SEPTEMBER 2009

Tanzania

Public Expenditure Review of the Water Sector

Caroline van den Berg
Eileen Burke
Leonard Chacha
Flora Kessy

THE WORLD BANK GROUP

Water Supply & Sanitation Sector Board

BNWP

WATER PARTNERSHIP PROGRAM

Acknowledgements

This report was prepared as part of a broader program of work undertaking public expenditure reviews in the water sector in the Water Anchor of the Energy, Transport, and Water Department of the World Bank. The report was prepared by a Bank team consisting of Caroline van den Berg and Eileen Burke, supported by Innovex Development Consulting led by Leonard Chacha, and a team led by Flora Kessy, including Martin Mlele, Jonathan Mbwambo, and George Chali. A number of Bank staff provided valuable contributions at various stages including Ato Brown, Abel Mejia, Vivien Foster, Gustavo Saltiel, Paolo Zacchia, Emmanuel Mungunasi, Midori Makino, Alexander Danilenko ~~and~~ Laura Katherine French Smith. Any errors and omissions are solely the responsibility of the authors. Special thanks are due to the Bank Netherlands Water Partnership which provided generous financial support for this undertaking.

Disclaimers

Contact Information

To order additional copies, please contact the Water Help Desk at whelpdesk@worldbank.org. This paper and its annexes are available online at *http://www.worldbank.org/water*.

TABLE OF CONTENTS

Abbreviations and Acronyms vii

Executive Summary ix

1 Introduction 1

2. Methodology 2

3 Sector Background 4

4 Performance Of Water Supply And Sanitation Sector 7

Access to Improved Water Sources 7

Performance of Water Supply and Sanitation Sector 13

Rural water supply sector performance 13

Performance of the Rural Water Sector using International Benchmarks 13

Functionality of Rural Water Points 13

Urban water and sanitation performance 15

Performance of the Urban Water Sector using International Benchmarks 15

Sustainability of Urban Water Utilities 15

Sanitation Performance 17

5 Institutional Context Of The Water Sector 20

6 What Is Being Spent On Water Supply And Sanitation? 25

Composition of Flow of Funds 27

Summarizing the funding of the sector 28

7 Is Spending Well Allocated? 29

Allocation across budget categories 29

Allocation across Expense Categories 30

Recurrent Expenditure 30

Development Expenditures 32

Ministry of Water and Irrigation 33

Regions 35

Local Government Administration 35

Spatial Allocation 37

Summarizing the allocation of public expenditure 38

8 How Efficient Is Spending? 40

Allocative Efficiency 40

Technical Efficiency 40

Budget Efficiency 41

Investment planning 45

Procurement processes 47

Auditing processes 47
Efficiency of Investments 49
Efficiency of Investments in Rural Areas 49
Efficiency of Investments in Urban Areas 49
Summary on the Efficiency of Sector Spending 51
9 Are External Resources Adequately Mobilized? 54
Donor Flows to the Water Sector 54
Efficiency of Donor Flows 55
Summary on Mobilization of Donor Flows 57
10 Financing Future Water Investments 58
Improving the Capacity of Government 59
Efficiency Gains that Lower Costs 60
Efficiency in Tariffs that Promote Sustainability 62
Promote Efficiency in Design of Infrastructure Programs 63
Annexes 64
References 74

Figures

Figure E.1: Access to Improved Water Sources ix
Figure 4.1: Access to Improved Water Supply 7
Figure 4.2: Access to Improved Water Sources at different intervals based on DHS surveys 8
Figure 4.3: Change in Access to Improved Water Sources between 1991 and 2007 by Region 9
Figure 4.4: Access to Improved Water Supply Services in Urban Areas by Service Levels 9
Figure 4.5: Access to Improved Water Sources by Region – 2007 10
Figure 4.6: Access to Improved Water Supply Services by Consumption, Quintiles in 2007 10
Figure 4.7: Percentage of Functional Water Points in 17 Rural Districts in 4 Regions in 2005 14
Figure 4.8: Functionality Rate of Rural Water Points by Market Share of Two Most Common Technologies in 17 Rural Water Districts in 4 Regions in 2005 15
Figure 4.9: Operating Cost Coverage Ratio for 20 utilities in FY2006/07 16
Figure 4.10: Non-Revenue Water in 20 utilities in Tanzania FY2006/07 17
Figure 4.11: Staff Ratio in 21 utilities in Tanzania FY2006/07 17
Figure 4.12: Households without access to basic sanitation by region in 2007 18
Figure 4.13: Access to Sanitation by Consumption Quintile 2007 19
Figure 5.3: Tanzanian Budget Cycle 23
Figure 6.1: Flow of Funds in the Water Sector 25

Figure 6.2: Water expenditure (in TzS billion) has increased significantly in the past decade 26
Figure 7.1: Number of Water Points Constructed by Type of Funding Agency in Four Regions between 1995 and 2005/06 30
Figure 7.2: Subnational budget allocations have increased but actual s pending lags behind 31
Figure 7.3: Water Sector Budget Allocations FY06-FY09 (TzS billion) 32
Figure 7.4: Absorption capacity of MOWI has been improving over the years 34
Figure 7.5: Budget execution performance varies widely between regions 35
Figure 7.6: Difference between actual water budget allocation and water allocation formula budget (in TzS million) and access to improved water sources in FY2007/08 36
Figure 7.7: Development Budget Allocation in FY2008/09 37
Figure 8.1: Budget Allocation and Actual Expenditure (in TzS million) 41
Figure 8.2: Budget Allocation and Actual Expenditure in LGAs (in TzS million) 42
Figure 8.3: Recurrent Budget Execution in LGAs (in TzS bn) 42
Figure 8.4: Development Budget Execution Rates in LGAs (in TzS bn) 43
Figure 8.5: Cumulative Actual Public Spending (in TzS of 2000/01) and Access to Improved Water Sources 49
Figure 8.6: Non-Functionality Rates for Different Type of Sources based on Sample of 13 Districts Nationwide 50
Figure 8.7: Detailed breakdown of LGA FY2008/09 Budget 50
Figure 8.8: Hidden costs in Urban Water Authorities against Best Practice in Tanzania 53
Figure 9.1: Donor funding as measured in actual disbursements in US$ 54
Figure 9.2: Aid commitments and disbursements to the water sector in US$ millions 55
Figure 9.3: Actual expenditures as percentage of Budgeted Expenditure by Type of Funding by Project in FY2007/08 55
Figure 9.4: Actual Disbursements on a Quarterly Basis in US$ million 56
Figure 9.5: Aid fragmentation as measured by number of active projects and actual project disbursement in US$ 57
Figure 10.1: Use of Piped Water by Income Quintile 62

Tables

Table 4.1: Access to Improved Water Sources has increased significantly in the different regions of Tanzania 8
Table 4.2: Access to improved water source by income quintile 11
Table 4.3: Access of point water sources as percent of access to improved water sources by income quintile – point water sources gain prominence 11
Table 4.4: Expenditure on water and share of water bill in total expenditure, by income quintile (missing values excluded) 12

Table 4.5: Distribution of time to the nearest drinking water source by income quintile 12
Table 4.6: Access to Improved Water Sources in Rural Areas between 1990–2006 13
Table 4.7: Access to Improved Water Sources in Urban Areas between 1990–2006 16
Table 4.9: Sanitation facilities in urban and rural areas 18
Table 6.1: Relative share of Water Sector Spending 26
Table 6.2: Budget Ceilings and Requests for FY2008/09 27
Table 6.3: Budget Composition of Several Sectors in FY2008/09 (with salary adjustments) 28
Table 7.1: Composition of on-budget water sector budget allocations is changing 31
Table 7.2: Composition of MOWI development budget allocation is changing 32
Table 7.3: Composition of MOWI development budget – a few large projects dominate 33
Table 7.4: Composition of Administration Budget of MOWI (in TzS millions) 34
Table 7.5: Composition of Total Capital Development Budget (in TzS billion) excluding LGAs 38
Table 8.1: Performance Budget Execution Ratios show wide variations on an annual basis 41
Table 8.2: Difference in time that money is to be received and is actually received 43
Table 8.3: Feasibility studies and Design (in TzS bn) for fiscal years 2006/07 and 2007/08 46
Table 8.4: Link between Procurement Deficiencies and Sector Inefficiencies 48
Table 8.5: Possible Routes of Subsidies in MOWI rural budget (in TzS bn) for fiscal years 2006/07 and 2007/08 51
Table 8.6: Possible Routes of Subsidies in MOWI urban budget (in TzS bn) for fiscal years 2006/07 and 2007/08 52
Table 9.1: Bilateral Aid (in US$ million) according to different sources 54
Table 10.1: Annual Investment Requirements in the Water Sector (in US$ mln) 58
Table 10.2: Unit Cost in US$ for Water Supply and Sanitation Investments 61

Boxes

Box 1: Evidence of misclassification of expenditures across budget types 3
Box 2: Functionality of rural water points 14
Box 3: A simple of rule of thumb on financial sustainability 16
Box 4: The role of NGOs in the WSS sector 30

ABBREVIATIONS AND ACRONYMS

AFDF	African Development Fund
AICD	Africa Infrastructure Country Diagnostic
Bn	Billion
BWO	Basin Water Offices
CAPEX	Capital Expenditure
DHS/AIS	Demographic Health Surveys / AIDS Indicator Surveys
EWURA	Energy and Water Utility Regulation Authority
FY	Fiscal Year
GDP	Gross Domestic Product
HBS	Household Budget Survey
IDA	International Development Agency
JMP	Joint Monitoring Programme for Water Supply and Sanitation
LAAC	Local Government Accounts Committee
LGA	Local Government Authority
MDGs	Millennium Development Goals
MKUKUTA	Tanzanian National Strategy for Growth and Reduction of Poverty
MOFEA	Ministry of Finance and Economic Affairs
MOWI	Ministry of Water and Irrigation
NAWAP	National Water Policy (2002)
NGO	Non-Governmental Organization
NOA	National Audit Office
OCCR	Operating Cost Coverage Ratio
OECD	Organisation for Economic Co-operation and Development
O&M	Operations and Maintenance
PER	Public Expenditure Review
PPRA	Public Procurement Regulatory Authority
PREM	Poverty Reduction and Economic Management
SWAp	Sector Wide Approach to Planning
TWRAS	Tanzania Water Resources Assistance Strategy (2006)
TzS	Tanzanian Shilling
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
UWA	Urban Water Authority

VIP	Ventilated Improved Pit
WHO	World Health Organization
WRM	Water Resources Management
WSS	Water Supply and Sanitation

EXECUTIVE SUMMARY

Reform is under way in the Tanzania water sector. Many developments see the sector moving into a positive direction. The Government of Tanzania has embarked on a major reform process and made significant strides in its water sector policy environment over the last decade. A forward-looking National Water Policy (NAWAPO – 2002) that promotes an integrated approach to water resources management and development is in place. The reforms have been backed since FY2005 by a significant increase in available budget, when the water sector became a priority sector. A larger share of the country's capital budget is allocated to fund water infrastructure, especially water supply infrastructure. Donors supply the bulk of capital funding to the sector, and have committed more funds to the sector than ever before. Donor coordination has been institutionalized with joint reviews and the introduction of a SWAp, in which donors pool resources to support the water sector in the country.

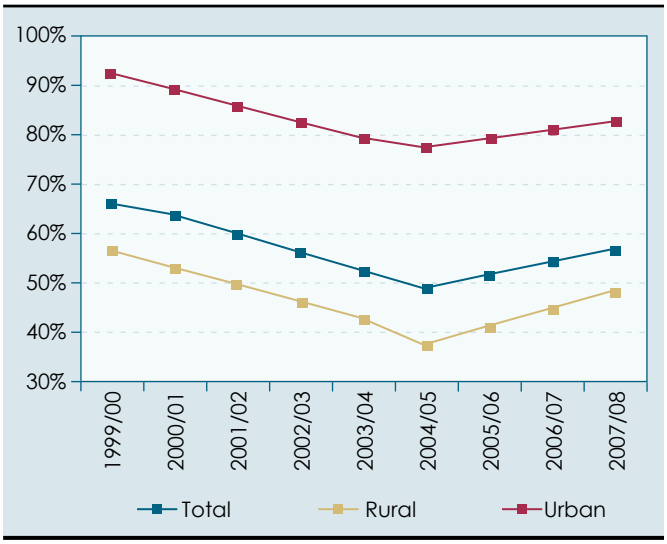
As a result of this transformation, the role of MOWI is changing. Because of the government's policy of decentralization and devolvement, an increasingly larger share of the government's budget is now channeled through local and regional governments. MOWI increasingly moves away from being an implementer of projects to become more of a facilitator as is reflected in its organization. A larger part of MOWI's budget is used for supporting activities such as policy and planning, coordination, M&E, project preparation and studies. Moreover, a larger part of the investment budget is provided through transfers to urban water authorities and river basin agencies instead of project implementation by the Ministry. This transformation of MOWI from implementer to facilitator is far from complete as its capacity to plan, monitor and provide assistance to the districts—key elements of this new role—still needs to improve as its capacity to take up these new functions is not optimal.

The increase in funding is starting to have an impact on the access to improved water sources. Preliminary data from household surveys conducted in FY2007/08 show that the access to improved water sources has been increasing since FY2004/05, albeit that access in FY2007/08 is still below the levels of 2000, especially in urban areas where rapid urbanization is putting a lot of pressure on utilities to improve access as can be seen in Figure E.1.

Nevertheless, the recent progress shows that increasing resources in itself is not enough. Progress has been slow. Water utility operators are still heavily dependent on budgetary support with a significant part of the budget allocated for operating support, maintenance and rehabilitation, due to a large backlog in proper maintenance which crowds out funding for new priorities in the water sector such as water resource management, and which explains the slow progress in achieving the MDG targets. And even though budget allocations have increased rapidly, budget releases have lagged behind significantly.

The sector deals with a number of issues that explain why the goal of improving access to water supply and sanitation services is moving slower than expected. Some of these issues are

Figure E.1: Access to improved water sources



Source: DHS and AIS surveys, various years

systemic in nature, i.e., they are mostly outside the control of the water sector, but they do influence the progress in the sector. Other issues are within the direct control of the water sector and need to be addressed to ensure that the sector can move more quickly to achieve its goals.

Sector-specific issues:

Sector-specific issues play a major role in explaining the performance of the sector in translating funds into actual outcomes. The sector currently requires significant subsidies for rehabilitation and operation and maintenance, crowding out the space for expansion investments and as such delaying improvements in access to water services. Improving the efficiency with which resources are used, would go a long way to improve the absorption capacity of the sector, increase the efficiency of public expenditure and ensure that access to services is improved. To that effect, the following measures are suggested (i) improve sector investment planning, (ii) improve the capacity in the sector to conduct procurement and disbursement, (iii) a sharper focus on including incentives in the allocation of funding; (iv) efficiency gains that lower the operating cost and/or capital costs; and (v) promote sustainability in tariff setting while guarding the affordability of access.

Improve Sector Investment Planning

The slow pace of project preparation contrasts with the resource envelope allocated through the sector, especially with the SWAp in place. In the absence of a project pipeline, the Government has spent a large part of its resources in the past three years on building this pipeline either through MOWI, the regions or to a much lesser extent through local government authorities. These efforts are showing results in the rural water supply sector, but the pipeline in the other water subsectors (most notably urban water supply and sewerage, water resource management and possibly irrigation) is still very feeble.[1] Yet, this investment strategy should not only focus on building a robust pipeline of implementable projects and programs, but also include the following

- *The current mechanism to screen investments should be reviewed, and adapted where necessary to ensure that it is implemented for each project* (independent of its funding source). To that effect, it is necessary to build capacity in MOWI to ensure that staff can adequately screen investments, while also creating a culture that avoids political interference in investment decisions. As part of the revised screening mechanism, sufficient consideration should be given to the medium-and long-term operation and maintenance cost implications of the new investments;
- *The government should prepare a long-term investment strategy for the water sector*, that includes other water sub-sectors (outside the rural and urban water supply sub-sectors) currently without a significant pipeline of projects;
- *The sector plan should directly linked to the budget.* The Medium-Term Economic Framework is the direct point of intervention here, but so far the annual deviations from the plans show that as a tool the multi-year resource envelope does not really work yet. This is partly because the level of detail in the MTEF which does not allow for much strategic decision making.
- *The costs of investment policies should be considered as an integral part of the total investment cost decisions***.** The medium-term costs play little role in the formulation of the annual budget. This is an issue in a sector where service delivery requires not only investments but also subsequent operation and maintenance of these assets over time. In combination with the virtual absence of a rigorous cost-benefit analysis of projects and programs, this results in scarce

[1] With its new mandate of irrigation, it is likely that more efforts in that subsector will also be needed.

resources being used to pay for these hidden costs in the form of subsidies for operation and maintenance and rehabilitation and maintenance costs that cater to existing consumers and delay increases in access of those not yet serviced.

Improve the predictability of release of funds in terms of timeliness and amounts

The lack of predictability of funds is a serious obstacle for implementation in the sector. This lack of predictability is a major cause of delays in implementation and results in additional costs.

- *The Ministry of Water should strengthen its procurement, disbursement and auditing functions* in such a way that (i) there is more independence between the various units in the Ministry to avoid conflict of interest and lack of accountability; (ii) provide training to its staff to ensure that staff is procurement proficient; (iii) plan the procurement and disbursement activities properly to avoid delays; and (iv) ensure that internal audit function is established and operational in water sector agencies. It should also help to improve these functions where appropriate in local government authorities, especially in the water offices, to ensure that capacity is built there to undertake procurement.
- *Government and donors agree on a code of conduct* that requires that (i) all funding donors provide to the water sector is communicated to the Government (Ministry of Finance) to get a better understanding of what funding is actually available in the sector; and (ii) Government sets a minimum threshold for donor funding commitments to reduce the transaction costs associated with management and operation of a large set of very small projects;

A sharper focus on including incentives in the allocation of funding

In the design of infrastructure programs, the Government could put more focus on how to improve the efficiency of its investment programs through: (i) performance based transfers; (ii) better poverty targeting in water allocation formulas; and (ii) better poverty targeting in water allocation formulas. Such mechanisms can only be contemplated if there is a monitoring system that can measure the performance of the sector (including access, quality and sustainability of services). Such a system is being built up for urban utilities under EWURA, while a similar system will need to be set up for the other subsectors.

- *Introduce more performance based incentives in the transfer of funds.* With the change in the role of MOWI, an increasingly large part of its funding is being transferred to urban water authorities and water basin boards. It would be useful to provide these funds to these agencies based on their performance.
- *The formulas for determining the block grants to local government authorities should be consistently applied in water sector budget allocations.* As a result, the efficiency in targeting water supply funds to those regions with the largest water supply access gaps can improve, while the transparency with which funds are allocated increase subsequently.
- *Accountability and achieving efficiency in sector performance require well-operating systems for monitoring and evaluation.* This means building reporting systems that measure the efficacy and efficiency of such programs in achieving measurable outcomes in terms of access, quality and sustainability of services. Evaluations could provide valuable information on what works and what does not and provide as such information for the design of future programs.

The efficiency of investments can be significantly improved upon

The volume of subsidies that are still provided to the sector can be used as a proxy for investment efficiency. The high breakdown rates of rural water supply infrastructure ensure that a significant

amount of funding in local government authorities is used for rehabilitation and maintenance. Performance data of urban utilities show that hidden subsidies to urban water authorities are very significant.

The following measures could be taken to improve the efficiency of investments:

- *Technology Choice*. Different assumptions about technology choices can make a significant difference in the total investment requirements. Three scenarios were calculated by AICD with the minimum scenario using very basic technologies while the subsequent scenarios assumed higher service levels for consumers. A minimum level scenario to meet the MDGs would cost an annual $567 million, while the most expensive scenario would cost an annual $1.1 billion. The cost of supplying water and sanitation services varies widely by level of service provided, especially in rural areas because of lower population densities and transport costs. In view of such large cost differentials and the fact that high service levels are much more likely to be used by richer consumers, there is a rationale for providing a minimum service level to consumers whereby higher levels of services are financed by households themselves.
- *Standardization of Technologies*. The wide dispersion of technologies poses costs in terms of availability of spare parts and the local knowledge to deal with the different technologies. Standardizing technologies and setting minimum standards, such as hand pumps may reduce the cost of spare parts whereas economies of scale may also have a positive impact on the price of such technologies.
- *Improve Cost Efficiency in Service Delivery*. Many utilities are barely able to cover their operation and maintenance costs through their revenues compromising the utilities' capacity to expand their customer base. Inefficiencies in the way utilities operate compromise financial viability. An example is the high levels of non-revenue water that average about 45 percent, whereas the best performing utility has a non-revenue water of less than 30 percent. Another source of inefficiency is over-employment. The best performing utilities in Tanzania have about 6 employees per thousand connections. This is twice as much as the average African utility (AICD 2008) and much higher than the benchmark of two employees per thousand connections frequently used as the international benchmark for developing countries. Reducing these inefficiencies can generate huge benefits. The hidden cost analysis shows that benefits from more than TzS27 billion per year (equal to about 55 percent of current operating costs) can be achieved if Tanzanian utilities perform similar to that of the best performing utilities in their own country.
- *Utilities that are not capable to cover basic operation and maintenance costs should be provided with support to improve their operational performance (through a capacity building program)*. Only once a water authority has proved to be able to cover basic operation and maintenance will it graduate to gain access for rehabilitation and expansion investments. As is shown in the hidden cost analysis, there is ample room to improve the performance of utilities such as reducing over-employment and increasing collection efficiencies;
- *Public investment funding to urban water authorities should be linked to performance improvements*. The current financing system should be made contingent on improvements in the financial performance of the water authorities (through a combination of cost reductions and where possible tariff increases);
- *The current policy to focus attention on the water utility in Dar es Salaam should be continued as improvements there are likely to affect the sector significantly*. This utility accounts for 44 percent of the water sold by urban water authorities, but is responsible for 59 percent of the hidden costs.

Promote sustainability in tariff setting while guarding the affordability of access

The Government has set up different cost recovery policies for the different water services. Urban water authorities are required to meet full cost recovery. In the case of rural water supply, communities are required to pay the full operation and maintenance costs (and costs for any service levels higher than the standard), while managing their own schemes. A polluter pays principle is to be applied. Yet, none of these policies is applied consistently, with water tariffs varying widely and as a result, a relatively large part of the budget has to be used to pay for operation, maintenance and rehabilitation of existing systems hindering expansion of services to those that are yet unserved.

- *There is space for tariff increases, especially in urban areas, where higher levels of piped water services are disproportionally used by richer consumers*. The 60 percent richest households use 80 percent of piped water connections (either house or yard connections or connections shared with neighbors), implying that individual piped connections tend to be mostly a service used by richer consumers. Household budget survey data show that when households pay for water, the two wealthiest quintiles have room to pay for tariff increases as they currently spend less than 5 percent of their household expenditure on water. Increasing the rates to the levels of the three utilities with the highest rates would generate an additional TzS22 billion (equal to 43 percent of current operating revenues).
- *Affordability remains a critical issue when assessing changes in tariff levels and structures.* The poorest 60 percent of the households that currently spend for their water sources pay more than 5 percent of their expenditure on water—which makes it more difficult for this group to pay for additional tariff increases. Yet, as this group is more dependent on standpipes, it is possible to include more discriminatory tariff policies where lower levels of service pay less than those that depend on better quality services. Evidence from a recent study on water and electricity subsidies found that subsidies on the basis of self-selection of service levels tend to be more pro-poor than the more common consumption-or connection based subsidies.
- *However, before making any changes to the tariffs, utilities should first address their low billing and collection efficiencies.* The household budget surveys show that many households with piped water do not pay for water. Fixing gaps in the utilities' billing and collection systems will generate additional revenue, while it reduces the pressure to increase tariff increases to ensure the sustainability of the water supply service.

Systemic issues

The government has to address a series of systemic issues in how to increase the release of funds allocated to the water sector. Systemic issues are largely outside the control of the water sector. They are mainly related to (i) improving budget procedures; (ii) the need to harmonize procurement, disbursement and monitoring procedures, and (iii) donors improving the predictability and reliability of their funding to the sector.

- *Improve the use of the Medium-Term Economic Framework as a reference point for longer-term planning and budgeting*. So far the annual deviations from the MTEF show that as a tool this multi-year approach to planning and budgeting needs to be improved upon. This will require building capacity in ministries and local governments to plan more strategically.
- *Improve the link between planning in the districts and budget planning at the central government level.* Districts have a planning process in place which is based on initial data from the central government that tend to vary significantly from the final data approved by Parliament. This disconnect makes the budget a rather inefficient tool for the districts as the budget availability on which they had made their plans can vary drastically with what is actually provided

to them. Ensuring that the data provided to the districts is up-to-date and consistent is paramount for better planning and implementation of investments.

- *Better targeting of budget allocations to local government authorities*. The formulas for determining the recurrent block grant and development grant to local government authorities are not consistently applied in its water sector budget allocations. As a result, the efficiency in targeting water supply funds to those regions with the largest water supply access gaps is not optimal, while the transparency with which funds are allocated is seriously jeopardized.
- *The budget process should be concluded before the beginning of the new fiscal year*. The current practice of the discussions in Parliament spilling into the new fiscal year has major adverse effects as it delays the release of funds up to three months, reducing the actual budget implementation period to less than one year. Particularly for local governments, whose water budgets tend to be relatively small and disbursements being often late, this provides incentives to undertake only small sized investments on an ad-hoc basis;
- *Budget allocations should be immediately published once the budget process is finalized by Parliament* to ensure that the information from central government on funds transfers is provided to local government authorities and other water sector agencies in a timely and reliable manner.
- *Government disbursement procedures of funds should be improved*, especially to local government authorities, which could significantly benefit when funding is provided to them on a more reliable basis. As the sector's dependency on donor funds is high, it is important that donors improve their disbursement procedures accordingly to ensure that water agencies are better able to plan and implement their investments.
- *Government and donors should also agree on a harmonization of procurement, disbursement and monitoring procedures* to reduce the number of parallel systems in place, that constrain already scarce capacity at both central and local levels. The recent shift towards a programmatic approach in funding should be accompanied by measures to ensure that a SWAp can generate economies of scale. When adjusted for the local counterpart funding, the disbursement rate for foreign funding under the SWAp has been similar to that for the rest of the sector. Harmonization of procurement, disbursement and monitoring requirements could help to ensure economies of scale. The Water Sector Development Program is the logical place to start these donor harmonization efforts because of the size of this program in relation to overall sector funding and the history of donor coordination in this program;
- *Donors should be improving the predictability and reliability of their funding to the sector*. Although part of the unpredictability of donor funding is linked to the procedures and capacity bottlenecks in Tanzania, another part of the unpredictability is linked a set of issues that donors can improve upon. The use of parallel systems as mentioned before is one of the issues already mentioned above. A second relates to administrative bottlenecks in donor countries. A survey of aid donors mentioned that 29 percent of delayed or lost disbursements were due to administrative problems in donor countries. These inefficiencies are further exacerbated by the fragmentation of donor funding, which results in high transaction costs for donors and government alike.

1. INTRODUCTION

Improving access to and quality of water supply and sanitation (WSS) services is emerging as a key objective in poverty alleviation. The importance of access to improved water supply and sanitation has been even more pronounced since it was declared a target of the Millennium Development Goals (MDGs) in 2000. The achievement of the MDGs will require a large investment program that will help increase access to safe and sustainable water and sanitation services. The majority of the funds for the sector are still provided for by the government at central, provincial or local levels. Although additional resources may be urgently needed, research in other social sectors (health and education) has also shown that higher public expenditures do not necessarily result in better social outcomes.[2] Gaps in achieving outcomes can be due to:

- Sub-optimal spending, due to inefficient allocation of resources (delays and lack of predictability), discretionary reallocation of resources (lack of transparency in allocation of resources), inappropriate policies and institutional incentives, or poor targeting of resources;
- Low quality of service delivery due to inefficiencies in service delivery;
- Lack of demand from certain segments of the population

A lot of effort has been dedicated to increasing resources to achieve the MDGs, but the size of the required investments can be substantially reduced if the efficacy, efficiency and quality of public expenditures in the water and sanitation (WSS) sector can be increased. Looking into the efficiency of public expenditure programs in the WSS sector is complicated. More so than in other social sectors (health and education), the WSS sector is characterized by highly decentralized service delivery that makes data collection more challenging.

Objectives of the Public Expenditure Review. The objective of the PER is to assess the quantity and quality of the transfers of public funds to the water and sanitation sector from the top of the chain (central government) to the bottom of the chain (water users) and the quality and quantity of service delivery with a basis hypothesis being that the finance link may be sub-optimal because

i. funding is either not available to (certain group of) service providers,
ii. it does not reach the service providers in case it is available;
iii. it is not being used efficiently by the service providers, or
iv. final users (consumers) do not use the services.

The current study aims to gain insight into how budgeted allocations for the water sector translate into actual water and sanitation service delivery, and to understand what impacts the links between the two. It has a bias towards water supply and sewerage that are mostly funded through the water sector agencies. Yet, basic sanitation has not been given much emphasis mostly because it does not receive much attention in the budgets of the different water agencies.

[2] See for instance: Lant Pritchett and Deon Filmer, The Impact of Public Spending on Health: Does Money Matter?". *Social Science and Medicine* 49(10): 1309–23, 1999.

2. METHODOLOGY

The data collection and analysis in Tanzania was undertaken as part of the SWAp program, and in co-ordination with PREM's Public Expenditure Reviews. To ensure that the water sector public expenditure review is useful and its results will be discussed not only at the sectoral level, but is also linked to macro-economic work on-going in the country, the work has been coordinated with that of PREM. The focus of the review was on water supply, sanitation and water resource management.

The methodology aims to be comprehensive in the sense that it tries to cover relevant budgetary and non-budgetary areas of water sector spending. The majority of expenditure in the water sector comes from four sources (i) the Ministry of Water and Irrigation (MOWI), (ii) local government authorities (LGAs); (iii) the regions, and (iv) other government ministries. Apart from these government entities, the water sector also has a large number of public bodies, the so-called water authorities whose expenditure do not enter the votebooks, but are public companies. These companies for so far as data is available will be discussed and included in this report. In addition, many small-scale providers and NGOs are also active in the water sector but data often were not available to determine their actual impact on the sector, and hence the actual spending in the water sector is likely to be underestimated.

Budget estimates and disaggregated actual expenditures are recorded for the period covering FY05 to FY09. Although data previous to FY05 are available, the format in which these data are available makes them hard to analyze. Data from before FY05 will be provided where appropriate. It is important to keep in mind that the allocation of funds before FY05 was heavily centralized in MOWI.

The data collection process raised a number of methodological issues that were dealt with as carefully as possibly. First, data availability and quality dictate to a large extent what type of analysis of budget allocation and expenditure can be conducted. Second, special care was paid to ensure expenses are analyzed and classified according to their economic use either as capital or current expenditure (Box 1). Third, it was important to avoid double-counting of transfers from central government to para-statals and sub-nationals by careful matching-up of the accounts.

Government budget data has become more easily available, and their quality has been improving. The quality and detail of budget allocation data in the government's books is increasing but it can still be further improved upon.

The budget lines were individually examined and assigned to the correct capital or current expenditure category. As a result, it is possible, among other things, to quantify the extent to which misclassification of spending across budget categories has been taking place (see Box 1 below). It becomes evident that nowadays, development budgets are not always a good proxy for investment and the functional separation between the two categories is increasingly fuzzy. For the water sector, the separation of budgets can create coordination problems between investments and the planning and programming of maintenance streams generated by them. This reinforces the temptation for postponing (or not even executing) maintenance of existing assets and delaying allocation of resources of ongoing projects. This situation per se makes monitoring of the quality of spending far from easy.

Notwithstanding these efforts, it is important to be aware of the data limitations. These limitations should be borne in mind when interpreting the results of the analysis. First, it is not always possible to fully identify which items of the budget are financed by donors, while NGO contributions to rural infrastructure projects are likely to be missed completely. Second, it was not always possible to obtain full financial statements for all the public water authorities and the information they provide tends to be patchy at times.

Because of data issues, the definition of the water sector is limited to that of the services that are provided by the MOWI. In this case, the water sector includes mostly water supply, sewerage and water resource management. Basic sanitation is included where possible, but is quite likely seriously underestimated as this type of expenditure is spread over many different ministries—including the Ministry of Education through its school sanitation programs**.** The MOWI has only recently been assigned to be responsible for irrigation, and this new responsibility has not yet translated into any specific changes in investment for irrigation purposes.

Box 1 Evidence of misclassification of expenditures across budget types

Tanzania has a dual budget system aiming at separating capital expenses—in principle recorded in the development budget— and current expenses recorded in the recurrent budget. The data collection process took great care to examine whether individual budget lines were correctly classified according to their economic nature into capital versus current spending; regardless of whether the budget line belonged originally to either budget.

Three types of misclassifications should be noted. The first is misclassification of recurrent and development expenditures—both in the Ministry of Water and Irrigation and the local governments. Going through the budget line by line, development expenditures include a significant portion of recurrent expenditures. This misclassification is a result of the sector responding to incentives created by less flexible criteria for allocating discretionary shares of the recurrent budget than for shares of the development budget.

A second misclassification is that of recurrent expenditure in such categories that it tends to reduce the total staff expenditure as a percentage of total recurrent expenditure—with many staff-related expenditure classified as goods and services resulting in an under-estimation of the staff costs in the actual expenditure data.

A third misclassification relates to misclassifying capital spending within the recurrent budget. This situation might be explained by the practice of characterizing rehabilitation spending as maintenance rather than as investment.

In the Ministry of Water, recurrent expenditure amounting to about TzS 15 bn was misclassified in the 2007/08 budget. At the actual expenditure level, the misclassification was significant less at about TzS 5 bn on a total expenditure of TzS151 bn.

3. SECTOR BACKGROUND

Tanzania faces a complex water sector challenge. Unlike many of its neighbors, the nation is endowed with sufficient freshwater resources—many rivers, lakes, aquifers, and wetlands—to meet all of its current water needs. The 2006 Tanzania Water Resources Assistance Strategy (TWRAS) underscores the central role water plays in the performance of key sectors of the economy and the livelihoods of Tanzanians. It highlights the consequences of under-investment in: (a) water supply and sanitation services (WSS) as a fundamental basic need for productive livelihoods and (b) irrigation and hydropower developments on food and energy security. It also shows how highly vulnerable the performance of key sectors of the economy (energy, agriculture, industry, livestock, mining, tourism, and fisheries) is to droughts, floods, and inadequate management of water resources. Among the key constraints to effective sector development are the following:

- *Low and Unreliable Investments in Infrastructure for other Water Using Sectors.* Tanzania has the highest levels of natural water storage capacity per capita in Africa, and yet the country depends on rain-fed agriculture. Rain-fed agriculture supports livelihoods of nearly 80 percent of the population but is highly vulnerable to climate variability. Less than 20 percent of the potentially irrigated area is under irrigation and there is little headwater storage for irrigated agriculture for buffering against periods of low river flows. Fourteen of the twenty-one dams constructed for irrigation supply are no longer operational. Irrigation uses about 97 percent of the total consumptive use of water and is the most inefficient user of water. Investment in irrigation cannot be fully realized because of weak management of water allocations. Inadequate investment in the hydropower component of the power sector is impacting the economy significantly. The reduced available electricity is currently causing considerable economic losses to urban populations, industries, and commercial and mining operations. Tanzania is currently facing its worst power crisis with enormous consequences on many key sectors of the economy. In order to address these needs, substantial investments are needed in sustainable water resources infrastructure (including single and multi-purpose dams, inter-basin transfers, and conveyance systems).
- *Weak Water Resources Management Framework*. The current platform for water resources management (WRM) remains inadequate, highly under-funded and under-resourced and this has a significant consequence on key sectors of the economy and on the livelihoods of many people. Two out of nine Basin Water Offices (BWOs) have been fully operational in the last five years, and a third is presently being supported. The rest have recently been established and are in their infancy. The result is under-appreciation of the role of water in the economy, poor links between water resource management *and* development decisions in key water-using sectors. This has led to fragmented investments and serious conflicts among competing users of water. Water needs for fisheries, national parks, wetlands and other environmental amenities are often marginalized in decision making. The weak and opaque water resources governance framework also has an important international dimension as Tanzania is riparian to 5 lakes (including all the largest freshwater lakes in Africa) and several rivers that are shared by more than one nation. Poor water resources governance contributes to social, economic, and environmental insecurity when unilateral actions are taken by neighboring nations leading to unsustainable utilization of shared waters. Social and political instabilities also result from unregulated and meandering border rivers.
- *Low Water and Sanitation Services Levels*. Over 15 million people out of the current population of 35 million are without safe water supply. While household sanitation coverage is reportedly

high (90%), ineffective use, unhygienic practices, and poor quality of service remain barriers to effective disease control and appreciation of health impacts. Most water sector investments (which in rural areas include water for livestock and in urban areas include water for industries and mining operations) are not adequately maintained. Without a clear resolve in sector programming and a scaling up strategy, there is a risk that the Millennium Development Goals' (MDG) targets for water and sanitation services might not be realized.

- *Inadequate Sector Coordination and Institutional Capacity*. The sector still suffers from uncoordinated sector-wide and cross-sectoral planning and development. Fragmentation results in treating water narrowly as a sectoral (i.e, water supply, sanitation, and sewerage) issue instead of addressing water as a high priority and resourcing its development and management as central to the performance of many key sectors of the economy. This is critical in achieving the Tanzanian National Strategy for Growth and Reduction of Poverty's (aka MKUKUTA, its Swahili acronym) pillars of growth, sustainable livelihoods, quality of life, and good governance. Consequently, many water-related policies are poorly aligned, while institutional and human resources' capacity is inadequate at all levels. Opportunities for promoting effective investments in multi-sectoral and multi-objective investments in infrastructure are being lost.

To address these structural challenges, the Government of Tanzania has embarked on a major reform process and made significant strides in its water sector policy environment over the last decade. A forward-looking National Water Policy (NAWAPO – 2002) that promotes an integrated approach to water resources management and development is in place. Bold policy provisions arising from the new water policy have been established and tested in both WRM and in WSS services delivery with good results. Despite these gains, the reforms have been slow, cross-sectoral integration and re-alignment have been inadequate, lessons from the early pilots have yet to be mainstreamed, and greater progress, faster reforms and significant investments in water supply and resources infrastructure are needed to ensure meeting both the Government's and the MDGs' sector targets.

The water sector's contribution to the MKUKUTA objectives is a three-pronged strategy: (i) scaling up water and sanitation services delivery to achieve the MDGs; (ii) establishment of a sustainable platform for water resources governance and development; and (iii) strengthening of sector institutions and accelerated capacity building at the national, basin, and local government levels as well as in the public and private sector. To support these objectives, the Government has adopted a National Water Sector Development Strategy (NWSDS-2006) aimed at accelerating the implementation of NAWAPO.

In pursuance of the MKUKUTA and MDG sector objectives, Government initiated in 2004 a doubling of its budgetary resource allocation to the sector from $60 million annually to the current $120 million annually. The government is also preparing a National Irrigation Policy to support implementation of its Agriculture Sector Development Program. Additionally, Government is drafting regulations for the Environment Management Act (2004) to support environmentally sustainable water resource management and development as well as promoting an urgent strategy for the protection of water sources. Furthermore, Government has changed the administrative units for planning and managing water resources from "regions" to "river and lake basins", treats water as a finite resource with social and economic value, supports the integration of water quality and quantity in its management, and has legally recognized the use of water for environmental purposes such as wetlands, fisheries, and National Parks.

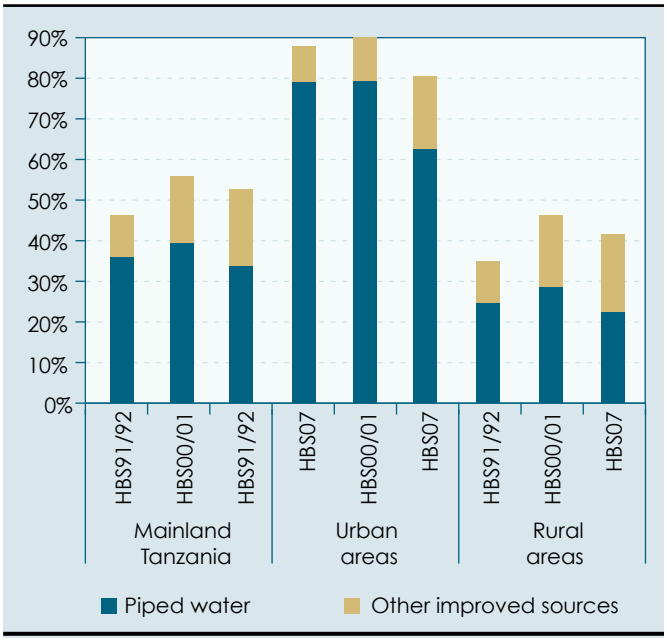
The Government has adopted a road map for sector transformation which includes among other things the move to a sector-wide approach to planning (SWAP) and an accompanying National Water Sector Development Strategy (2006) and Water Sector Development Program (2006) to improve water resources governance and increase services delivery. This complements reforms and supports

investments in other water-using and related sub-sectors such as agriculture, energy, environment, mining, fisheries, and lands. The Government is also working at consolidating its water laws to reinforce the new polices and institutional arrangements as well as guide sector practice and development. A process of sector oversight through the creation of a Sector Working Group between Government sector agencies, development partners, and civil society has also been initiated.

4. PERFORMANCE OF WATER SUPPLY AND SANITATION SECTOR

Access to Improved Water Sources

Figure 4.1 Access to improved water supply



Source: Household Budget Surveys

Access to (or use of) improved water sources have been stagnating in the past 15 years. Budget household survey data[3] show that access has been improving between 1991 and 2007, but that most of that increase took place between 1991 and 2000. Since 2000, access to improved sources has been in slow decline since 2000. In 2007, some 53 percent of the population in Mainland Tanzania had access to improved sources, of which 34 percent had access to piped water and another 19 percent had access to protected sources (mostly groundwater).

Access to (or use of) improved water sources in urban areas has declined. Growth patterns are quite distinct between rural and urban areas. Access to improved water sources declined in urban areas. In 2007, 80 percent of the population in urban areas used improved sources, compared to 88 percent in 1991 and 90 percent in 2000. The drop is especially steep with regard to the use of piped water. In 2007 only 62 percent of the urban population had access to piped water compared to 79 percent in 2000. The decline in access to piped water has been especially pronounced in Dar es Salaam, where access to improved sources has been steadily declining since 1991—with piped water use decreasing from 93 percent in 1991 to 58 percent in 2007. Part of this disappointing performance is due to rapid population growth. Between 1991 and 2007, the urban population in Tanzania more than doubled, and it is clear from the data that utilities were not able to keep up with that population growth. Nevertheless, several million people gained access during this period.

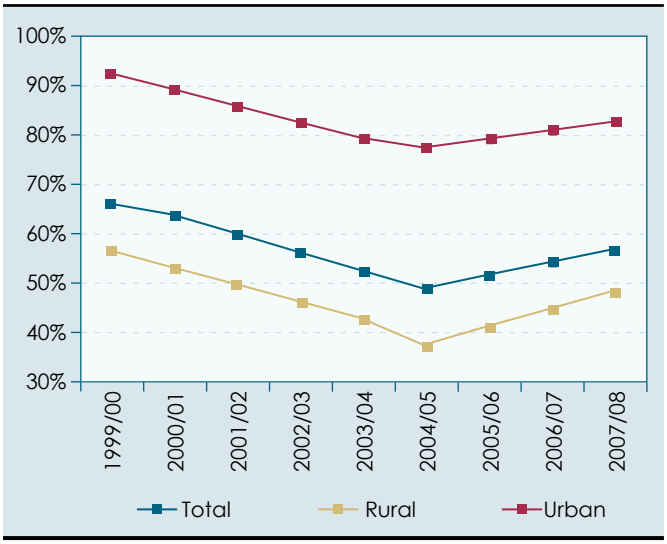
Access to (or use of) improved water sources in rural areas is increasing albeit slowly. In rural areas, access to improved water sources increased to 42 percent in 2007 from 35 percent in 1991. Most of that increase was brought about by increasing dependence on other improved water sources, especially groundwater.

Yet, the lack of progress is masked by the fact that household budget surveys come along only once every 7 years, which makes it easy to miss what is happening within these seven year intervals. Further, the definition of data between different household budget surveys varies—with each subsequent

[3] The categories used were slightly different between the three surveys: use of a neighbour's piped water supply was not considered separately in 1991/92, and water sold by vendors was added in 2006/07. These fourteen categories have been aggregated to 'piped water', 'other protected sources', 'unprotected sources', and 'other' including water collected from a rain tank (improved source), water bought from water vendors and water from other sources.

survey the level of detail in information increases. Demographic Health Survey (DHS/AIS) data are collected on a more regular basis, and the latest survey that was undertaken published its results in April 2009. When looking at the DHS/AIS survey data from several years (FY1999/00, FY2003/04, FY2004/05 and FY2007/08), it seems that the decline in access hit bottom in FY2004/05 but that since then access has started to increase since then; nevertheless, access is still below the levels of 2000.

Figure 4.2 Access to improved water sources at different intervals based on DHS surveys



Source: DHS and AIS surveys, various years

Spatial access to improved water sources shows wide variations. The household budget survey data show significant differences across regions and across time. In 1991/92, in 6 regions of the country, less than 25 percent of the population had access to improved water sources; 5 regions had between 25 and 50 percent of their population with access to safe and clean water; and 9 regions between 50 and 75 percent. In Dar es Salaam, 97 percent of the population had access to clean and safe water. In 2006/07, the situation has improved. The number of regions with access rates less than 25 percent declined rapidly. In 2006/07, Singida is the only region where less than 25 percent of the population have access to improved water sources. In 11 regions, between 25 percent and 50 percent of the population have access to safe and clean water; in 4 regions, access rate is between 50 and 75 percent and in 5 regions it is greater than 75 percent.

There are striking differences in access to improved water sources across time. In some regions, access to improved water sources has increased significantly across the years: in Arusha, 87 percent of the population used improved water sources in 2006/07 against 47 percent in 1991/92. Lindi, Shinyanga, Morogoro and Kilimanjaro also show a sharp rise in the use of improved water sources. In other

Table 4.1. Access to improved water sources has increased significantly in the different regions of Tanzania

	% of regions	
Access to improved water sources	**1991/92**	**2007**
Less than 25 percent	30%	5%
Between 25 and 50 percent	25%	52%
Between 50 and 75 percent	40%	19%
More than 75 percent	5%	24%

Source: Household Budget Surveys, 1991/92 and 2007

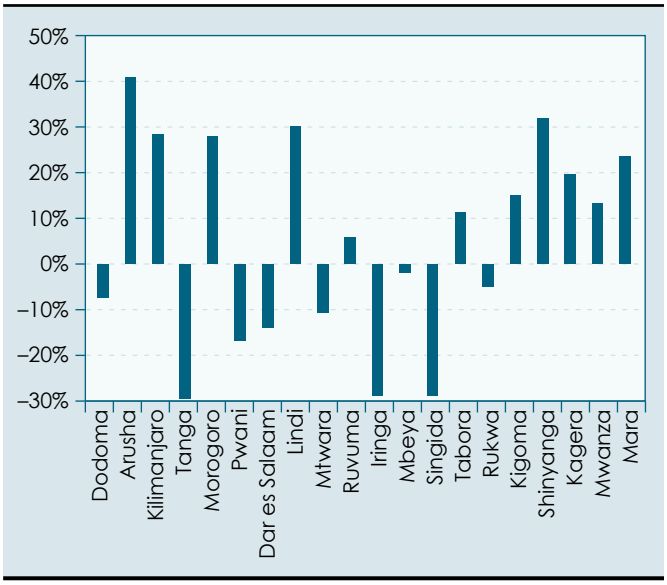
regions, we observe the opposite trend: in Tanga, Iringa, Singida and Dar es Salaam the use of improved water sources declined.

Quality of service (as measured by the level of service provided) is declining, especially in Dar es Salaam. Interestingly, there is a large change in the quality of service between 1991/92 and 2007. In this period, the percentage of population with access to piped water sources decreased markedly in favor of non-piped improved water supplies. This change is especially marked in Dar es Salaam, but is also occurring in rural areas, where all the gains are made in providing services through providing access to water sources other than piped water.

As the utilities cannot keep up with soaring demand, urban households look for alternative forms of water supply. In 2007, households in urban areas did not depend as much on piped water as they did before (62 percent of population), but they were increasingly using protected private wells (10 percent) and vendors (7 percent). The use of these latter two sources is especially high in the wealthier income quintiles suggesting that those households are the most capable of finding alternative sources in a case where utilities cannot keep up in providing services.

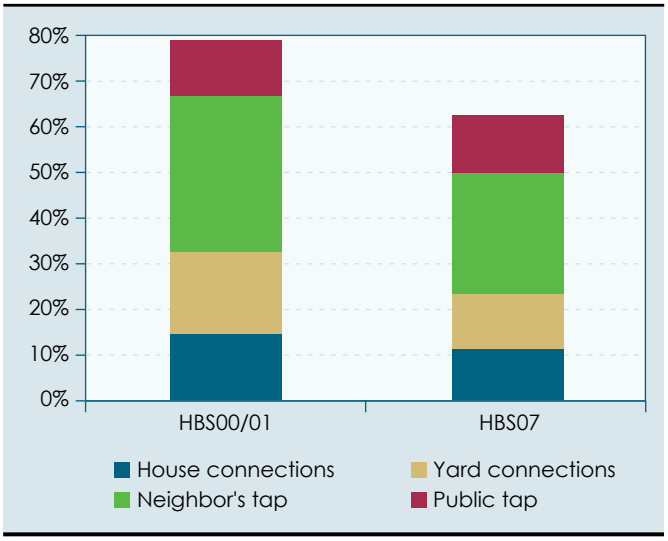
Spatial access to piped water sources shows wide variations. As can be seen in Figure 4.5, there is a wide variation in the use of piped water sources between regions. In Arusha and Kilimanjaro for instance almost all those that use improved water sources depend on piped water. Yet, in many other regions the use of piped water is less important than other non-piped water sources. The most interesting development is that of Dar es Salaam where no more than 58 percent of the population had access to piped water in 2007 compared to 93 percent in 1991/92.

Figure 4.3 Change in access to improved water sources between 1991 and 2007 by region



Source: Household Budget Surveys, 2007

Figure 4.4 Access to improved water supply services in urban areas by service levels



Source: Household Budget Surveys, various years

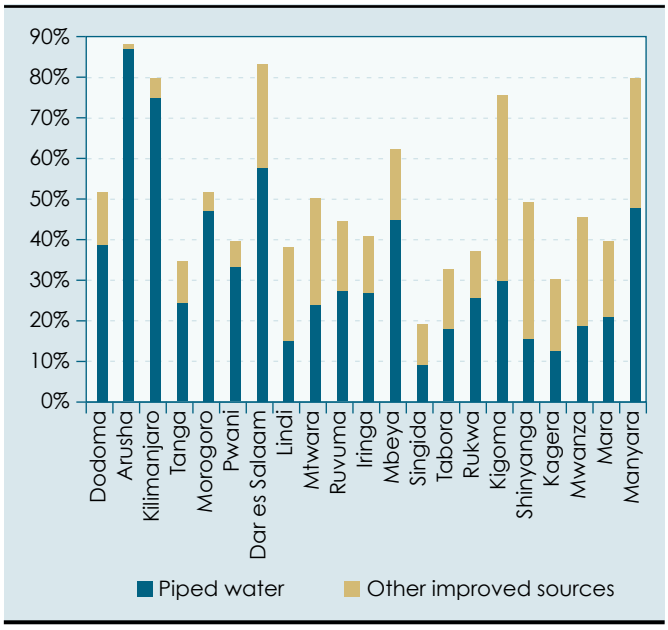
The poor have less access to improved water supply services than the non-poor. This is a common feature that is seen everywhere in the world. Yet, what is interesting to note is that even in the richer quintiles the percentage of population without access to improved sources is relatively high. In the wealthiest quintile, 33 percent of the population does not have access to improved water sources compared to 54 percent in the poorest quintile. Also interesting to note is the high dependence on non-piped water sources—even in the wealthier quintiles.

The service gap in access to improved water sources between poor and non-poor has been increasing over the past 15 years. The population in the two lowest income quintiles saw little progress in achieving access to improved water sources. Almost all the gains in access to improved water sources has been made in the three highest income quintiles. Interestingly, their progress has proved also relatively fragile as they saw a significant decline in improved access during the period between 2000/01 and 2007, with more richer households increasingly dependent on water vendors to provide them with drinking water.

Service levels differ widely between poor and non-poor. The poor almost exclusively depend on public taps and non-piped water sources. Yet, access to piped water increases with expenditure level. Nevertheless, wealthier households are depending less on piped water than they did in the past. In 2000/01, 60 percent of the wealthiest households depended on piped water compared to 50 percent in 2007. Yet, use of other improved water sources was up to 18 percent in 2007 (compared to 12 percent in 2000/01) while dependence on water vendors was 7 percent (no comparable data is available in 2000/01 as the data did not include water vendors).

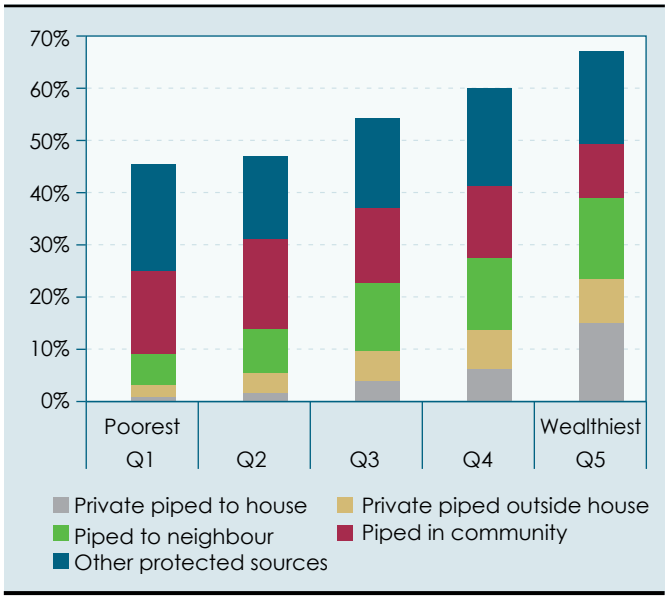
Another interesting feature is the increased dependence on other sources of improved water sources, mainly protected wells and boreholes. Table 4.2 shows that in FY1992/93, piped water made up 67 percent of the total access to improved water sources for the poorest quintile. By FY2006/07 this had declined to 54 percent. For the richest quintiles, the numbers differ, but the trend is similar—in FY1992/93 89 percent of access to improved water sources came from piped water compared to 73 percent in FY2006/07. This increase in dependence on point water sources might be brought about several factors. The first one is the lack of investment in most of the past 15 years resulting in low available expenditure that inadvertently promote small, modular investments in groundwater. The current problems to disburse sector investment funds and the compressed timetable with which they have to be implemented (because of the long delays in disbursing government funds) further exacer-

Figure 4.5 Access to improved water sources by region – 2007



Source: Household Budget Surveys, 2007

Figure 4.6 Access to improved water supply services by consumption, quintiles in 2007



Source: Household Budget Surveys, 2007

Table 4.2. Access to improved water source by income quintile

Income quintiles	1991/92		2000/01		2007	
	Access to piped water	Access to all improved sources	Access to piped water	Access to all improved sources	Access to piped water	Access to all improved sources
Q1-poorest	29.5%	43.9%	24.9%	44.6%	24.9%	45.5%
Q2	36.9%	46.7%	34.3%	52.1%	31.0%	48.0%
Q3	33.8%	43.3%	44.1%	58.4%	36.9%	55.1%
Q4	43.7%	49.6%	52.3%	70.0%	41.0%	60.2%
Q5-wealthiest	44.3%	49.7%	59.6%	72.2%	49.1%	67.2%

Source: Household Budget Surveys, 2007

Table 4.3. Access of point water sources as percent of access to improved water sources by income quintile – point water sources gain prominence

Income quintiles	1991/92		2000/01		2007	
	Piped water	Point water sources	Piped water	Point water sources	Piped water	Point water sources
Q1-poorest	67%	33%	56%	44%	54%	46%
Q2	79%	21%	66%	33%	65%	35%
Q3	78%	22%	76%	24%	67%	33%
Q4	88%	12%	75%	25%	68%	32%
Q5-wealthiest	89%	11%	83%	17%	73%	27%

Source: Household Budget Surveys, 2007

bate the preference for point water sources. A second factor is that the most rapid increase in dependence on water point sources took place in urban areas (not in rural areas), possibly a result of higher economic growth and low satisfaction with piped water sources. Afrobarometer recorded a further decrease in satisfaction with how government handles the delivery of household water from 46 percent in 2003 to 43 percent in 2005 (again coinciding with the period of very low sector investments. This increased dependence on groundwater brings about a series of challenges: environmental pressures (especially the dependence on groundwater in densely populated urban areas), but even more so the long-term willingness to use piped water when households have invested in alternative water sources.

Table 4.4. Expenditure on water and share of water bill in total expenditure, by income quintile (*missing values excluded*)

Income group	Number of households	Expenditure on water (Tsh)	Percentage of total household expenditure	Percentage of non-response
Q1 – poorest	920	2,564	10.5	57
Q2	1,118	4,286	8.6	47
Q3	1,223	5,012	6.1	44
Q4	1,317	5,906	4.1	38
Q5 – wealthiest	1,258	7,438	2.1	41

Source: Household Budget Surveys, 2007

The poor spend more on water supply services than the non-poor, relative to their total household expenditures. HBS 2007 contains information on water expenditure for each household. Unfortunately, many households do not provide data on their water expenditure. It is impossible to determine whether this high level of non-response is a result of households not paying for water services (as is possibly the case for surface water users) or because they actually do not want or cannot provide data on water spending. It is quite likely that both categories are included in this missing category.

The poorest households that pay for water service spent a larger proportion of their expenditure on water. Those poor households that provided details on their water expenditure spent TzS 2,564 per month, which represents more than 10 percent of households' total expenditure. The expenditure on water increases with income and reaches TzS 7,438 for households in the wealthiest group, which represents only 2.1 percent of household's total expenditure in the wealthiest quintile.

Most households including the poor live within 30 minutes of the nearest drinking water source. Overall, 83 percent of the population in Tanzania had access to a drinking water source within 30 minutes in

Table 4.5. Distribution of time to the nearest drinking water source by income quintile

	2000/01		2007	
Income quintiles	Within 30 minutes	Above 30 minutes	Within 30 minutes	Above 30 minutes
Q1-poorest	81.4%	18.6%	82.3%	17.7%
Q2	83.5%	16.5%	79.4%	20.6%
Q3	85.0%	15.0%	83.7%	16.3%
Q4	86.1%	13.9%	83.2%	16.8%
Q5-wealthiest	85.3%	14.7%	89.5%	10.5%

Source: Household Budget Surveys, 2007

2006/07. A higher percentage of the population in the wealthiest quintile is located within 30 minutes of the nearest drinking source. The long distance to a drinking water source is especially prevalent for poorer and rural households

Performance of Water Supply and Sanitation Sector

Rural water supply sector performance

As is shown in Section 4.1, most households in rural areas have access to non-piped water, which mainly refers to wells with or without handpumps, boreholes, and springs. We will use two indicators to measure the performance of Tanzania's rural water sector. The first indicator measures access to improved water sources in rural areas in other countries, while the second indicator measures the functionality of rural water points.

Performance of the Rural Water Sector using International Benchmarks

While less than half of Tanzania's rural population has access to improved water sources, performance of the rural water sector is in line with that of Sub-Saharan Africa and its growth exceeds that of other low-income countries. Table 4.6 presents the average annual increase in household coverage for rural water supply. Though only 46 percent of Tanzanians in rural areas have access to improved water sources, progress in the sector has been more pronounced than in other low-income countries over the period 1990–2006. Nevertheless, it must be noted that even though the increase in access has been more impressive in Tanzania than in other LIC, the average low-income country has better access to safe water than Tanzania does.

The standard assumptions on the number of people served per water point varies significantly across the country. The sector assumes that 250 people are served for each water point source (i.e., borehole, shallow well or spring). The district surveys found that the number of people served per water point is 166 for all water points in rural districts, when adjusted for non-functionality this number is a little over 210.

Functionality of Rural Water Points

Functionality of water points is low, although it varies widely between and within regions. A WaterAid Study of 2005 in 20 districts in four regions (Dodoma, Manyara, Singida and Tabora) classified wa-

Table 4.6. Access to improved water sources in rural areas between 1990–2006

	1990	2006	Rate of increase of population with access between 1990–2006
Tanzania[4]	35%	46%	4.0%
Sub-Saharan Africa	35%	46%	3.6%
Low-Income Countries	50%	60%	1.9%

Source: UNICEF-WHO Joint Monitoring Program, 2008

[4] Although the 1990 data is very much comparable to that of the Household Budget Survey, there is a difference between the two sources. JMP estimates access at 46 percent (using data from 2006 and before and not include the HBS data) whereas the HBS estimate access is 42 percent. The difference is made up mostly by different methodologies being used.

ter points that at least yielded water for six months of the year and were used by people as a water source on a daily basis as functional. They found that on average only 54 percent of the water points surveyed were functional. Yet, functionality varied significantly between regions. Tabora had the lowest functionality rate at 29 percent while that of Dodoma was 54 percent. It varied even more so between districts within regions where functionality rates varied between 9 and 76 percent.

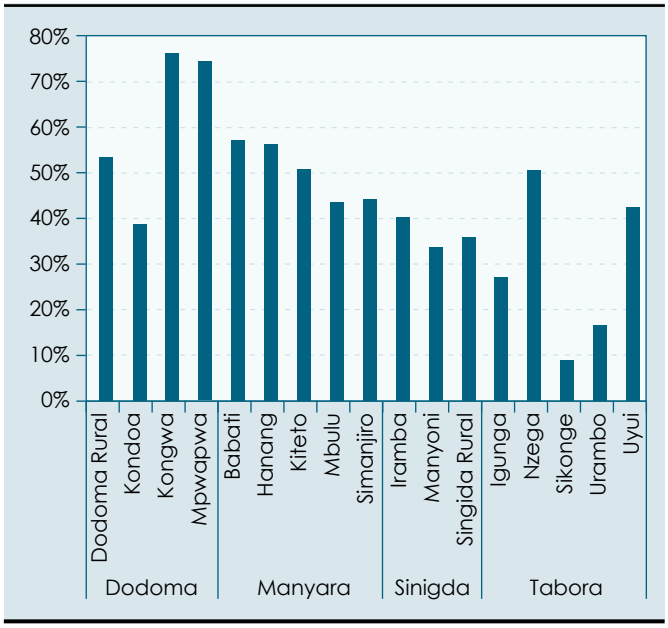
Nevertheless, a breakdown rate of between 22 and 46 percent per year suggests that lack of maintenance is a major issue. If one assumes the average lifetime of a well with pump at about 7–10 years, a breakdown rate that is much higher than 10 to 14 percent assumes that the efficiency of such investments are low. In case of a gravity system with an estimated lifetime of 25 years, a breakdown rate of more than 4 percent should be considered inefficient. The low functionality rate can be explained by many different factors—some which are beyond the control of the sector. These factors include:

- Hydrological conditions play an important role. In districts in more arid areas, functionality rates tend to be lower. This is partly because more complex technologies are needed to supply water services in such areas. In the southern region, for instance, gravity systems tend to be more common while these systems tend to be mostly absent in other districts. Yet, such gravity systems tend to put less of a burden on rural communities in terms of operation and maintenance of systems.

Box 2 Functionality of Rural Water Points

Preliminary data from a district survey undertaken for the Public Expenditure Review in late 2008 builds on the WaterAid study and also shows that many water points and systems are not working. This district service provider survey was undertaken in 13 districts in different parts of the country, with a wider geographical range than the WaterAid study. The functionality rate of water points in rural districts was 78 percent. At first glance, this looks significantly better than the WaterAid study. Yet, the gap is less than the data suggest. The difference is part due to differences in definition between the WaterAid and service provider surveys (as the latter survey only asked whether the water points were currently operational and as such this definition was much less stringent than the WaterAid definition). The second reason is related to differences in hydrological conditions. The WaterAid study focused on four regions that are located in areas that are relatively arid. When looking at only arid areas, the district water service provider survey found a functionality rate of 62 percent (compared to 54 percent from WaterAid). The district service provider survey was undertaken in different hydrological zones, and shows that rural water points in arid areas tend to have lower rates of functionality than elsewhere in the country. In the southern part of the country where water sources are more amply available, the functionality rate was significantly higher. A third reason is the type of rural water supply systems that are being included. Gravity schemes tend to have lower breakdown rates than point water sources. Point sources tend to also have higher breakdown rates because their estimated lifetime is much shorter than that of a piped water system. And lastly, the district surveys were conducted in villages where a water project had been undertaken in the past ten years, thereby not including the most aged systems.

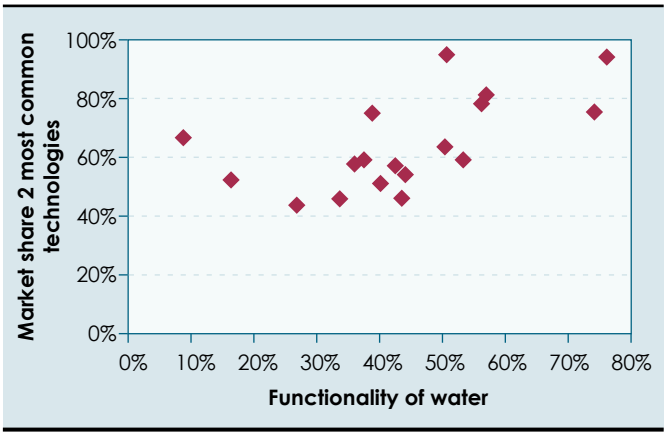
Figure 4.7 Percentage of functional water points in 17 rural districts in 4 regions in 2005



Source: WaterAid, 2005 and Author's Calculations

- A large diversity in rural water supply technologies may impact funtionality. In the four regions WaterAid surveyed, 15 different types of water supply technologies were identified. In each region, about 8 different technologies were used. Obviously, the wide dispersion of technologies poses costs in terms of availability of spare parts and the local knowledge to deal with the different technologies. Figure 4.8 implies that a relationship may exist between the dispersion of technologies within a district and the functionality rate: the less dispersion of technologies, the higher the functionality rate.

Figure 4.8 Functionality rate of rural water points by market share of two most common technologies in 17 rural water districts in 4 regions in 2005



Source: WaterAid, 2005 and Author's Calculations

- The capacity in the districts to operate and maintain water supply systems that are predominantly managed by village water committees may differ significantly. The WaterAid study found that water points in mixed wards that combine rural and urban areas tend to have higher functionality rates possibly because their location may make it easier to access more skilled labor and spare parts

Urban water and sanitation performance

Most households in urban areas have access to some form of piped water. We will use two indicators to measure the performance of Tanzania's urban water sector. The first indicator measures access to improved water sources in urban areas in other countries, while the second indicator will measure the sustainability of water utilities' piped water services.

Performance of the Urban Water Sector using International Benchmarks

Tanzania's urban water sector reflects similar trends seen in Sub-Saharan Africa as a whole. While Tanzania's urban population that has more than doubled in size since 1990, and more than 3.6 million users have been served with improved water supply, access rates have not kept up with the pace of urbanization. As a result, the percent of urban population with access to improved water supply has declined the period 1990–2006. Growth of urban populations of low income countries has not been as pronounced as in Tanzania though LICs have also seen a decline in access rates.

Sustainability of Urban Water Utilities

Sustainability of urban water utilities can be measured in many different ways. In this section, we look at two sets of indicators that measure sustainability with regard to operational performance and financial performance of the 20 largest water utilities in the country. These utilities provide 77 percent of the urban population that have access to piped water sources.

Many utilities are barely able to cover their operation and maintenance costs through their revenues compromising the utilities' capacity to expand their customer base. As can be seen in Figure 4.9, only 2 out of the twenty utilities have an operating cost coverage ratio that comfortable exceeds one meaning that they are at least able to ensure that they can keep their operations on-going for their current customer base. The remaining utilities are either just managing to keep their current operations

Table 4.7. Access to improved water sources in urban areas between 1990–2006

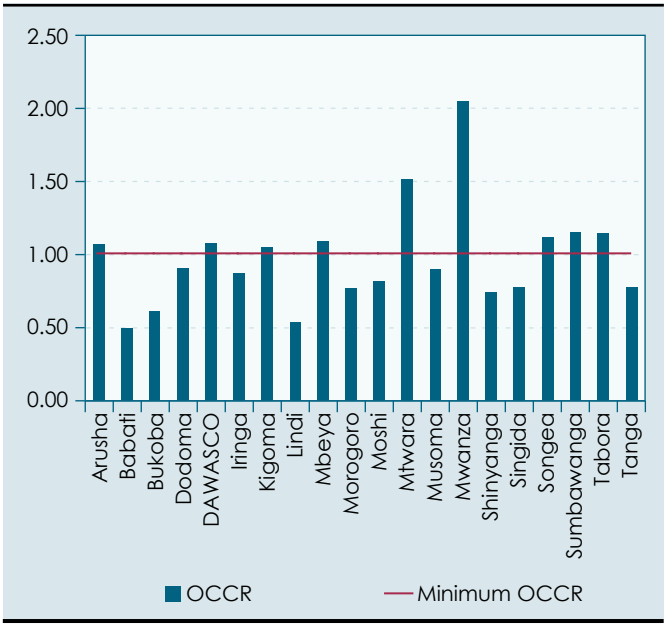
	1990	2006	Rate of increase of population with access between 1990–2006
Tanzania[5]	90%	81%	3.9%
Sub-Saharan Africa	82%	81%	4.2%
Low-income countries	87%	84%	1.0%

Source: UNICEF-WHO Joint Monitoring Program, 2008

running, while others are not even capable of doing just that. Data from EWURA show that the operating cost coverage ratio has improved in recent years from 0.84 in FY2004/05 to 1.04 in 2006/07. Yet, it is not clear whether all this improvement is linked to efficiency gains or part of the improvement is due to the provision of subsidies to ailing utilities.

Inefficiencies in the way utilities operate compromise financial viability. As can be seen in Figure 4.10, large inefficiencies exist in these 20 largest utilities. An example is the high levels of non-revenue water that average about 45 percent, whereas the best performing utility has a non-revenue water of less than 30 percent. Utility level data also show that a significant proportion of households do not pay for their water, whereas the household data suggest the same. EWURA data for 2006/07 shows that 15 percent of revenues is not collected.

Figure 4.9 Operating cost coverage ratio for 20 utilities in FY2006/07



Source: EWURA FY2006/07 data and author's calculations

Box 3 A simple of rule of thumb on financial sustainability

Short term sustainability assumes an Operating Cost Coverage Ratio (operating revenues divided by operating expenditures) larger than 1, but smaller than 1.45. In this case the utility is capable of ensuring that the current customer base can be served in the short-run;

Medium-term or current system sustainability assumes that the utility not only covers O&M but also depreciation (similar to an operating ratio of 1). In this case the utility will be able to replace worn out assets and therefore can serve the current customer base over time;

Long-term sustainability assumes an OCCR of more than 2 with all costs are covered (including debt service) which leaves some revenue remains for expansion of the network, and which in the context of Tanzania with a rapidly growing urban population with the funds to expand its customer base.

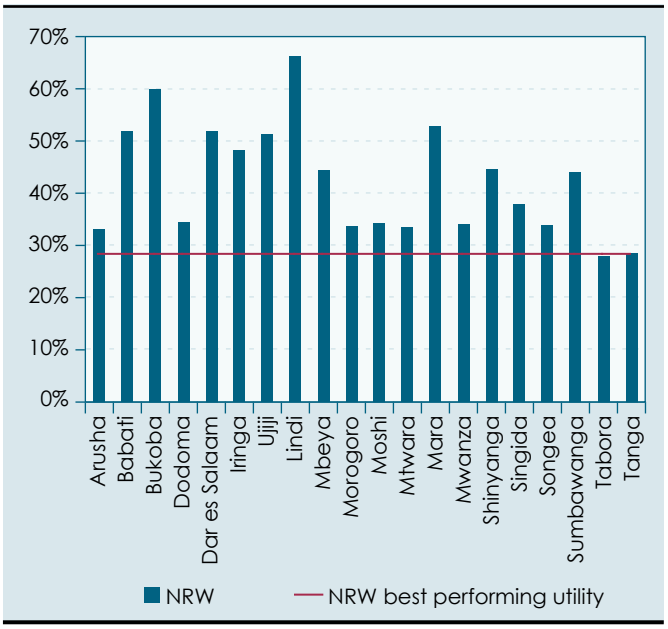
[5] JMP estimates access at 90 percent in 1990 compared to 88 percent in the HBS91/92. Data is similar for 2006/07 sources.

Another source of inefficiency is over-employment. As can be seen in Figure 4.11 the the best performing of the 20 largest utilities in Tanzania have about 6 employees per thousand connections. This is twice as much as the average African utility (AICD 2008) and much higher than the benchmark of two employees per thousand connections frequently used as the international benchmark for developing countries. Even the best performing utility in Tanzania has almost 6 employees per thousand connections. It is hence possible that utilities are used as a vehicle for employment creation that signifies a very inefficient way to transfer funds to the population. Interestingly, those utilities that receive staff subsidies (category C level utilities) have the lowest staff productivity.[6]

Sanitation Performance

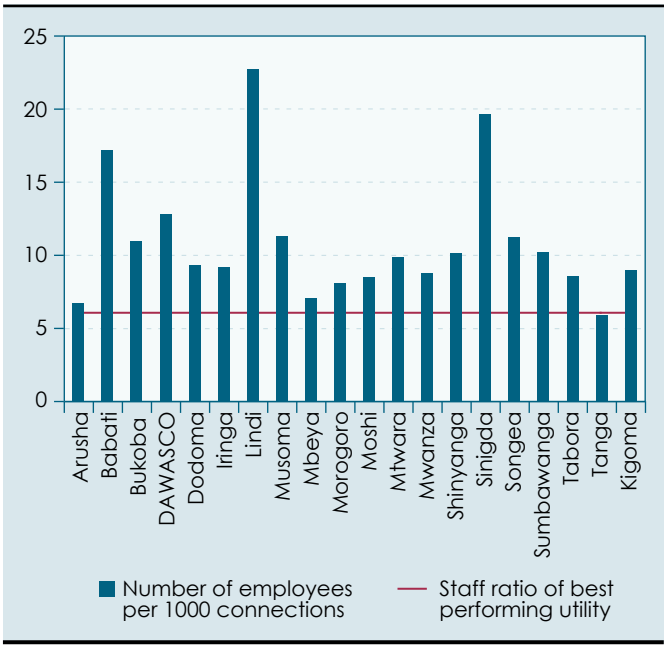
Access to sanitation is high but access to improved sanitation is much lower. Overall in Tanzania, 7 percent of the population does not have any toilet according to the latest HBS. Of those that have access to a toilet, 3 percent use a flush toilet, 85 percent of the population uses a pit latrine, and 5 percent use a Ventilated Improved Pit (VIP) latrine. The percentage of the population using a pit latrine has decreased by 6 percentage points since 1991/92 while the share of the population using higher service levels (VIP latrines and flush toilets) has increased by a similar number. The survey data do not distinguish between improved and unimproved sanitation, where pit latrines can count to either type. The JMP uses a much more stringent definition of what constitutes safe basic sanitation resulting in only 33 percent of the population with safe basic sanitation compared to 93 percent by the HBS. Progress in gaining access to improved sanitation has been much slower than increasing access to improved water sources. The lack of profile for sanitation shows off as the rate of increase in access between 1990 and 2006

Figure 4.10 Non-revenue water in 20 utilities in Tanzania FY2006/07



Source: EWURA FY2006/07 data and author's calculations

Figure 4.11 Staff ratio in 21 utilities in Tanzania FY2006/07



Source: EWURA FY2006/07 data and author's calculations

[6] These two utilities are also the smallest utilities in number of customers served—and so part of the inefficiency is linked to lack of economies of scale, but that cannot only explain the high staff ratios in these utilities.

Table 4.9. Sanitation facilities in urban and rural areas

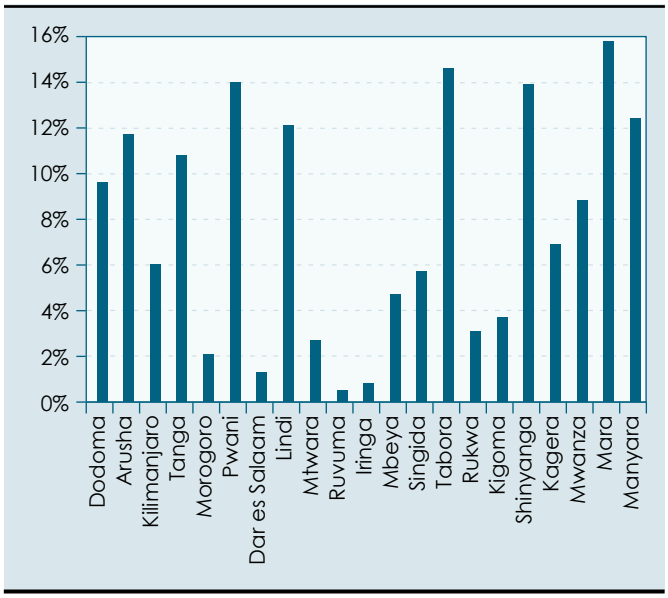
Sanitation facilities	91/92		00/01		06/07	
	Urban areas	Rural areas	Urban areas	Rural areas	Urban areas	Rural areas
No toilet	1.6	8.7	3.2	8.2	2.1	9.3
Flush toilet	5.2	0.2	8.5	0.5	7.3	1.0
Pit latrine	93.0	90.3	86.0	90.8	79.0	87.3
VIP	0.2	0.6	2.3	0.4	11.4	2.2
Other	0.0	0.2	0.2	0.1	0.1	0.2

Source: Household Budget Surveys, various years

was only 2.5 percent compared to about 4 percent for water supply.

Disparities in access to basic sanitation between rural and urban areas are relatively small. Some 9 percent of the population in rural areas report not having any toilet in 2006/07, against 2 percent in urban areas. Flush toilets are almost nonexistent in rural areas (1 percent) while 7 percent of the urban population uses flush toilets. VIPs are also more common in urban areas than in rural areas (11 percent of the population in urban areas against 2 percent in rural areas use VIP latrines).

Figure 4.12 Households without access to basic sanitation by region in 2007



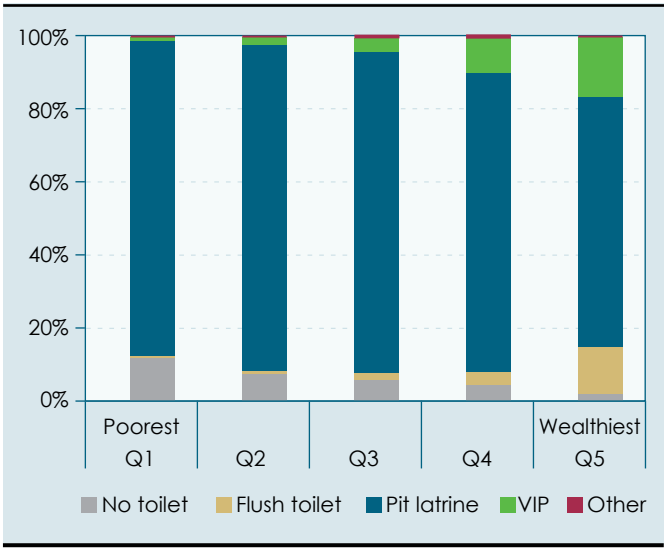
Source: Household Budget Surveys, 2007

There are also significant differences in access to basic sanitation across time and space. There is a lot of heterogeneity in the use of sanitation facilities across regions. In 2006/07, the percentage of the population without any toilet varies from 0.5 percent in Ruvuma to 16 percent in Mara. In Dodoma, the percentage of the population without any toilet increased from 0.2 percent in 1991/92 to 10 percent in 2006/07. In Pwani, this percentage increased from 2 percent in 1991/92 to 14 percent in 2006/07. On the other hand, some regions have seen improvement in the use of sanitation facilities. In Arusha, the percentage of the population not using any toilet facilities reached 25 percent in 1991/92 and decreased to 12 percent in 2006/07. In Morogoro, 2 percent of the population was without any toilet facilities in 2006/07 against 11 percent in 1991/92.

Income matters in gaining access to basic sanitation. The largest differences across the three years are observed for the two wealthiest quintiles. In these two groups, the share of the population using pit

latrines has decreased between 1991/92 and 2006/07 (from 90 percent to 82 percent in the fourth quintile, and from 90 percent to 69 percent in the wealthiest quintile). This decrease has been compensated by an increased use of flush toilets in the wealthiest group (from 4 percent to 13 percent) and by an increased use of VIP latrines in the fourth quintile (from 1 to 10 percent).

Figure 4.13 Access to sanitation by consumption quintile 2007



Source: Household Budget Surveys, 2007

5. INSTITUTIONAL CONTEXT OF THE WATER SECTOR

Institutional Setting

The National Water Policy has put in place a new institutional framework for the sector. This framework is based on a set of principles: (i) the Government's role should be limited to coordination, support and capacity building, monitoring policy formulation and overall sector regulation; (ii) implementation functions will be decentralized to the lowest appropriate level, while balancing consumer participation with economies of scale; (iii) responsibility for regulation will be separated from investment financing and performance monitoring; (iv) autonomous entities will be established to manage water supply and sewerage services in urban areas; (v) community-based organizations will own and manage rural water supply schemes; and (vi) water basin offices will be established as autonomous bodies.

Although this institutional framework follows from the National Water Policy of 2002, the transformation to the new institutional framework is still not fully completed. The roles and responsibilities of the different agencies have been summarized in Figure 5.1 and 5.2.

Figure 5.1 Functional responsibilities for water supply, sewerage and sanitation

Organization	Functions and responsibilities	
Minister responsible for water	Presents national sector policy and strategy to Government Ensures policies and strategies are implemented	Appoints chairman and members of the WSSAs boards Appoints chairman and members of the EWURA board
Ministry responsible for water	Policy and strategy development Advises EWURA in formulation of technical guidelines and standards Co-ordinates planning for projects of national importance Secures finance for projects of national importance Monitors service performance and regulate COWSOs	Provides technical guidance to Councils Monitors technical performance of WSSAs and DAWASA provides technical support, guidance and monitor major capital Works to WSSAs; and coordinates and monitor WSSAs plans
Water Supply and Sewerage Authorities	Own, manage and develop water supply and sewerage assets Prepare business plans to provide water supply and sewerage Services, including capital investment plans	Secure finance for capital investment, and relevant subsidies Contract and manage Service Providers Provide services not contracted out
Service providers	Provide water supply and sewerage services in accordance with contractual requirements Collect revenues for services Construction of water sector infrastructures	Provide Consultancy services Supply of goods Training of communities in water related aspects

(*continued on next page*)

Figure 5.1 Functional responsibilities for water supply, sewerage and sanitation (*continued*)

Organization	Functions and responsibilities	
Community owned Water Supply Organizations	Own and manage water supply assets Operate and maintain water supply assets Determine consumer tariffs	Collect revenue for the provision of services Contract and manage Service Providers
Energy and Water Utilities Regulatory Authority	Approves business plans of WSSAs Issues operating licenses to WSSAs Approves service tariffs	Publishes technical guidelines and standards Monitors water quality and service performance of WSSAs Collects and publishes comparative performance data
Prime Minister's Office – Regional Administration and Local Government	Co-ordinates planning of projects from local government authorities Co-ordinates local government authority budgets	Co-ordinates capacity building for local government authorities
Regional Secretariat	Representation on WSSA Boards Provides technical advice and support to local government authorities	Supervises and monitors local government authorities
City, Municipal, Towns and District Councils	Provide representation on WSSA Boards Co-ordinate WSSA plans within Council plans Delegate performance monitoring and regulation of COWSOs	Delegate technical performance monitoring of WSSAs Provide and/or promote on-site sanitation Formulate by-laws concerning water supply and sanitation
Village Councils	Promote establishment of COWSOs Provide representation on COWSO management body Co-ordinate COWSO budgets within Council Budgets	Resolve conflicts within and between communities Formulate by-laws concerning water supply and sanitation
Ministry responsible for health	Develops policy, guidelines and strategies for sanitation Provides technical assistance to councils for sanitation	Prepares Acts, Regulations and Standards for sanitation Monitors, regulates and provides support and advice to councils and other stakeholders on sanitation issues.

Budget Cycle

The budget cycle in Tanzania is captured in Figure 5.3. It starts with the preparation of s set of resource projections prepared by the Ministry of Finance. These translate into Budget Guidelines and expenditure limits that are circulated to the districts, regions and ministries. The Guidelines are the basis for the preparation of budget plans by the different water agencies, that are afterwards being appraised by the Ministry of Finance. Once agreement is reached between the different water agencies, such

Figure 5.2 Functional responsibilities for water resources management

Organization	Functions and responsibilities
Minister responsible for water	Presents national policy and strategy to the Government Ensures policies and strategies are implemented Appoints Chairman and members of Basin Water Boards Determines appeals from all levels in framework
Ministry responsible for water	Sectoral co-ordination, monitoring and evaluation Policy development and review, including legislation and financing Formulates technical standards and WRM guidelines Co-ordinates trans-boundary water issues Ensures dam safety Water Quality Monitoring Development of water resources of national interest Co-ordinates data collection and assessment of water resources Supervises, monitors and evaluates Basin Water Boards Supervises the Water Resources Institute. (Agency) Supervises the Drilling and Dam Construction Agency
National Water Board	• Advises the Minister on: • Integration of inter-sectoral planning • Co-ordination of basin planning and management • Inter-sectoral / inter-basin conflicts • Investment priorities and financing patterns • Interbasin water transfer • Transboundary water resources management
Basin Water Boards	Data collection, processing and analysis for WRM monitoring and resource assessment Co-ordinates technical aspects of trans-boundary issues in the basin Co-ordinate and approve basin WRM planning / budgets Approve, issue and revoke water use and discharge permits Enforce water use permits and pollution control measures Co-operate between sectors at the local level Resolve conflicts and co-ordinate stakeholders Integrate district plans
Catchment/Sub-catchment Water Committees	Coordination of catchment/sub-catchment integrated water resources management and planning Resolution of water resources conflicts in the catchment/subcatchment, and other delegated responsibilities from Basin Water Board

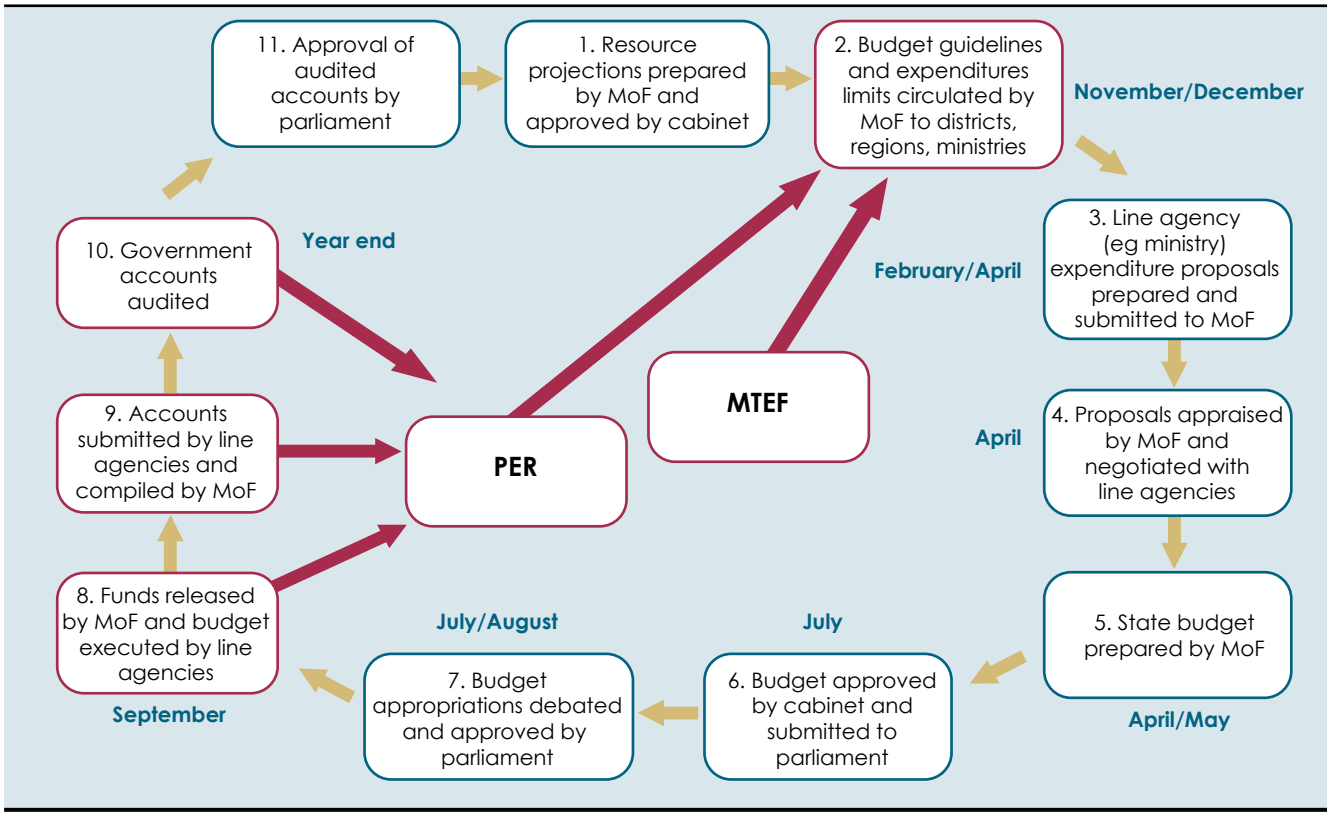
(*continued on next page*)

Figure 5.2 Functional responsibilities for water resources management *(continued)*

Organization	Functions and responsibilities
Water User Associations	Manage allocation of water resources at local level Manage equitable allocation of resources during drought Mediate in local disputes.
Regional Secretariat	Representation on Basin Water Boards
District Councils	Representation on Basin Water Boards Representation on Catchment Committees Formulate and enforce bylaws Promote efficient water utilization Preparation of district plans

as line ministries or regions, the Ministry of Finance finalizes the state budget that is then approved by Cabinet and send to Parliament for discussion. Parliament approves the budget in July or August after which funds can be released to the different agencies.

Figure 5.3 Tanzanian budget cycle



An increasingly large part of the budget is now being allocated to local governments. These LGA receive block grants—one grant to cover recurrent costs, the other for financing investments. This grant structure is not specific for the water sector, as the same type of grants are also being provided to other priority sectors. Parliament does not vote directly for recurrent block grants to the water sector. Instead, water sector budgets for LGAs are aggregated with budgets for other sectors. Development grants are channeled through the Local Government Capital Development grant initiative through sector windows and resources are distributed to the LGAs through the PMO-RALG (Regional and Local Government Section within the budget department of the Ministry of Finance).

6. WHAT IS BEING SPENT ON WATER SUPPLY AND SANITATION?

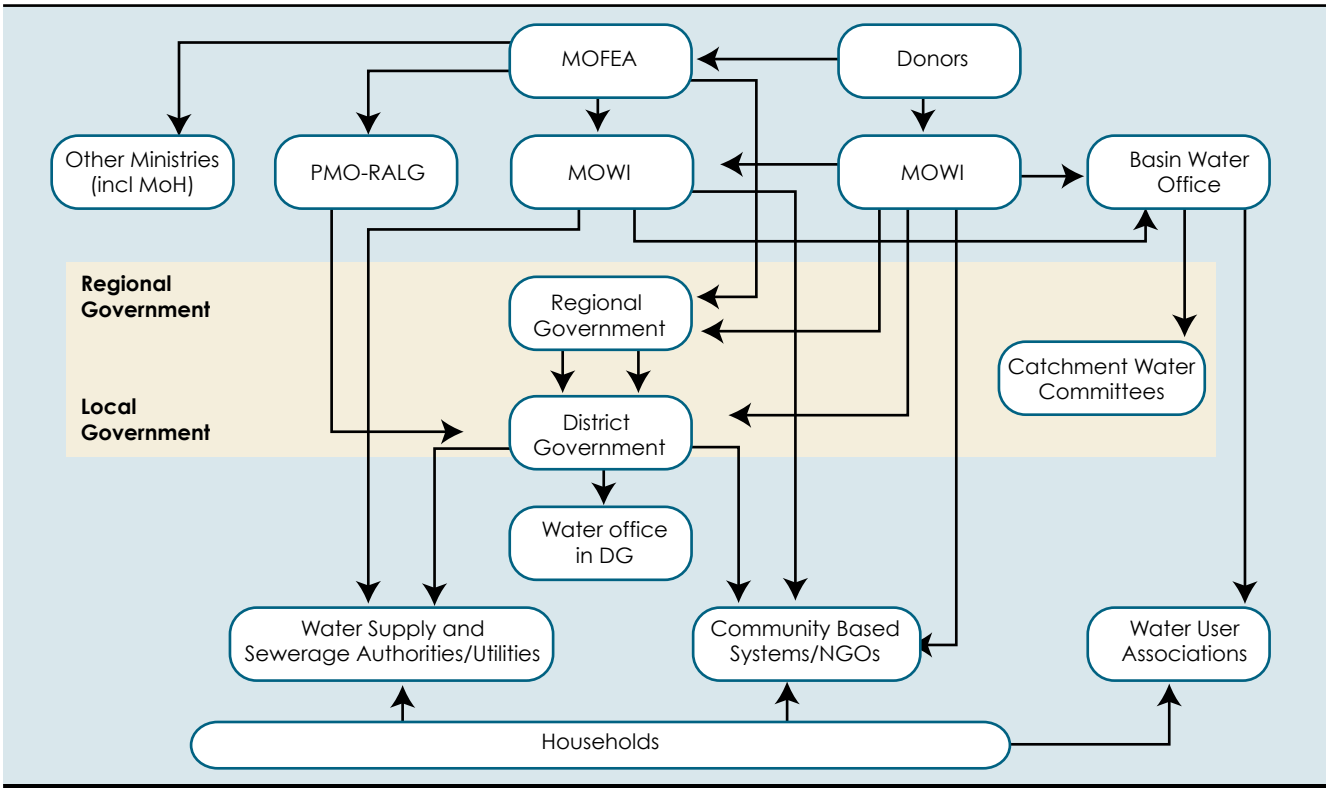
The flow of funds in the water sector

The financial relationship between the various organizations in the water sector is depicted in Figure 6.1.

Water spending has increased rapidly over the past decade. Taking into consideration the differences in data availability before FY2005/06 and the importance of fiscal decentralization, water spending has increased significantly since the beginning of the 2000s. This increase started in FY2004/05 when fiscal decentralization was initiated and the role of LGAs in sector funding increased significantly. At about the same time MKUKUTA was launched in FY2005/06 that established water as a priority sector in its efforts to reduce poverty in the country.

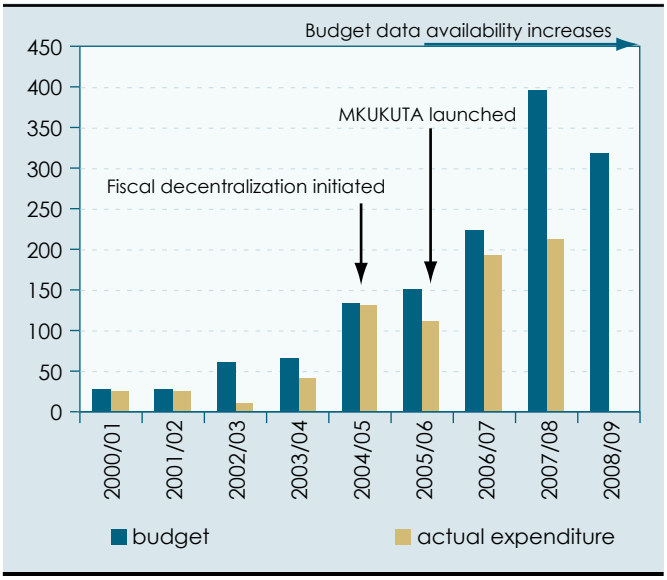
Current levels of WSS spending are high as a percentage of GDP, but remain low in absolute terms. Average annual public expenditure on water in FY2007/08 was 1 percent of GDP. Given that the figures exclude spending by the water utilities and other service providers, actual expenditure is likely to be significantly higher. The 20 largest utilities in Tanzania posted a total operating expenditure of TzS 49 billion in 2006/07 (the latest year for which utility data are available) which would result in a total actual 1.2 percent of GDP spent on water in FY2006/07. In absolute terms, this amounts to TzS 5,101 (equivalent to US$ 3.80) per capita per year (excluding utilities' expenditure) in FY2007/08, compared to TzS 738 in FY2000/01. In real terms, water spending has quadrupled since FY2000/01.

Figure 6.1 Flow of funds in the water sector



The budget allocations for the sector are relatively high compared to other countries in the region. The Africa Infrastructure Country Diagnostic found that water expenditures from central government only for water supply and sanitation was between 0.29 and 0.83 percent of GDP with a low of 0.29 percent in Kenya and a high of 0.83 percent in Uganda. Compared to these numbers, the total central government (excluding regional and local government) actual expenditures in Tanzania added up to an average 0.70 percent between FY2005/06 and FY2007/08.

Figure 6.2 Water expenditure (in TzS billion) has increased significantly in the past decade



Source: Ministry of Finance data and author's calculations

The high budget allocation to the water sector is commensurate with its classification as a priority sector. The Government has classified water as one of the priority sectors, with education, health, agriculture and roads. Water's share in FY2007/08 was close to 10 percent—the lowest sectoral share in the total priority budget. Yet, in the past years, water's share in the total priority sector budget increased very fast from 3.7 percent in FY2000/01 to 9.8 percent in FY2007/08—the second fastest increase after agriculture.

But the trend in increasing budget allocations for the water sector is reversing in FY2008/09. After several years in which budget allocations in the water sector have increased rapidly, nominal water government budgets are decreasing. Based on original budget estimates, the current budget of FY 2008/09 shows a sharp decrease in sector funding. The sector share in FY 2008/09 is 5.2 percent compared to 6.5 percent in FY2007/08 (excluding utilities). The nominal budget for FY2008/09 is 19 percent less than the budget of FY2007/08—a decline of almost TzS 77 bn. The sharp decline in the budget is almost entirely due to a sharp decline in the development budget, which has dropped by TzS 68 bn.

Table 6.1. Relative share of water sector spending

Water sector spending	2005/06	2006/07	2007/08	2008/09
Sectoral share of water in government budget				
Budget allocations	3.8%	4.6%	6.5%	5.2%
Actual expenditures	2.4%	4.0%	3.6%	na
Share of water expenditure as % of GDP				
Budget allocations	0.9%	1.2%	1.8%	1.3%
Actual expenditures	0.6%	1.0%	1.0%	na

Source: Ministry of Finance data and author's calculations

Development budgets are declining both at the central and local level, although the decline has been most pronounced at the central level. Slightly more than half of the drop in development budget is caused by the fact that the Lake Victoria—Shinyanga-Kahama pipeline nears completion. According to the Government's Budget Guidelines, MOWI obtained a total budget allocation of TzS 140 bn which is significantly less than the original budget request of TzS 371 bn—and also less than the FY2007/08 budget allocation of TzS 224 bn).

The reasons for this decline are largely caused by a change in priorities brought about by the impact of the food and fuel crisis. A factor that may explain the decline in funding for WSS in FY2008/09 is the impact of the food and fuel crisis that has resulted in a re-allocation of MKUKUTA funding. The Medium-Term Expenditure Framework shows the fiscal space for investments decreased—with a gap between requests of ministries and ceilings set by the Ministry of Finance of TzS 785 bn. Within the MKUKUTA investments, funding was re-allocated in favor of the growth and poverty reduction cluster (with larger allocation for social protection measures to counteract the impacts of the food and fuel crisis) at the expense of other MKUKUTA priority sectors, especially with regard to Cluster II which funds water expenditure.

Composition of Flow of Funds

The water sector budget is almost entirely made up of development expenditures. As can be seen compared to the total budget, the water sector has a very specific pattern characterized by very low recurrent funding and very high development funding. As in general 55 percent of the total government budget is allocated to the development budget, in the water sector 85 percent of the sector budget is dedicated to development expenditure. This very high dependence on development expenditure is only matched by the energy sector (which unlike the water sector tends to be characterized by more centralized service delivery).

The high level of development funding makes the water sector vulnerable in times of macroeconomic stress. In case of budget re-allocations, governments tend to find it easier to cut development rather than recurrent budgets. The high level of development funding as part of the total budget reflects the high capital intensity that is characteristic for the water sector. This high capital intensity in

Table 6.2. Budget ceilings and requests for FY2008/09

	Total budget (in TzS billion)		
	Request	Ceiling	Difference in budget allocation
Total budget	4,644	3,859	–785
MKUKUTA	3,067	2,581	–486
Cluster I – Growth and poverty reduction	1,034	1,245	+211
Cluster II – Improvement of quality of life (including WSS)	1,335	880	–455
Cluster III– Governance and accountability	698	455	–243
Other	1,577	1,278	–299

Source: Ministry of Finance data and author's calculations

Table 6.3. Budget composition of several sectors in FY2008/09 (with salary adjustments)

	Total budget (in TzS billion)		
	Recurrent	Development	Total
Total budget	45%	55%	100%
Infrastructure (mainly roads)	31%	69%	100%
Energy	12%	88%	100%
Water	15%	85%	100%
Health	61%	39%	100%
Education	85%	15%	100%

Source: Ministry of Finance data and author's calculations

combination with the local character of service delivery results in frictions with regard to the efficiency and equity in service delivery (there are less possibilities to phase in large investments due to the limits on taking a modular approach in service delivery) and the equity of service delivery.

Summarizing the funding of the sector

Funding for the water sector has increased significantly over the past years conform its status as a priority sector. Even though funding is declining in FY2008/09, funding has increased significantly over the past few years. The pattern of funding is characterized by relatively low recurrent expenditure, with 85 percent of water sector expenditure assigned for development expenditure. The latter profile makes the sector very vulnerable in times of macroeconomic stress. In case of budget re-allocations, governments tend to find it easier to cut development than recurrent expenditure.

But the food and fuel crisis has had a negative impact on the availability of investment funding for the sector. Actual budget allocations for the current fiscal year 2008/09 have been lower than in the previous year resulting from a re-allocation in government funding. The Medium Term Economic Framework for the next three budget years assumes that the funds available for the cluster are scarcely increasing in real terms, which means that available funding for the water sector may be constraint in the medium-term because of the fall out of the financial crisis.

7. IS SPENDING WELL ALLOCATED?

This section explores the extent to which infrastructure spending is internally well allocated. A number of different dimensions of expenditure allocation are relevant. First, whether the allocation of infrastructure spending across budget and non-budget categories is appropriate. Second, whether the allocation of resources across capital and operating expenditure categories is appropriate to ensure effective asset management. Third, whether resource allocations to sub-national jurisdictions are commensurate with their responsibilities for service provision. Fourth, whether the spatial allocation of resources across rural and urban areas is equitable.

Allocation across budget categories

Water sector spending is higher than the Government Budget assumes. The Government budget includes data on water spending from the Ministry of Water and other Ministries. It also includes data on government spending of lower levels of government, most notably regional governments and Local Government Authorities (LGAs).

Off-budget funding is a significant source of funding in the sector. There are several forms of off-budget funding: (i) expenditures from public water authorities; (ii) expenditures made in the sector by donors that are not registered in the government's budget; and (iii) expenditures in the sector made by NGOs (whose budgets at times tend to be funded by donors).

- *Public Water Authorities*. Part of the funding from MOWI and to a much lesser extent LGAs is geared to public water authorities in the form of capital investment subsidies and operation and maintenance subsidies. We have presented data on the financial performance of public water authorities in Chapter 4, but have not included data in the government budget data to avoid double counting as data not always can be disaggregated in sufficient detail to allocate costs to the individual public water authorities. In FY2006/07, the public water authorities spend TzS 49 billion. Yet, these utilities also generate income through user charges and fees at TzS 51 billion which means the public water authorities are just able to cover their basic operation and maintenance—although there is significant variation between utilities in their ability to cover basic operation and maintenance costs.
- *Funding by donors off-budget*. The Medium Term Economic Framework projections show that some bilateral donors (most notably Japan and Switzerland) and multilateral organizations (UN-Habitat and UNDP) do not have budget codes in the MOFEA database, and hence their funding is likely to be off-budget. If it is assumed that the difference in bilateral aid as registered by OECD and the Ministry of Finance is a result of off-budget funding, the portion of bilateral donor funding that is allocated off-budget amounts to 26 percent of total bilateral donor funding that OECD[7] registered over the past five years.
- *Funding through NGOs*. Another important off-budget source of funding is financing provided by NGOs and civil society organizations. The earlier mentioned WaterAid study shows that many rural water points in the past 10 years in the four districts where they surveyed have been funded and built by NGOs and civil society organizations as can be seen in Figure 7.1 and Box 4.

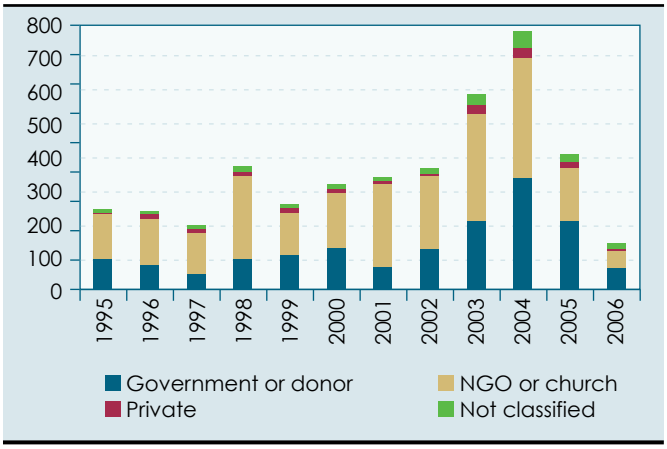
[7] The OECD database is not necessarily complete as it does not include for instance much of the multilateral aid (although improving in recent years).

Box 4 The role of NGOs in the WSS sector

While the focus of this paper is on public funding to the water sector, funding for new rural waterpoints comes increasingly from non-government sources.

WaterAid commissioned surveys of every public waterpoint in rural and mixed wards in the Dodoma, Manyara, Singida and Tabora regions in 2005/06. The surveys collected information on reported funding sources for the water points. The results show that a large amount of funding for new water point construction has come from sources other than Government of Tanzania or donor funds (the latter are presumably not reflected in the Government of Tanzania budget). From 1970 to 2006, 43 percent of water points were funded by churches or other non-governmental organizations, while another 3 percent was funded by the private sector. The proportion of non-government funded water points has increased in recent years. From 1995–2005, 35 percent of rural water points in these regions were funded by public entities or donors, while 57 percent were funded by NGOs or churches, and 4 percent were funded by private donors.

Figure 7.1 Number of water points constructed by type of funding agency in four regions between 1995 and 2005/06



Source: WaterAid Study 2005/06, and author's calculations

Whether the substantial amounts of non-government funding of new water points in other regions is as pronounced as it is in these four regions needs to be determined. WaterAid undertook this mapping exercise in the four regions because it was active in funding water points there. It is possible that as a result of WaterAid's presence, these regions could have more NGO activity than other regions. From 1970 until the time of the surveys, WaterAid is reported to have funded construction of about 24 percent of the NGO or church funded water points. However, even if WaterAid funded water points in the regions examined are ignored, a significant number of water points in these regions are funded by NGO or church organizations.

Allocation across Expense Categories

The policy of Devolvement and Decentralization is reflected in associated government budgeting. The share of MOWI in the total water budget has decreased significantly over the past five years—with much more of the funding allocated through lower levels of governments. In FY2003/04, MOWI accounted for 100 percent of the total water sector budget, but in FY2007/08 its share in the total government's water sector budget dropped to 63 percent, and to 49 percent in FY2008/09. Yet, even though budget allocations show a sharp decline in the share of MOWI in the total budget composition, the actual spending patterns lag behind. Due to a number of factors that will be discussed in more detail in the remainder of this report, the share of MOWI in government's water sector expenditures has dropped less rapidly: from 100 percent in FY2003/04 to 69 percent in FY2007/08.

Recurrent Expenditure

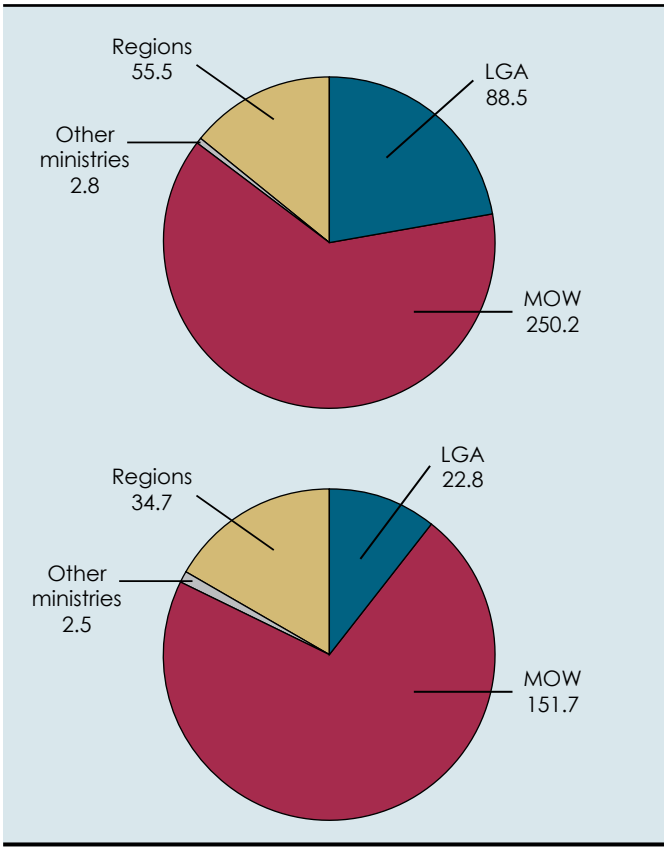
Recurrent expenditures are declining as a percentage of total expenditures. This reduction in recurrent expenditure is largely due to the sharp increase in capital expenditure—both in the water sector and outside of the water sector. A larger proportion of the capital expenditure is going through the regions and other ministries, while the votebooks of these entities are not registering recurrent expenditures related to these capital expenditure. Recurrent cost make up 10 percent of the total government expenditure in the sector. An increasing part of the recurrent cost is related to personnel ex-

penditure. In 2005/06 personnel expenditure made up 28 percent of total recurrent costs compared to 58 percent in the current budget year.

Staff expenditure shows that progress has been made in the pay reform process on which the Government has embarked. After a sharp decline in 2007/08, staff expenditure has increased to 58 percent of total recurrent expenditure in FY2008/09 budget. Part of this increase is related to an increase in staff in the MOWI. Yet, only 55 percent of total staff expenditure is made up of wages and salaries (up from 50 percent in FY2006/07); almost all of the remaining staff costs consists of personal allowances. This translates into an overhead costs on basic salaries of about 80 percent. This constitutes a decline in the past three years as in FY2006/07 overhead costs were higher at 97 percent, but is still very high—and indicates that the pay reform process still has some way to go in the sector.

The high dependence on personal allowances suggests that these allowances are still a major tool to supplement salaries and wages. The high dependence on personal allowance may distort incentives in the sector; an issue that was already raised in the 2008/09 Budget Guidelines which recommended that each expenditure should produce value for money.

Figure 7.2 Subnational budget allocations have increased but actual spending lags behind



Source: Ministry of Finance data and author's calculations.

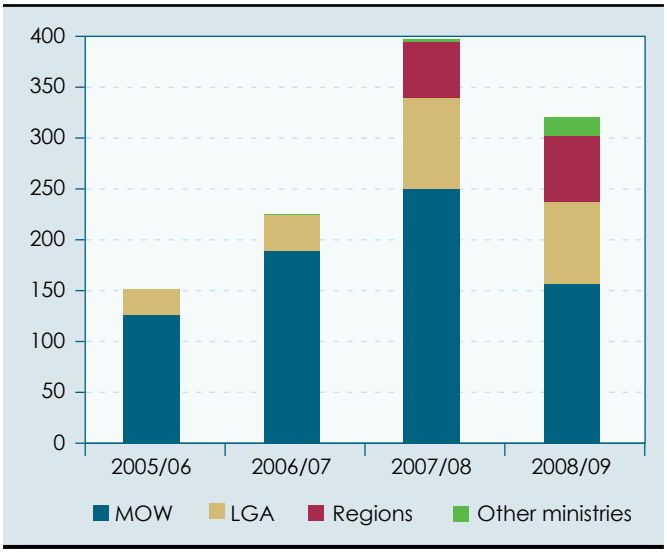
Table 7.1 Composition of on-budget water sector budget allocations is changing

	2005/06 Budget	2006/07 Budget	2007/08 Budget	2008/09 Budget
Personal expenditure	5.1%	6.1%	3.8%	5.8%
Other charges	13.0%	9.9%	6.4%	4.1%
Total recurrent expenditure (excluding Water Authorities*)	18.1%	16.0%	10.2%	10.0%
Development expenditure	81.9%	83.9%	89.8%	90.0%

Source: Ministry of Finance data and author's calculations
* Expenditures from Water Authorities are only recurrent costs. Data from FY2006/07 the only year for which detailed data are available, total operating expenditures from the 20 water authorities (including DAWASCO) was TzS49bn of which TzS13bn was cost related to personnel.

Actual expenditures for per diems in MOWI have increased substantially as a percentage of total budget allocations, from 0.6 percent of actual MOWI sector budget in FY2006/07 to 1 percent in FY2007/08. This translates to 5.3 and 7 percent of MOWI's recurrent budget respectively. The increase in per diems is unexpected as the change in the role of MOWI from implementer to facilitator is accompanied by MOWI being less engaged in the actual implementation of investment works.

Figure 7.3 Water sector budget allocations FY06–FY09 (TzS billion)



Source: Ministry of Finance data and author's calculations

Development Expenditures

The development budget increased rapidly since the early 2000s, but this trend is reversing in FY2008/09. The actual composition of the development budget has changed significantly over the past few years due to the decentralization policy. As can be seen in Figure 7.3, the share of local and regional governments has increased rapidly at the expense of MOWI. At the same time, in the current budget year (FY2008/09) the share of other ministries has increased.

There is a clear demarcation of responsibilities in the development budget. In FY2008/09, the local governments' development budget is essentially focused on the rural water sub-sector. The largest part of the MOWI budget is allocated to the urban water supply and to a lesser extent the water resource management sub-sectors. The regions are especially engaged in undertaking supporting ser-

Table 7.2. Composition of MOWI development budget allocation is changing

	2006/07 Budget	2006/07 Actual	2007/08 Budget	2007/08 Actual	2008/09 Budget
Infrastructure investments (expansion and rehabilitation)	81%	89%	55%	60%	30%
Of which rehabilitation	(5%)	(6%)	(3%)	(3%)	(3%)
Capital transfers:	0%	0%	32%	29%	45%
• Urban water authorities	0%	0%	28%	27%	39%
• Water basin agencies	0%	0%	4%	2%	6%
Feasibility studies	2%	2%	7%	7%	12%
Maintenance	4%	0%	0%	0%	0%
Other	10%	9%	2%	2%	13%
Total	100%	100%	100%	100%	100%

Source: Ministry of Finance data and author's calculations

vices; the largest part of their budget is linked to feasibility studies. Local governments are responsible for the delivery of rural water supply services.

Ministry of Water and Irrigation

The composition of the MOWI's development budget portfolio has changed profoundly. The changes in the composition of MOWI's development budget are largely due to the decentralization policy that has resulted in a significant reduction of the rural water and sanitation development budget in the MOWI. Yet, the character of the urban water portfolio is changing too; the largest part of the urban water sector development budget is now made up of transfers to urban water authorities. The latter development is consistent with the change in the role of MOWI from an actual implementer of water infrastructure investments into a facilitator—conform the water sector strategy. The increase in supporting activities, most notably the contracting and supervision of feasibility studies, fits that profile as the capacity of local governments to undertake such work is still weak.

Feasibility studies are an important part of MOWI's budget. Feasibility studies make up an increasing part of the budget. This is a direct result of the absence of a pipeline of investment projects at a time that funding through the SWAp is becoming available. So in a way, MOWI (and as we will see not only the Ministry has expanded its expenditure on feasibility studies) is catching up in undertaking this type of project preparation. Yet, in general feasibility and design for relatively large projects take up 5–10 percent of the total investment cost of a project. This component in MOWI's budget should decrease to a level that is more consistent with a rate of –0 percent per year once a reasonable inventory of investment projects has been built up.

MOWI's development budget has been heavily skewed towards a small set of large projects in the past years, most notably the Shinyanga project and the Malambo water catchment programs. These projects are funded by the Government of Tanzania without donor assistance. In the past years, a large part of the MOWI budget has been allocated to the Lake Victoria– Shinyanga-Kahama pipeline project which is close to completion with a significant drop in budget allocation in 2008/09.

Table 7.3. Composition of MOWI development budget – a few large projects dominate

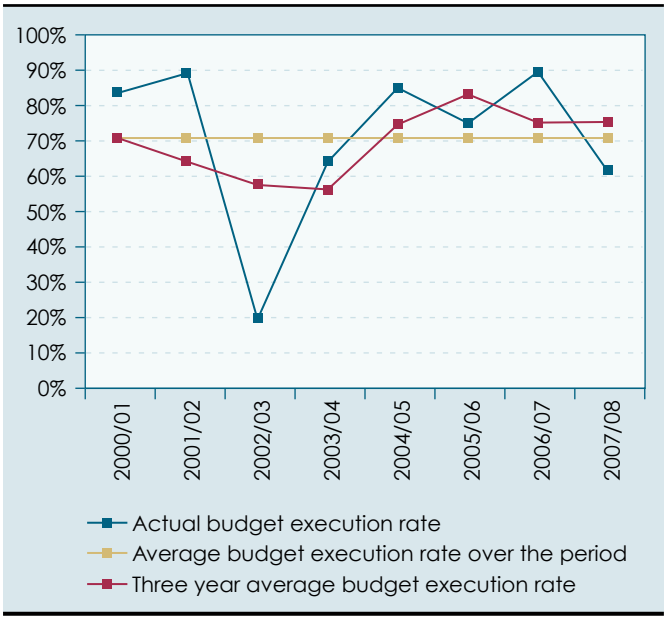
	2006/07 Budget	2006/07 Actual	2007/08 Budget	2007/08 Actual	2008/09 Budget
Urban	41	36	69	26	50
Rural	***32***	***27***	***41***	***36***	***21***
Of which Malambo	***6***	***6***	***7***	***7***	***12***
Shinyanga	***82***	***82***	***52***	***49***	***16***
Other (Water Resource Management and Capacity Building)	14	4	66	18	14
Total	169	149	227	130	140
Shinyanga and Malambo as % of MOWI budget	*51%*	*58%*	*26%*	*43%*	*20%*

Source: Ministry of Finance data and author's calculations

Funding for water resource management remains small despite sector strategy priorities. As can be seen in Table 6.4, investments for water resources management remain very small despite its prominence in the sector strategy. Although funds are increasingly made available for water resources management, this has not yet translated in actual implementation which is due to a combination of lack of capacity and lack of a pipeline of projects that make it difficult to implement any works even when needed.

Overall, the absorption capacity of MOWI has been satisfactory. Since 2000, on average 70 percent of the budget allocation has been spent. Yet, within the period between 2000 and 2008, the variance in budget execution has been large. In FY2002/03, the budget execution rate dropped below 20 percent. It is not clear what affected this drop. In FY2007/08, another drop occurred in the execution of the budget allocations mainly because of budget-reallocations and slow release of funds.

Figure 7.4 Absorption capacity of MOWI has been improving over the years



Source: Ministry of Finance data and author's calculations

The change in MOWI's role and responsibilities has resulted in a higher internal administration budget allocated to the MOWI. Part of the increase in internal administration costs is the result of improved due diligence—the establishment of a set of new administrative units that aim to improve the quality of the support provided by MOWI (procurement, audit and legal functions) and its role as policymaker (information collection and dissemination) and a significant increase in staff in FY2007/08. But the overall administration cost of MOWI has increased rapidly. A large part of the budget actually seems to be

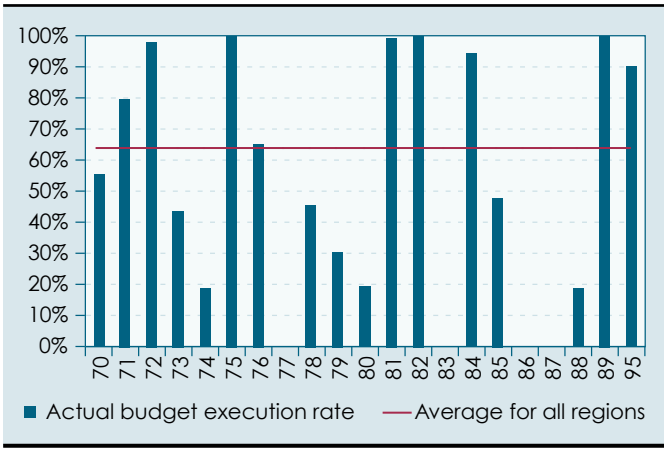
Table 7.4 Composition of administration budget of MOWI (in TzS millions)

	2006/07 Budget	2006/07 Actual	2007/08 Budget	2007/08 Actual	2008/09 Budget
Total administration expenditure unadjusted	8,131	7,666	36,297	17,333	17,144
Total administration expenditure adjusted for capex	5,736	4,640	15,249	14,904	11,574
Total budget allocation MOWI	189,059	167,911	250,253	151,734	156,243
Expenditure forinternal functioning as % of total expenditure					
• Unadjusted for capex	4.3%	4.6%	14.5%	11.4%	11.0%
• Adjusted for capex	3.0%	2.8%	6.1%	9.8%	7.4%

Source: Ministry of Finance data and author's calculations

misclassified with regard to capital expenditure—as the establishment of new departments in MOWI related to its role of sector facilitator may require capital expenditure. Yet, it seems that most of the capital expenditure is related to feasibility studies that although linked with policy and planning are included in these new administrative units whereas before it was directly linked to the urban, rural and water resource management departments.

Figure 7.5 Budget execution performance varies widely between regions



Source: Ministry of Finance data and author's calculations.

Regions

Government spending through regional governments has increased rapidly. Regions have increased their presence in the water sector significantly in the past few years. By FY2005/06, regions spent close to nothing on water sector related activities. By FY2007/08 this was TzS 35bn. All this funding is related to foreign funded rural water project (Grant 3280 on Rural Water Supply and Sanitation). It is interesting to note that a large part of this funding is related to project preparation activities. Building the project pipeline hence does not only take place at the ministerial level but also at the regional level.

The overall trend in which actual expenditures lag behind budget allocations is also shown at the regional level. In FY 2007/08, About TzS 35 bn was spent on rural water supply development expenditure, yet the original budget allocation was TzS 56 bn. The performance in using budget allocations varies widely between regions—with actual performance ratios ranging from 0 to more than 100 percent. Kilimanjaro, Mwanza, Ruvuma and Rukwa were able to use all of their budget allocations. Two regions were not able to spend anything: Kagera, Mara and Shinyanga, whereas Tanga spent close to TzS 3 billion but without an initial budget allocation. Lack of capacity may be one of the factors explaining the large differences between regions, but other factors also play a role, as neither Kagera nor Mara received a regional water budget allocation in the first place.

The regional budget is solely dedicated to project preparation for rural water supply and sanitation. Almost all regional budgets are allocated to project preparation activities, including feasibility and design studies, implicating a dearth of pipeline projects that need to be created now that district funding has increased rapidly. All the funding for this project preparation is provided by donors.

Local Government Administration

Local governments have become increasingly important in sector spending. Between FY2004/05 and FY2007/08, actual local government expenditure has doubled in size. Most of the local government expenditure is aimed at rural districts and as such rural water supply service delivery has become increasingly the domain of local governments. Budget allocations increased fivefold over the same period, especially since FY2007/08 onward when total water sector budget allocations to local governments topped more than TzS 88 bn.

The local governments' water sector budget is almost entirely funded through central government transfers. The two main government transfers in the water sector are the block grants and development grants. The system of water transfers based on formulas was introduced in FY2005/06. The formula is based on a combination of indicators including coverage rates, technologies used in the

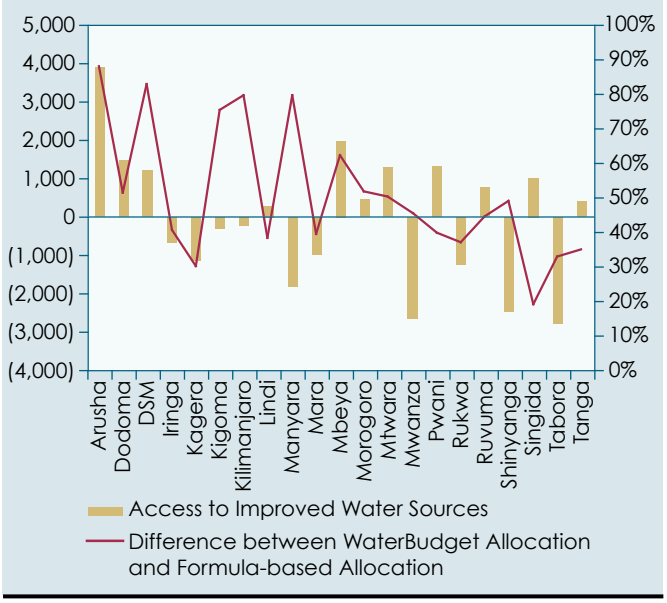
district and poverty incidence. Although the district surveys show that these funds are supplemented by donor funding, and other sources within the district (such as other transfer funds, most notably the general purpose fund allocation, and sometimes community resources), these supplemental sources remain very small in comparison to the grants provided through the central government

Government transfers are the single most important source in the funding of water supply investments in the districts. The two main government transfers in the water sector are the block grants and development grants. The system of water transfers based on formulas was introduced in FY2005/06. The formula is based on a combination of indicators including coverage rates, technologies used in the district and poverty incidence. Although the district surveys show that these funds are supplemented by donor funding, and other sources within the district (such as other transfer funds, most notably the general purpose fund allocation, and sometimes community resources).

The implementation of the formulas for allocating sector funds to LGAs requires access to reliable and disaggregated sector data. The actual calculation of the formulas is hindered by the quality of the available data. The data underlying the budget allocations is in most cases insufficiently disaggregated. Poverty data is only available at regional level which makes it impossible to target grants to the poorer districts within a region. The reliability of the water supply data is an issue. MOWI data on water supply coverage tend to overestimate access to safe water mainly because it measures number of water points; it does not measure the number of functional water points (as discussed in Chapter 3), while the level of non-functionality is not evenly distributed across the country. As such, the water formulas are not too effective in targeting the areas where most assistance is needed. To increase the effectiveness of the water formulas, access to more timely, availability of reliable and disaggregated data is a first requirement.

In addition, the formulas are not consistently applied in the water sector budget allocations. The difference between budget allocations and actual allocated budgets at the regional level shows that the water formula is not consistently implemented. Some regions get significantly more funds than the water formula calculation would allow for, while in other regions the opposite holds true. In FY2007/08, as can be seen in Figure 6.6, the link between access to improved water sources and actual budget allocations tend to be less than perfect as regions with low access rates do not necessarily get higher budget allocations.

Figure 7.6 Difference between actual water budget allocation and water allocation formula budget (in TzS million) and access to improved water sources in FY2007/08

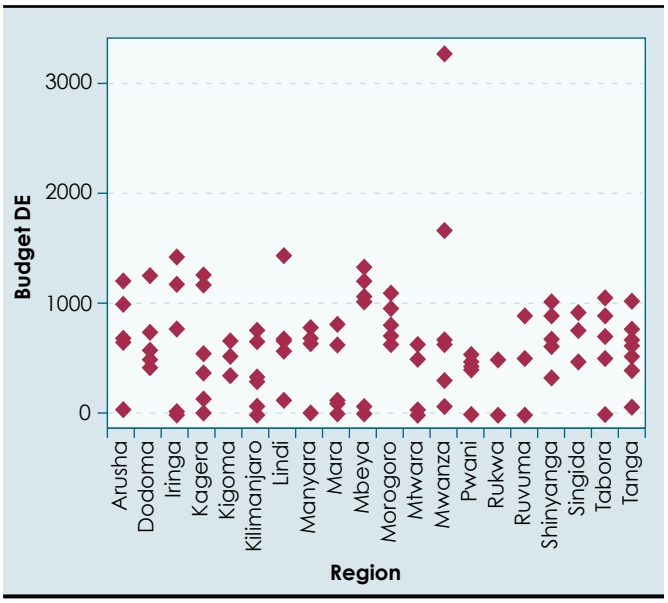


Source: Ministry of Finance data and author's calculations.

The variation in formulae-based allocation and actual budget allocation at district level is also significant. Budget deviations from the budget formulas are significant and widespread. Not one local council gets the budget allocation that it would be entitled to according to the water allocation formula. Although the variation in budget allocation as measured by the difference between the district with the maximum budget allocation and those with the minimum one has decreased over time, the improvement is still very modest. Part of this devia-

tion may be caused by reasons of practicality. The relatively small allocation of funds by district at around TzS 1,000 per capita will make it necessary to prioritize investments to avoid that funding is spread too thinly. The cheapest technology to be introduced is spring protection, but using average cost of such a technology is close to $4 per capita (TzS 5,300. equivalent), while in more water-stressed areas boreholes with hand pumps would easily cost $36 per capita (TzS 48,000 equivalent).

Figure 7.7 Development budget allocation in FY2008/09



Source: Ministry of Finance data, LOGINTanzania website and author's calculations

Spatial Allocation

In the past a large part of the development budget was allocated to urban areas. Before FY2004/05 almost all development expenditures were concentrated in the Ministry of Water and Irrigation. In most of these years, urban water sector receives significantly more resources than the rural sector—albeit that part of that bias was donor driven. In years with little donor funding this bias was less strong than in years where donor funding was available. This donor dependency on funds which will be discussed in more detail in Chapter 9 can skew the development budget easily in one direction or the other.

Since the decentralization and devolvement process was initiated, a significantly larger part of the budget is actually directed to rural areas. The increasing share of funding available from regional and local governments tends to result in an overall larger part of the development budget allocated for rural areas. In FY03, none of the water sector budget was allocated to local and regional governments, by FY08 22 percent of the total budget allocation was going to local governments and another 15 percent to regional governments.

The per capita rural water allocation is smaller than the per capita urban water allocation, but the difference between per capita rural and urban development budget allocation is getting smaller. The per capita budget allocation for rural water supply has almost tripled between FY2006/07 and FY2008/09 when the contribution of the LGAs is included, whereas the per capita urban water budget allocation has shown wide fluctuations, but essentially remained unchanged over the past three years. This change coincides with the decentralization and devolvement of water supply service delivery and is largely due to the fact that much more budget is allocated to the Regions and LGAs which tend to spend most of their funding on rural water supply—as most districts tend to be rural. Nevertheless, most of the per capita funding is still directed to urban water supplies, and mostly to urban water authorities.

In view of the Government's interest in achieving the MDGs, it makes sense that a large part of the development budget is allocated to rural areas. It should be noted, however, that even if funding would be equitably distributed between rural and urban areas, the average cost of supply to an urban resident with improved water, especially piped water, tends to be higher than the cost to supply a rural resident. The higher per capita cost of water supply provision in urban areas is directly linked to the choice of technology for service delivery. Piped water systems tend to be associated with higher costs than lower-cost technologies such as the use of shallow wells with handpumps.

Table 7.5. Composition of total capital development budget (in TzS billion) excluding LGAs

	2006/07 Budget	2006/07 Actual	2007/08 Budget	2007/08 Actual	2008/09 Budget
Rural (without LGA)	32	27	95	70	85
Urban	41	36	69	26	50
Shinyanga	82	82	52	49	16
Other (WRM, Capacity Building)	14	4	66	17	52
Per capita budget (TzS)					
Rural *	853	720	2,461	1,813	2,139
Urban	4,435	3,894	7,127	2,685	4,557

Source: Ministry of Finance data and author's calculations
* The rural component is underestimated because of the exclusion of the LGA budget due to lack of precise data on type of capital expenditures;

Summarizing the allocation of public expenditure

The significant level of off-budget funding makes it difficult to know what exactly is spent in the sector, and gives the sector a "miracle premium". Comparing OECD bilateral data and MOFEA bilateral data results in a gap between the two that may account for off-budget financing averaging about 26 percent of total bilateral aid in the past five years**.** This level of funding essentially provides the Government with a "miracle premium". Even if nothing is built because of on-budget funding not being available, the decline in access caused by population growth and breakdown of water systems (including water points) is less severe because of these off-budget funded investments that take place in the sector. The high level of off-budget funding means that a parallel system is at work in the sector that may be working in accord or against current policies and priorities.

Sector inefficiencies drive the allocation of resources across capital and operating expenditure categories. Although at first sight, most funding in the sector is allocated to capital expenditures, the actual capital expenditure is lower due to the misclassification of expenditure, while a part of the capital budget consists of recurrent expenditure and a significant part of the capital budget is used for project preparation, maintenance and rehabilitation. The high level of maintenance and rehabilitation is a direct consequence of the high inefficiencies in the sector that result in the breakdown of services and the lack of cost recovery in urban utilities.

The resource allocations to sub-national jurisdictions are in line with the increased responsibilities of LGAs for water service provision. Spending patterns have changed significantly in recent years due to sector reform and the devolvement and decentralization policy of the Government. As a result of the decentralization policy of the government, the budget allocated to the local government authorities has increased rapidly with its share in total water sector budget allocations increasing from zero percent in 2003/04 to 25 percent in 2008/09. Yet, although the budget allocations have increased rapidly, actual expenditures have lagged behind. In FY2007/08, only half of the LGA budget allocations were actually spent because of significant delays in the release of budget funds. The role of the Regions has

also gained prominence—as the regions saw their share of total sector funding increase to 20 percent in the 2008/09 budget; yet, as all regional funding is allocated through one particular sector project where it is almost entirely used for project preparation, it is not entirely clear in how far this regional allocation is structural, or temporary because of its link to a specific project.

The spatial allocation of water sector resources across rural and urban areas is getting more equitable. The per capita rural water allocation is still less than the per capita urban water allocation, but the difference between the per capita rural and urban development budget allocation is decreasing. The per capita budget allocation for rural water supply has more than doubled between FY2006/07 and FY2008/09, whereas the increase for the urban water budget allocation has more or less remained constant. This change coincides with the decentralization and devolvement of water supply service delivery and is largely due to the fact that more of the budget is allocated to the LGAs which tend to spend almost all of their funding for rural water supply—as most districts tend to be rural.

8. HOW EFFICIENT IS SPENDING?

Allocative Efficiency

Allocative efficiency measures whether we are spending on the "right" things as set out by national objectives. The indicators used to determine the allocative efficiency of water sector budget allocation and expenditure are consistent with the basic objectives set out in the sector strategy.

Progress in achieving the four sector objectives is uneven. The overall sector objectives are (i) to address cross sectoral interests in water (with a special emphasis on water resource management); (ii) changing the role of the Government from service provider to facilitator (coordinator, policy formulation and regulation); (iii) to ensure full cost recovery in urban areas; and (iv) to implement demand-based approaches in rural areas.

Central government is less involved in actual project implementation, while more of the development funding is allocated to transfers to urban water authorities and water basin agencies. At the same time, administration functions have increased in importance. Local governments' role as a service provider however has been growing in recent years—both in terms of infrastructure development and basic operation and maintenance of rural water supply systems. Yet, progress in addressing the cross-sectoral interests with regard to water resource management is still modest if funding to water resource management as a proportion of the total sector funding is taken as an indicator. The budget allocation shows an increasing—albeit still small—share for water resource management in the total budget allocation, the actual expenditure for water resource management is still very low. In FY2007/08, only 15 percent of the total WRM budget allocation (excluding capacity building activities) was actually spent. This low performance ratio points to a need to build up capacity: (i) build capacity in terms of trained and skilled staff, and (ii) the need for WRM planning with the subsequent result of a pipeline of programs to implement.

Progress in ensuring full cost recovery in urban areas shows there is still a long way to go. In the FY2008/09 budget, in total more than TzS 32.8 billion was allocated for operation and maintenance (TzS 22.9 billion) and rehabilitation (TzS 9.9 billion) both for rural and urban water supplies, which means that on a total budget of TzS 288 bn, 11 percent is being used for maintaining operations of existing water infrastructure. These subsidies are a direct result of the high breakdown rate of rural water points and the high proportion of public water authorities that are unable to meet even basic operation and maintenance of their water supply networks. The high costs of operation and maintenance in the government budget for the water sector have major implications for the effectiveness of Government in expanding access to water supply and sanitation services as too much funding is needed to ensure basic access to existing users.

Demand-based approaches are used in rural areas. The district surveys shows that many districts prepare their development budgets on the basis of an "Opportunities and Obstacles to Development Study". This study is done at the village level, approved at the ward level and the data is stored at the district council. This study is updated annually and forms the input for the identification of development projects in the district council. Of the 10 district councils interviewed, only 3 mentioned community contributions as a source of funding for the water sector.

Technical Efficiency

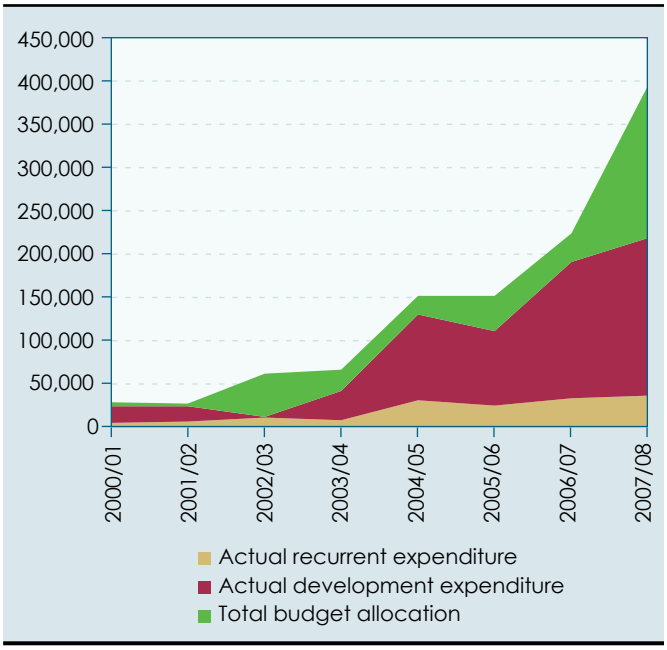
Technical efficiency measures whether funding is spent efficiently given the allocative decisions. To that effect, we will use two indicators to measure technical efficiency: (i) budget efficiency through

(a) budget execution rates; (b) investment allocation and screening procedures; (c) budget cycle and long-term projects—duration of implementation; and (ii) the efficiency of investments.

Budget Efficiency

Despite significant increases in the past years in the total water sector budget, actual expenditures fall below the budgeted estimates. Although actual expenditure has increased rapidly over the past decade, it has generally lagged behind budget allocations. Yet, the difference is relatively small, with the exception of the FY2007/08 budget that showed a much larger gap. This gap may be due to a re-allocation in the budget and subsequent delays in releasing funds to the water sector during the fiscal year, rather than due to lack of capacity to spend funds by water agencies.

Figure 8.1 Budget allocation and actual expenditure (in TzS million)



Source: Ministry of Finance and author's calculations

Large differences exist between the ability to spend recurrent expenditure compared to that of development expenditure. On average, recurrent expenditure is slightly below the allocated budget, with MOWI able to spend about 95 percent of its recurrent expenditure budget. In LGAs the budget execution rate over the past three years averaged 87 percent. The delays in budget implementation are concentrated in executing the development budget. Development expenditures tend to be used with more discretion and the first to be affected when budget cuts need to be

Table 8.1. Performance budget execution ratios show wide variations on an annual basis

	2005/06	2006/07	2007/08
Recurrent expenditure			
MOWI	92%	96%	97%
LGA	90%	89%	82%
Total	90%	93%	90%
Development expenditure			
MOWI	72%	88%	57%
LGA	51%	49%	23%
Regions	—	—	63%
Other	—	100%	100%
Total	*70%*	*84%*	*51%*

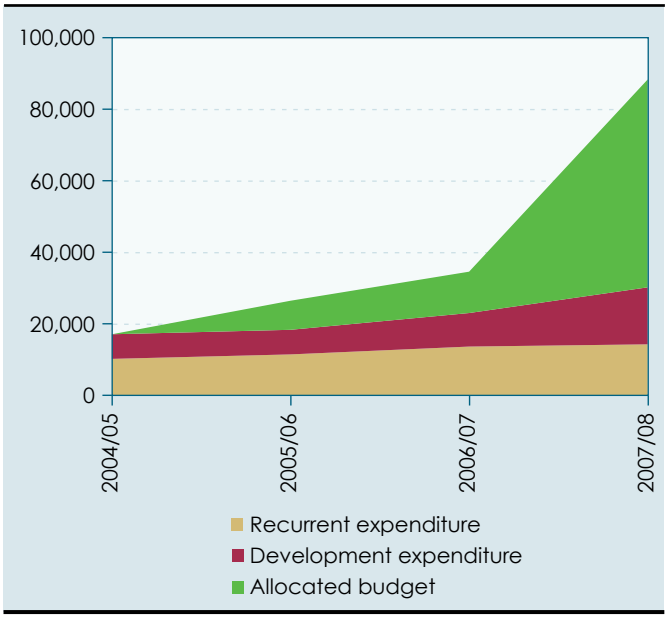
Source: Ministry of Finance data and author's calculations

made, as is clear from the current developments where changes in budget re-allocations to deal with the food and fuel crisis is affecting the development budget of the water sector.

The delays in FY2007/08 are seen at both central and local government levels, but are especially significant for local governments. Although low budget execution ratios are affecting all actors in the water sector, local governments also experienced major delays in their actual flow of funds. The water block grant aimed to fund recurrent expenditure had disbursed 82 percent of its initial budget allocation by the end of the year.

The gap between budget allocations and actual expenditure are caused by a combination of factors. As will be discussed in the remainder of this chapter, the divergence between budgeted and actual expenditure is due to a combination of issues in the budgeting, planning, procurement and disbursement processes.

Figure 8.2 Budget allocation and actual expenditure in LGAs (in TzS million)

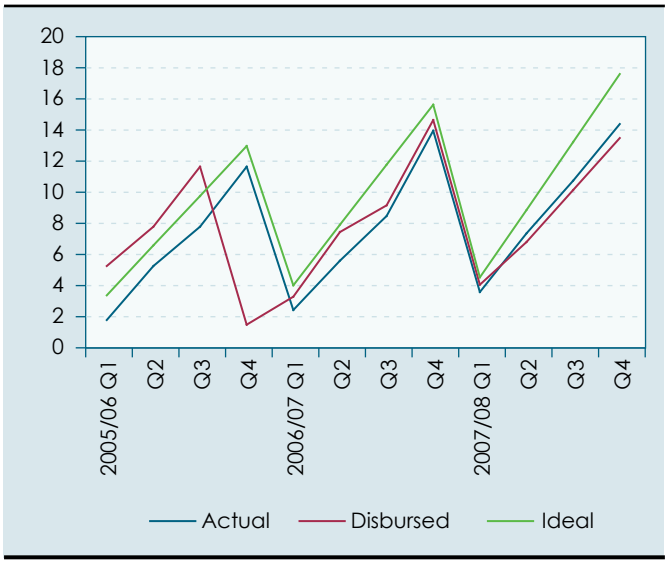


Source: Ministry of Finance data and author's calculations

The release of funds by the Government is highly unpredictable, especially for release of development budget. The quarterly data (only available for local government expenditure) show that for development expenditure actual expenditure follows very closely actual disbursements. It is only in the last two quarters of FY2007/08 when food and fuel prices peaked internationally that there is a gap between actual expenditure and disbursement, with local governments at times unable to scale back expenditure due to contractual agreements. The high unpredictability of the budget releases has caused problems in hiring and keeping qualified staff, hindered procurement and therefore jeopardizes meeting demand for water supply and sanitation services.

As a consequence, expenditure patterns are not guided by budget allocations, but by actual disbursements. It is actually availability of funds that drive the spending behavior of local governments, essentially undermining the usefulness of the budget. With disbursements driving investment decisions, local governments are more likely to have a preference for small investments that can be implemented within a one-year timeframe or less. The same pattern can also be detected at the ministerial level.

Figure 8.3 Recurrent budget execution in LGAs (in TzS bn)

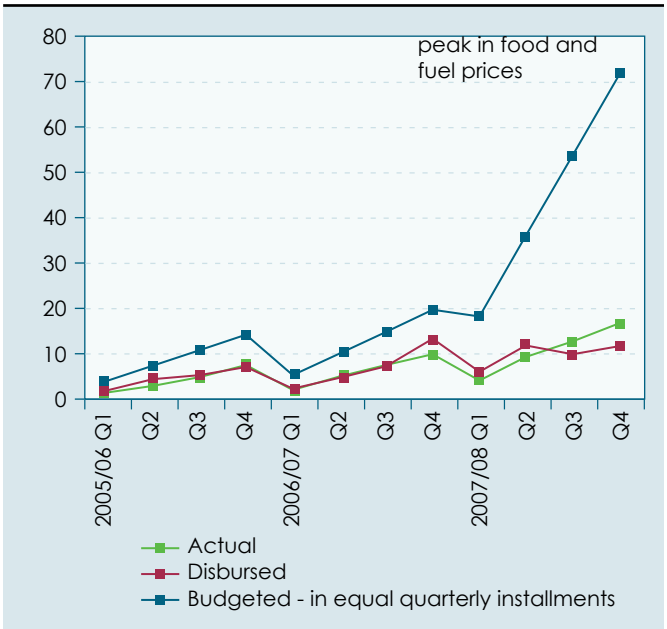


Source: Ministry of Finance data, Login Tanzania data (preliminary Q4 data) and author's calculations

MOWI's actual expenditure is completely driven by its access to funds. The release of funds completely matches actual expenditures.

Most of the LGA development budget was never released in FY2007/08. By June 2008, only 23 percent of the sector development grants for LGAs had been compared to 48 percent in June 2007. In other water agencies, the development expenditures also trailed behind (with the exception of some small water investments undertaken by ministries outside MOWI). The delays in transferring development grants is a general issue, but the water sector tends to be more than average affected by the delays because the largest part of its expenditure is made up by development expenditure unlike the health and education sectors as was discussed in Chapter 7.

Figure 8.4 Development budget execution rates in LGAs (in TzS bn)



Source: Ministry of Finance data, Login Tanzania data (preliminary Q4 data) and author's calculations

The district surveys confirmed the unreliability of budget allocations as a measure for fund availability to the districts. All councils interviewed for the district surveys mentioned the unreliability of the transfer of funds as a major constraint. It should be noted that this unreliability in the fund transfer is not a water sector specific issue as it also affects other transfers to the districts. This unreliability of fund transfers has two levels of unreliability. It is not clear for most district councils when funding will be received or how much funding will be received at any given time.

Districts do not know when funds will be transferred. The delays in getting access to the funding can be quite substantial, and the delays tend to be longer for development expenditure than for recurrent expenditure. Only 46 percent of the districts knew when transfers are received by the district authorities, only 31 percent know the day when the transfers would be received. In most cases, districts receive their recurrent funding within one month, whereas for development funding the delay can take

Table 8.2. Difference in time that money is to be received and is actually received

	Water transfer for recurrent expenditure	Water transfer for development expenditure	Administrative transfer to district council
Within one week	15%	15%	15%
Within one month	62%	23%	62%
Between 1 to 3 months	15%	54%	15%
More than 3 months	0%	0%	0%
Other	8%	8%	8%

Source: District Council Surveys, October 2008

up to three months. In general, rural district councils tend to be faced with longer delays than municipal councils.

In addition, districts do not know what amount of funds will be transferred. This issue has been discussed in much detail as the actual budget formulas and the actual budget allocations differ significantly. District councils mention their familiarity with how the Government allocates the different transfers, but at the end of the day all districts mentioned that the final transfer to the districts can vary significantly over time, which obviously will hinder budget implementation in the districts. Almost 80 percent of the districts were not certain about the transfers that would be received, as the transfer received could be higher or lower than anticipated. This lack of reliability in fund transfers limits districts' ability to efficiently plan and implement works.

Once funds to local governments are released, actual spending tends to be high. In the case of local governments, local governments were able to spend almost all of the funds released. On a disaggregated level, the budget performance execution rates show large variance. The low execution rates are obviously directly related to the late release of funds, but the variance in execution rates per district is mainly related to how the remaining budget is re-allocated to the different regions and districts and capacity constraints within regions.

Procurement processes are hindered by capacity constraints and fragmentation. Procurement poses a serious bottleneck both at district and national level. In the District Water Office Survey, procurement issues played a prominent role in explaining the constraints in budget execution. Although the lack of reliable funding was deemed the most important constraint, cumbersome procurement regulations, which in combination with the lack of financial capacity and equipment by contractors and their inexperience were also cited as reasons for the lack of progress in implementation.

Capacity within districts. The district survey found that staffing levels in district water offices is still inadequate. In the sample of 13 districts, less than 80 percent of the staff required was actually in place at the time of the survey. The staff shortages were especially prominent at the level of water engineers and technicians, where respectively only 72 and 75 percent of the staff was in place. The lack of reliable budget transfers seems to have contributed to the difficulties in attracting higher and medium-level staff, which has led in some districts to attracting staff that requires extensive training and hence only working part-time. The district surveys also show that some districts have difficulty retaining staff as a consequence.

Budget Cycle Procedures

The approval process for the budget hinders implementation. Although the budget process is well-defined and working properly in the sense that there is a prescribed process in place, the release of funds is severely hampered by the late start of the new budget year. Parliamentary discussions over the sector budget spill into the new fiscal year (with budget deliberations on-going in July and sometimes August) has major adverse effects as it delays the release of funds up to three months, reducing the actual budget implementation period to less than one year. Quarterly data from local government transfers show that on average for the past three budget years, actual recurrent expenditures in the first quarter was 21 percent whereas for development expenditures it was only 11 percent. This issue is especially poignant in the water sector, which also faces the impact of the rainy seasons on its efficiency to implement works. The district surveys mentioned weather also as a constraint to budget implementation.

Because of the late release of funds, the role of the budget as a management tool and the integrity of the budget formulation process is seriously undermined. As such, this lack of predictability of funds affects the ability of local governments and MOWI to carry out their work plans. As a result, the activities

carried out once funds are released are more dictated by pressing needs and political pressures than by the plans originally laid out in the budget.

The budget allocations to local government authorities are not consistently applied as discussed in Chapter 7. The formulas for determining the recurrent block grant and development grant to local government authorities are not consistently applied in its water sector budget allocations. As a result, the efficiency in targeting water supply funds to those regions with the largest water supply access gaps is lower than need be, while the transparency with which funds are allocated is seriously jeopardized.

A major issue is the disconnect between the planning in the districts and the budget planning at the central government level. Districts have a planning process in place which is based on initial data from the central government that tend to vary significantly from the final data approved by Parliament. This disconnect is making the budget a rather inefficient tool for the districts as the budget availability on which they had made their plans can vary drastically with what is actually provided to them. This disconnect is especially pronounced as district funding is almost entirely made up of central government transfers.

Medium-term costs of investment policies are considered only on an ad-hoc basis. The medium-term costs play little role in the formulation of the annual budget. This is an issue in a sector where service delivery requires not only investments but also subsequent operation and maintenance of these assets over time. In combination with the virtual absence of a rigorous cost-benefit analysis of projects and programs, this results in scarce resources being used to pay for these hidden medium-term costs in the form of operating subsidies and rehabilitation and maintenance costs that cater to existing consumers and delay increases in access of those not yet serviced.

Re-allocation among programs within their portfolio requires approval of Minister of Finance. Ministers do not have the authority to reallocate among programs within their portfolios without the approval of the Minister of Finance. This results in a rigid budget ceiling for MOWI, and reduces the probability of overspending, but at the same time reduces any flexibility in the implementation of the budget. As such, re-allocations are subject to a systematic process of review to ensure that they are consistent with government-wide strategic priorities.

Carry-over of appropriations is not allowed for ministerial budgets. Carry-over budget is not allowed although next year's budget is not affected if ministerial budgets are not used. For district councils this rule has essentially been waived and districts are allowed to keep their funding if they are unable to spend it in the current budget year. Yet, this focus on annual budgets does not sit well with the often multi-year investments that are needed in the sector.

Investment planning

A process for investment planning is in place but rarely adhered to. There are no technical standards set out by the Ministry of Finance which sector ministries must adhere to calculate program/project costs. As a result, the process of investment planning is essentially an ad-hoc process. MOWI has a planning process in place that includes some form of cost-benefit analysis, but it is not clear what the precise planning process looks like. It is likely that the investment planning process is mostly dictated by donor requirements, and not at all systematically used. The lack of a proper investment planning process results in politically driven investments, such as the construction of the Lake Victoria—Shinyanga-Kahama pipeline.

Districts have guidelines for selecting water projects in their areas. Investment decisions are guided by the "opportunities and obstacles to development" planning process which produces village development plans. The major criteria for selecting water supply projects at the district level are (i) areas with acute water shortages; (ii) priority community assigns to water supply; (iii) availability of funds—whether

Table 8.3. Feasibility studies and design (in TzS bn) for fiscal years 2006/07 and 2007/08

	Total actual expenditure on feasibility studies and design	Minimum stock of investment projects	Maximum stock of investment projects	Current annual actual development expenditure
MOWI	*12*	*96*	*160*	*140*
Regions	*35*	*233*	*349*	*24*

Source: Ministry of Finance data and author's calculations
Note on Assumptions
1. *Feasibility* and design studies make up 10–15 percent of total investment costs for rural water supply and sanitation, and 5–10 percent for urban water supply and sanitation investments;
2. *MOWI's* actual expenditure in water sector is based on 2008–09 data with about 50 percent of water supply investments allocated to rural areas and 50 percent to rural areas

local or donor. But the existing processes at the national and local levels are not always adhered to because of (i) political pressure, and (ii) lack of capacity of water staff to implement project selection guidelines. Yet, this bottom-up planning process in combination with the unpredictability of funds to local government authorities makes this planning process not necessarily very effective.

The lack of a project pipeline has hindered actual expenditure in the past years. In the past few years, a large part of the total development budget has been allocated for project preparation. As was shown previously, more than 11 percent of the total development expenditures of MOWI and the regions over the past two fiscal years with actual expenditure outcomes (no detailed data is available for the local governments before 2008/09) is assigned to feasibility studies. As mentioned before, this allocation in the budget is the direct result of the absence of a pipeline of investment projects at a time that funding through the SWAp is becoming available. So in a way, MOWI and the regions are catching up in undertaking this type of project preparation. Assuming that rural water projects spend 10–15 percent of their budget on project preparation, and urban projects 5–10 percent, this implies that in the past two years, MOWI built a portfolio of pipeline projects that is ranging from TzS96 and 160bn—which is small in view of the an average annual development budget of TzS 140 bn. This means that the pipeline in MOWI is still very feeble and is hardly covering one year of investments; the large budget allocation for project preparation activities in FY2008/09 seems therefore appropriate. In the case of the regions, whose expenditure is almost solely dedicated to project preparation activities, the stock of investment projects has increased significantly in the past two years, especially as the budget allocation for FY2008/09 assumes a further increase in funding project preparation activities. The stock of investment projects for rural districts is now already 10 times larger than the actual annual expenditures for rural water supply and sanitation.

The process to monitor the effectiveness of existing programs and projects is not consistently applied. Even though the government has a policy in place mainly through MKUKUTA to monitor and evaluate the effectiveness of existing programs, this policy is not consistently implemented. In the water sector, there is not yet a reliable performance monitoring process in place that tracks the effectiveness of existing programs and projects. As such, output and outcome information in the sector do not yet guide investment planning, track results-based budget processes or facilitate policy making.

[8] A survey was also carried out in FY2007/08 but did not include the Ministry of Water.

Procurement processes

Procurement bottlenecks are severe. The Public Procurement Regulatory Authority (PPRA) carried out a survey in FY2006/07[8] to determine to what extent procuring entities were complying with the regulations of the Public Procurement Act (2004). The Ministry of Water scored a 29 percent compliance rate, below the average of all procuring entities of 39 percent and falling far short from the national target of 80 percent compliance.

The assessment of the Public Procurement Regulatory Authority measures a long list of deficiencies with regard to procurement in the Ministry. The PPRA uses a set of 14 indicators to determine procurement performance. MOWI did well in only four (establishment and composition of a PMU, advertisements of bid opportunities, approvals and use of standard tender documents). The performance for all other 10 indicators was dismal, and related to the lack of an annual procurement plan, inadequate independence among various units in the Ministry, long delays in tender processing (also because of an inadequate functioning of the Tender Board), lack of dissemination of tender awards to the public and poor record keeping.

The procurement deficiencies also occur in other water sector agencies. In a FY2007/08 assessment, the procurement performance of 34 district and municipal councils was assessed with the levels of procurement compliance rating from 24 to 59 percent. The urban water authorities of Arusha and Moshi were also rated during this assessment and had procurement compliance levels of 33 to 37 percent. On average a better performance than the Ministry, but still far below the national target of 80 percent procurement compliance.

The reasons for this lack of procurement compliance are many. The areas that are most deficient are related to the lack of an annual procurement plan, records keeping and quality assurance and control. The PPRA mentioned that in FY2005/06 MOWI conducted 65 procurements (for a total of TzS 102 bn), suggesting that the procurement capacity in water sector agencies, and especially in MOWI, is poor.

The procurement deficiencies affect the efficiency with which the sector can improve services to the population. The procurement deficiencies result in serious inefficiencies as can be seen in Table 8.4, and add to the lack of disbursement of funds in the sector.

The PPRA mentioned the need for improved contract management in the Ministry. The procurement performance assessment mentioned delays in project completion, and hence contract management to be an issue. Obviously, delays in the implementation of projects has serious consequences in terms of cost and time overruns and contract disputes amongst others adding to the cost of providing water services. Yet, procurement deficiencies are not the only reason why only part of the budgeted funds is actually disbursed. Reallocation of funds by the national government and unpredictability of aid (to be discussed in Chapter 7) also have an effect on improving contract management within the Ministry.

Auditing processes

Lack of oversight on activities is an issue at the level of the Ministry. The National Audit Office has for many years qualified the audits of MOWI, but improvements are visible. In FY2007/08 it issued an unqualified opinion with emphasis on matters. There was still a gap of TzS 41 million in improper documented expenditure, compared to TzS 378 million in FY2006/07 and close to TzS 6 bn in FY2005/06. The Ministry recently established an audit office. Yet, the effectiveness of the audit office is still constrained by political pressures and lack of capacity. The lack of oversight results in shortcomings in the proper use of funds. The most common issues in MOWI's external audits are the lack of reconciliation of funds, improperly vouched expenditure and unaccounted for procurement of goods. The latter is directly linked to the procurement issues described in the previous section.

Table 8.4. Link between procurement deficiencies and sector inefficiencies

Procurement deficiency	Type of inefficiency
Absence of an Annual Procurement Plan	Inefficient timing and planning of procurement Use of inappropriate procurement methods Increased procurement costs
Inadequate independence among various units in the Ministry	Inappropriate procurement decisions and conflict of interest Lack of accountability
Long delays in tender processing	Cost and time overruns in tender processing Procurement disputes
Lack of dissemination of tender awards to the public	Lack of transparency Unfair contract awards
Selection of methods of procurement	In case of MOWI, preference for quotations and direct shopping Lack of bundling of small procurements Preference for local firms was applied when relevant
Poor record keeping	Poor management of procurement Loss of public property Corruption

Source: PPRA,Results of Procurement Audits for the Fiscal Year 2007/08: http://www.ppra.go.tz/reports/AuditResults0708.pdf

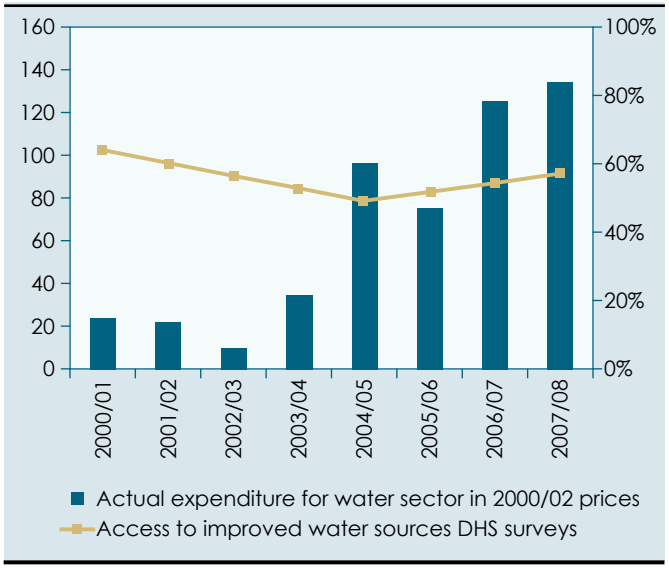
A**nd at the level of the Local Government Authorities**. Audit compliance in local government authorities is still in major need of improvement: 46 percent of the audits for local government authorities were qualified in FY2007/08. This was a decline in performance compared to the previous year. With the increase of funds available in local government authorities, the demand of the already limited capacity to manage these funds in the districts has increased. Most Council managers lack the capacity to supervise and monitor implementation of development projects being implemented at the lower administrative levels (wards and villages).

The limited capacity at the district level is further complicated by the many different reporting requirements districts have to comply with. In the district survey, most districts mentioned that monitoring is taking place. The reporting structure is rather elaborate with monthly revenue and expenditure reports to Council Management Team, the Finance Committee and the full District Council. In addition, quarterly revenue and expenditure progress reports are provided to the Ministry, and annual financial statements reports to NAO and Local Government Accounts Committee (LAAC). This monitoring takes place for administrative transfers to the districts and for the water transfers (both recurrent and development expenditure). Most of this monitoring is taking place through external audits, mostly by NOA. Only about 8 of the 13 districts sampled produce internal audits. Technical audits were undertaken in only one of the 13 districts sampled. Although the quantity of monitoring is not an issue, quality could be improved upon especially through a reduction of the number of separate audits.

Efficiency of Investments

A first indicator for investment efficiency is the relationship between the volume of expenditures with improvements to access. Data gaps in the availability make this a time-consuming exercise to undertake. First, the actual expenditure has to be adjusted to include water supply expenditure only. Secondly, this data has to be matched by household data. However, household data are not available on an annual basis. The HBS data used in Chapter 4 is only undertaken every 6–8 years, the two last HBS surveys were conducted in FY2000/01 and FY2006/07; the DHS series provides data more regularly although not necessarily for Mainland Tanzania (Zanzibar has semi-autonomous status, and its own budget expenditure for water supply and sanitation). The DHS surveys show that access to improved water sources has been declining since 1999, with a low point achieved in FY2004/05. This decline coincided with low levels of sector expenditures, and almost negligible investment resources for water supply. Since then, water supply investments have picked up and so has access to improved water sources albeit with a time lag due to the lumpiness of water investments.

Figure 8.5 Cumulative actual public spending (in TzS of 2000/01) and access to improved water sources



Source: Ministry of Finance, Ministry of Water, Household Budget Surveys of FY2000/01 and FY 2006/07, and DHS/AIS household surveys for FY1999/00, 2003/04, 2004/05, and 2007/08

A second indicator is to investigate the different subsidies that are being channeled to the sector. This investigation can only indicate the possible routes of how these subsidies may end up in the government accounts. Precise figures cannot be given as the data is not disaggregated enough to determine the actual size of all these types of subsidies. The presence of these subsidies indicates that the success of cost recovery policies in the water sector in urban areas is very limited, whereas these subsidies crowd out of the capital budget with less funds available for expansion of the service explaining for some part the lack of progress in improving access to populations not yet served

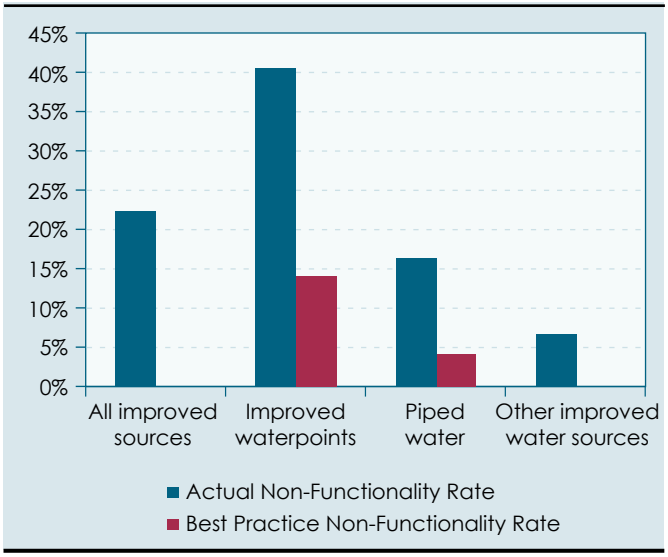
Efficiency of Investments in Rural Areas

The high break-down of rural water points is a major issue as it shows that the efficiency of rural water supply investments can be significantly improved. In view of a lifetime of assets in the rural water sector (i.e., 7 years for an individual water point and 25 years for a piped water system) between 4 and 14 percent should be considered reasonable depending on the mix of individual water points and piped water systems used in rural areas. Obviously, this figure is significantly below the current level of non-functionality of 22 percent, ranging from 16 percent for piped water systems to 41 percent for point sources. This lack of sustainability in water supply infrastructure is also reflected in the large gap in access to improved water sources in rural areas between data from the Ministry estimated at 55.7 percent in FY2006/07 and the most recent household survey (FY2007/08) which estimates the access at 48 percent, or about 45 percent in FY2006/07—suggesting that the Ministry's estimates are including the non-functional water points, which would add to about 23 percent (very close to the level of non-functionality that was found in the district survey sample).

Another indicator of the low efficiency of rural water systems is the size of the subsidies provided to the rural water sector. These subsidies are increasingly provided through local governments, although MOWI also channels subsidies to rural water supply systems. Although data are hard to come by the FY2008/09 budget for local governments shows that local governments plan to spend a significant amount of their goods and services budget on the operation and maintenance of water supply systems.

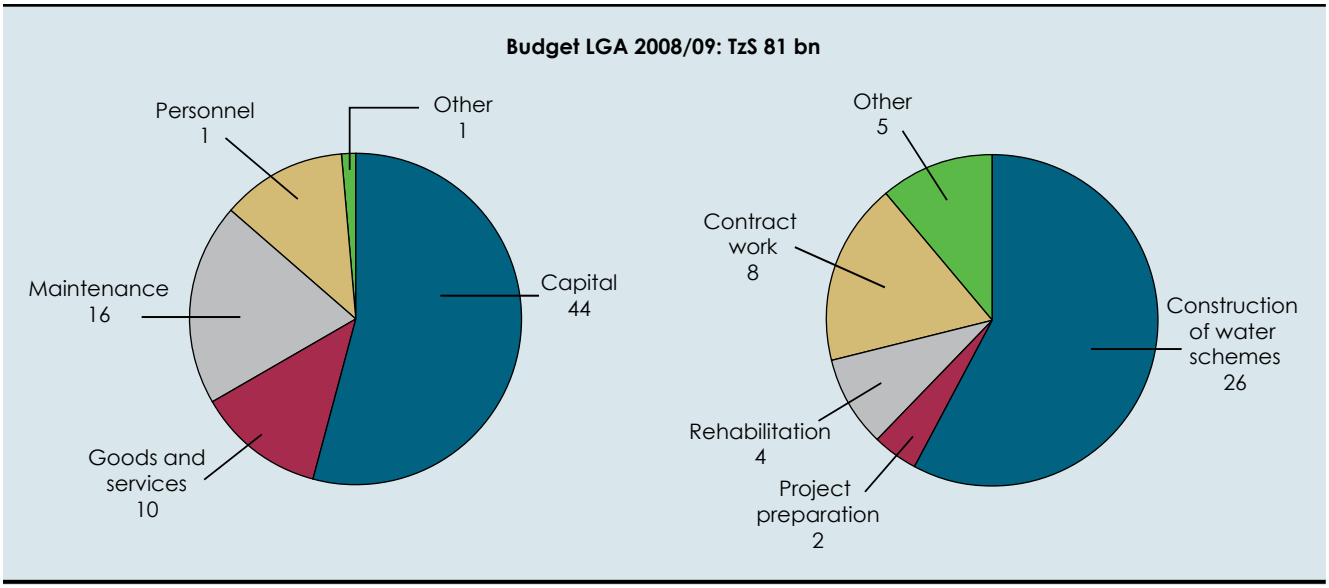
In the FY2008/09 budget for local governments, 25 percent of the total LGA budget for water was allocated for maintenance and rehabilitation. In FY2008/09 (the first year for which detailed disaggregated data are available), the budget shows a large percentage of funding allocated to maintenance and rehabilitation (totaling about TzS 20bn) which makes up close to 25 percent of the total LGA budget. In addition, there is also a significant allocation for utilities, water, chemicals and diesel, fuel and oils of TzS 2.3bn in the goods and services sub-budget for local government authorities, which may suggest that the LGAs also provide some direct operating subsidies to the water systems under their jurisdiction.

Figure 8.6 Non-functionality rates for different type of sources based on sample of 13 districts nationwide



Source: District Surveys October 2008

Figure 8.7 Detailed breakdown of LGA FY2008/09 budget



Source: Ministry of Finance and author's calculations

Table 8.5. Possible routes of subsidies in MOWI rural budget (in TzS bn) for fiscal years 2006/07 and 2007/08

	2006/07 Total	2006/07 Rural	2007/08 Total	2007/08 Rural
Rehabilitation	13.4	2.5	3.7	1.9
Maintenance	1.0	0.4	0.6	0.2
Utilities	1.2	0.8	1.5	0.4

Source: Ministry of Finance data and author's calculations

MOWI's rural water sector budget also contained some subsidies channeled through the Rural Water Supply Department in the form of rehabilitation, maintenance and utility payments. In total, MOWI spent about TzS 3.7bn in FY2006/07 (equivalent to about 12 percent of rural water supply budget) and TzS 2.5bn in FY2007/08 (or equivalent to about 6 percent of the rural water supply budget) on rehabilitation, maintenance and utilities. These different costs could act as a proxy for rural water supply subsidies, the majority of these expenditures for rehabilitation. The decline in subsidy expenditures may be partially due to the increase in local government expenditures.

Rehabilitation, maintenance and utility subsidies tend to be vulnerable to changes in budget availability. In general, the planned expenditure for rehabilitation, maintenance and utilities tend to be significantly larger than what is actually spent. If actual expenditure lacks behind budget allocation, trade-offs have to be made. In general, government prefers less spending cuts in construction, whereas most spending cuts take place in areas that are related to equipment, rehabilitation and maintenance.

This lack of sustainability and the subsequent levels of subsidies in the rural water supply sector is a major issue that needs to be addressed as it essentially crowds out the possibilities to expand services to those without access to improved water sources. The crowding out of the capital budget for rehabilitation, operating subsidies and maintenance means less funds are available for expansion of the service explaining for some part the lack of progress in improving access to populations not yet served.

Efficiency of Investments in Urban Areas

Many urban water authorities do not cover basic operation and maintenance costs, as a result of low tariffs and large inefficiencies in service delivery. Yet, the operating cost coverage ratios only tell part of the story as many urban water authorities receive operating subsidies. In principle, utilities have to cover their recurrent expenditures from their operating revenues. Yet, the Ministry has made a number of exceptions, in which some utilities do not have to cover staff cost or part of all of their electricity bills.

A first indicator of the inefficiency of urban water systems is the size of the subsidies provided through the urban water sector. Subsidies come in different forms, such as operating subsidies, maintenance and rehabilitation investments on top of the investment subsidies that are standard in the sector. It is often difficult to detect these subsidies, as they require a very disaggregated level of data—that level of disaggregation is not always available meaning that some inferences can be made but only with major caution.

The possible routes of subsidies in MOWI's budget are transfers to urban water authorities, rehabilitation and maintenance and utilities. Transfers to urban water authorities are essentially meant to transfer

Table 8.6. Possible routes of subsidies in MOWI urban budget (in TzS bn) for fiscal years 2006/07 and 2007/08

	2006/07 Total	2006/07 Urban	2007/08 Total	2007/08 Urban
Transfers to UWA	0.9	0.0	38.8	35.4
(recurrent portion)	13.4	10.7	*0.7*	*0.5*
Rehabilitation	1.0	0.1	3.7	1.0
Maintenance	1.2	0.4	0.6	0.2
Utilities			1.5	0.6

Source: Ministry of Finance data and author's calculations

funds for capital investments, yet there is a small portion of recurrent funding in these transfers (TzS500 million). Utilities make up about TzS 600 million. MOWI finances electricity costs for the so-called Category B and C utilities[9] (which are unable to meet all of their electricity bills and/or all of their personnel emoluments). The total electricity cost of all urban water authorities (except DAWASCO) was TzS 8bn in FY2006/07, with a total electricity cost of TzS0.6 bn for the Category B and C utilities. Although the data is not disaggregated enough to tell whether these utilities are used to pay for electricity costs in Category B and C utilities, it is quite likely that some of the funding will be used for that purpose. As for maintenance and rehabilitation, these types of expenditures made up 7 percent of the total capital budget in FY2006/07 whereas it dropped to 5 percent in FY2007/08.

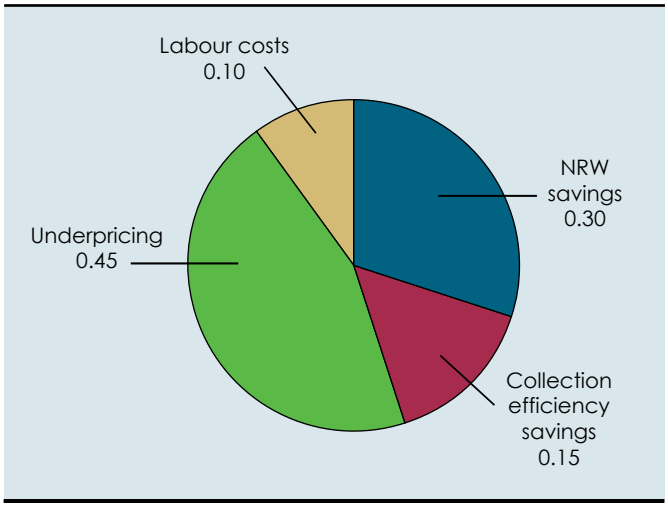
Apart from the direct subsidies provided to the urban water sector, there are also implicit subsidies or hidden costs. These implicit subsidies are caused by mispricing of water services, collection inefficiencies and non-revenue water losses. All three forms of inefficiency in water supply delivery are distortionary and non-transparent mechanisms for transfer of resources to actual users of the service. Tariff regimes that do not allow for cost recovery and collection inefficiencies provide implicit subsidies to existing utility consumers. Non-revenue water losses are also implicit subsidies but do not necessarily benefit existing consumers only. All of these three types of efficiencies result in lack of maintenance, underinvestment and deteriorating service levels.

The size of hidden costs in Tanzania's urban water authorities is significant. It is assumed that each utility would perform in line with the three best performing utilities with regard to tariffs, employment and non-revenue water. It is further assumed that all utilities are able to collect all their billed revenues. In such a scenario, the total implicit hidden costs are TzS49 bn (compared to total operating revenues of TzS51 bn). What is clear is that these hidden costs are very sizeable with regard to the actual revenues generated by the water authorities. The biggest gains can be made when DAWASCO, the utility providing water and sewerage services in Dar es Salaam, would be able to improve its performance. Changes in performance in this utility will disproportionally affect any improvements due to its size and also the large inefficiencies.

[9] A Category A utility meets all its operation costs and part of investment. Category B utilities cannot meet all electricity costs, while category C utility cannot meet part of the electricity and personnel costs. As per July 2007, two utilities were classified as Category C utilities (Babati and Lindi), whereas 6 utilities were classified as Category B (Bukoba, Kigoma, Musoma, Sumbawanga, Singida and Songea). The other utilities all were classified as Category A.

Underpricing of piped water services is the most important source of implicit subsidies when urban water authorities are benchmarked against their best performer. Artificially low pricing was already flagged as an issue in the previous discussion where the lack of cost recovery results also in high explicit subsidies provided by MOWI through its annual budget. Obviously increasing tariffs is a challenge especially as people have been shifting out of piped water and into point sources, and alternative sources are available.

Figure 8.8 Hidden costs in urban water authorities against best practice in Tanzania



Source: EWURA and author's calculations

Collection efficiencies is another area that need to be addressed. The performance of the urban water authorities in collecting revenues varies significantly between utilities, and this a relatively easy way to add to revenue. Data from EWURA in 2007 suggest that many utilities have been increasing their collection efficiencies. Non-revenue water losses are harder to fix as they require upfront investments whereas the track record to address these losses is not very encouraging.

Summary on the Efficiency of Sector Spending

Progress in achieving allocative efficiency is uneven. The links between sector objectives and resource allocations are increasingly more visible in the budget allocations. More funding is allocated to water resource management. The change in the role of the Government from service provider to facilitator (coordinator, policy formulation and regulation) has resulted in a change in spending patterns in the sector—with capital funding shifting more towards regions and local government authorities, while the Ministry allocates more funding to its role as facilitator. Yet, the main issue where little progress is made is with regard to the goal of full cost recovery in utilities, and as a result the urban water sector still consumes a large part of the total budget.

Large increases in budget allocations to the sector following its identification as a priority sector in the country's National Strategy for Growth and Poverty Reduction were not matched by similar increases in disbursements. The disbursement lags are due to (i) the lack of capacity in MOWI to properly identify, appraise, prioritize, plan and procure investment projects; (ii) inefficiency in administrative processes that delay the release of budgeted funds especially but not only in local government authorities; and (iii) inefficiencies in procurement, disbursement, financial management, and accountability procedures and lack of capacity to implement them properly.

Combining household survey data with public expenditure data suggest that the increase in public funding for the sector is producing some positive impacts on access to improved water sources. The Government's decision to provide more funding to the sector is paying off, as access to improved sources has been increasing since FY2004/05. Yet, as the sector received very little funds before FY2004/05, the sector is in a way catching up with the past due to the high level of non-functionality of water sources. This high rate of non-functionality requires much more systematic attention to maintenance of water systems once constructed, because the high breakdown rates mean that large investments are required just to maintain current service levels.

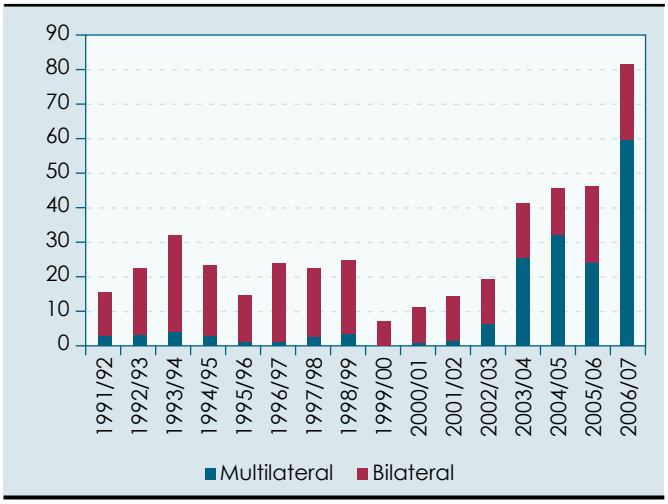
9. ARE EXTERNAL RESOURCES ADEQUATELY MOBILIZED?

Donor Flows to the Water Sector

Donor funding has increased very rapidly over the past five years. As can be seen in Figure 9.1, donor funding has increased rapidly. It also shows that aid disbursements vary greatly over the years. Large increases in one year can be followed by large declines the next. Multilateral funding has increased in significance since FY2003/04, before that multilateral funding to the sector was minimal.

About 60 percent of the development expenditure in the water sector is funded by donors. The water sector's development budget is highly dependent on donor funding. A very large part of the water sector budget is directly linked to foreign funding. In FY2007/08, 75 percent of the water sector development budget (excluding LGA budget allocations) was foreign funded. These numbers decline when the local government budget is included.

Figure 9.1 Donor funding as measured in actual disbursements in US$



Source: Ministry of Finance data and author's calculations

A significant proportion of development aid is not on-budget. Data sources are very incomplete, but some data still show that a large part of the funding is not on budget. Data from the OECD database and the Ministry of Finance show little overlap. Different donors in the OECD database are not showing up in the database the Ministry of Finance is using. This could be a sign of inefficient accounting, but it is likely that some of the funding is off-budget and is actually channeled through NGOs as many of these donors are showing up in the OECD database with very small commitments,. As can be seen in Table 9.1, on average over the past 5 years the Ministry of Finance's disbursements make up only 74 percent of those of OECD bilateral donors[10], with on-budget bilateral aid declining in most recent years.

Table 9.1. Bilateral aid (in US$ million) according to different sources

	2002/03	2003/04	2004/05	2005/06	2006/07
MoFEA	13.0	16.1	13.9	22.6	22.0
OECD	16.3	17.5	21.0	29.0	33.9
MoFEA's bilateral aid as % of OECD bilateral aid	80%	92%	66%	78%	65%

Source: OECD Statistics, Creditor Reporting System, 2008; and Ministry of Finance

[10] Multilateral aid in the OECD database is very incomplete. Disbursement data of the country's largest donors in the sector, IDA and AfDF, are unavailable.

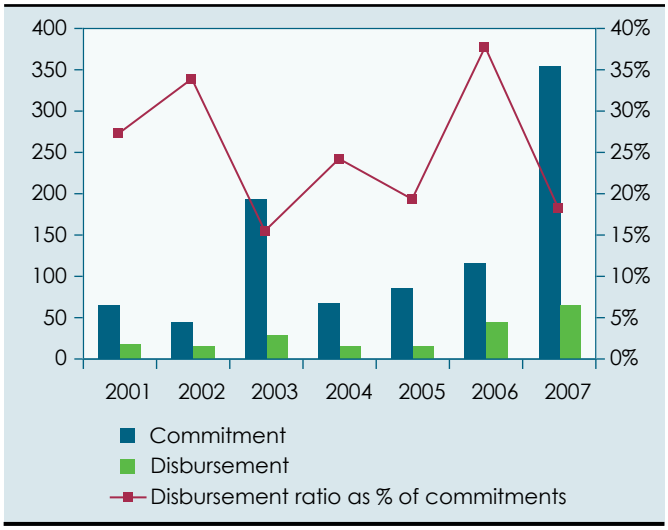
Efficiency of Donor Flows

Actual aid disbursements are a fraction of actual aid commitments. Although donor commitments have increased rapidly over the past years, actual disbursements have seriously lagged behind. During the period between 2001 and 2007, on average only 25 percent of commitments were disbursed, whereas this disbursement ratio fluctuated widely over that period[11]. Actual donor funding from OECD reporting is in general underestimated as the donor commitments and disbursements of multilateral agencies tend to be significantly underreported upon, while funding through NGOs is only registered when NGOs are funded by official donors.

This unpredictability of donor funding is a major issue and an important reason for the delays in implementation that were reported upon in Chapter 7**.** In FY2007/08, only 46 percent of the budget in MOWI was actually implemented compared to 97 percent of the local funding budget. As a result, only 59 percent of the proposed development budget was implemented. The donor funding shows a wide range of implementation rates, ranging from 0 to 100 percent, with a large number of projects not receiving any funds at all. Figure 9.3 also shows that counterpart funding—where foreign funding is complemented by local funding—is in most cases not a serious issue, at least in FY2007/08 for which detailed data are available.

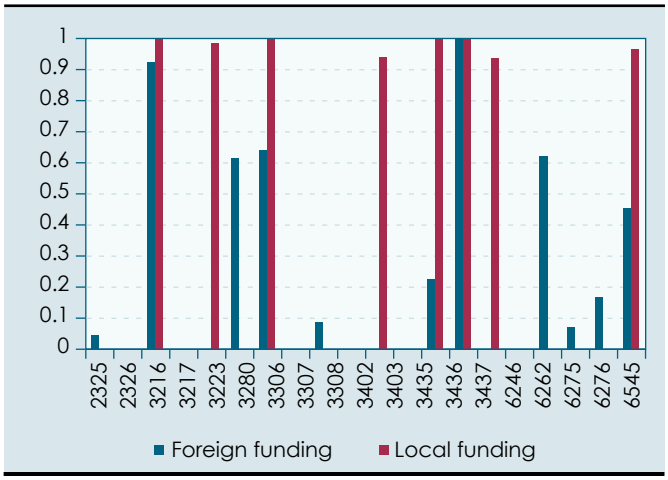
The lack of its predictability is a longstanding issue and is also reflected in the quarterly aid disbursements. Quarterly disbursement of donor funding fluctuate heavily over time, with no discernable pattern as to when funding will be available (see Figure 9.3). If aid would be distributed more efficiently, the pattern of quarterly disbursements should show a much smoother pattern. This lack of predictability is also shown in a recent study that discussed how the unpredictability of aid as measured by the difference between aid commitments and disbursements can be harmful as every aid dollar withheld reduces

Figure 9.2 Aid commitments and disbursements to the water sector in US$ millions



Source: OECD Statistics, Creditor Reporting System, 2008

Figure 9.3 Actual expenditures as percentage of budgeted expenditure by type of funding by project in FY2007/08

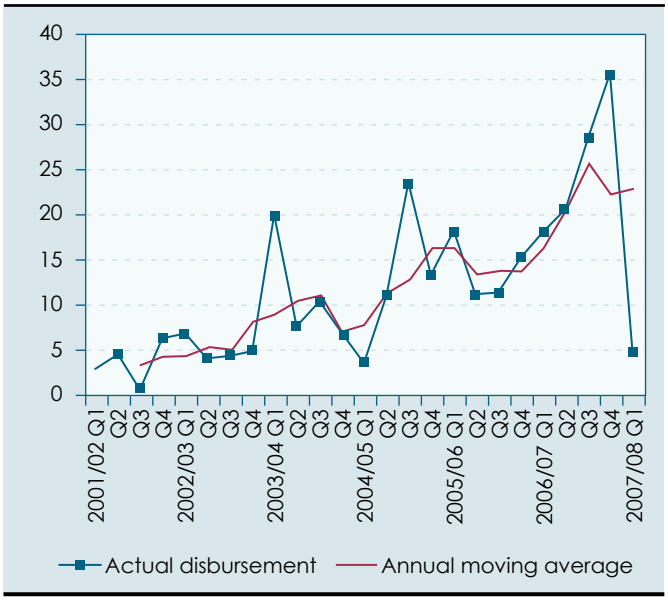


Source: Ministry of Finance data and author's calculations

[11] Actual donor funding from OECD reporting is in general underestimated as the donor commitments and disbursements of multilateral agencies tend to be significantly underreported upon, while funding through NGOs is only registered when NGOs are funded by official donors.

government investment by 12 percent, while every dollar unexpectedly given reduces government consumption by 64 percent[12]. Many different factors underlie this erratic pattern of disbursements but it is clear that when implementation is smooth, efficiency of government spending in a sector where donor dependency is high could increase significantly.

Figure 9.4 Actual disbursements on a quarterly basis in US$ million



Source: Ministry of Finance data and author's calculations

The reasons for unpredictability of donor funding are related to inefficiencies in the budget administration and processes of the Government of Tanzania and donor countries. Unpredictability is linked to (i) the planning and implementation of donor funding is not aligned with the government's budget calendar, especially if the government and donor countries work with different financial years; (ii) the use of parallel systems that make it hard to obtain full information on the expected assistance flows; and (iii) the seasonality in project implementation. In addition, a survey of aid donors mentioned that 29 percent of delayed or lost disbursements were due to administrative problems in donor countries, either because of re-allocations of donor funding and administrative delays.

These inefficiencies are further exacerbated by the fragmentation of donor funding, which results in high transaction costs for donors and government alike. Several indicators show this fragmentation of aid. In the period between FY1991/92 and FY2006/07, the Government had on average each year 145 active projects on its books. The annual variation in the number of projects was much larger with a minimum of 21 and a maximum of 251 projects. Another indicator for fragmentation is the low disbursement per project. In the period under review each project averaged an annual disbursement of less than US$300,000 per year per project. That number is inching up in FY2006/07 and onward due to the larger contribution of multilateral agencies that tend to have fewer but larger projects.

The unpredictability of aid also contributes to the procurement bottlenecks that the water sector is facing. Procurement bottlenecks are severe as was discussed in the previous chapter. The following procurement issues reported by the PPRA are linked to unpredictability of aid. The long delays in contract implementation are directly linked to the unpredictability with which funds become available—both for local and foreign funding. Because of the unpredictability of funds, water sector agencies tend to procure on a more ad-hoc basis which may result in smaller sized procurement contracts, the lack of possibilities to bundle smaller procurement and use economies of scale in procurement, and increased procurement transaction costs. Aid fragmentation further exacerbates the lack of economies of scale in procurement.

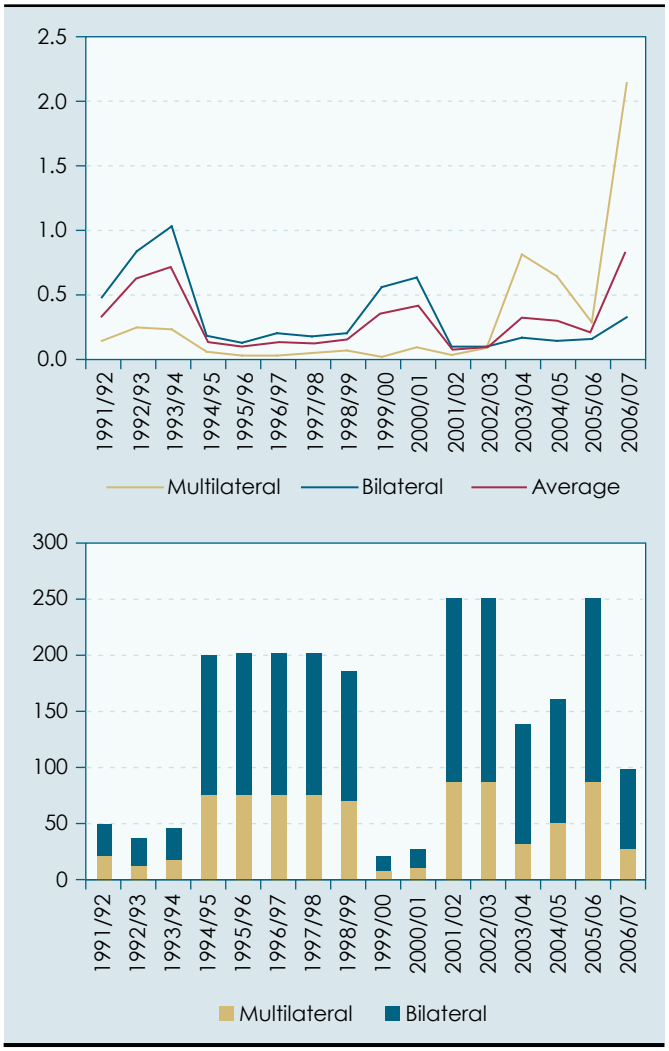
Donor funding increased rapidly and has increasingly be channeled through sector-wide projects. Given the sector's high dependence on external funds, a solid public expenditure management system requires that donors improve the predictability of their support and make progress on streamlining and

[12] Celasun, O, and J. Walliser, "Predictability of Aid: Do Fickle Donors Undermine Aid Effectiveness?" Economic Policy, 23, 545–594

harmonizing administrative procedures. Registration from donor funding should be improved upon—both at the Ministry of Finance and donor level. The current focus on multi-donor initiatives that pool funds to provide general support for a sector-wide program of interventions may be a good alternative to deal with the costs of aid fragmentation. Yet, the recent shift towards a programmatic approach in funding the water sector through a SWAp has not yet resulted in major improvements in actual disbursements to the sector. The National Audit Office in its report of FY2007/07 showed that when adjusted for the local counterpart funding, the disbursement rate for foreign funding under the SWAp is similar to that for the sector as a whole—hence pooling resources does not necessarily improve predictability of resources.

Pooling resources is likely to be most effective when it is combined with measures that generate the economies of scale of such pooling through harmonization of procurement, disbursement and monitoring procedures, and coordination of the different donor contributions. Reducing the number of parallel systems in place, especially in a SWAp with many different donor agencies, has the advantage that it does not pose additional burdens on already scarce capacity at both central and local levels.

Figure 9.5 Aid fragmentation as measured by number of active projects and actual project disbursement in US$



Source: Ministry of Finance

Summary on Mobilization of Donor Flows

Donor funding for the sector has increased significantly over the past few years. Donors have been providing significant additional resources to the water sector. Donor funding is critical for the sector as the majority of the funding for the sector is provided through donors, especially with regard to development funding. The pattern of funding has changed in character in the past years—with an increasing share of the donor funding being provided by multilateral agencies.

The efficiency of donor funding can be significantly improved. The inefficiencies in donor funding are reflected in (i) a significant amount of the donor funding is off-budget; and (ii) the long delays in releasing donor funds. Part of these delays is the result of lack of capacity in the sector agencies resulting in inadequacies in the performance in procurement, disbursement and reporting project arrangements. This is, however, not the only reason for these delays as the donors' own performance in managing these funds can also improve by for instance harmonizing procurement, disbursement and reporting requirements (which will alleviate some of the capacity constraints in the different sector agencies), and improvements in the release of funds.

10. FINANCING FUTURE WATER INVESTMENTS

This chapter considers two questions with regard to financing Tanzania's water infrastructure, namely how much is needed, and how these investment requriements are funded.

There are several ways of estimating expenditure needs in the water sector, each of which gives different answers depending on the objectives. In the past years, the most common applied method to estimate expenditure needs in Tanzania are through the definition of set targets, mostly the MDGs or the MKUKUTA goals.

Estimates differ widely with regard to what investments requirements are needed to achieve the MDGs. Although all estimates focus on achieving the MDGs in water and sanitation, what is included in the estimate can differ. The MKUKUTA MDG costing exercises does not only include water supply and sanitation but also includes investments for water resource management, capacity building and institutional strengthening. The AICD estimate is significantly larger due to the inclusion of rehabilitation and operation and maintenance in the total investment requirements. The latter is also included in the MKUKUTA estimates but the actual costs associated with rehabilitation and operation and maintenance are much lower than estimated in the AICD. In general, the unit costs that AICD employs in its calculations are much higher than those of the other two estimates, especially with regard to provision of services in rural areas.

Table 10.1. Annual investment requirements in the water sector (in US$ mln)

Type of investment	Wateraid (2005)	Mkukuta (2005)	AICD (2009)	
			Minimum case	Base case
Water supply	***96***	***235***	***390***	***749***
Expansion investment		*195*	*70*	*350*
Rural		89	47	298
Urban		106	23	52
Rehabilitation investment		*6*	*187*	*187*
Rural		2	148	148
Urban		4	39	39
Operation and maintenance		*11*	*133*	*212*
Rural		4	97	167
Urban		7	37	44
Other		*23*		
Sanitation	***35***	***149***	***177***	***191***
Expansion investment		*132*	*85*	*89*
Rural		45	50	52
Urban		87	35	38

(*continued on next page*)

Table 10.1. Annual investment requirements in the water sector (in US$ mln) *(continued)*

Type of investment	Wateraid (2005)	Mkukuta (2005)	AICD (2009)	
			Minimum case	Base case
Rehabilitation investment			*72*	*72*
Rural			58	58
Urban			13	13
Operation and maintenance			*20*	*30*
Rural			11	11
Urban			10	19
Other		*15*		
Total MDG costing	**130**	**384**	**567**	**940**
Water resource management		20		
Total sector funding	**130**	**404**	**567**	**940**
in % of GDP 2005	**0.9%**	**2.9%**	**4.0%**	**6.7%**

Note: The minimum case scenario assumes that a minimum service level is applied for all new investments, whereas the base case scenario uses a combination of service levels similar to that of the 2005/06 household survey.

It is obviously that the MKUKUTA and AICD investment requirements far exceed the actual funding for the sector. Even though budget allocations have reached 1.8 percent of GDP recently, actual expenditures so far have never surpassed 1 percent of GDP. Funding from households will be able to cover the cost of operation and maintenance in urban areas, but overall the sector is faced with a significant investment gap. This investment gap is further aggravated by the high dependency on donor funding and the common practice of many donors to disburse funds with large delays (as described in Chapter 9).

Given Tanzania's high unit cost for connecting and servicing households, especially in rural areas, the level of resources and timing needed to meet the MDGs are highly sensitive to efficiency improvements. Efficiency gains can be realized in several different ways: (i) improving the capacity of the Government to stretch its funds further by improving sector planning and streamlining procurement and disbursement procedures; (ii) materialize efficiency gains that translate into lower operating and/or capital costs; (iii) efficiency in the setting and collecting of tariff revenues without disregarding affordability; and (iv) promote efficiency in water infrastructure investment programs.

Improving the Capacity of the Government to Use its Funds more efficiently.

Although budget allocations have increased rapidly, budget releases have lagged significantly behind. This is an issue with which all agencies with responsibilities in the water sector are confronted. This problem is especially urgent in local government authorities. The under-spending of budget funds especially hits the development funds in the sector. To improve the absorption capacity of the sector, increase the efficiency of public expenditure and ensure that access to services is improved, the Government will have to (i) improve sector planning and (ii) improve implementation of procurement, disbursement, auditing and monitoring arrangements to ensure more efficient use of resources.

- ***Improve sector planning***. The slow pace of project preparation contrasts with the resource envelope allocated through the sector, especially with the SWAp in place. In the absence of a project pipeline, the Government has spent a large part of its resources in the past three years on building this pipeline either through MOWI, the regions or (to a much lesser extent) local government authorities. These efforts are showing results in the rural water supply sector, but the pipeline in the other water subsectors (most notably urban water supply and sewerage, water resource management and possibly irrigation) is still very feeble[13]. Yet, this investment strategy should not only focus on building a robust pipeline of implementable projects and programs, but also include the development of a long-term investment strategy for other water sub-sectors (outside the rural and urban water supply sub-sectors) currently without much of a pipeline of projects. The sector planning exercise should also pay attention to improve the current mechanism to screen investments should be reviewed, and adapted where necessary to ensure that it is implemented for each project (independent of its funding source).

  The sector plan should directly linked to the budget. The Medium-Term Economic Framework is the direct point of intervention here, but so far the annual deviations from the plans show that as a tool the multi-year resource envelope does not really work yet. This is partly because the level of detail in the MTEF which does not allow for much strategic decision making.
- ***Improve implementation of procurement, disbursement, auditing and monitoring arrangements***. The Ministry of Water should strengthen its procurement, disbursement and auditing functions in such a way that (i) there is more independence between the various units in the Ministry to avoid conflict of interest and lack of accountability; (ii) provide training to its staff to ensure that staff is procurement proficient; (iii) plan the procurement and disbursement activities properly to avoid delays; and (iv) ensure that internal audit function is established and operational in water sector agencies. It should also help to improve these functions where appropriate in local government authorities, especially in the water offices to build capacity to ensure that capacity is build there to undertake procurement.
- ***Government and donors should also agree on a harmonization of procurement, disbursement and monitoring procedures*** to reduce the number of parallel systems in place, that constrain already scarce capacity at both central and local levels. The Water Sector Development Program is the logical place to start these donor harmonization efforts because of the size of this program in relation to overall sector funding and the history of donor coordination in this program.

Efficiency gains that lower operating and/or capital costs

The volume of subsidies that are still provided to the sector can be used as a proxy for investment efficiency. The high breakdown rates of rural water supply infrastructure ensure that a significant amount of funding in local government authorities is used for rehabilitation and maintenance. Performance data of urban utilities show that operating subsidies to urban water authorities are not negligible. Efficiency gains that can lower operating and/or capital costs can be affected by (i) technology choice; (ii) standardization of technologies; and (iii) efficiency improvements in utilities' performance.

- ***Technology Choice***. Different assumptions about technology choices can make a significant difference in the total investment requirements needed to achieve the MDGs. In the AICD study, three scenarios were calculated with the first one using very basic technologies while the subsequent scenarios assumed higher service levels for consumers. A minimum level scenario to meet the MDGs would cost an annual $567 million, while the most expensive scenario would

[13] With its new mandate of irrigation, it is likely that more efforts in that subsector will also be needed.

cost an annual $1.1 billion. As can be seen in Table 9.2, the cost of supplying water and sanitation services varies widely by level of service provided. In urban areas, the costs of individual piped water connections are six times higher than that of water point sources. In rural areas, this difference is much higher due to lack of economies of scale (because of lower population densities) and transport costs, and amounts to 55 times according to the latest data provided by AICD. In view of such large cost differentials and the fact that high service levels are much more likely to be used by richer consumers, there is a rationale for providing a minimum service level to consumers whereby higher levels of services are financed by households themselves.

- Obviously, there are limits to the use of low-cost technologies as the dependence on groundwater (safe wells/boreholes) is not always hydrologically sustainable which makes it necessary to depend on surface water. The Government in its policy has opted in such situations to cluster water supply systems where possible to generate economies of scale. The large cost differentials between the different water supply technologies are also evident for sanitation and sewerage services. Interestingly, in urban areas networked condominal sewerage services are competitive with septic tanks as an option to reduce the cost of investment and subsequent the cost of operation and maintenance.
- ***Standardization of Technologies***. As was shown in Chapter 4, data from WaterAid suggested that a relationship may exist between the dispersion of technologies within a district and the functionality rate: the less dispersion of technologies, the higher the functionality rate. The wide dispersion of technologies poses costs in terms of availability of spare parts and the local knowledge to deal with the different technologies. Standardizing technologies and setting minimum standards may reduce the cost of spare parts whereas economies of scale may also have a positive impact on the price of such technologies.
- ***Cost Efficiency in Service Delivery***. Many utilities are barely able to cover their operation and maintenance costs through their revenues compromising the utilities' capacity to expand their customer base. Inefficiencies in the way utilities operate compromise financial viability. An example is the high levels of non-revenue water that average about 45 percent, whereas

Table 10.2. Unit cost in US$ for water supply and sanitation investments

Unit costs	Urban areas	Rural areas
Water		
Piped water	321	2001
Public taps/standpipes	60	205
Safe wells/boreholes	50	36
Sanitation		
Sewer	355	
Condominal sewer	89	
Septic tank	111	
Ventilated improved pit latrine	51	
Simple pit latrine	35	
Treatment cost	40	

Source: African Infrastructure Diagnostic Country Study, 2009

the best performing utility has a non-revenue water of less than 30 percent. Another source of inefficiency is over-employment. The best performing utilities in Tanzania have about 6 employees per thousand connections. This is twice as much as the average African utility (AICD 2008) and much higher than the benchmark of two employees per thousand connections frequently used as the international benchmark for developing countries. Reducing these inefficiencies in operating costs can generate huge benefits. The hidden cost analysis shows that benefits from more than TzS 27 billion per year (equal 55 percent of current operating costs) can be achieved if Tanzanian utilities perform similar to that of the best performing utilities in their own country.

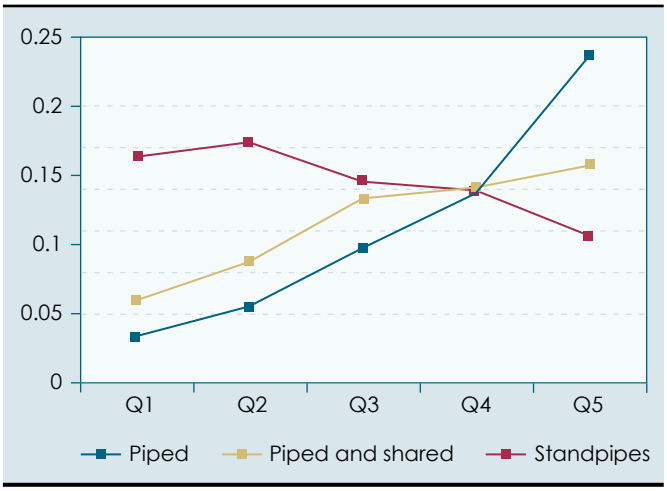
Efficiency in tariffs to promote sustainability of services

The Government has set up different cost recovery policies for the different water services. For urban water authorities, the Government has set up a policy of full cost recovery. In the case of rural water supply, communities are required to pay the full operation and maintenance costs (and costs for any service levels higher than the standard), while managing their own schemes. A polluter pays principle is to be applied. Yet, neither of these policies is applied consistently, and as a result, a significant part of the budget has to be used to pay for operation, maintenance and rehabilitation of existing systems hindering expansion of services to those that are yet unserved.

Underpricing of utility tariffs is a major issue. On average, water tariffs in Tanzania are about 24 percent lower than that of the average African utility. Underpricing of water will result in tariffs failing to cover operation and maintenance costs and result in scarce budget resources being diverted away from expansion to finance basic operation and maintenance. At the same time, low tariffs tend to stimulate higher demand for water services inflating investment requirements.

Affordability remains a critical issue when assessing changes in tariff levels and structures. Figure 9.1 shows that the 60 percent richest households use 80 percent of piped water connections (either house or yard connections or connections shared with neighbors), implying that individual piped connections tend to be mostly a service used by richer consumers. Household budget survey data show that when households pay for water, the two wealthiest quintiles have room to pay for tariff increases as they currently pay less than 5 percent of their household expenditure on water. This is also confirmed by the relatively high dependence of this group on vendor water. Yet, the poorest 60 percent of the households that currently pay for their water sources pay more than 5 percent of their expenditure on water—which makes it more difficult for this group to pay for additional tariff increases. Yet, as this group is more dependent on standpipes, it is possible to include more discriminatory tariff policies where lower levels of service pay less than those that depend on better quality services. Evidence from a recent study on water and electricity subsidies found that subsidies on the basis of self-selection of service levels tend to be more pro-poor than the more common consumption-or connection based subsidies.

Figure 10.1 Use of piped water by income quintile



Source: Household Budget Survey, 2006/07

However, before making any changes to the tariffs, utilities should first address their low billing and collection efficiencies. The collection efficiency in the 20 largest water utilities is 85

percent. The household budget surveys show that many households with piped water do not pay for water. Interestingly, the percentage of non-paying customers is inversely related to their service level, meaning that households with an individual piped water connection tend to have a lower probability to pay for their water than households with a standpipe or those that depend on neighbors for their water. A similar finding was found in a number of audits of the water authorities showed that there are many deficiencies with the current billing systems. Fixing these gaps in the billing systems will generate additional revenue, while it reduces the pressure to increase tariff increases to ensure the sustainability of the water supply service.

Promote Efficiency in the Design of Infrastructure Programs

Tanzania's key infrastructure challenge is how to improve access to water and sanitation services, while maintaining the quality of the existing water infrastructure and improving the efficiency of services to ensure that every dollar spent in the sector has maximum impact.

In the design of infrastructure programs, the Government could put more focus on how to improve the efficiency of its investment programs: (i) performance based transfers; (ii) better poverty targeting in water allocation formulas; (ii) better use of the MTEF as a tool to make more strategic and long-term investment decisions; and (iii) better poverty targeting in water allocation formulas. Such mechanisms can only be contemplated if there is a monitoring system that can measure the performance of the sector (including access, quality and sustainability of services). Such a monitoring system is being built up for urban utilities under EWURA, while a similar system will need to be developed and implemented for the other subsectors.

The current low levels of quality of service have already resulted in a relatively substantial allocation of spending being allocated to rehabilitation and maintenance. Yet, at the same time there is a need to develop better incentives and funding mechanisms to promote better maintenance of existing assets, because the allocation of spending to rehabilitation and maintenance compromises the increase in access of water supply and sanitation services required to achieve the MDG targets. One possibility is to introduce more performance based incentives in the transfer of funds, especially the large transfers being provided to urban water authorities by the Ministry of Water.

Improving the efficacy and efficiency of fiscal support for infrastructure requires better coordination and planning within the sector, and across sectors, and greater accountability. Better coordination is essential, especially in a decentralized environment where the responsibility for water and sanitation services has been transferred to local governments. Greater coordination between the national and sub-national government planning process and the annual budget formulation process is necessary to make the budget a tool to avoid that the budget availability on which they had made their plans does not vary so much that it makes the planning process useless. To ensure that planning and budget are better linked it is necessary to ensure that the LGA planning process is not taken place in isolation from national government planning.

The formulas for determining the recurrent block grant and development grants to local government authorities should be consistently applied in water sector budget allocations. As a result, the efficiency in targeting water supply funds to those regions with the largest water supply access gaps can improve, while the transparency with which funds are allocated increase subsequently.

Accountability and achieving efficiency in sector performance require systems for monitoring and evaluation. This means building reporting systems that measure the efficacy and efficiency of such programs in achieving measurable outcomes in terms of access, quality and sustainability of services. Evaluations could provide valuable information on what works and what not and provide as such information for the design of future programs.

Table 1: Budget allocations and actual expenditures FY1999/00 to FY2007/08

Summary of public expenditure 1998/99–2003/04 (Actual and development expenditure)	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08
TOTAL ACTUAL EXPENDITURE									
MOW - recurrent	3,377,959,838	4,939,597,668	6,194,858,780	10,442,472,207	7,700,793,116	20,391,386,324	13,510,063,051	19,394,382,164	22,031,603,053
LGA - recurrent	—	—	—	—	—	10,463,600,000	11,500,100,000	13,818,522,975	14,228,323,737
other - recurrent							400,000,000	323,358,668	
LGA - development	—	—	—	—	—	6,602,500,000	6,929,100,000	9,307,791,558	16,235,624,022
MOW-development	21,508,512,000	18,854,007,000	17,626,379,000	1,232,026,978	34,264,152,986	93,375,425,847	79,724,586,181	148,516,168,092	129,702,616,356
Regions - development							—	—	35,150,401,541
Other - development								495,137,243	2,022,993,794
	24,886,471,838	23,793,604,668	23,821,237,780	11,674,499,185	41,964,946,102	130,832,912,171	111,663,849,232	191,932,002,032	219,694,921,171
Recurrent	3,377,959,838	4,939,597,668	6,194,858,780	10,442,472,207	7,700,793,116	30,854,986,324	25,010,163,051	33,612,905,139	36,583,285,458
Development	21,508,512,000	18,854,007,000	17,626,379,000	1,232,026,978	34,264,152,986	99,977,925,847	86,653,686,181	158,319,096,893	183,111,635,713
Region as % of TOTAL	0.0%	0.0%	0.0%	0.0%	0.0%	13.0%	16.5%	12.0%	13.9%
budget exexution rate		82.9%	88.5%	18.8%	63.4%	86.0%	73.4%	85.4%	55.4%
recurrent as % of total		20.8%	26.0%	89.4%	18.4%	23.6%	22.4%	17.3%	16.5%
TOTAL BUDGET ALLOCATION									
MOW - recurrent	2,252,442,200	4,295,925,500	9,247,772,800	16,122,280,200	15,428,131,400	19,636,549,900	14,734,372,540	20,185,887,676	22,825,465,647
LGA - recurrent						10,463,600,000	12,841,285,073	15,506,958,744	17,457,700,000
Regions - recurrent								—	10,000,000

(*continued on next page*)

Table 1: Budget allocations and actual expenditures FY1999/00 to FY2007/08 *(continued)*

Summary of public expenditure 1998/99–2003/04 (Actual and development expenditure)									
	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08
Other - recurrent								400,000,000	323,358,668
LGA - development						6,602,500,000	13,653,380,359	19,115,998,915	71,049,400,000
MOW-development		24,420,000,000	17,666,800,000	46,019,622,500	50,754,196,000	115,404,299,400	110,806,800,000	168,873,127,000	227,427,747,600
Regions - development								106,000,000	55,726,676,111
Other - development								495,301,000	2,024,500,000
		28,715,925,500	**26,914,572,800**	**62,141,902,700**	**66,182,327,400**	**152,106,949,300**	**152,035,837,972**	**224,683,273,335**	**396,844,848,026**
Recurrent		4,295,925,500	9,247,772,800	16,122,280,200	15,428,131,400	30,100,149,900	27,575,657,613	35,692,846,420	40,616,524,315
Development		24,420,000,000	17,666,800,000	46,019,622,500	50,754,196,000	122,006,799,400	124,460,180,359	188,990,426,915	356,228,323,711
Region as % of TOTAL		0.0%	0.0%	0.0%	0.0%	11.2%	17.4%	15.4%	22.3%
Recurrent as % of total		15.0%	34.4%	25.9%	23.3%	19.8%	18.1%	15.9%	10.2%
BUDGET EXECUTION RATE									
MOW - recurrent		115.0%	67.0%	64.8%	49.9%	103.8%	91.7%	96.1%	96.5%
LGA - recurrent		#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	100.0%	89.6%	89.1%	39.8%
LGA - development		#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	100.0%	50.8%	48.7%	17.2%
MOW-development		77.2%	99.8%	2.7%	67.5%	80.9%	71.9%	87.9%	57.0%

Table 2: Recurrent and development budget and actual expenditures: Tanzania (2005–2011)

in Tanzanian Shilling	2005/06 budget	Actual	2006/07 budget	Actual	2007/08 budget	Total except for LGAs actual (till Q3)	2008/09 budget	2009/10 budget	2010/11 budget
Recurrent expenditure	27,575,657,613	11,500,048,588	36,092,846,420	33,612,905,139	40,616,558,980	32,940,105,676	31,843,501,300	20,803,526,850	22,877,453,990
PE	7,793,425,331	7,971,032,111	13,811,376,833	12,315,954,664	15,054,143,339	11,869,534,134	18,660,560,893	9,198,636,250	10,692,318,990
OC	19,782,232,282	16,916,929,840	22,281,469,587	21,296,950,475	25,562,415,641	21,070,571,542	13,182,940,407	11,604,890,600	12,185,135,000
Development expenditure	124,460,180,359	86,654,446,061	188,590,426,915	158,319,097,073	356,228,327,109	179,072,682,764	288,063,211,860	340,353,080,650	418,562,151,140
TOTAL	*152,035,837,972*	*98,154,494,649*	*224,683,273,335*	*191,932,002,212*	*396,844,886,089*	*212,012,788,440*	*319,906,713,160*	*361,156,607,500*	*441,439,605,130*

As a share of GDP

	2005/06 budget	Actual	2006/07 budget	Actual	2007/08 budget	Total except for LGAs actual (till Q3)	2008/09 budget	2009/10 budget	2010/11 budget
Recurrent expenditure	0.16%	0.07%	0.19%	0.20%	0.24%	0.17%	0.16%	0.07%	0.07%
PE	0.05%	0.05%	0.07%	0.07%	0.09%	0.06%	0.10%	0.03%	0.03%
OC	0.12%	0.10%	0.11%	0.13%	0.15%	0.11%	0.07%	0.04%	0.04%
Development expenditure	0.73%	0.51%	0.97%	0.93%	2.10%	0.92%	1.48%	1.17%	1.26%
TOTAL	0.90%	0.58%	1.16%	1.13%	2.34%	1.09%	1.65%	1.24%	1.32%

(*continued on next page*)

Table 2: Recurrent and development budget and actual expenditures: Tanzania (2005–2011) (*continued*)

in Tanzanian Shilling	2005/06 budget	Actual	2006/07 budget	Actual	2007/08 budget	Total except for LGAs actual (till Q3)	2008/09 budget	2009/10 budget	2010/11 budget
As a share of GOT budget									
Recurrent expenditure	0.68%	0.29%	0.74%	0.69%	0.67%	0.54%	0.44%	0.25%	0.23%
PE	0.19%	0.20%	0.28%	0.25%	0.25%	0.20%	0.26%	0.11%	0.11%
OC	0.49%	0.42%	0.46%	0.44%	0.42%	0.35%	0.18%	0.14%	0.12%
Development expenditure	3.08%	2.15%	3.89%	3.26%	5.87%	2.95%	3.99%	4.05%	4.27%
TOTAL	3.77%	2.43%	4.63%	3.96%	6.54%	3.49%	4.43%	4.29%	4.50%
Annual percentage change									
Recurrent expenditure			30.9%	192.3%	12.5%	–2.0%	–21.6%	–36.8%	–28.2%
PE			77.2%	54.5%	9.0%	–3.6%	24.0%	–22.5%	–42.7%
OC			12.6%	25.9%	14.7%	–1.1%	–48.4%	–44.9%	–7.6%
Development expenditure			51.5%	82.7%	88.9%	13.1%	–19.1%	90.1%	45.3%
TOTAL			47.8%	95.5%	76.6%	10.5%	–19.4%	70.3%	38.0%

Table 3: Recurrent and development budget and actual expenditures: MOWI, LGA, Regions and other (2005–2009)

MOW in Tanzanian Shilling	2005/06 budget	Actual	2006/07 budget	Actual	2007/08 budget	Actual	2008/09 budget
Recurrent expenditure	14,734,372,540	13,387,913,363	20,185,887,676	19,394,382,164	22,825,465,647	22,031,630,053	16,288,212,000
PE	4,457,925,331	4,437,132,111	8,581,050,557	8,220,517,892	8,978,819,647	8,494,971,128	10,708,192,000
OC	10,276,447,209	8,950,781,252	11,604,837,119	11,173,864,272	13,846,646,000	13,536,658,925	5,580,020,000
Development expenditure	110,806,800,000	79,724,586,181	168,873,127,000	148,516,168,092	227,427,747,600	129,702,616,356	139,954,867,700
TOTAL	125,541,172,540	98,154,494,649	*189,059,014,676*	*167,910,550,256*	*250,253,213,247*	*151,734,246,409*	*156,243,079,700*

LGA in Tanzanian Shilling	2005/06 budget	Actual	2006/07 budget	Actual	2007/08 budget	Actual	2008/09 budget
Recurrent expenditure	12,841,285,073	11,500,048,588	15,506,958,744	13,818,522,975	17,457,734,665	10,585,116,955	15,555,289,300
PE	3,335,500,000	3,533,900,000	5,230,326,276	4,095,436,772	6,075,323,692	3,374,563,006	7,952,368,893
OC	9,505,785,073	7,966,148,588	10,276,632,468	9,723,086,203	11,382,410,973	7,210,553,949	7,602,920,407
Development expenditure	13,653,380,359	6,929,859,880	19,115,998,915	9,307,791,558	71,049,403,398	12,196,671,073	65,286,420,102
TOTAL	26,494,665,432	18,429,908,468	*34,622,957,659*	*23,126,314,533*	*88,507,138,063*	*22,781,788,028*	*80,841,709,402*

REGIONS in Tanzanian Shilling	2005/06 budget	Actual	2006/07 budget	Actual	2007/08 budget	Actual	2008/09 budget
Recurrent expenditure	—	—			10,000,000		
PE							
OC					10,000,000		

(*continued on next page*)

Table 3: Recurrent and development budget and actual expenditures: MOWI, LGA, Regions and other (2005–2009) (*continued*)

Development Expenditure	—	—	106,000,000		55,726,676,111	35,150,401,541	64,542,657,400
TOTAL	—	—	*106,000,000*	—	*55,736,676,111*	*35,150,401,541*	*64,542,657,400*

OTHER in Tanzanian Shilling	2005/06 budget	Actual	2006/07 budget	Actual	2007/08 budget	Actual	2008/09 budget
Recurrent expenditure	—	—	400,000,000	400,000,000	323,358,668	323,358,668	
PE							
OC			400,000,000	400,000,000	323,358,668	323,358,668	
Development expenditure			495,301,000	495,137,423	2,024,500,000	2,022,993,794	18,279,266,658
TOTAL	—	—	*895,301,000*	*895,137,423*	*2,347,858,668*	*2,346,352,462*	*18,279,266,658*

Performance budget execution			
MOW	78.2%	88.8%	60.6%
Recurrent	0.0%	96.1%	96.5%
Development	71.9%	87.9%	57.0%
LGA	69.6%	66.8%	*25.7%*
Recurrent	89.6%	89.1%	60.6%
Development	50.8%	48.7%	17.2%
Total	*76.7%*	*85.4%*	*51.5%*
Recurrent	41.7%	93.1%	81.0%
Development	69.6%	84.0%	47.5%

Table 4: Adjusted budget and expenditure – reallocating the recurrent and development expenditure

in Tanzanian Shilling	2006/07 budget	Actual	2007/08 budget	Actual	2008/09 budget
Recurrent expenditure	51,573,889,363	39,504,845,541	52,634,684,699	35,948,500,383	56,127,093,796
Wages and salaries	22,355,320,455	15,093,477,170	20,237,724,363	9,351,542,530	23,930,897,030
Goods and services	29,218,568,908	24,411,368,371	32,396,960,336	26,596,957,853	32,196,196,766
Development expenditure	173,109,363,972	152,427,156,671	344,210,201,210	176,064,288,056	263,779,619,365
TOTAL	*224,683,253,335*	*191,932,002,212*	*396,844,885,909*	*212,012,788,439*	*319,906,713,160*
In percent of total sector expenditure					
	2006/07 budget	**Actual**	**2007/08 budget**	**Actual**	**2008/09 budget**
Recurrent expenditure	23.0%	20.6%	13.3%	17.0%	17.5%
Wages and salaries	*9.9%*	*7.9%*	*5.1%*	*4.4%*	*7.5%*
Goods and services	*13.0%*	*12.7%*	*8.2%*	*12.5%*	*10.1%*
Development expenditure	77.0%	79.4%	86.7%	83.0%	82.5%
TOTAL	100.0%	100.0%	100.0%	100.0%	100.0%

(*continued on next page*)

Table 4: Adjusted budget and expenditure – reallocating the recurrent and development expenditure (*continued*)

In percent of GDP

	2006/07 budget	Actual	2007/08 budget	Actual	2008/09 budget
Recurrent expenditure	0.30%	0.20%	0.23%	0.14%	0.19%
Wages and salaries	0.13%	0.08%	0.09%	0.04%	0.08%
Goods and services	0.17%	0.13%	0.14%	0.10%	0.11%
Development expenditure	1.02%	0.78%	1.53%	0.69%	0.91%
TOTAL	1.33%	0.99%	1.77%	0.83%	1.10%
Annual Percentage Change					
Recurrent expenditure			2.1%	–9.0%	6.6%
Wages and salaries			–9.5%	–38.0%	18.2%
Goods and services			10.9%	9.0%	–0.6%
Development expenditure			98.8%	15.5%	–23.4%
TOTAL			76.6%	10.5%	–19.4%

Table 5: Grant allocation according to actual budget and fomula-based budget by region

Region	Budget 2007/08	Formula 2007/08	Gap 2007/08	Budget 2008/09	Formula 2008/09	Gap 2008/09
Arusha	6,873,869,000	2,954,325,280	133%	3,024,128,800	2,952,629,161	2%
Dodoma	4,373,164,000	2,890,560,847	51%	2,985,017,600	2,888,901,336	3%
DSM	1,402,142,500	183,836,700	663%	935,721,000	183,731,157	409%
Iringa	3,500,798,000	4,151,442,202	–16%	4,443,250,500	4,149,058,802	7%
Kagera	5,787,561,000	6,923,329,202	–16%	5,721,065,970	6,919,354,424	–17%
Kigoma	1,794,835,900	2,102,934,052	–15%	3,385,210,000	2,101,726,729	61%
Kilimanjaro	1,551,803,000	1,780,028,697	–13%	4,766,238,500	1,779,006,758	168%
Lindi	3,734,849,400	3,445,344,917	8%	3,225,779,000	3,443,366,897	–6%
Manyara	1,575,266,000	3,374,386,135	–53%	3,842,813,200	3,372,448,854	14%
Mara	3,509,285,000	4,486,290,914	–22%	3,448,673,000	4,483,715,273	–23%
Mbeya	5,452,076,000	3,457,599,181	58%	5,175,542,300	3,455,614,126	50%
Morogoro	3,566,005,000	3,093,244,641	15%	3,326,007,733	3,091,468,766	8%
Mtwara	4,329,989,100	3,028,749,690	43%	3,066,724,000	3,027,010,843	1%
Mwanza	5,341,122,000	7,980,845,301	–33%	5,194,462,300	7,976,263,389	–35%
Pwani	4,708,166,400	3,390,183,001	39%	3,815,199,600	3,388,236,651	13%
Rukwa	1,818,320,700	3,061,144,576	–41%	3,017,704,800	3,059,387,131	–1%
Ruvuma	3,553,645,900	2,771,352,350	28%	3,250,068,000	2,769,761,279	17%
Shinyanga	5,845,588,800	8,293,878,319	–30%	5,832,800,200	8,289,116,689	–30%
Singida	3,117,967,400	2,103,739,018	48%	3,049,553,500	2,102,531,232	45%
Tabora	3,735,069,900	6,516,558,098	–43%	4,881,598,000	6,512,816,853	–25%
Tanga	5,316,623,000	4,898,374,878	9%	4,454,151,000	4,895,562,654	–9%
TOTAL	**80,888,147,999**	**80,888,147,999**		**80,841,709,003**	**80,841,709,003**	

Table 6: Hidden cost analysis

Source	Utility	Savings because of improvements in NRW	Savings because of 100% collection efficiency	Additional Income because of higher water rates	Over-emplyment reduction
		TZS	TZS	TZS	TZS
EWURA	Arusha	199,921,513	52,135,158	2,898,507,586	57,166,276
EWURA	Babati	60,683,834	–15,942,929	153,887,742	30,949,766
EWURA	Bukoba	292,296,894	–154,872,035	215,486,266	92,435,502
EWURA	Dodoma	193,987,918	–52,257,979	202,758,369	158,561,286
EWURA	DAWASCO	11,407,199,414	6,698,146,424	7,174,512,066	3,525,236,724
EWURA	Iringa	403,406,834	–84,262,421	287,704,967	102,222,527
EWURA	Kigoma	221,878,175	6,775,368	614,814,298	45,156,175
EWURA	Lindi	142,858,309	–167,419,230	–36,882,629	
EWURA	Mbeya	501,327,239	306,477,078	1,212,231,428	—
EWURA	Morogoro	134,106,568	–111,705,847	1,541,511,936	173,262,376
EWURA	Moshi	140,877,271	–460,985,498	1,459,612,654	143,092,359
EWURA	Mtwara 3	5,773,275	105,904,868	62,406,414	70,979,593
EWURA	Musoma	270,237,034	1,705,790	602,091,994	73,672,341
EWURA	Mwanza	231,227,792	2,014,563,693	1,742,380,618	277,080,776
EWURA	Shinyanga	186,121,734	–253,804,261	354,837,229	69,281,305
EWURA	Singida	41,306,204	–54,092,109	122,894,820	109,311,469
EWURA	Songea	28,923,757	60,446,227	400,928,625	78,661,864
EWURA	Sumbawanga	70,784,784	52,079,539	306,339,462	42,340,400
EWURA	Tabora	—	36,034,326	935,202,406	66,418,131
EWURA	Tanga	—	–515,798,470	1,717,646,916	—
		14,562,918,549	7,463,127,693	22,005,755,796	5,152,711,498

REFERENCES

Braathen, Einar and Geoffrey Mwambe (REPOA), 2007. Service Delivery in Tanzania; Findings from Six Councils 2002–2003.

Briceno-Garmendia, Cecilia and Vivien Foster, 2007. Fiscal Costs of Infrastructure Provision: A Practicioner;s Guide. Africa Infrastructure Country Diagnostic.

Briceno-Garmendia, Cecilia and Vivien Foster, 2007. More Fiscal Resources for Infrastructure? Evidence from East Africa

Burke, Eileen, 2008. Calculation of Implicit Subsidies of Urban Water Supply and Sewerage Authorities in Tanzania (internal memo)

Celasun, O, and J. Walliser, "Predictability of Aid: Do Fickle Donors Undermine Aid Effectiveness?" Economic Policy, 23, 545–594

Chacha, Leonard 2008. Value for Money – Efficiency of Public Expenditure in the Water and Sanitation Sector in Tanzania. Dar es Salaam (internal memo)

Chacha, Leonard 2009. Value for Money – Efficiency of Public Expenditure in the Water and Sanitation Sector in Tanzania at the District Level. Dar es Salaam (internal memo)

Demographic Health Surveys, various years at *www.measuredhs.com*

Ebinger, Jane, 2006. Measuring Financial Performance in Infrastructure. World Bank Working Paper Series No. 3992, Washington D.C.

Household Budget Surveys, various years

International Benchmarking Network for Water and Sanitation Utilities (IBNET) at *www.ib-net.org*

Kessy, Flora, 2009. Value for Money Study: Efficiency of Public Expenditure in the Water and Sanitation Sector in Tanzania at the Service Provider Level. Dar es Salaam (internal memo)

Komives, Kirsten, Vivien Foster, Jonathan Halpern and Quentin Wodon with support from Roohi Abdullah, 2005. Water, Electricity and the Poor: who benefits from utility subsidies? Washington D.C.

Ministry of Finance, Votebooks, various years in electronic formats.

Ministry of Finance, 2008. Guidelines for the Preparation of Medium Term Plan and Budget Framework for 2008/09 to 2010/11: Part I. Dar es Salaam

Ministry of Finance, Budget Execution Reports, various years at *http://www.mof.go.tz/index.php?option=com_content&task=view&id=24&Itemid=38*

Ministry of Water and Livestock, 2002, National Water Policy. Dar es Salaam, July.

Ministry of Water, 2006. Water Sector Development Programme: Programme Implementation Manual, Annex 4: Formula Based Allocation of Financial Resources to local Government Authorities. Dar es Salaam.

Ministry of Water, 2007. Annual Report – Urban Water Supply and Sewerage Authorities: Financial Year 2005/2006.

Ministry of Water and Irrigation, 2007. Annual Water Sector Status Report – 2006/2007. Dar es Salaam.

Ministry of Water and Irrigation, 2008. Annual Water Sector Status Report – 2007/2008. Dar es Salaam.

Ministry of Water and Irrigation, 2008. Annual Report – Urban Water Supply and Sewerage Authorities: Financial Year 2006/2007.

Ministry of Water and Irrigation, 2008. Vote 49: Medium Term Expenditure Framework Forward Budget for 2008/09 – 2010/11.

National Audit Office, 2007. Annual General Report of the Controller and Auditor General – on the audit of the financial statements of Central Government for the year ended 30 June 2006.

National Audit Office, 2008. Annual General report of the Controller and Auditor General – on the audit of the financial statements of Central Government for the year ended 30 June 2007.

National Audit Office, 2009. Annual General report of the Controller and Auditor General – on the audit of the financial statements of Central Government for the year ended 30 June 2008.

National Audit Office, 2007. Annual General report of the Controller and Auditor General – on the audit of the financial statements of Local Government Authorities for the year ended 30 June 2006.

National Audit Office, 2008. Annual General report of the Controller and Auditor General – on the audit of the financial statements of Local Government Authorities for the year ended 30 June 2007.

National Audit Office, 2009. Annual General report of the Controller and Auditor General – on the audit of the financial statements of Local Government Authorities for the year ended 30 June 2008.

Nauges, Celine, 2009. Analysis of Drinking Water and Sanitation Facilities; Tanzanian Household Budget Surveys (1991/92, 2000/01 and 2006/07) (internal memo)

OECD, Creditor Reporting System: Aid Activities in Support of Water Supply and Sanitation 2001–2006. Paris, 2008

OECD Stats Database at *http://oberon.sourceoecd.org/vl=1748514/cl=21/nw=1/rpsv/dotstat.htm*

Prime Minister's Office, Regional Administration and Local Government, 2004. Local Government Fiscal Review 2004.

Prime Minister's Office, Regional Administration and Local Government, 2005. Local Government Fiscal Review 2005.

Prime Minister's Office, Regional Administration and Local Government, 2006. Local Government Fiscal Review 2006

Prime Minister's Office, Regional Administration and Local Government, 2006. Background paper on Local Government Finance: the Framework for the Financing of Local Government Authorities in Tanzania.

Prime Minister's Office, Regional Administration and Local Government, 2007. Local Government Fiscal Review 2007

Prime Minister's Office, Regional Administration and Local Government, 2008. Guidelines for the Preparation of Local Government Authorities' Medium Term Plans and Budgets for 2008/09 to 2010/11: Volume I. Dodoma

Public Procurement Regulation Authority, 2007. Results of Procurement Audits for the Fiscal Year 2006/07 at *http://www.ppra.go.tz/reports/AuditResults0607.pdf*

Public Procurement Regulation Authority, 2008. Results of Procurement Audits for the Fiscal Year 2007/08 at *http://www.ppra.go.tz/reports/AuditResults0708.pdf*

REPOA, 2006. Afrobarometer: Afrobarometer Briefing Paper No. 36.

UNICEF-WHO Joint Monitoring Programme at *http://www.wssinfo.org*

United Republic of Tanzania, Local Government Information at http://www.logintanzania.net/monitor.htm

van den Berg, Caroline, 2008. Rapid Budget Analysis for Annual Review 2008/09: Water Sector. World Bank.

van den Berg, Caroline, 2008, Public Expenditure Review in the Water Sector: the Case of Tanzania

http://siteresources.worldbank.org/EXTWAT/Resources/4602122-1213366294492/5106220-1234469721549/24.2_PER_Tanzania_Water_Sector.pdf

WaterAid, 2002. Water and Sanitation in Tanzania: Poverty Monitoring for the Sector Using National Surveys.

WaterAid, 2005. WaterAid learning advocacy for good practice – WaterAid water point mapping in Malawi and Tanzania at *http://www.wateraid.org/documents/plugin_documents/malawi__tanzania.pdf*

World Bank, 2006. Water Resource Assistance Strategy: Improving Water Security for Sustainable Livelihoods and Growth. Washington D.C. No. 35327

World Bank, 2003. Public Expenditure Review FY03 - Managing public expenditures for poverty reduction report on fiscal developments and public expenditure management issues. Washington D.C., No. 26807

World Bank, 2006. Public Expenditure and Financial Accountability Review : FY05. Washington D.C., No. 36642.

World Bank, 2007. Water Sector Support Project: Project Appraisal Document. Washington D.C.