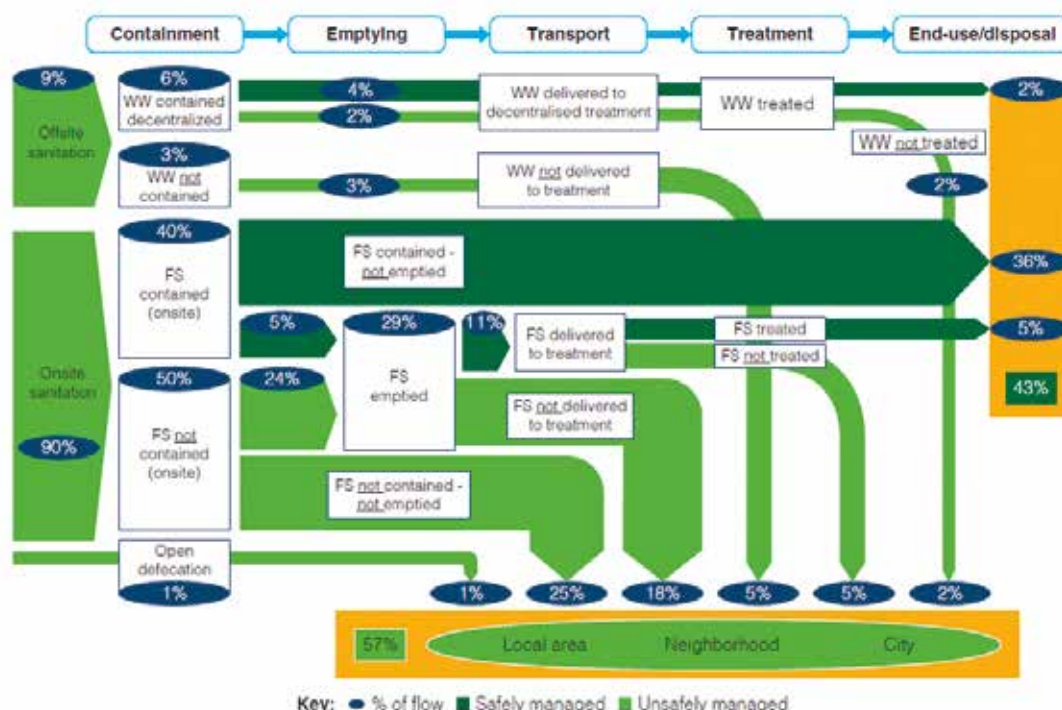


Figure 4.3. Faecal flow diagram of Dar es Salaam (Source: Sandec 2015)

⁶⁸WHO, 2018, <https://www.who.int/csr/don/12-january-2018-cholera-tanzania/en/>

4.6 Flooding

Flooding is an acute and regular problem for the people and economy of Dar es Salaam.

- ◆ 42% households are regularly affected by flooding in Kigogo and 39% in Vingunguti.
- ◆ Respondents reported that flooding caused them problems of homelessness, death and diseases.

Serious flooding is common along the Msimbazi causing widespread destruction of roads, bridges, houses and regular loss of life. 2011, 2014, 2015 and 2018 were particularly destructive years. In April 2018 floods had a severe impact nationwide, and in Dar es Salaam, 14 people were killed, 2,151 households displaced, 42 houses destroyed and 342 houses severely damaged⁶⁹. The economic impacts of urban centres besieged by flooding is significant, and unless addressed will be a major contributor to a predicted 2% reduction to GDP growth due to climate impacts by 2030.



Plate 1. Flood impact, Dar es Salaam 2015

4.7 Water secure and inclusive urban growth: key messages and recommendations

This chapter draws on new and secondary data to show the importance of investing in water security and flood resilience for our urban centres as a central pillar of attaining our development vision. Our data show how urban households face problems of water access and reliability, water quality, poor sanitation and flooding, and that each impact on wellbeing, livelihoods, income and education. The impacts of this urban water insecurity are disproportionately felt by the poor. The gross inequities of urban water problems have been characterised as ‘hydraulic exclusion’ where infrastructure is limited to a small, richer area of the city with heavy subsidies, with poorer communities in informal areas and the outskirts forced to fend for themselves. As well as posing differential health burdens, hydraulic exclusion also means that the poor are likely to pay more for their water, in some places, up to 5 times as much as those served by utilities⁷⁰.

⁶⁹DARMAERT & TRCS assessment, 2018

⁷⁰Pp. 38, World Bank 2018

We conclude that:

- ◆ **Low levels of water reliability cause disruption and impose cost burdens for business, urban populations and the poor.** The causes of low reliability are variable but ultimately stem from decades of underinvestment in strategic planning, water production, treatment, network upgrading and maintenance.
- ◆ **Problems of urban water quality are significant and impose inequitable acceptability, health and additional cost burdens on communities.** Causes are context specific to each source but include:
 - Uncontrolled groundwater abstraction and increased salinity of groundwater.
 - Problems with source water quality due to pollution and land use change.
 - Ineffective or incomplete treatment by utilities and providers.
 - Limited source or well-head protection and sanitary controls within the distribution network.
- ◆ **Whilst urban sanitation coverage has improved since 2005, safe disposal of human waste remains a problem for many urban households.** The longstanding neglect of sanitation and wastewater treatment in our cities means that even where sewage is collected; it is discharged untreated into the environment. Recent reports suggest that 2164m³ of raw sewage are discharged into the Indian ocean each day - that's about enough water to fill a ten-story building. The situation imposes economic and health burdens through disease and environmental decline and is a significant lost opportunity for economically productive waste re-use.
- ◆ **Urban flooding continues to take a significant toll on our economy and the wellbeing of communities, and unless action is taken, climate change and urban growth will exacerbate this.** Building houses within flood plains, catchment degradation upstream, dumping of solid waste, poorly designed drainage systems and hydraulic engineering all heighten flood risks. The root cause of these problems is the failure of land-use planning and control, and environmental management across our urban centres. Whilst initiatives such as Tanzania Urban Resilience Programme (TURP) and associated donor investment is encouraging, it is not clear yet whether political support is in place to mobilise the necessary investment or resolve the difficult governance issues at the heart of the problem.

Addressing our urban water insecurity is a formidable challenge. Given the unstoppable forces of urban population growth, shirking these challenges now will merely store up even more severe economic, social and political problems for the future. In this light we recommend:

1. **New investment in urban water security.** The Ministry of Water with its sector stakeholders and partners should clearly set out the economic costs and benefits for urban water security in Tanzania. Drawing on the capacity and expertise within the sector, the future infrastructure needs, level of investment, and levels of return on that investment, required to equip our cities with strategic water supplies, sanitation, waste water treatment and flood protection must be set out.

2. Revitalised regulation and enforcement for urban water security. Many of the legal powers and regulatory provisions required to address these problems are already in place, but they lie dormant. For example powers: to control abstraction and protect catchments, to require suppliers to meet standards of service on reliability, comply with water quality and source protection standards, to prevent encroachment and dumping of waste into river channels, and to require adequate levels of sewage collection and treatment are all in place. We ask, what would it require for duty bearers in government and urban authorities to implement these powers and begin to enforce measures to protect our urban water security? As an immediate step, because of the heavy reliance on informal providers, we would like to see a strategic approach to improved water quality monitoring and enforcement through stronger regulation within the catchment and supply network.

Given the scale of the challenge, its importance for stability and inclusive growth, we urge this 'new deal' for urban water security which matches strong leadership, enforcement and sectoral co-ordination with the investment needed to ensure that no-one is left behind by our rapid urbanisation.

5. Appropriate financing for strong water institutions

Adequate financing is a pre-requisite for improving the performance of water sector institutions. As demand for water grows, in our towns, cities and from industries and agriculture, we must keep step by increasing the funds available for infrastructure and basic services, for planning, operations, monitoring and maintenance, and for water resource management (WRM). If the sector goes short of funding, then it is the poor who go short of water first. This is why we have maintained a focus on financing of the water sector in the sector equity report.

2016's Sector Equity Report posed the question: 'are we investing enough in water resource management to support Tanzania's economic growth?' Based on detailed analysis of government figures we highlighted the problems in budget allocation and disbursement, and revenue generation which meant that water resource management was receiving a tiny fraction - less than 5% - of the funding required to deliver mandates under the Water Resource Management Act 2009.

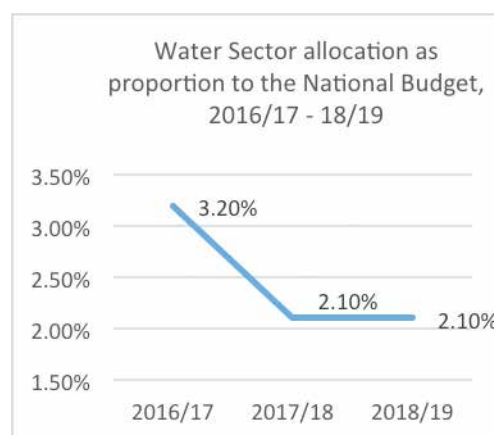
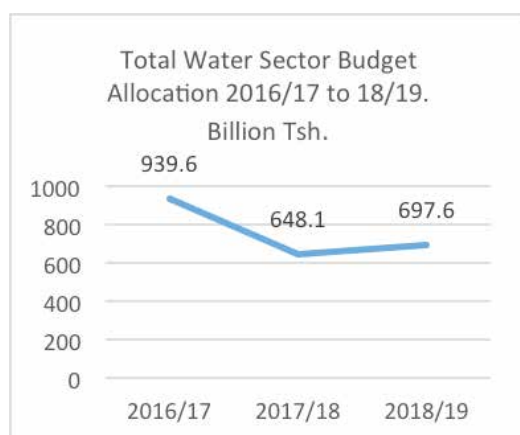
We recommended that in order to enable growth in our water dependent economy and to avoid significant environmental degradation, conflict and negative impacts for the people of Tanzania, sector funding should be increased, and that a 'Financing Options' study be completed to inform strategy for sustainable financing of the WRM sub-sector. The donor community and the government responded positively, committing in speeches at the JWSR to ensure adequate and sustainable financing for water resource management in future.

In 2019 the Ministry of Water made the findings of the 'Water Resources Management Financing Options Study' available for stakeholder review⁷¹. We draw on this and analysis of government budgets and expenditure by the Uhakika wa Maji Programme⁷² to check on progress against these commitments.

5.1 How has water sector financing changed since 2016?

Analysis of government data shows that between financial years 2016/17 and 18/19:

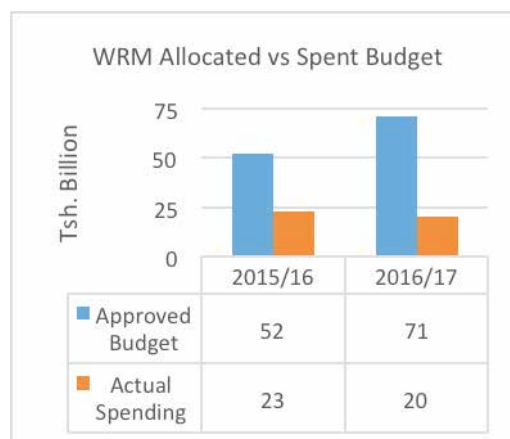
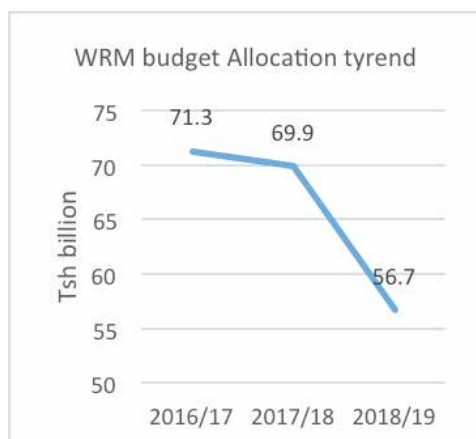
- ◆ The total budget available to the government has increased, but **the total budget allocated to the water sector has fallen by over a quarter (26%),** by Tsh 242 billion, to Tsh 687 billion in 18/19 (See Chart 4.1).



⁷¹ Ministry of Water, 2019, Water Resources Management Financing Options Study, Final Deliverable no3, Determination of financing needs for water resources management, COWI.

⁷² Shahidi wa Maji, 2019. Budget Analysis for GoT Ministry of Water, FY16/17-19/20. The data used for analysis in this report are official and drawn from the Ministry of Water's Information System (MIS), Enacted Budgets, Volume II & IV for Financial Year 2016/17, 2017/18 and 2018/19. Triangulation used the Ministry of Water's Budget Speech for 2016/17 & 2018/19, Budget memoranda for Vote 49, for the same years.

- ◆ **The proportion of national budget allocated to water dropped from 3.2% to 2.1%** such that the sector is funding allocated to water is the lowest amount of any priority sectors (see Chart 4.2.)
- ◆ In both water supply and sanitation, and water resource management, development expenditure has declined dramatically (by TSh 200 billion, and Tsh14 billion respectively) whilst recurrent budgets have increased over the same period.
- ◆ **The water resource management has seen its approved budget allocation fall by 20.5% since 2016** and the proportion of sector allocation has dropped from 10 to 8.8% (See Chart 4.3).



- ◆ **Basin Water Boards have performed well in revenue collection**, in some cases collecting as much as 178% of anticipated revenue from fees and charges. However, the total revenue collected TSh 4.6 billion in 17/18 remains very low in proportion to total budget needed (<8%).
- ◆ Across all budgets the amount actually spent is low. For the total water budget, only 36% was spent in 15/16 and 28% in 16/17. In water resource management 44% was spent in 15/16 and as little as 28% was spent in 16/17 (See Chart 3.4).

5.2 What does the Financing Option study tells us?

The WRM Financing Options Study is a rigorous and well-executed piece of work and we congratulate the Ministry of Water on this vital contribution. Its key findings include:

- ◆ The estimated average cost of delivering water resource management in Tanzania is around 7 TSh/m³ - a figure comparable to that of similar countries.
- ◆ Current allocations fall well short of what is needed. **'The gaps between ideal financial requirements and budgets are huge'**⁷³. Current provisions for:
 - Data information and knowledge are 13% of that needed
 - Planning and institutions is 28% of the requirement
 - Regulation and enforcement is only 9% of what is needed.
- ◆ These shortfalls vary by basin, with Rufiji receiving 16% of estimated need and Pangani 4%. IDB receives as little as 3% of its financial need, and Wami Ruvu 11% (see Figure 4.1).
- ◆ With regard to staff shortfalls, the study found that **Basin Water Boards have less than half the professional staff required to deliver their duties** (See Figure 4.2).

⁷³ pp. iv. MOW 2019

- ◆ Against a total annual need of US\$42 Million for water resource management in Tanzania, user fees are generating only US\$1.4 Million (3.3%). Users are currently being charged as little as 1 cent, or 0.24 Tsh per m³ of water. **'A very low levy on a very low proportion of the water actually being used.'**
- ◆ The report concludes that:
 - **'Overall the financing gaps are huge because the Government provides insufficient annual funds to basins due to the scarcity of funds. Similarly, the revenues collected by the basins are insufficient to play a visible role in the cost recovery in water resource management.'**
 - **Revenues collected by the water basins are low because:** the fee structure is inadequate; revenue collection methods are not efficient; public awareness of the need to pay for water is low; stakeholders in water resource management are not fully engaged; management capacity of water basins board is low.
 - There is a pressing need to: address all factors that contribute to low revenue collection and find and implement an equitable WRM cost recovery system with minimal transaction costs.

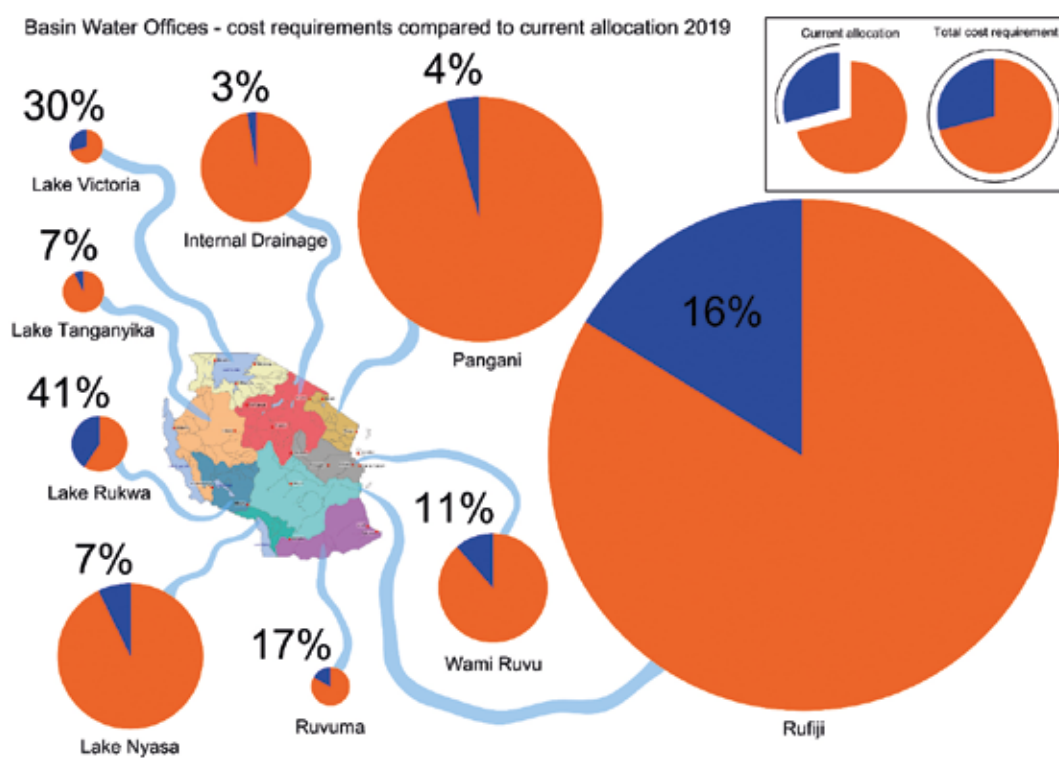


Figure 5.2 Professional and support staff headcounts and shortfall by BWB 2019 (Source: MoW, 2019).

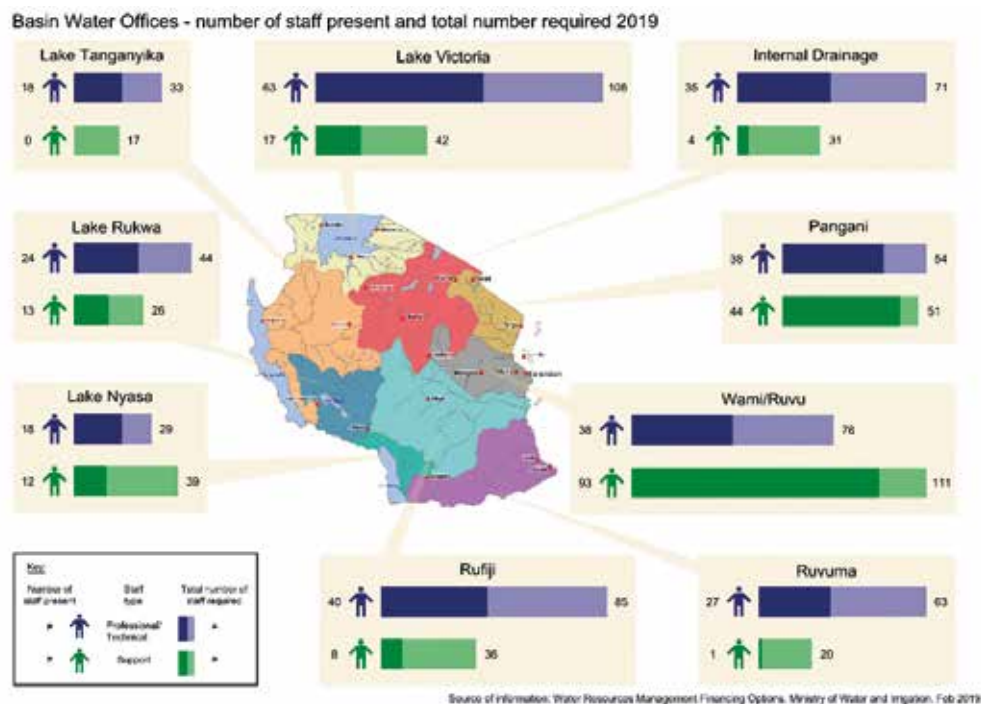


Figure 5.2 Professional and support staff headcounts and shortfall by BWB 2019 (Source: MoW, 2019).

In light of these findings, the consultants advising the MoW suggest the introduction of a ten pillar WRM sector financing strategy over 3-5 years including the following components:

Components of the ten-point WRM financing strategy

1. Enhanced permit coverage and volumes permitted.
 - 1.1 Enhance the coverage of permits.
 - 1.2 Pricing structure thresholds to be defined as m³/year.
 - 1.3 Conservative allocations of permits.
2. Widespread implementation of cumulative flow metering.
3. A tariffs structure which retains the characteristics of the current structure.
 - 3.1 Fixed application permit fee (Exists currently, rates reviewed, infractions penalized).
 - 3.2 Flat rate part of the water user fee depending on the volume applied for relative to a threshold.
 - 3.3 Volumetric fees for volumes applied for (and used) in excess of certain limits.
4. Reconsider charges for non-beneficial and non-consumptive water use.
 - 4.1 Hydro-power.
 - 4.2 Hydro power and ecological flows.
 - 4.3 Industry, thermal power, mining and fish farms.
5. Performance bonds for mining and industrial activities with major risk of pollution.
6. Wastewater discharges - point pollution.
7. Wastewater discharges - non-point pollution.
8. A stronger focus on enforcement (the higher revenues generated will be an important enabler for improved enforcement).
9. Strong focus on providing the WRM service in a predictable manner in accordance with the permits given.
10. Lower transaction costs.
 - 10.1 Promote water user associations.
 - 10.2 A systematic effort to promote a modern electronic system of payments.
 - 10.3 Increased use of self-reading meters.

5.3 Sector financing: key messages and recommendations

These findings reinforce the conclusion of previous equity reports, that: **the root cause of growing water insecurity in Tanzania and the negative impacts it has on people and the economy is the inadequate resourcing of water management institutions.**

- ◆ **Despite commitments to provide adequate and sustainable financing for water management, over the last 3 years budget allocations have been cut dramatically: by 25% overall and 20% for WRM.** That these budget cuts have taken place during a period when overall government budgets have increased, and in the face of a clear need for increased finances to allow the sector to function is a shock. Global analysis suggests that countries like Tanzania should be spending between 0.64 % to 1.4 % of its GDP on the provision of safe water, sanitation, and water resource management^{74,75}. Cuts to the water sector budget since 2016 mean that we are falling well short of such targets. **Given the deep and difficult challenges facing adequate WASH provision in schools, health facilities and across our urban and rural populations, and water resource management, budget allocations need to see an upward not downward trend. The levels of budget cuts seen across the sector are likely to undermine efforts towards economic growth and poverty reduction in Tanzania.**
- ◆ **There are continuing problems with the disbursement, expenditure and accounting of budgets in the water sector with as little as 28% of allocated actually being spent.** It is not clear why this is the case. As well as difficulties with absorptive capacity (the ability of the Ministry to spend), in previous years this mismatch has been the result of non-disbursement, late disbursement and bureaucratic delays in procurement. **Improving the flow, as well as the level of funding to front line services in the water sector is a priority. Understanding and action on the root causes of the large differences between allocated budget and budget actually spent are urgently needed.**
- ◆ **The Financing Options study confirms the previous observation that the WRM subsector is starved of the human and financial resources it needs to operate.** Overall the sub-sector is spending around 18% of the money it needs to deliver water resource management function. The Basins are receiving as little as 3% of the resources they need to function (see Figure 4.2). **This massive underinvestment in water resource management at the basin scale has major implications for the country's water security, equity and future prosperity.**
- ◆ **Basin Water Boards are working hard to generate revenue through fees and charges, but the current pricing structure, low permit coverage and weak enforcement are skewed against financial sustainability.** Water users in Tanzania are charged some of the lowest tariffs anywhere on earth - it often costs more to collect fees than they bring in. The MoW has put forward a draft strategy for sustainable financing of WRM and which represents a constructive solution to the current WRM funding catastrophe. The changes proposed should be analysed and tested before implementation to ensure that they are pro-poor. It would be easy to harm vulnerable communities by imposing tariffs that are too high. **Combined with a risk-based approach to water management which focuses limited resources on the greatest need (see Figure 4.3), implementing the pillars of the MOW WRM financing strategy will be an important step towards a functioning sub-sector with the resources to support inclusive growth.**

⁷⁴ Hutton, G., and Varughese, M., 2016. The Costs of Meeting the 2030 Sustainable Development Goal Targets on Drinking Water, Sanitation, and Hygiene Summary Report. Water and Sanitation Program (WSP)/World Bank.

⁷⁵ Eurostat, 2018. https://ec.europa.eu/eurostat/statistics-explained/index.php/Government_expenditure_on_environmental_protection

Recommendations:

1. Urgent action guided by strong sector leadership are needed to reverse the worrying trend of year on year declines in the water sector budget allocation which has been cut by over a quarter since 2016. Cuts in the budgets for water supply and sanitation and water resource management at a time when the national budget and water sector financing needs are increasing will threaten Tanzania's growth and water security. Future allocation should better reflect our commitment to deliver inclusive growth and meet the SDGs - typically of at least Tsh 790 billion per annum (0.64% of GDP) on water supply and sanitation, and at least a five fold increase in budgets for WRM until the benefits of the WRM financing strategy take effect.
2. The apparent problems with budget dispersal or low absorptive capacity of the sector which sees less than 30% of allocated budget actually spent needs to be understood and acted on as a priority and the results and recommendations presented to the JWSR.
3. The WRM financing strategy outlined by the MoW in 2019 as a result of the long-awaited financing options study should be implemented as an urgent priority once its pro-poor credentials have been verified. Implementing the plan to adjust tariffs for water use to realistic levels, and to enforce the rules around payment is likely to be a major leap forward for water security and inclusive growth in Tanzania.

6. Accountability at the centre of improved water sector performance

“The quest for accountability is the single defining political idea of the 21st Century. A failure to deliver is likely to make the idea of development irrelevant.”

Thomas Carothers, Carnegie Endowment for International Peace, May 2016

Evidence and analysis presented within the 2019 Sector Equity Report sets out some of the priorities we need deliver on to put the water sector to work for inclusive growth. Common to all of the issues we flag is the need for stronger accountability. Whether it is ensuring adequacy of WASH provision in schools and hospitals, ensuring good water stewardship by business, provision of urban water security or ensuring adequate financing: the policies, rules and commitments are there, but few follow them. Stronger accountability can ensure that solutions are delivered quicker, more cost effectively and fairly, so that no-one is left behind.

Accountability is the obligation of one actor to provide information and to justify action to another actor who has the power to make demands and apply sanctions for poor performance or non-compliance. Accountability is the beating heart of good governance and takes many forms: political, regulatory, judicial and social, and operates between multiple actors.

Effectively holding institutions, organisations and people to account is a key step towards a fairer water future in Tanzania. The benefits of full stakeholder accountability for water would be tremendous: government accountable for delivering the right to water and sanitation; water utilities meeting standards of service to consumers at a fair price; the private sector compliant with water permits and pollution control; financiers fulfilling promises on water; NGOs answerable to beneficiaries; the media and academia working in the public interest; and communities fulfilling stewardship of water resources.

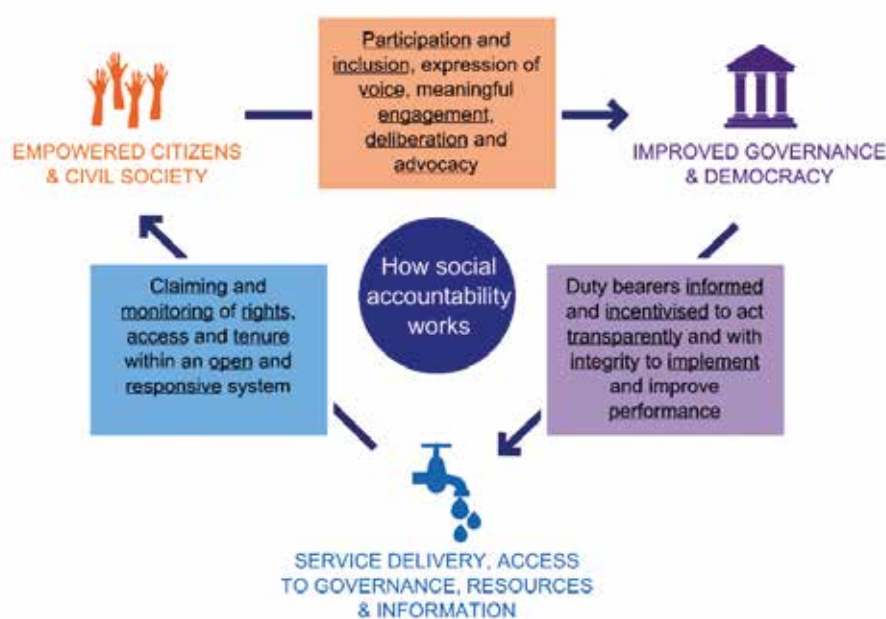


Figure 6.1 Processes at play in social accountability (after Robinson 2016).

The benefits of social accountability (see Figure 6.1) for Tanzania's water sector, and vulnerable communities in particular has been explored by TAWASANET members via the Uhakika wa Maji Programme since 2013. As well as helping duty bearers to respond to the needs of citizens and generating evidence for sector advocacy, this experience has shown how systematising and strengthening accountability within sector institutions has potential to improve performance on many fronts.

6.1 Household water security and accountability

Large scale household surveys in Morogoro and Dar es Salaam explored public understanding and experiences of accountability on water issues⁷⁶, and found that:

People are unsure of their rights and responsibilities

On most water issues people took the view that they, the government and its authorities shared responsibility for preventing and addressing water problems.

- ◆ However, awareness of policies, laws, government duties and citizen rights were very low: fewer than 2% knew about water access and pollution regulations; less than 3% knew about water quality standards; and less than 1% knew about rights and regulations on sanitation and flooding.
- ◆ Fewer than 40% of households knew their own responsibilities on sanitation and waste disposal.

People don't always contact authorities or demand their rights on water

Despite widespread household water insecurity, fewer than 1 in 5 households had ever complained in Dar es Salaam. As many as 40% had complained in Morogoro, where in some places households had recently gone for 3 weeks without piped water. When households were asked why they had taken no action to raise problems with authorities, the most frequent answers were:

- ◆ they didn't know who to report to, or how to report it (42% in Dar and 57% in Morogoro didn't know where leakages should be reported; 80% didn't know if water was tested to check it was safe).
- ◆ they didn't have time;
- ◆ that there was no follow up so 'why bother'
- ◆ they were 'afraid'.

In both cities over 90% said they would raise their voices in future now they know who is responsible.

What does this mean for sector accountability and performance?

The survey responses suggest that the vast majority of urban dwellers do not know their rights and responsibilities in relation to water security. Their understanding of the duties of agencies and authorities on aspects of water security (flooding, sanitation, water availability and quality) are limited. In the past complaints have not been made because of this limited knowledge, but also because people lacked confidence in getting a response, they were too busy or they were afraid.

⁷⁶ Shahidi wa Maji, 2019, Baseline report on household water security in Morogoro and Dar es Salaam, Uhakika wa Maji Programme, Tanzania.

These insights are important for improving sector performance:

- ◆ Individuals and households need to be accountable for responsible water use, and waste disposal. If they aren't aware of what the law requires of them, there's no way they can comply;
- ◆ Households need to be the eyes and ears of service providers and regulators so that they can flag problems with quality, leakages, illegal connections, dumping of waste and pollution. If they don't know what constitutes a 'problem' or notifiable incident, or who to contact and why, then this connectivity breaks down.
- ◆ If nothing happens when they do report issues, then performance feedback and citizen reporting will not be sustained.

An improved system of awareness raising for urban dwellers, and investment in citizen complaints systems and response will have beneficial effects in driving accountability for implementation and adherence to water law and regulations. Additionally, by flagging and addressing problems early it will improve service delivery.



Figure 6.2 and 6.3 Citizen reporting can help tackle issues of water reliability and urban groundwater protection

6.2 Getting our own house in order - Accountability and compliance in the water sector

Initial results of a new study on compliance by Urban Water and Sanitation Authorities (UWASAs) in Tanzania suggests that we need to prioritise accountability and compliance closer to home⁷⁷. Data provided by the BWBs indicates that some UWASAs are failing to comply with the requirement to obtain a water use permit for abstractions, are not paying their water user fees, and are failing to comply with pollution control requirements:

Initial findings from these basins show that:

- ◆ In one basin as many as 48% of all public water supply abstraction points used by UWASAs (44 of 92 springs, boreholes and river offtakes) do not hold a Water Use Permit which is valid under the Water Resource Management Act 2009.
- ◆ In the same basin none of the UWASA wastewater discharges from municipal waste stabilisation ponds hold a valid wastewater discharge permit as required under the WRMA 2009. Neither do they comply with wastewater quality standards. According to the BWB this puts downstream communities at risk.
- ◆ In another basin, the UWASAs have only paying 13% of the water user fees owed to the BWB, leaving a TSh 125 Million shortfall.

⁷⁷ Water supply sub-sector WRMA 2009 compliance survey, 2019, DWR/MOW.

Although further work is needed to corroborate the data, these initial findings have significant implications. Firstly, the lack of compliance by UWASAs which they expose, poses risks to public wellbeing. Pollution impacts and disease risk from unregulated discharges of improperly treated waste water will be very significant. Without the legal mandate to abstract water from the environment via a water use permit, UWASA abstractions are technically illegal. Without the official recognition of a permit, there is a risk that the water needed for these abstractions for public supply may be reallocated in future to competing uses. Such limited regulation of the water supply and sanitation subsector is likely to have impact on downstream users, not only via pollution and untreated sewage from UWASA WSPs, but also because of resource depletion from unregulated UWASA abstractions.

Second, there will be lost revenue for the BWBs because of non-payment of permit fees and use fees which will further limit the resources available to the government, and the BWB ability to deliver their mandate for WRM.

Lastly, and importantly, the message this sends to all water users is that the Ministry of Water is not serious about WRM or compliance against the WRMA 2009. If the water sector itself can't be held to account for compliance, then what chance is there that other sectors can be held to account? Unless water sector and UWASA operations are brought within the law and shown to be compliant with the Water Resource Management Act 2009 and its daughter regulations, then the legitimacy and credibility of the WRM sub-sector is likely to be irreparably damaged.

6.3 Disclosing sector and stakeholder performance as an incentive to change

Chapter 3 has focused on the central importance of good water stewardship by all water users for delivery of Tanzania's development vision. One straightforward way to incentivise this, and to strengthen accountability is for the regulatory performance of water users to be publicly disclosed. Annual publication of the level of compliance against obligations will drive transparency and create a level playing field. For example recording private sector compliance with water use and discharge permits, and UWASA compliance against standards of service, BWB performance in resolving conflicts and performance against donor commitments will be a powerful driver of positive change.

The Sanitation and water for All, mutual accountability mechanism provides a further example for tracking performance among stakeholders towards delivery of the Sustainable Development Goal 6.

6.4 Sector performance - increasing the value of the JWSR process

Tanzania's Water Sector Dialogue and Joint Water Sector Review are important mechanisms for co-ordination, representation and communication, and are recognised globally as examples of good practice. They ensure that all stakeholders are aligned and equipped with reliable information in their efforts to improve water service provision, resource management and water governance. It is therefore re-assuring to see the JWSR process back on track after a hiatus of two years.

The JWSR is also an important mechanism for mutual accountability in the sector. By coming together every year to review plans and programmes, the JWSR provides the transparency, participation and lesson learning needed to make progress. The institutional performance monitoring, open deliberation and debate in the public domain, and formal undertakings to improve performance which take place within the sector dialogue process are exactly what is needed for strong accountability.

However, there are always opportunities to improve further. We've noticed that some of the undertakings made at previous JWSRs have 'fallen off the radar'. Commitments around adequate funding and proposed reviews of enforcement and compliance performance are examples of verbal pledges which have not been followed up on.

We therefore propose a revitalised mechanism for accountability within the dialogue process. This should formally document sector commitments and agreed actions based on performance monitoring and debate and provide for a review of progress against these in the subsequent year. This will provide the tenacity and focus needed to ensure a water sector fit for the future.

6.5 Accountability for water: key messages and recommendations

Our policy, regulatory and institutional frameworks for water security are world class. The problem is implementation.

Evidence shows that:

- ◆ At household level, most people we surveyed are not aware of their own rights and responsibilities or the duties of government on water issues. This stops them from taking positive action to do the right things themselves and from demanding action from others to solve water problems. It undermines the potential for accountability.
- ◆ Some authorities in the water sector itself don't play by the rules. We show how some UWASAs aren't paying water user fees or complying with the need for water use or wastewater discharge permits. Low accountability within the sector limits revenue, credibility and exposes the public, the environment and water users to significant risks.
- ◆ It isn't clear how well water stakeholders – such as the private sector and UWASAs – are performing because this performance isn't systematically documented or disclosed. A major driver for good performance is therefore missing.
- ◆ Whilst our sector dialogue process and JWSR are mechanisms to be proud of, improving them further through stronger mechanisms for mutual accountability will pay dividends.

Getting water users and sector stakeholders to activate rights and responsibilities for water, to play by the rules, and to honour their commitments is therefore a priority. Stronger accountability mechanisms are likely to benefit vulnerable, poor and marginalised people the most because they are the groups who find it most difficult to have their voices heard, and to demand accountability of their own accord.

We therefore recommend that:

1. All water sector organs review, develop and implement plans to help the public understand their roles and responsibilities and statutory duties, and establish working, transparent and time-bound mechanisms for 'customer' reporting and response. A national water 'hotline' is a potentially useful and cost-effective mechanism to improve government responsiveness to the needs of citizens and water users.
2. A review of the systems and strategies in place to ensure mutual accountability for water security by all stakeholders be delivered, with detailed proposals to be made at the JWSR 2020. This should be comprehensive and explore how to improve the performance review frameworks for the private sector, UWASAs, COWSOs, WUAs, BWBs, Ministry Departments as well as NGOs and donors. In the immediate future, a programme of work to ensure that the UWASAs comply with provisions under the WRMA 2009 and its daughter regulations would help maintain the credibility of the sector.

Multiple civil society and development partner entities are well placed to support these efforts, though leadership and co-ordination is best provided from within government.

7. Conclusions

This year's equity report provides the unequivocal message that: **when water problems occur, it is consistently the poor who lose out first and most dramatically.** Whether it is through inadequate WASH in our schools and hospitals, environmental abuse by business, water insecurity in our towns and cities, inadequate financing and weak accountability, poor water sector performance can both undermine our economic growth and lead to growth which is exclusive – not inclusive.

By drawing on evidence from the field, case studies and research we make the case for why a strong and functional water sector which prioritises inclusion and equity must be at the centre of delivering sustainable industrialisation in Tanzania. Industrialisation can be an important step towards poverty reduction, through job creation, value addition and export revenue but only if it is supported by water sector which can provide services, protect the vulnerable, ensure resilience to shocks and enforce the rules.

Our hypothesis is powerful and empowering: business and poor communities both need a well performing, properly resourced and accountable water sector.

Lessons from around the world support this view:

- ◆ **The economic benefits of investing in water and sanitation are considerable:** they include an overall estimated gain of 1.5% of global GDP and a US\$ 4.3 return for every dollar invested in water and sanitation services, due to reduced health care costs for individuals and society, and greater productivity and involvement in the workplace through better access to facilities⁷⁸.
- ◆ **Poor water resource management is costly for the economy:** Uncontrolled pollution from industrial activities costs countries like China and India between 5-10% of GDP through premature deaths, disease, crop and ecosystem damage and costs to business of treating water.
- ◆ **Vulnerability to droughts and floods is a major economic risk.** Drought typically reduces Zambia's GDP growth rate by 6.6 percent, a figure likely to be of comparable magnitude in Tanzania.

Such losses are not an inevitable price of progress. If we learn from the mistakes of others and act now, a strong water sector can accelerate economic growth and poverty reduction. This is particularly the case in Tanzania where analysis shows strong links between water management and economic growth⁷⁹, such that improved water service delivery, infrastructure and governance can increase growth by 6 percent⁸⁰. We make a series of grounded recommendations for improved performance of the water sector. TAWASANET members look forward to closer collaboration to deliver these and to help shape a vibrant water sector which will serve all Tanzanian's and our economy in future.

⁷⁸ WHO 2019, https://www.who.int/water_sanitation_health/monitoring/economics/en/

⁷⁹ Escribano et al 2010 calculate the Total Factor Productivity of Tanzania – a measure of efficiency and competitiveness which serves as the main determinant of economic growth to be 40% dependent on water. (see Wold Bank 2017).

⁸⁰ WBG (World Bank Group), 2016. High and Dry: Climate Change, Water and the Economy. P. vi.

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