

Development Aid and Access to Water and Sanitation in Sub-Saharan Africa



African Development Bank Group

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Adeleke Salami, Marco Stampini
and Abdul B. Kamara
Editors



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Foreword

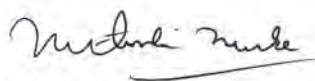
Providing safe drinking water and basic sanitation to citizens is one of the major challenges facing African governments. The question of access to safe drinking water and improved sanitation is well articulated and prioritised in the various national, continental, and international policy documents, strategy papers, declarations, and conventions. Yet it is not clear if sustainable access to safe drinking water and basic sanitation has been given the requisite financial and other support by the Sub-Saharan Africa (SSA) policy makers and donors. An even more important issue is understanding how the African governments have utilised the limited available Official Development Assistance (ODA) allocated to Water Supply and Sanitation (WSS) sector to guarantee the highest possible performance and deliverance of WSS services to the citizens. In this context, this report provides an in-depth analysis on the role, significance, and targeting of development aid in the provision of water and sanitation.

According to this report, Net ODA disbursement flows to SSA have more than doubled in real terms since 1980, with most of the growth taking place during the last 10 years. In 2008, the region received 27.5 percent of the net ODA disbursement flows to developing countries, corresponding to USD 24 billion or 2.4 percent SSA's GDP. Gross ODA disbursements to the water and sanitation sector in SSA grew from USD 757 million in 1995 to USD 1.438 billion in 2008. Further evidence in the report indicates that increase in aid has, however, not been matched by commensurate progress in providing SSA populations with safe drinking water and improved sanitation facilities.

Access to piped water in sub-Saharan Africa remains generally low. It improved negligibly from 15 percent in 1990 to 16 percent in 2008. At the country level, however, the figures show significant variations, with several good performers pulling ahead of the lot. For example, Botswana, Comoros, Djibouti, Gambia, Mauritius, Namibia and South Africa, all had rates above 90 percent. Similarly, access to improved sanitation remains generally low. Only Botswana, Gambia, Mauritius and South Africa record rates of 60 percent or higher. In 10 countries (Benin, Burkina Faso, Eritrea, Ethiopia, Ghana, Madagascar, Niger, Sierra Leone, Chad and Togo) access remains below 15 percent. The group of good performers varies between water and sanitation sectors. For example, Burkina Faso and Ghana achieved remarkable progress in access to water, while at the same time recording very small improvements in access to sanitation. The poor performance of the water and sanitation sector was due to the weak capacities of aid recipients, inadequate government support, and scant monitoring and evaluation.

The report provides useful insights that will assist regional member countries (RMCs), the Bank's operations, and donor agencies in the design and implementation of future development aid strategies and action for increased access to water and sanitation in SSA. It is expected that this report will enhance the efficient utilisation of development aid and contribute to increased access to water and sanitation in SSA.

We wish to express our thanks to all those who have contributed to this study. Finally, we recommend the report to our readers, especially policymakers, and development practitioners, researchers, and other stakeholders in the water and sanitation sector.



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Abbreviations

AfDB	African Development Bank
AfDF	African Development Fund
AEO	African Economic Outlook
AMCOW	African Ministers Council on Water
AWF	African Water Facility
ANDEA	Autorite' Nationale de l'Eau et de l'Assainissement (National Authority for Water and Sanitation)
BADEA	Arab Bank for Economic Development in Africa
BOT	Build Operate and Transfer
CBO	Community Based Organisation
CNAEA	Congo National Action Committee for Water and Sanitation
CPI	Corruption Perception Index
CSO	Country Status Overview
CSP	Country Support Programme
DAC	Development Assistance Committee
DANIDA	Danish International Development Agency
DRC	Democratic Republic of Congo
DEA	Directorate of Environmental Affairs (Uganda)
DFID	Department for International Development
DGRE	Direction de Gestion des Ressources en Eaux (The General Directorate of Water Resources)
DoL	Division of Labour
DP	Donor Partner
DWD	Directorate of Water Development
DWRM	Directorate of Water Resources Management
DWSCC	District Water and Sanitation Coordination Committees
EAC	East African Community
ECOSAN	Ecological Sanitation
EDF	European Development Fund
EHD	Environmental Health Division
EIB	European Investment Bank
ENRWG	Environment and Natural Resources Working Group
EU	European Union
EUWI	European Union Water Initiatives
FAD	Fonds Africain de Développement (African Development Fund)
FAO	Food and Agricultural Organisation
GDP	Gross Domestic Product
GGSWG	Good Governance Sub-Sector Working Group
GLAAS	Global Annual Assessment of Sanitation and Drinking-Water
GNI	Gross National Income
GoM	Government of Madagascar
GoK	Government of Kenya
GoU	Government of Uganda

GWP	Global Water Partnership
HDI	Human Development Index
HDR	Human Development Report
HICs	Home Improvement Campaigns
IGAD	Inter-Governmental Authority on Development
IDA	International Development Association
IMS	Information Management System
IRIN	Integrated Regional Information Networks
IWRM	Integrated Water Resource Management
JICA	Japan International Cooperation Agency
JMP	Joint Monitoring Programme
KfW	Kreditanstalt für Wiederaufbau (German Development Bank)
KEWI	Kenya Water Institute
LVBC	Lake Victoria Basin Commission
LVFO	Lake Victoria Fisheries Organisation
MAAIF	The Ministry of Agriculture, Animal Industry and Fisheries
MDG	Millennium Development Goals
M&E	Monitoring and Evaluation
MEM	Ministry of Energy and Mining
MFPED	The Ministry of Finance, Planning and Economic Development
MGLSD	The Ministry of Gender, Labour and Social Development
MLTSF	Medium to Long-Term Strategic Framework
MoES	Ministry of Education and Sport
MoFPED	Ministry of Finance, Planning and Economic Development
MoH	Ministry of Health
MoLG	Ministry of Local Government
MTEF	Medium Term Expenditure Framework
MTP	Medium Term Plan
MVP	Millennium Village Project
MWE	Ministry of Water and the Environment
MWI	Ministry of Water and Irrigation
MWLE	Ministry of Water, Lands and Environment
NBI	Nile Basin Initiative
NEPAD	New Partnership for Africa's Development
NGO	Non-Government Organisation
NWSC	National Water and Sewerage Corporation
NWSS	National Water Supply and Sanitation
OBA	Output Based Aid
ODA	Official Development Assistance
OECD	Organisation for Economic Co-operation and Development
O&M	Operation and Maintenance
OLAF	Office de Lutte Anti-Fraude (European Anti-Fraud Office)
ONEA	Office National de l'Eau et de l'Assainissement (National office for Water and Sanitation)
OOFs	Other Official Flows
OPEV	African Development Bank's Operations Evaluation Department
OWAS	African Development Bank's Water and Sanitation Department

PAGIRE	Plan d'Action pour la Gestion Intégrée des Ressources en Eau (Action Plan for Integrated Water Resources Management)
PANEA	Plan d'Action National de l'Efficacité de l'Aide (National Action Plan for Aid Effectiveness.).
PEAP	Poverty Eradication Action Plan
PFs	Private Flows
PNAEPA	Programme National d'Accès à l'Eau Potable et à l'Assainissement (National Programme for Safe Water Supply and Sanitation)
PNSA	Politique Nationale et Stratégie pour l'Assainissement (A Sanitation Policy and Strategy)
PPDU	Public Procurement Disposal Unit
PRSP	Poverty Reduction Strategy Plan
PSP	Private Sector Participation
RMC	Regional Member Country
RWSS	Rural Water Supply and Sanitation
RWSSI	Rural Water Supply and Sanitation Initiative
SIDA	Swedish International Development Cooperation Agency
SIP	Sector Investment Plan
SSA	Sub-Saharan Africa
STAP	Short-Term Action Plan
STIPA	Support for Tropical Initiatives in Poverty Alleviation
STWSS	Small Towns Water Supply and Sanitation
SWAP	Sector Wide Approach to Planning
TECCONILE	Technical Cooperation Committee for the Promotion of the Development and Environmental Protection of the Nile Basin
TSU	Technical Support Unit
TWRM	Trans-boundary Water Resource Management
UA	Units of Account
UC	Universal Currency
UfW	Unaccounted for Water
ULGA	Uganda Local Governments Association
UNAIDS	The United Nations Joint Programme on HIV/AIDS
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organisation
UNICEF	The United Nations Children's Fund
USAID	United States Agency for International Development
UWASNET	Uganda Water and Sanitation NGO Network
WARIS	Water Resources Information System
WASH	Water, Sanitation and Hygiene Programme.
WDR	World Development Report
WESWG	Water and Environment Sector Working Group
WHO	World Health Organisation
WIDE	Watsan Index of Development Effectiveness
WMO	World Meteorological Organisation of the UN
WPC	Water Policy Committee
WSB	Water Service Board
WSC	Water and Sanitation Committee
WSDPG	Water and Sanitation Development Partners Group
WSIs	Water Sector Institutions
WSP	Water and Sanitation Programme

WSPs	Water Services Providers
WSRB	Water Regulatory Services Board
WSS	Water Supply and Sanitation
WSSD	World Summit on Sustainable Development
WSSWG	Water and Sanitation sector Working Group
WSTF	Water Services Trust Fund
WSTG	Water Sector Technical Group
WSWG	Water Sector Working Group
WUA	Water User Association
WUC	Water User Committee
ZINWA	Zimbabwe National Water Authority

Executive Summary

In the face of heterogeneous performance in the water and sanitation sector by different countries in Sub-Saharan Africa (SSA), it is important to understand the factors that determine success or failure in order to improve the targeting of future interventions, including those funded by development aid, and to avoid the repetition of past errors.

The principal objective of this report is to compare countries' performance in the water and sanitation sector and to analyse how effectively they used the associated development aid. Specifically, the book addresses the following questions in the WSS sector in SSA: What is the current magnitude of WSS ODA, and how did it evolve over the past two decades? How effective were the countries in utilising the disbursed WSS ODA? How did the SSA countries perform in safe drinking water and sanitation service provision to their citizens? What are the factors that explain the performance differences in WSS sector among SSA countries?

Much has been written on Development Aid Effectiveness, but the focus has often been on how donors operate, and how recipients use the money. In this context, the report used an innovative standardised measurement framework known as the Watsan Index of Development Effectiveness (WIDE), which compares drivers of progress with results achieved, and ranks African countries by the level of outcome obtained per unit of available input. In particular, it determines how effectively they used the development aid received for the water and sanitation sector.

The WIDE is made up of two composite information layers: Resources and Progress Outcomes. The first one refers to input drivers, such as the aid received, GDP, water resources, and governance level, while the latter relates to access to water, access to sanitation, and progress in the two. Each of these is calculated as a composite index, based on a number of pre-defined factors influencing progress in the water and sanitation sector. These analyses are further validated by presentation of the WSS sector situation of four case study countries, namely, Kenya, Madagascar, Burkina Faso and Uganda.

In spite of its importance, the share of development aid allocated to water and sanitation has been low. Between 2001 and 2006, the region received 24 percent of global aid to the water and sanitation sector. When the figures

are deflated by population, the trend is, however, less impressive. Per-capita ODA to the sector grew from USD07 1.28 a year in 1995 to USD07 1.75 in 2008¹. Furthermore, in spite of increasing international support, aid provided for WSS projects as a percentage of overall ODA only reached 4.1 percent in 2008, rising from just 2.8 percent of total ODA in 2002. Overall, this indicates that while the level of aid available to the water and sanitation sector has been increasing in real terms, it is still the case that the allocation to that sector is just a small fraction of the total, which may not be sufficient to meet the targets of the MDGs.

The highest amounts of ODA to WSS went to Senegal, Ghana, Burkina Faso, Uganda, Tanzania, Mozambique, and Zimbabwe, all above USD07 500 million over the 1995-2008 period. When accounting for population size, the island states emerged as the main recipients. The highest amounts were recorded in Sao Tome and Principe, Mauritius, Seychelles, followed by Gabon, Equatorial Guinea, Senegal, and Cape Verde. All were above USD07 100 per capita over the 1995-2008 period. This was likely due to scale effects, and to the relatively high cost of projects in countries with small populations. In relative terms, 14 countries showed greater focus than average on water and sanitation issues, dedicating more than five percent of total ODA to the sector. They are Benin (six percent), Burkina Faso (9.5 percent), Botswana (5.7 percent), Gabon (11.2 percent), Guinea (8.9 percent), Equatorial Guinea (15.2 percent), Lesotho (6.7 percent), Mauritius (34.4 percent), Namibia (5.3 percent), Niger (6.0 percent), Senegal (8.8 percent), Sao Tome and Principe (6.8 percent), Swaziland (9.4 percent), and Seychelles (13.6 percent).

The African Development Bank Group (AfDB) is playing a significant role in improving access to water and sanitation in SSA. Besides its lending operations, the Bank is also involved in several initiatives and collaborations with other development partners, all designed to achieve water security and improved sanitation. The Bank has supported the implementation of the Rural Water Supply and Sanitation Initiative, and ensured funding for projects and studies in the water sector.

The AfDB also serves as a trustee for the African Water Facility Special Fund, provides support to the NEPAD Water and Sanitation Program, and is part of the multi-

¹ Constant 2007 USD.

donor Water Partnership Programme. From 1967-2006, the AfDB has committed more than USD 4 billion (undiscounted nominal value) to WSS in Africa – about 7.7 percent of total approvals. More recently, over the 2005-2008 period, the AfDB disbursed USD 495 million for water and sanitation projects in SSA (in constant 2007 USD), equivalent to about nine percent of total ODA disbursements to the sector in the region (OECD CRS).

Progress towards target 7c of the Millennium Development Goal of halving by 2015 the proportion of people without sustainable access to safe drinking water and improved sanitation facilities, remains slow. The rate of access to improved water sources increased from 49 percent in 1990 to 60 percent in 2008 – a marginal increase of less than one percent a year. Over the same period, growth in access to improved sanitation facilities was even more disappointing. It rose from 27 percent to 31 percent.

Rural areas face the most serious problems in sanitation coverage. Rural access in the region increased only by three percent between 1990 and 2008, and over three quarters of SSA rural populations still lacked access in 2008. Yet, some relatively good performers can be identified. For example, rural access to sanitation grew by 33 percent in Rwanda, 23 percent in Central African Republic, and 21 percent in Cape Verde.

Based on the WIDE assessment, the six best performers, all with WIDE values of 20 or above, include Angola (25), Rwanda (23), Zimbabwe (23), Central African Republic (23), Malawi and Comoros (both with 20). Angola's performance, for example, is commendable. In spite of ranking 30th in resource availability, it achieved the 5th highest outcomes. This suggests that the scarce inputs were used relatively more effectively than in other SSA countries. Angola's exceptional performance can be explained by the government's aggressive capital investment programme in the sector and institutional reforms after decades of persistent civil conflict. At the other end of the distribution, Sierra Leone (-18), Tanzania (-21), Congo Rep (-23), Gabon (-24), Madagascar (-30) and Equatorial Guinea (-35) recorded the worst results, displaying low WIDE scores. For these countries, the input drivers are stronger than the progress outcome, hence poor WIDE scores. This suggests that available resources, including ODA, are not being used effectively in these countries in generating the desired results.

The country case studies on Madagascar, Burkina Faso, Uganda, and Kenya involved discussions with relevant stakeholders in each country, to generate further insights into the performance of WSS. During the visits, both formal and informal meetings were held to evaluate how development projects were viewed from a range of perspectives. In Madagascar, the proportion of the national Malagasy population with access to improved

water sources, increased from 31 percent in 1990 to 41 percent in 2008. National access to improved sanitation increased only from eight percent in 1990 to 11 percent in 2008. It will be difficult for Madagascar to meet the MDG target. The major challenge for Madagascar is to make progress on sanitation provision, which is amongst the lowest on the continent. Another major cause for concern is the funding gap and the ability to absorb and effectively manage outside donor contributions. Capacity development of WSS institutions will be crucial if real progress is to be made.

In Kenya, projections indicate that by 2015, some 14 million Kenyans will still be without access to improved water sources. This is about six percent more than the MDG target of 11.5 million people – a difference of about 2.4 million people. For the sanitation sector, Kenya has a projected 26.6 million people lacking access to improved sanitation services in 2015. This is about 12 million people more than the 14.7 million targeted in the MDG. The WIDE analysis (value of 11) shows that given Kenya's scarce water resources, the country has utilised these effectively in generating reasonable outcomes in access to water and sanitation. Improved access to water and sanitation needs to be sustained by increased funding support.

For Uganda, access to improved water increased from 43 percent to 67 percent over the 18-year period to 2008. The increase in access to sanitation services was only from 39 percent to 48 percent. At the current progress rate, by 2015, only 23 percent of the population or 9.44 million Ugandans are likely to lack access to improved water source, as against an MDG target of 29 percent or 11.9 million people. With regard to sanitation, it is highly likely that the country will miss the MDG on sanitation by about 17 percent. Considering the current progress rate, Burkina Faso is among the few countries in Africa that will surpass the MDG target on access to improved water source. By 2015, only 10 percent of the population or 0.65 million Burkinabe will lack access to improved water source as against MDG target of 30 percent or 4.94 million people. However, Burkina Faso will miss access to the basic MDG sanitation target by 40 percent (6.59 million people) by 2015. Increased investment in sanitation facilities, particularly in rural areas of the country, is urgently needed.

Overall, in all the studied SSA countries, inadequate finance and capacities to implement the various national strategies are the major constraints to meeting the MDG targets in WSS. Progress in WSS are slowed down because the relevant departments are understaffed, not just in absolute numbers, but also in terms of the required technical qualification. Operation and Maintenance is a key factor for infrastructure sustainability and development aid effectiveness. However, inadequate operation and

maintenance programmes to support projects that have been donor financed are a major reason why development aid effectiveness is lower than it should be.

There is clear evidence that sanitation is often neglected or given less priority especially in the case study countries. This sub-sector needs to be supported both at community and household levels. Monitoring and Evaluation (M&E) system is generally weak. In most instances, M&E activities are generally limited to donor funded projects. There are also concerns with data quality and discrepancies in available data from many sources. This hinders effective and efficient planning and policy processes.

The determinants of performance in the WSS sector in general and the WSS ODA effectiveness identified by the study are of technical/biophysical, institutional, social, economic or financial nature. The technical/physical factors encompass a range of issues, including water resources endowment of countries; climate change posing flood and drought hazards, the geographic size of the countries, and so on. Water institutions and policies are key as they provide defined water laws and rights. Water policies relate to the declared statements and intended approaches of governments towards water-resources planning, development, allocation, and management. The social factor relates to population size (including growth rate and human settlement pattern), and socioeconomic and behavioural characteristics of the beneficiary communities. Furthermore, the general water supply and sanitation situation of the country, *ceteris paribus*, is conditioned by the level of economic development of the country and financial factors. However, corruption also shrinks the effective amount of financial resources meant for project implementation.

Given the fact that many facilities are not optimally operating after completion of projects, involvement of the Bank and other development partners beyond project term is worth considering. The design of innovative solution to resolve the issue of operation and maintenance is critical to increase results sustainability. A capital sum should be included right from the project proposal stage, to create a revolving fund that could then be used as the 'cash float' to support the operational maintenance of schemes. The weak technical and administrative capacities call for more donors' investment in capacity building for the sector's operators in both public and private sectors. Donor's support is also required to ensure budgetary discipline, increased transparency, fiscal decentralisation, and streamlining of the procurement process. Donors and recipient countries should leverage the contribution of the private sector, which can play important roles, such as capital mobilisation and capacity support. Greater participation of private sector is required as the available resources from user tariffs, government and development aid has not proven to be reliable sources of financing.

Increased investment in sanitation facilities, particularly in rural areas, is highly recommended. Greater attention should, however, be given to adequate public awareness and sensitisation, especially hygiene education, for the correct use of latrines and cleaning of hands after defecation. For the WSS sector to achieve greater performance and increase the effectiveness of development, the Bank and development partners have a role in the implementation of effective monitoring and evaluation systems. These would reduce or eliminate the divergence of information from different data sources in the WSS.



1 Introduction

Marco Stampini, Adeleke Salami and Caroline Sullivan

1.1 Renew Focus on Development Aid to Water and Sanitation

The water and sanitation sector has attracted increasing political attention, given its relevance to basic human development needs. The peak of this attention was marked by the launch of the UN Decade for Water and Sanitation of the 1990s, and of the UN Decade of Water for Life (2005-2015). The importance of the sector is further emphasised by its inclusion among the Millennium Development Goals (MDGs).

Countries are working to achieve Target 7c of the seventh MDG, which is “to halve, by 2015, the proportion of people without sustainable access to safe drinking-water and basic sanitation”. Consequently, net ODA disbursement flows to SSA have more than doubled in real terms since 1980, with most of the growth taking place during the last 10 years. In 2008, the region received 27.5 percent of the net ODA disbursement flows to developing countries, corresponding to USD 24 billion or 2.4 percent of SSA's GDP (OECD stat 2010). Gross ODA disbursements to the water and sanitation sector in SSA grew from USD07¹ 757 million in 1995 to USD07 1.438 billion in 2008.

Notwithstanding the increase in government and donors contributions to the WSS sector, funding is still low, especially in terms of total provision. This has constrained the implementation of planned projects and programmes. For instance, a World Bank study on Africa's infrastructure² estimated the annual financing needed to meet the water and sanitation MDG at USD 21 billion per year come 2015. In contrast, existing financial flows to the sector, including ODA at USD 7.6 billion per year, is far less than required. It is important to note that domestically funded spending accounted for over 50 per cent of total spending in WSS. However, capital investments are predominantly executed with donor funds. In light of the foregoing, the critical issue to understand is how African governments have utilised the limited available ODA allocated to Water Supply and Sanitation (WSS) sector to guarantee the highest possible performance and deliverance of WSS services to citizens.

1.2 Safe Drinking Water and Improved Sanitation Facilities in SSA

The increase in aid has however not been matched by commensurate progress in providing SSA populations with safe drinking water and improved sanitation facilities. In 2008, 328 million people in the region still lived without access to drinking water, 84 percent of which in rural areas, and 567 million individuals still lacked access to improved sanitation. The rate of access to improved water sources slowly increased from 49 percent in 1990 to 60 percent in 2008. Access to improved sanitation facilities grew even more slowly, from 27 percent to 31 percent over the same period (WHO/UNICEF, 2008). Access to piped water in sub-Saharan Africa remains generally low, and improved negligibly from 15 percent in 1990 to 16 percent in 2008.

Viewed at country level, however, the figures show significant variations with several good performers pulling ahead of the lot. The largest improvements in access to improved water were recorded by Malawi (from 40 percent in 1990 to 80 percent in 2008), Burkina Faso (from 41 to 76 percent), Namibia (from 64 to 92 percent), Ghana (from 54 to 82 percent), and Mali (from 29 to 57 percent)³. In terms of the level of access in 2008, the best performers are Botswana, Comoros, Djibouti, Gambia, Mauritius, Namibia and South Africa, all with rates above 90 percent. The main caveat lies in the fact that the definition of access used to measure progress towards the millennium development goal hides huge variability in the quality of service. For example, although both Botswana and Comoros record that 95 percent of the population has access to an improved water source in 2008, the share of access to piped water within the dwelling is 62 percent in the former country and 30 percent in the latter.

The largest increases in access to improved sanitation were recorded in Angola (from 25 percent in 1990 to 57 percent in 2008), Rwanda (from 23 to 54 percent), Botswana (from 36 to 60 percent) and Central African Republic (from 11 to 34 percent). Access to improved sanitation remains generally low. Only Botswana, Gambia, Mauritius and South Africa record rates of 60 percent

¹ Constant 2007 USD.

² See Foster V. and C. Briceño-Garmendia (2010)

or higher. In 10 countries (Benin, Burkina Faso, Eritrea, Ethiopia, Ghana, Madagascar, Niger, Sierra Leone, Chad and Togo), access to improved sanitation remains below 15 percent. The group of good performers varies between water and sanitation sectors. For example, Burkina Faso and Ghana achieved remarkable progress in access to water, while at the same time recording very small improvements in access to sanitation.

1.3 Objectives and Methodology

In the face of heterogeneous performance of different SSA countries, it becomes fundamental to understand the factors that determined success or failure in increasing access to water and sanitation. This will improve the targeting of future interventions, including those funded by development aid. It will also help to avoid the repetition of past errors. The main objective of this study is to identify the factors determining countries' performance in providing access to safe water and improved sanitation. At a more micro level, the study also attempts to identify project features that increase the likelihood of achieving and sustaining outcomes (see chapter 3 and 4 of this report).

To achieve the study objectives, we develop a standardised measurement framework – the Watsan Index of Development Effectiveness (WIDE). It compares drivers of progress in water access and sanitation with results achieved, and ranks countries by the level of outcome obtained per unit of available input. The WIDE is made up of two composite information layers: the Resources (input drivers such as aid received, GDP, water resources, and governance level), and the Progress Outcomes (access to water, access to sanitation, and progress in the two). It is used to rank countries in terms of performance in WSS sector. WIDE provides a structured and consistent framework on which the water and sanitation sector can be evaluated in terms of development inputs and subsequent outcomes. Given the vital and underpinning role played by water and sanitation, the issue of quantifying real progress in that sector is crucial for the future of Africa.

To measure inputs and outcomes, we make use of recently updated data from: (a) the OECD Creditor Reporting System, which contains information on Official Development Assistance (ODA) commitments to the WSS sector for the 1995-2008 period, and on

disbursement for the 2002-2008 period; (b) the United Nations Joint Monitoring Programme (JMP), which measures access to improved water sources and improved sanitation facilities, and which was updated in March 2010 to include estimates for 2008. Previously, the latest estimates were from 2004 or 2006.

The performance differences (as indicated by WIDE) were further explained by analysing the structure of the institutional framework and sector regulatory and the policy reforms. In an attempt to gain more insights into the factors influencing the effectiveness of development aid in the water and sanitation sector, a survey of practitioners and policy makers with multi-year work experience and beneficiaries has been carried out. The survey aims to identify the wide range of environmental, social, economic and political circumstances that determine success in the water and sanitation sector, and those that are likely to lead to failure. The results of the survey are summarised in Chapter 4 of this report.

1.4 Outline

The report is organised into five Chapters. The first Chapter presents the general background, objectives and methodology of the report. In the Second Chapter, we analyse the relationship between development aid dedicated to policies and projects in the field of water and sanitation in SSA countries, with progress made in improving access using WIDE and other relevant indicators. Chapter 3 presents the results of four country case studies (Burkina Faso, Kenya, Madagascar and Uganda), and reveals more detailed insights, beyond the general trends analysed in Chapter 2. The fourth chapter presents views of expert and beneficiaries on key success factors or failures of WSS sector and specific projects. The analysis is based on information collected through dedicated field missions, primarily on interviews with the main stakeholders in governments, water management authorities, and communities of beneficiaries. Finally, Chapter 5 synthesises the insights obtained and spells out specific recommendations for enhancing the performance of WSS sector and development aid effectiveness.

The report is an assessment of the realities of the WSS in SSA. It provides various innovative ideas and intervention strategies for improving the performance of WSS sector related projects and programmes.

⁴ Note that coverage statistics for water supply and sanitation are uncertain. For instance official rural water coverage may fail to account properly for constructed facilities that are not actually working. Thus the figures obtained from the supply side data may overstate the actual coverage figures



2 Development Aid and Access to Water Supply and Sanitation in Sub-Saharan Africa: An Overview of Trends

Marco Stampini and Caroline Sullivan

2.1 Introduction

This chapter presents the trends in development aid to SSA, focusing in particular on the water and sanitation sector. It reviews progress in access to water supply and sanitation, and analyses the relationship between resources (including aid) and results by applying the innovative WIDE index methodology.

2.2 Development Aid

Development aid budgets represent huge financial flows across the world. Indeed, aid is used for multiple purposes, from large infrastructure projects (including those in water storage, such as dams), to interventions in sectors such as health and education, social protection, environmental protection, etc. Increasingly, aid flows to support government budgets (budget support or performance based loans), often targeting improvements in governance and financial management.

Development aid is made up of Official Development Assistance (ODA), Other Official Flows (OOFs), and Private Flows (PFs). ODA represents flows of official financing to enhance economic development and welfare of developing countries, and are concessional in character, with a grant element of at least 25 percent (using a fixed 10 percent rate of discount)⁵. By convention, ODA flows are classified as “bilateral ODA” when aid is given directly by individual donor governments, or “multilateral ODA” when aid is disbursed via a number of multilateral agencies. OOFs are transactions by the official sector with countries on the list of aid recipients, but which do not meet the conditions for eligibility for ODA or official aid, either because they are not primarily aimed at development, or because they have a grant element of less than 25 percent. PFs represent flows at market terms financed out of private sector resources (i.e. changes in holdings of private long term assets held by residents of the reporting country) and private grants (i.e. grants by NGOs, net of subsidies received from the official sector).

In total, from 1990 to 2006, ODA accounted for 84.4 percent of aid to this region. It is vitally important to the development of many of the countries of SSA. An example may highlight their relevance: When donors cut all flows of development aid (but those with emergency focus) to Madagascar in 2010 in reaction to the 2009 coup, the government had to cut the budget of all ministries by a flat 40 percent in 2010. Investments (including hospitals and schools) suffered the brunt of the adjustment.

The most important bilateral ODA flows to SSA over the period of our analysis originate from the 22 countries of the Development Assistance Committee (DAC) of the Organisation for Economic Cooperation and Development (OECD)⁶. Other aid flows to SSA are from countries such as Taiwan, Qatar, and Kuwait. China has particularly replaced traditional partners in recent years as the main investor in some SSA countries. However, there is no standardised data on this. In SSA, between 1990 and 2006, private flows contributed 15.6 percent of total aid. OOFs were virtually zero. We therefore focus our analysis on ODA from DAC countries and from the main multilateral organisations⁷ as reported by OECD Stat.

2.2.1 Official Development Assistance to sub-Saharan Africa

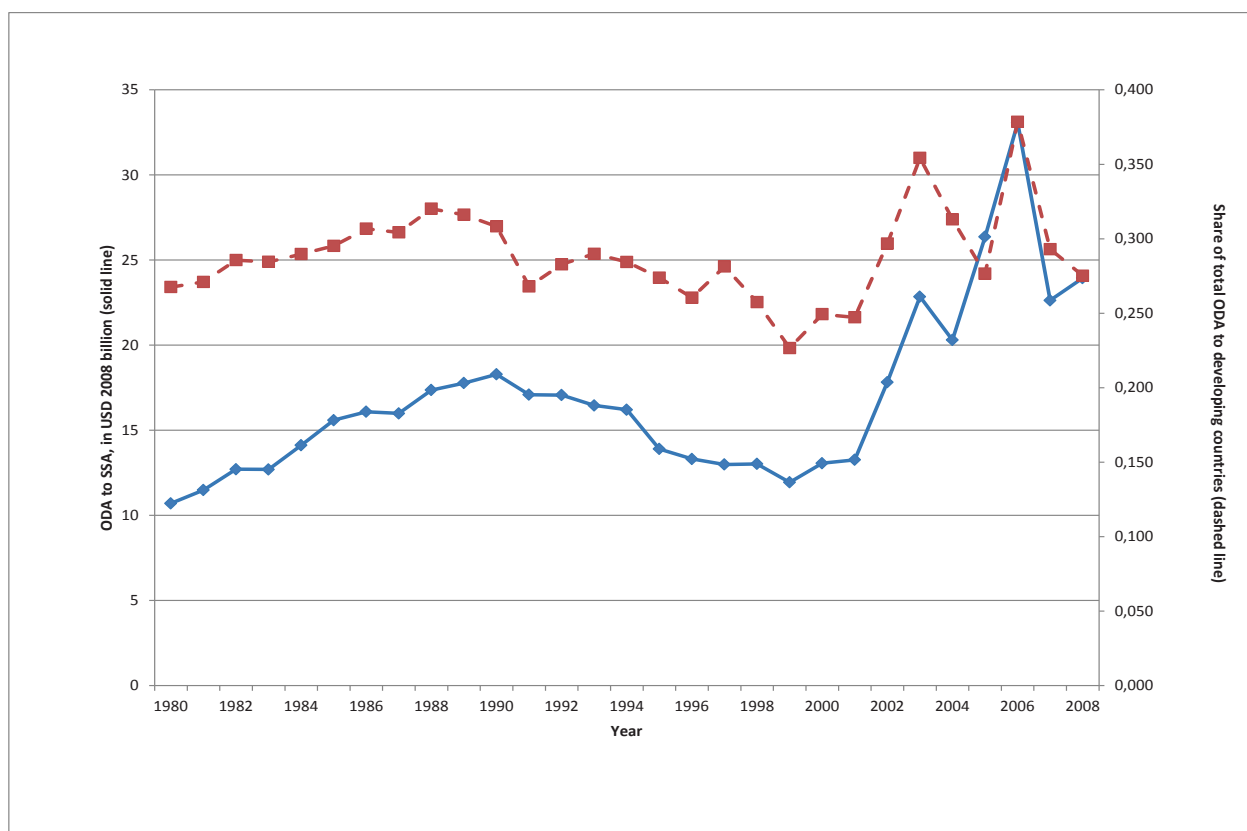
Net ODA disbursement flows to SSA more than doubled in real terms since 1980. Much of the growth took place during the last 10 years (Figure 1). Net ODA to SSA reached a sharp peak at USD08 33 billion in 2006, following the 2005 Summit of G8 countries in Gleneagles, Scotland. The pledge from this meeting was to double total aid volume by 2010, with half of this increase to be allocated to SSA. However, much of the increase recorded in 2006 was due to a one-off growth of bilateral aid in the form of debt relief, following the decision by the G8 finance ministers to cancel the debts of 15 Heavily Indebted Poor Countries (HIPCs) from Africa. In 2007, net ODA to SSA fell back to around the 2005 level.

⁵ For a definition of ODA, see OECD 2008, “Is it ODA?” (<http://www.oecd.org/dataoecd/21/21/34086975.pdf>). In the rest of this report, the terms ODA and aid are used as synonyms.

⁶ Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Japan, Luxembourg, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom, United States, European Community.

⁷ World Bank Group, African Development Bank Group, East African Development Bank (EADB), West African Development Bank (BOAD), European Commission (EC), European Investment Bank (EIB), International Fund for Agricultural Development (IFAD), Islamic Development Bank (IDB), Nordic Development Fund (NDF), The Nordic Investment Bank (NIB), OPEC Fund for International Development (OPEC Fund).

Figure 1 : Net official development assistance to sub-Saharan Africa



Source: OECD Stat, 2010

Although net ODA gives a better picture of the resources available for development (once repayments are netted out), it can only be calculated at the country level with no sector breakdown. This is due to the fact that repayments by the government are not necessarily subtracted from the sector that originally received the funds. Therefore, we use data on gross ODA from OECD's Creditor Reporting System, which contains information on commitments from 1995 and disbursement from 2002.

Table 1 presents undiscounted gross ODA disbursements for all sectors to the 48 SSA countries, expressed in constant USD 2007 (USD07). The main recipients are Tanzania, Nigeria, Ethiopia, Mozambique, Ghana and Uganda, all above USD07 20 billion over the period 1995-2008. The ranking is clearly affected both by the inclusion of debt relief, and by the size of the countries' population. When considering per-capita value, the main recipients are two small island states, Sao Tome & Principe and Cape Verde, followed by Mauritania, Zambia, and Senegal.

Table 1: Gross ODA disbursements to all sectors in SSA (million USD 2007)

Abb.	Country	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	Total
AGO	Angola	400	437	293	306	314	375	339	441	546	1,304	508	314	346	337	6,260
BDI	Burundi	93	44	35	69	164	166	153	219	247	397	409	454	458	490	3,398
BEN	Benin	315	216	185	229	443	477	279	258	354	437	421	1,389	456	558	6,016
BFA	Burkina Faso	461	281	399	428	670	664	763	496	585	626	747	2,010	890	900	9,920
BWA	Botswana	75	106	36	17	48	39	44	51	42	62	68	88	109	705	1,490
CAF	Central African Rep.	151	39	41	116	106	133	90	70	61	121	115	202	189	240	1,674
CIV	Côte d'Ivoire	921	691	373	1,386	626	595	273	1,529	512	375	335	369	295	756	9,037
CMR	Cameroon	366	665	523	1,110	781	654	1,076	773	1,239	1,014	717	3,357	2,019	1,040	15,335
COD	Congo, Dem. Rep.	223	144	127	109	116	231	407	1,188	6,742	1,929	2,158	2,263	1,325	1,719	18,681
COG	Congo, Rep.	62	179	121	58	187	71	140	113	97	105	1,846	447	136	471	4,035
COM	Comoros	20	9	48	45	18	35	47	40	32	29	47	35	44	37	485
CPV	Cape Verde	43	35	88	90	149	82	119	87	153	145	206	158	183	212	1,751
DJI	Djibouti	23	27	79	66	63	95	62	79	89	66	84	78	106	100	1,016
ERI	Eritrea	144	180	193	151	87	466	323	235	319	242	374	134	144	128	3,121
ETH	Ethiopia	922	809	903	2,079	585	1,481	1,528	1,385	1,712	1,841	2,006	5,987	2,417	3,067	26,721
GAB	Gabon	110	98	138	135	68	88	137	141	165	96	128	91	94	84	1,573
GHA	Ghana	954	994	631	1,114	1,532	1,019	1,482	790	1,028	2,292	1,681	5,633	1,096	1,222	21,466
GIN	Guinea	239	292	565	337	375	231	614	301	288	314	264	243	246	412	4,722
GMB	Gambia	17	24	50	127	130	78	139	52	46	50	65	62	80	281	1,200
GNB	Guinea-Bissau	118	207	124	42	96	150	99	70	175	85	144	108	123	132	1,672
GNQ	Equatorial Guinea	4	5	27	58	32	36	34	33	29	37	49	36	33	33	446
KEN	Kenya	371	549	422	283	431	981	496	519	718	765	820	1,082	1,345	1,456	10,238
LBR	Liberia	29	46	68	112	56	29	60	65	118	229	250	267	733	1,142	3,204
LSO	Lesotho	46	51	25	53	78	45	72	94	95	81	74	84	124	144	1,066
MDG	Madagascar	248	310	1,004	910	1,026	670	869	486	702	1,308	1,218	3,094	868	741	13,455
MLI	Mali	464	467	534	619	578	887	788	594	636	706	843	2,627	980	865	11,587
MOZ	Mozambique	1,031	867	1,163	1,014	1,574	2,094	1,684	3,074	1,190	1,226	1,396	3,269	1,691	1,852	23,124
MRT	Mauritania	425	220	208	289	409	367	630	325	275	269	306	1,084	313	285	5,404
MUS	Mauritius	24	22	12	58	32	22	21	51	42	53	60	65	94	150	704
MWI	Malawi	718	1,051	585	1,500	988	1,417	715	438	588	582	657	3,050	1,722	787	14,799
NAM	Namibia	131	123	80	154	87	124	107	131	150	164	119	162	207	197	1,938
NER	Niger	189	163	313	506	207	547	575	339	500	588	570	1,752	497	544	7,290
NGA	Nigeria	31	60	18	86	184	973	753	345	383	596	7,373	13,399	2,019	1,398	27,620
RWA	Rwanda	387	465	435	541	476	777	447	459	387	527	685	1,848	677	841	8,952
SDN	Sudan	140	118	94	295	281	344	249	304	468	965	1,909	1,993	1,966	2,129	11,255
SEN	Senegal	702	586	692	778	1,316	1,225	948	609	595	1,239	888	3,147	777	980	14,483
SLE	Sierra Leone	118	178	85	113	255	471	472	385	338	320	359	354	1,058	350	4,855
SOM	Somalia	43	114	58	61	125	118	142	155	192	213	243	406	371	710	2,952
STP	São Tomé e Príncipe	99	22	23	14	54	78	84	32	40	34	39	32	110	59	719
SWZ	Swaziland	47	18	7	18	15	25	51	21	34	28	63	47	53	54	481
SYC	Seychelles	6	3	9	26	4	4	6	5	7	7	11	13	5	5	111
TCD	Chad	211	166	181	209	280	461	284	291	298	345	451	332	372	465	4,345
TGO	Togo	142	166	147	162	106	104	66	80	76	77	95	92	133	387	1,834
TZA	Tanzania, United Rep.	697	805	1,424	1,403	1,220	1,930	2,594	1,590	1,783	1,923	1,717	6,029	2,739	2,209	28,061
UGA	Uganda	773	665	1,106	1,280	1,112	1,935	1,522	931	1,137	1,283	1,336	5,154	1,627	1,575	21,436
ZAF	South Africa	426	547	445	610	441	483	590	485	542	498	717	856	980	1,089	8,712
ZMB	Zambia	1,128	652	570	780	1,202	1,757	620	809	958	1,200	1,841	4,374	925	1,047	17,862
ZWE	Zimbabwe	498	561	221	498	210	273	175	238	226	213	273	295	463	585	4,727
Total		14,787	14,473	14,909	20,445	19,337	25,307	23,172	21,204	26,938	27,008	36,684	78,365	33,637	34,968	391,234

Source: Authors' calculations based on OECD's Creditor Reporting System (March 2010). Note: Figures for the 1995-2001 period are estimated from the relationship between disbursements and commitments over the 2002-2008 period

2.2.2 Official Development Assistance to the Water and Sanitation Sector

In spite of its importance, the share of development aid allocated to water and sanitation has been low. In general, investment in water and sanitation comes from in-country publicly funded projects, and from international loans and aid. In many countries, the volume of aid-related funds is less than the finance provided domestically. Nevertheless, donor funding is crucial in many parts of Africa. The commitment to the achievement of the MDGs, reiterated during the 2002 World Summit on Sustainable Development in Johannesburg, increased interest in aid commitments to WSS. The early aspirations of the UN Decade for Water and Sanitation of the 1990s were clearly not achieved⁸. The initiative was later strengthened by the establishment of the UN Decade of Water for Life

(2005-2015). The initiatives went a long way in attracting funding to the sector. Between 2001 and 2006, the region received 24 percent of global aid to the water and sanitation sector.⁹

However, when the figures are deflated by population, the trend is less impressive. Per-capita ODA to the sector grew from USD07 1.28 a year in 1995 to USD07 1.75 in 2008. Furthermore, in spite of increasing international support, aid provided for WSS projects as a percentage of overall ODA only reached 4.1 percent in 2008, rising from just 2.8 percent of total ODA in 2002 (Figure 2). Overall, this indicates that while the level of aid available to the water and sanitation sector has been increasing in real terms, it is still the case that the allocation to that sector is just a small fraction of the total, which may not be sufficient to meet the targets of the MDGs.

Figure 2: Gross official development assistance to Water and Sanitation in SSA



Source: Authors' calculations based on OECD's Creditor Reporting System and AfDB Data Platform

⁸ In spite of increasing access to clean water for 1.2 billion people, and providing sanitation for 770 million, the earlier UN Drinking Water Supply and Sanitation Decade between 1981 and 1990 had failed to deliver water and sanitation to all. Nevertheless, "Despite the failure to meet the quantitative goals, much was learnt from the experience of the water and sanitation decade. There was further realisation of the importance of comprehensive and balanced country-specific approaches to the water and sanitation problem (Choguill et al., 1993). Some of these lessons certainly resonate today as we still fail to deliver on these goals.

⁹ This is to be compared with 20 percent in Far East Asia, 19 percent in South and Central Asia, 16 percent in the Middle East, eight percent in Northern Africa and six percent in America.

The inter-sectoral breakdown provides interesting information on the allocation of ODA to water and sanitation. This is categorised in the following seven sub-groups:

- 1) Water resources policy and administrative management, including water sector policy, planning and programmes; water legislation and management; institution capacity building and advice; water supply assessments and studies; groundwater, water quality and watershed studies; hydrogeology;
- 2) Water resources protection, including surface waters (rivers, lakes, etc.); conservation and rehabilitation of groundwater; prevention of water contamination from agro-chemicals, and industrial effluents;
- 3) Water supply and sanitation - large systems, including water desalination plants; intakes, storage, treatment, pumping stations, conveyance and distribution systems; sewerage; domestic and industrial waste water treatment plants;
- 4) Basic drinking water supply and basic sanitation, including water supply and sanitation through low-cost technologies, such as hand pumps, spring catchment, gravity-fed systems, rainwater collection, storage tanks, small distribution systems; latrines, small-bore sewers, on-site disposal (septic tanks);
- 5) River development, including integrated river basin projects; river flow control; dams and reservoirs; excluding dams primarily for irrigation and hydropower and activities related to river transport;

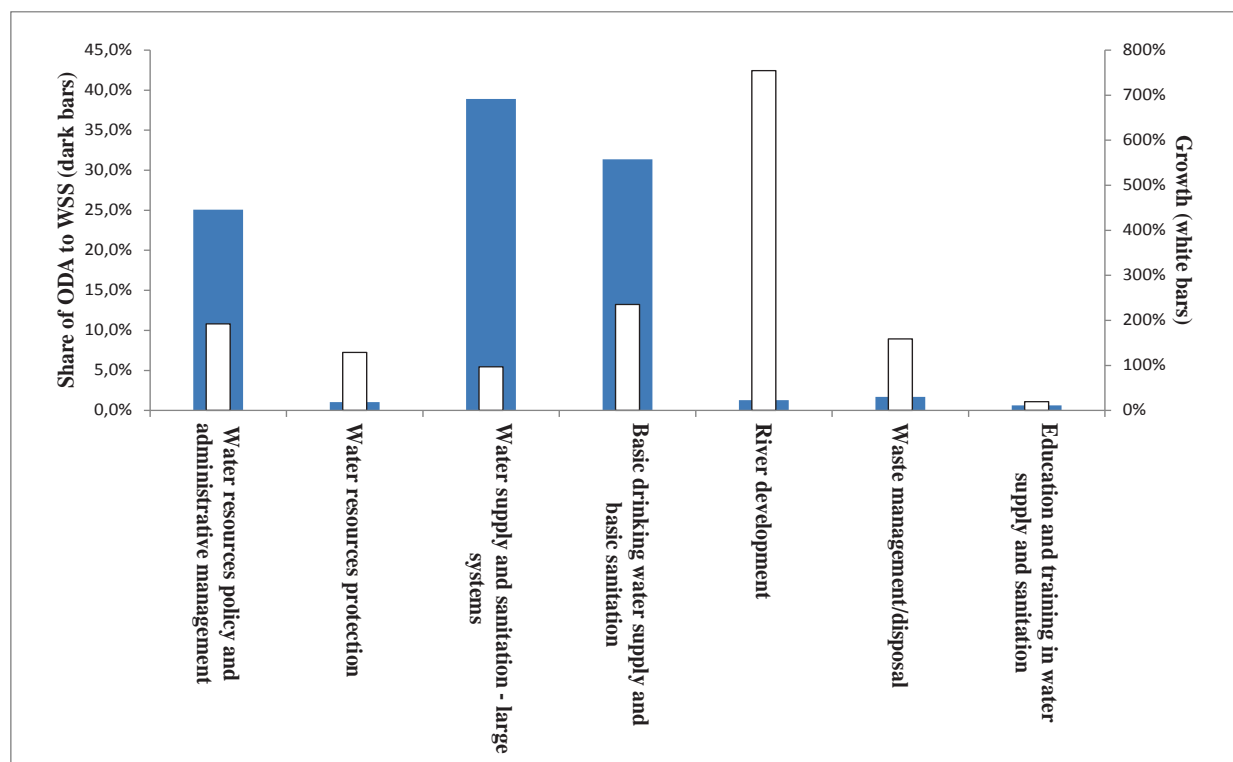
- 6) Waste management/disposal, including municipal and industrial solid waste management, including hazardous and toxic waste; collection, disposal and treatment; landfill areas; composting and use; and

- 7) Education and training in water supply and sanitation.

Over the 2002-2008 period, large water supply and sanitation systems received the largest share of ODA (39 percent), followed by basic systems (31 percent) and by water resources policy and administrative management (25 percent) (Figure 3). It is interesting that the remaining four sub-sectors, Water Resources Protection, River Development, Waste Management, and Education and Training in WSS, attract an extremely small percentage of ODA to water and sanitation in SSA (five percent). The lowest share goes to education and training in water supply and sanitation (0.6 percent). An analysis of the trends points to widening differentials, with the flow for basic drinking water and sanitation growing by 235 percent between 2002 and 2008, and the flows for education and training increasing by only 19 percent over the same period. Yet, evidence shows that training and awareness-raising, especially in terms of water and sanitation practices and hygiene, play a fundamental role in determining the success of water and sanitation projects. Therefore, a fair distribution of aid across various sub-sectors is essential for sustainable development in the water sector.

It would be useful to add a further classification in terms of two main categories of “hard tools” (e.g. infrastructures) and “soft tools” (e.g. education and training, water management policies). Such a breakdown could be applied to each of the seven sub-sectors in order to highlight the lack of adequate commitment by donors on awareness-raising, and human and institutional capacity development. This could also be used to show whether projects that dedicate a higher share of the budget to soft side investments perform better.

Figure 3: Gross ODA disbursements to WSS sector over the period 2002-2008, by project typology



Source: OECD Creditor Reporting System

The ranking of the main recipients of ODA to WSS differs remarkably from the picture portrayed for total ODA flows. The highest amounts went to Senegal, Ghana, Burkina Faso, Uganda, Tanzania, Mozambique, and Zimbabwe, all above USD07 500 million over the 1995-2008 period (Table 2). When accounting for population size, the island states emerge as the main recipients. The highest amounts are recorded in Sao Tome and Principe, Mauritius, and Seychelles, followed by Gabon, Equatorial Guinea, Senegal, and Cape Verde, all above USD07 100 per capita over the 1995-2008 period (Table 3). This is likely to be due to scale effects, and to the relatively high

cost of projects in countries with small populations. In relative terms, fourteen countries showed greater focus than average on water and sanitation issues, dedicating more than five percent of total ODA to the sector (Table 4). These countries are Benin (six percent), Burkina Faso (9.5 percent), Botswana (5.7 percent), Gabon (11.2 percent), Guinea (8.9 percent), Equatorial Guinea (15.2 percent), Lesotho (6.7 percent), Mauritius (34.4 percent), Namibia (5.3 percent), Niger (six percent), Senegal (8.8 percent), Sao Tome and Principe (6.8 percent), Swaziland (9.4 percent), and Seychelles (13.6 percent).

Table 2: Gross ODA disbursement to the water and sanitation sector in SSA (million USD 2007)

Abb.	Country	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	Total
AGO	Angola	1.42	3.74	3.83	1.49	3.34	13.88	5.88	17.51	8.99	11.00	18.53	15.20	41.76	21.41	168
BDI	Burundi	0.42	0.74	0.04	0.03	0.07	5.22	6.30	4.46	4.46	4.59	5.97	7.15	12.37	14.74	67
BEN	Benin	25.46	11.25	4.66	18.64	0.34	23.99	6.30	11.43	15.26	44.25	51.25	39.60	51.08	59.12	363
BFA	Burkina Faso	56.08	3.57	15.54	61.34	152.41	74.40	157.51	29.66	47.49	55.35	68.68	84.95	79.51	56.45	943
BWA	Botswana	52.47	15.87	1.86	1.00	2.22	2.25	2.55	2.19	0.21	0.37	0.09	0.16	1.26	2.03	85
CAF	Central African Rep.	3.10	0.73	11.50	0.81	6.79	0.14	0.19	1.01	0.25	0.19	0.36	0.93	1.57	1.82	29
CTV	Côte d'Ivoire	15.29	14.58	28.72	9.75	0.25	0.62	15.02	10.32	3.68	5.06	3.20	1.21	4.48	7.44	120
CMR	Cameroon	14.73	13.03	0.70	0.22	1.16	1.91	2.60	6.32	3.62	5.21	3.79	2.85	4.22	17.24	78
COD	Congo, Dem. Rep.	0.17	4.09	0.75	0.19	0.07	0.63	0.49	4.39	9.44	16.83	37.40	38.52	39.43	58.71	211
COG	Congo, Rep.	0.55	1.59	0.12	0.04	0.05	0.36	1.25	1.77	7.35	2.86	3.09	1.94	1.27	1.70	24
COM	Comoros	0.19	0.67	2.44	2.28	0.90	1.78	6.01	1.87	1.37	0.68	1.24	1.35	1.62	1.24	24
CPV	Cape Verde	1.10	1.48	1.13	7.64	0.22	0.47	6.10	5.52	3.32	8.26	6.49	5.72	3.67	5.99	57
DJI	Djibouti	2.34	2.83	0.00	0.38	0.06	0.73	2.24	4.93	5.99	3.10	2.24	1.18	1.69	2.95	31
ERI	Eritrea	0.32	4.78	2.43	9.99	4.04	0.29	3.92	5.18	1.22	1.66	5.13	7.92	3.45	7.70	58
ETH	Ethiopia	3.21	22.89	5.05	31.97	9.70	4.53	44.78	21.92	32.94	31.65	29.01	57.61	75.65	102.09	473
GAB	Gabon	2.77	7.20	38.54	19.48	7.67	9.89	15.44	18.85	0.04	0.06	0.17	0.03	40.50	16.18	177
GHA	Ghana	38.49	121.71	64.07	37.56	86.29	47.29	46.55	56.66	51.31	58.23	68.25	79.24	118.80	117.22	992
GIN	Guinea	18.43	55.73	76.71	3.19	36.30	10.66	82.93	13.47	28.84	26.03	23.43	16.95	14.45	13.58	421
GMB	Gambia	0.61	0.86	0.45	4.63	1.52	0.18	0.23	0.94	0.71	1.55	2.11	5.53	15.80	8.53	44
GNB	Guinea-Bissau	18.84	0.07	0.55	1.22	5.76	0.39	0.47	3.53	4.15	2.91	2.41	2.38	3.31	2.79	49
GNQ	Equatorial Guinea	0.67	0.63	0.03	48.56	0.29	0.24	0.17	7.43	1.15	3.26	1.41	3.20	0.65	0.02	68
KEN	Kenya	13.78	16.40	20.44	3.00	17.21	9.34	15.97	23.40	25.16	30.75	35.88	38.80	50.82	94.11	395
LBR	Liberia	0.13	0.20	0.08	0.19	0.68	0.02	0.27	0.25	0.00	0.38	0.98	0.65	3.14	7.18	14
LSO	Lesotho	1.60	0.47	0.93	5.39	0.36	1.21	1.46	3.97	9.83	6.33	7.24	5.35	9.13	17.62	71
MDG	Madagascar	0.51	7.76	22.50	2.73	0.01	15.02	22.10	9.25	18.25	21.82	25.25	14.03	12.66	16.47	188
MLI	Mali	10.78	28.77	31.33	1.53	13.49	34.95	9.17	21.45	18.82	23.08	33.37	37.08	37.98	43.79	346
MOZ	Mozambique	6.50	11.95	17.20	42.82	111.03	31.06	24.20	45.92	39.41	35.03	70.20	52.76	72.63	76.61	637
MRT	Mauritania	6.39	0.62	26.10	16.86	4.08	1.50	19.77	5.44	11.76	8.45	6.60	11.24	12.06	20.67	152
MUS	Mauritius	25.28	7.39	1.41	80.68	0.48	9.04	15.61	24.48	11.49	18.93	11.20	15.51	12.44	8.72	243
MWI	Malawi	73.94	1.72	26.20	12.43	3.14	18.72	20.79	27.21	24.21	12.90	15.81	9.65	15.44	13.03	275
NAM	Namibia	8.86	13.55	14.14	11.06	2.04	2.16	11.59	2.74	5.97	7.53	2.36	4.19	5.90	10.98	103
NER	Niger	27.39	6.73	22.51	43.10	6.61	22.80	101.53	14.68	25.07	40.69	38.29	33.77	21.82	35.38	440
NGA	Nigeria	1.90	0.01	0.09	0.05	0.93	32.43	37.47	10.07	12.44	25.68	49.02	55.93	85.01	104.01	415
RWA	Rwanda	0.90	8.13	0.69	13.85	0.76	31.76	10.05	6.04	5.57	19.31	26.45	31.87	38.35	35.50	229
SDN	Sudan	0.21	0.47	1.23	0.86	0.50	2.63	4.71	5.54	1.94	1.58	11.07	18.15	20.87	20.91	91
SEN	Senegal	171.26	181.63	25.85	66.51	8.83	30.95	360.13	39.89	47.34	83.06	62.53	43.14	75.48	71.70	1,268
SLE	Sierra Leone	34.04	0.49	0.28	0.26	2.45	3.44	2.57	6.53	2.43	3.30	7.71	5.63	15.12	13.17	97
SOM	Somalia	0.37	0.99	1.91	0.22	3.95	1.91	1.66	1.67	1.68	1.30	1.59	4.05	2.46	1.78	26
STP	São Tomé e Príncipe	7.59	1.66	1.74	2.09	4.14	20.01	3.78	1.65	1.35	0.26	1.80	0.88	0.78	0.86	49
SWZ	Swaziland	17.91	5.28	0.74	4.23	2.67	0.08	5.09	0.18	1.63	3.17	2.61	0.68	0.04	0.94	45
SYC	Seychelles	2.07	0.02	0.08	2.93	0.61	0.60	0.94	0.77	0.05	0.26	1.27	5.30	0.04	0.19	15
TCD	Chad	0.01	7.86	6.05	15.66	23.30	20.89	2.35	15.16	19.58	12.15	18.69	21.00	18.86	23.77	205
TGO	Togo	1.19	17.19	0.34	32.26	10.64	0.60	4.30	1.59	6.47	6.37	1.23	1.29	1.40	2.78	88
TZA	Tanzania, United Rep.	4.40	26.14	14.02	21.40	9.29	24.17	47.98	31.52	71.37	36.79	59.41	95.19	127.47	139.61	709
UGA	Uganda	16.91	86.17	60.91	24.94	28.52	38.76	62.41	27.93	67.63	61.65	94.27	87.63	92.30	60.57	811
ZAF	South Africa	0.41	40.81	3.21	26.89	2.72	5.05	4.78	11.97	9.48	13.46	38.13	90.42	12.10	49.08	309
ZMB	Zambia	65.09	6.14	56.54	38.26	5.58	91.29	27.77	25.20	38.49	54.13	56.16	56.41	51.98	36.93	610
ZWE	Zimbabwe	0.99	9.53	5.78	7.94	5.15	0.71	0.52	1.87	1.81	0.66	1.07	1.91	0.21	12.52	51
Total		757	776	621	739	589	651	1,226	596	711	812	1,014	1,116	1,313	1,438	12,359

Source: Authors' calculations based on OECD's Creditor Reporting System (March 2010). Note: Figures for the period 1995-2001 are estimated from the relationship between disbursements and commitments over the 2002-2008 period.

Table 3: Per capita gross ODA disbursement to the water and sanitation sector in SSA (USD 2007)

Abb.	Country	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	Total
AGO	Angola	0.11	0.29	0.29	0.11	0.24	0.97	0.40	1.15	0.58	0.68	1.12	0.89	2.37	1.19	10.39
BDI	Burundi	0.07	0.12	0.01	0.00	0.01	0.81	0.95	0.66	0.64	0.64	0.81	0.94	1.58	1.83	9.06
BEN	Benin	4.45	1.91	0.77	2.98	0.05	3.60	0.92	1.61	2.07	5.81	6.51	4.87	6.09	6.83	48.46
BFA	Burkina Faso	5.55	0.34	1.45	5.58	13.49	6.36	13.13	2.39	3.68	4.16	5.01	5.98	5.41	3.71	76.25
BWA	Botswana	33.85	10.00	1.14	0.60	1.31	1.31	1.46	1.23	0.12	0.20	0.05	0.08	0.67	1.06	53.08
CAF	Central African Rep.	0.93	0.21	3.28	0.23	1.85	0.04	0.05	0.26	0.06	0.05	0.09	0.22	0.37	0.42	8.06
CIV	Côte d'Ivoire	1.02	0.94	1.81	0.59	0.02	0.04	0.85	0.57	0.20	0.27	0.17	0.06	0.22	0.36	7.11
CMR	Cameroon	1.04	0.91	0.05	0.01	0.07	0.12	0.16	0.38	0.21	0.30	0.21	0.16	0.23	0.90	4.76
COD	Congo, Dem. Rep.	0.00	0.09	0.02	0.00	0.00	0.01	0.01	0.08	0.17	0.29	0.63	0.63	0.63	0.91	3.49
COG	Congo, Rep.	0.20	0.56	0.04	0.01	0.02	0.12	0.40	0.56	2.26	0.86	0.91	0.56	0.36	0.47	7.31
COM	Comoros	0.38	1.32	4.72	4.32	1.67	3.23	10.65	3.25	2.32	1.13	2.02	2.15	2.51	1.88	41.56
CPV	Cape Verde	2.77	3.65	2.72	18.06	0.52	1.08	13.65	12.13	7.19	17.58	13.60	11.80	7.47	12.01	124.22
DJI	Djibouti	3.75	4.40	0.00	0.56	0.08	1.00	3.00	6.46	7.70	3.92	2.78	1.44	2.03	3.47	40.60
ERI	Eritrea	0.10	1.47	0.73	2.92	1.14	0.08	1.03	1.31	0.30	0.39	1.15	1.71	0.72	1.56	14.60
ETH	Ethiopia	0.06	0.39	0.08	0.51	0.15	0.07	0.67	0.32	0.46	0.44	0.39	0.75	0.96	1.27	6.52
GAB	Gabon	2.55	6.46	33.63	16.57	6.37	8.02	12.24	14.63	0.03	0.05	0.13	0.02	28.48	11.17	140.34
GHA	Ghana	2.24	6.88	3.52	2.02	4.52	2.43	2.33	2.76	2.44	2.72	3.12	3.54	5.19	5.01	48.70
GIN	Guinea	2.46	7.24	9.72	0.40	4.41	1.27	9.70	1.55	3.25	2.88	2.54	1.80	1.50	1.38	50.12
GMB	Gambia	0.56	0.76	0.39	3.82	1.21	0.14	0.17	0.68	0.49	1.05	1.38	3.52	9.78	5.14	29.07
GNB	Guinea-Bissau	16.16	0.06	0.45	0.98	4.52	0.30	0.35	2.58	2.96	2.02	1.63	1.58	2.15	1.77	37.51
GNQ	Equatorial Guinea	1.49	1.35	0.07	97.57	0.56	0.45	0.31	13.25	1.99	5.50	2.31	5.12	1.02	0.03	131.01
KEN	Kenya	0.50	0.58	0.70	0.10	0.56	0.30	0.49	0.71	0.74	0.88	1.00	1.05	1.34	2.43	11.39
LBR	Liberia	0.07	0.10	0.03	0.08	0.26	0.01	0.09	0.08	0.00	0.12	0.29	0.19	0.87	1.89	4.07
LSO	Lesotho	0.93	0.27	0.52	2.95	0.20	0.64	0.76	2.05	5.02	3.20	3.63	2.66	4.49	8.60	35.92
MDG	Madagascar	0.04	0.57	1.61	0.19	0.00	0.98	1.41	0.57	1.09	1.28	1.43	0.78	0.68	0.86	11.49
MLI	Mali	1.13	2.96	3.16	0.15	1.31	3.33	0.85	1.95	1.67	1.99	2.83	3.06	3.06	3.45	30.89
MOZ	Mozambique	0.41	0.73	1.02	2.48	6.24	1.71	1.29	2.38	1.99	1.73	3.38	2.47	3.32	3.42	32.54
MRT	Mauritania	2.81	0.27	10.89	6.85	1.61	0.58	7.39	1.98	4.15	2.91	2.21	3.67	3.84	6.43	55.58
MUS	Mauritius	22.40	6.47	1.22	68.98	0.40	7.57	12.93	20.08	9.34	15.24	8.95	12.29	9.79	6.81	202.46
MWI	Malawi	7.32	0.17	2.45	1.12	0.27	1.59	1.70	2.16	1.88	0.97	1.15	0.69	1.07	0.88	23.42
NAM	Namibia	5.47	8.16	8.31	6.34	1.14	1.18	6.23	1.44	3.08	3.82	1.17	2.04	2.82	5.16	56.38
NER	Niger	2.94	0.70	2.26	4.18	0.62	2.07	8.91	1.24	2.05	3.23	2.92	2.48	1.55	2.41	37.58
NGA	Nigeria	0.02	0.00	0.00	0.00	0.01	0.26	0.29	0.08	0.09	0.19	0.35	0.39	0.57	0.69	2.93
RWA	Rwanda	0.17	1.44	0.11	2.04	0.10	3.99	1.21	0.71	0.64	2.19	2.94	3.46	4.06	3.65	26.70
SDN	Sudan	0.01	0.01	0.04	0.03	0.01	0.08	0.13	0.15	0.05	0.04	0.29	0.46	0.52	0.51	2.32
SEN	Senegal	19.78	20.41	2.83	7.08	0.92	3.13	35.31	3.84	4.42	7.55	5.53	3.72	6.34	5.88	126.73
SLE	Sierra Leone	8.53	0.12	0.07	0.06	0.59	0.81	0.59	1.44	0.51	0.67	1.51	1.07	2.79	2.37	21.14
SOM	Somalia	0.06	0.15	0.28	0.03	0.55	0.26	0.22	0.21	0.21	0.16	0.19	0.47	0.28	0.20	3.27
STP	São Tomé e Príncipe	59.32	12.75	13.08	15.42	30.06	140.00	26.53	11.35	9.13	1.76	11.77	5.70	4.93	5.35	347.16
SWZ	Swaziland	18.47	5.32	0.73	4.07	2.52	0.08	4.66	0.17	1.47	2.84	2.32	0.60	0.04	0.80	44.07
SYC	Seychelles	27.36	0.28	1.07	37.00	7.56	7.39	11.49	9.40	0.66	3.19	15.37	63.87	0.51	2.23	187.37
TCO	Chad	0.00	1.07	0.80	2.00	2.87	2.49	0.27	1.68	2.09	1.25	1.87	2.04	1.78	2.18	22.38
TGO	Togo	0.27	3.76	0.07	6.57	2.09	0.11	0.80	0.29	1.14	1.09	0.21	0.21	0.22	0.43	17.25
TZA	Tanzania, United Rep.	0.15	0.85	0.44	0.66	0.28	0.71	1.37	0.88	1.93	0.97	1.52	2.37	3.09	3.28	18.50
UGA	Uganda	0.81	3.99	2.73	1.08	1.20	1.59	2.48	1.07	2.51	2.22	3.28	2.95	3.02	1.91	30.85
ZAF	South Africa	0.01	0.97	0.07	0.62	0.06	0.11	0.11	0.26	0.20	0.28	0.79	1.86	0.25	0.99	6.58
ZMB	Zambia	7.15	0.65	5.86	3.86	0.55	8.69	2.60	2.29	3.44	4.71	4.80	4.70	4.23	2.93	56.45
ZWE	Zimbabwe	0.08	0.80	0.48	0.65	0.41	0.06	0.04	0.15	0.14	0.05	0.09	0.15	0.02	1.00	4.13
Total		1.28	1.28	1.00	1.15	0.90	0.97	1.77	0.84	0.98	1.09	1.33	1.43	1.64	1.75	17.39

Source: Authors' calculations based on OECD's Creditor Reporting System (March 2010) and AfDB Data Platform. Note: Figures for the period 1995-2001 are estimated from the relationship between disbursements and commitments over the 2002-2008 period.

Table 4: Share of gross ODA disbursement to the water and sanitation sector in SSA

Abb.	Country	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	Average
AGO	Angola	0.004	0.009	0.013	0.005	0.011	0.037	0.017	0.040	0.016	0.008	0.037	0.048	0.121	0.064	0.027
BDI	Burundi	0.004	0.017	0.001	-	-	0.031	0.041	0.020	0.018	0.012	0.015	0.016	0.027	0.030	0.020
BEN	Benin	0.081	0.052	0.025	0.081	0.001	0.050	0.023	0.044	0.043	0.101	0.122	0.028	0.112	0.106	0.060
BFA	Burkina Faso	0.122	0.013	0.039	0.143	0.227	0.112	0.206	0.060	0.081	0.088	0.092	0.042	0.089	0.063	0.095
BWA	Botswana	0.700	0.150	0.052	0.058	0.046	0.058	0.058	0.043	0.005	0.006	0.001	0.002	0.012	0.003	0.057
CAF	Central African Rep.	0.021	0.019	0.279	0.007	0.064	0.001	0.002	0.014	0.004	0.002	0.003	0.005	0.008	0.008	0.018
CIV	Côte d'Ivoire	0.017	0.021	0.077	0.007	-	0.001	0.055	0.007	0.007	0.014	0.010	0.003	0.015	0.010	0.013
CMR	Cameroon	0.040	0.020	0.001	-	0.001	0.003	0.002	0.008	0.003	0.005	0.005	0.001	0.002	0.017	0.005
COD	Congo, Dem. Rep.	0.001	0.028	0.006	0.002	0.001	0.003	0.001	0.004	0.001	0.009	0.017	0.017	0.030	0.034	0.011
COG	Congo, Rep.	0.009	0.009	0.001	0.001	-	0.005	0.009	0.016	0.076	0.027	0.002	0.004	0.009	0.004	0.006
COM	Comoros	0.010	0.074	0.051	0.051	0.051	0.051	0.129	0.047	0.043	0.023	0.027	0.038	0.037	0.033	0.049
CPV	Cape Verde	0.025	0.043	0.013	0.084	0.001	0.006	0.051	0.064	0.022	0.057	0.031	0.036	0.020	0.028	0.033
DJI	Djibouti	0.102	0.104	-	0.006	0.001	0.008	0.036	0.062	0.068	0.047	0.027	0.015	0.016	0.029	0.030
ERI	Eritrea	0.002	0.027	0.013	0.066	0.046	0.001	0.012	0.022	0.004	0.007	0.014	0.059	0.024	0.060	0.019
ETH	Ethiopia	0.003	0.028	0.006	0.015	0.017	0.003	0.029	0.016	0.019	0.017	0.014	0.010	0.031	0.033	0.018
GAB	Gabon	0.025	0.073	0.280	0.145	0.112	0.112	0.112	0.134	-	0.001	0.001	-	0.431	0.192	0.112
GHA	Ghana	0.040	0.122	0.101	0.034	0.056	0.046	0.031	0.072	0.050	0.025	0.041	0.014	0.108	0.096	0.046
GIN	Guinea	0.077	0.191	0.136	0.009	0.097	0.046	0.135	0.045	0.100	0.083	0.089	0.070	0.059	0.033	0.089
GMB	Gambia	0.036	0.036	0.009	0.036	0.012	0.002	0.002	0.018	0.016	0.031	0.033	0.089	0.198	0.030	0.036
GNB	Guinea-Bissau	0.159	-	0.004	0.029	0.060	0.003	0.005	0.050	0.024	0.034	0.017	0.022	0.027	0.021	0.029
GNQ	Equatorial Guinea	0.152	0.118	0.001	0.831	0.009	0.007	0.005	0.228	0.040	0.088	0.029	0.088	0.020	0.001	0.152
KEN	Kenya	0.037	0.030	0.048	0.011	0.040	0.010	0.032	0.045	0.035	0.040	0.044	0.036	0.038	0.065	0.039
LBR	Liberia	0.004	0.004	0.001	0.002	0.012	0.001	0.004	0.004	-	0.002	0.004	0.002	0.004	0.006	0.004
LSO	Lesotho	0.034	0.009	0.037	0.102	0.005	0.027	0.020	0.042	0.103	0.078	0.098	0.064	0.074	0.122	0.067
MDG	Madagascar	0.002	0.025	0.022	0.003	-	0.022	0.025	0.019	0.026	0.017	0.021	0.005	0.015	0.022	0.014
MLI	Mali	0.023	0.062	0.059	0.002	0.023	0.039	0.012	0.036	0.030	0.033	0.040	0.014	0.039	0.051	0.030
MOZ	Mozambique	0.006	0.014	0.015	0.042	0.071	0.015	0.014	0.015	0.033	0.029	0.050	0.016	0.043	0.041	0.028
MRT	Mauritania	0.015	0.003	0.125	0.058	0.010	0.004	0.031	0.017	0.043	0.031	0.022	0.010	0.039	0.072	0.028
MUS	Mauritius	1.051	0.343	0.116	1.400	0.015	0.414	0.750	0.483	0.274	0.357	0.188	0.239	0.132	0.058	0.344
MWI	Malawi	0.103	0.002	0.045	0.008	0.003	0.013	0.029	0.062	0.041	0.022	0.024	0.003	0.009	0.017	0.019
NAM	Namibia	0.067	0.110	0.177	0.072	0.023	0.017	0.108	0.021	0.040	0.046	0.020	0.026	0.028	0.056	0.053
NER	Niger	0.145	0.041	0.072	0.085	0.032	0.042	0.177	0.043	0.050	0.069	0.067	0.019	0.044	0.065	0.060
NGA	Nigeria	0.061	-	0.005	0.001	0.005	0.033	0.050	0.029	0.032	0.043	0.007	0.004	0.042	0.074	0.015
RWA	Rwanda	0.002	0.017	0.002	0.026	0.002	0.041	0.022	0.013	0.014	0.037	0.039	0.017	0.057	0.042	0.026
SDN	Sudan	0.002	0.004	0.013	0.003	0.002	0.008	0.019	0.018	0.004	0.002	0.006	0.009	0.011	0.010	0.008
SEN	Senegal	0.244	0.310	0.037	0.086	0.007	0.025	0.380	0.066	0.080	0.067	0.070	0.014	0.097	0.073	0.088
SLE	Sierra Leone	0.289	0.003	0.003	0.002	0.010	0.007	0.005	0.017	0.007	0.010	0.021	0.016	0.014	0.038	0.020
SOM	Somalia	0.009	0.009	0.033	0.004	0.032	0.016	0.012	0.011	0.009	0.006	0.007	0.010	0.007	0.003	0.009
STP	São Tomé e Príncipe	0.077	0.077	0.077	0.151	0.077	0.257	0.045	0.051	0.034	0.008	0.046	0.027	0.007	0.014	0.068
SWZ	Swaziland	0.377	0.301	0.100	0.230	0.177	0.003	0.100	0.009	0.048	0.113	0.042	0.014	0.001	0.017	0.094
SYC	Seychelles	0.326	0.007	0.009	0.114	0.146	0.146	0.146	0.160	0.008	0.039	0.116	0.414	0.009	0.036	0.136
TCD	Chad	-	0.047	0.033	0.075	0.083	0.045	0.008	0.052	0.066	0.035	0.041	0.063	0.051	0.051	0.047
TGO	Togo	0.008	0.104	0.002	0.199	0.100	0.006	0.065	0.020	0.085	0.082	0.013	0.014	0.011	0.007	0.048
TZA	Tanzania, United Rep.	0.006	0.032	0.010	0.015	0.008	0.013	0.019	0.020	0.040	0.019	0.035	0.016	0.047	0.063	0.025
UGA	Uganda	0.022	0.130	0.055	0.019	0.026	0.020	0.041	0.030	0.059	0.048	0.071	0.017	0.057	0.038	0.038
ZAF	South Africa	0.001	0.075	0.007	0.044	0.006	0.010	0.008	0.025	0.017	0.027	0.053	0.106	0.012	0.045	0.035
ZMB	Zambia	0.058	0.009	0.099	0.049	0.005	0.052	0.045	0.031	0.040	0.045	0.031	0.013	0.056	0.035	0.034
ZWE	Zimbabwe	0.002	0.017	0.026	0.016	0.025	0.003	0.003	0.008	0.008	0.003	0.004	0.006	-	0.021	0.011
Total		0.051	0.054	0.042	0.036	0.030	0.026	0.053	0.028	0.026	0.030	0.028	0.014	0.039	0.041	0.032

Source: Authors' calculations based on OECD's Creditor Reporting System (March 2010). Note: Figures for the 1995-2001 period are estimated from the relationship between disbursements and commitments over the 2002-2008 period.

2.2.3 The contribution of the AfDB to WSS provision

Over the 40-year period from 1967-2006, AfDB has committed more than USD 4 billion (undiscounted sum of nominal values) to water supply and sanitation in the whole continent, representing about 7.7 percent of total approvals.

More recently, over the 2005-2008 period, the AfDB disbursed USD 495 million ODA for water and sanitation projects in SSA (in constant 2007 USD), equivalent to about nine percent of total ODA disbursements to the sector in the region (OECD CRS). In 2008, the sector accounted for 10.8 percent of total AfDB disbursements, up from 5.4 percent in 2005.

The sectoral profile of AfDB disbursements over the 2005-2008 period is broadly in line with the one of other donors, with 36 percent dedicated to large water supply and sanitation systems, 32 percent to basic systems, 29 percent to water resources policy and administrative management, two percent for river development and one percent to water resource protection. No disbursement was recorded for waste management/disposal and education and training in WSS. Once again, it is worth noting that this is an important dimension of water provision, which is often neglected, and without which the effectiveness of all other investments will be reduced.

First generation projects (1967-1989) addressed

infrastructure provision, while second generation initiatives emphasised rehabilitation works and technical assistance for studies and capacity building, and socioeconomic development, in line with the Bank's Water Supply and Sanitation Policy Document issued in 1989. Past AfDB group projects were rarely undertaken as part of an integrated policy (e.g. most water supply projects did not consider sanitation). Projects were not integrated, and an absence of participatory planning reduced effectiveness, particularly for rural water supply projects.

In general, water supply projects reduced vulnerability to disease (although this is often difficult to assess due to poor baseline data), and in rural areas, women and children benefited, particularly girls who gained time to attend school. In some cases, however, limited sanitation investment and inadequate wastewater disposal from water supply projects increased the incidence of water borne diseases and created adverse environmental impacts. As in the case of most donors, urban poor, informal settlements and rural areas were all inadequately catered for within the early portfolio.

The AfDB's Strategic Plan for the 2003-2007 placed emphasis on improved water and sanitation services in rural and peri-urban areas. A Water and Sanitation Department (OWAS) was established in 2007 under the Vice Presidency for Infrastructure, Private Sector and Regional Integration. The department has supported the implementation of the Rural Water Supply and Sanitation Initiative (RWSSI, Box 1), and ensures funding for projects and studies in the water sector.

Box 1: The AfDB's Rural Water Supply and Sanitation Initiative

The AfDB's Rural Water Supply and Sanitation Initiative (RWSSI) is the largest and most important of the AfDB's water initiatives. The aim of the initiative is to provide safe water and basic sanitation to 66 percent of the rural population in Africa by 2010, and 80 percent by 2015, with the possibility of reaching 100 percent coverage by 2025. The RWSSI seeks to achieve its aims by mobilising funds from a range of sources; fast-tracking the preparation and implementation of national WSS programmes; encouraging greater coordination within the sector; building capacity for decentralised government, communities, private sector and artisans; and ensuring beneficiary participation.

The cumulative investment required to achieve 80 percent coverage by 2015 is estimated to be USD 14.2 billion. Of this, USD 9.7 billion is for providing water supply infrastructure and associated investments.

USD 4.4 billion is for provision of sanitation, and USD 95 million provides for programme preparation and other facilitation. These resources will need to be mobilised from international sources to cover approximately 80 percent of the overall requirements – 30 percent through AfDF replenishment, and 50 percent from other bilateral and multilateral donors. The remaining 20 percent is to be financed from within the recipient countries, with 15 percent from government resources, and five percent from the beneficiaries themselves. , AfDB supports capacity building and sensitisation, and policy development for sanitation. However, it does not support household sanitation infrastructure, as this is expected to be a household expenditure under the RWSSI programme. As of end of 2010, over 33 million people had gained access to drinking water and nearly 20 million had improved sanitation as a result of the initiative.

The AfDB also serves as a trustee for the African Water Facility (AWF) Special Fund, and provides support to the NEPAD Water and Sanitation Programme (see Box 2). The Bank also manages the Multi-Donor Water Partnership Programme (MDWPP) to promote effective water management policies and practices at regional and country levels, and to operationalise its Integrated Water Resources Management (IWRM) Policy in the RMCs. The MDWPP is funded also by the Netherlands, France, Denmark, and Canada. The Bank's current and

future interventions in the water supply and sanitation sector are now guided by its new policy for IWRM which, among others, fosters demand-driven approaches and community participation, particularly in rural areas, from the conceptual stage to the management and operation of the schemes. On this basis, there can be cautious optimism about the effectiveness of this aid, and the beneficial outcomes it may deliver.

Box 2: AfDB and the NEPAD Water Resources Management Programme

At the continental level, NEPAD provides the overarching framework for directing efforts to ensure water security across the whole of Africa through water resource development and management. The AfDB has the responsibility of assisting NEPAD to implement its water and sanitation infrastructure development programme. NEPAD and the AfDB have prepared a five-year Short-Term Action Plan (STAP), which includes:

- The development of national IWRM policies;
- Mitigation of floods and droughts;
- Meeting basic needs; and
- The development of trans-boundary water resource management (TWRM) programmes.

So far, this initiative has brought about the implementation of STAP in seven major African basins: the Niger and Senegal Rivers in West Africa, River Congo and Lake Chad in Central Africa, River Nile in East Africa, and Rivers Zambezi and Okavango in Southern Africa.

The AfDB is also assisting NEPAD in the formulation of the medium to long-term strategic framework (MLTSF) for the Water and Sanitation Infrastructure Programme.

In 2008, the MLTSF was replaced with the Programme for Infrastructure Development in Africa (PIDA). The programme was designed to develop a vision and strategic framework for the development of regional and continental infrastructure, including Trans-boundary Water Resources). The programme scheduled to cover up to the year 2030 is being led by the African Union Commission (AUC), NEPAD Secretariat and the Bank.

2.3 Access to Water and Sanitation

Between 1990 and 2006, the number of people with access to safe drinking water and to improved sanitation facilities in SSA increased respectively by 14 million and by seven million a year. Yet, progress towards target 7c of the Millennium Development Goals of halving by 2015, the proportion of people without sustainable access to safe drinking water and improved sanitation facilities, remains slow (see Box 3). The rate of access to improved water sources increased from 49% in 1990 to 60% in 2008 – a marginal increase of less than one percent a year. Over the same period, growth in access to improved sanitation facilities was even more unsatisfactory. It grew from 27 percent to 31 percent (source: JMP). This implies that, in 2008, 328 million people in the region still had no access to drinking water, 84 percent of them being in the rural areas, and that 567 million individuals still lacked access to improved sanitation. These numbers are significant and a serious cause for concern.

In a sub-sample of 21 SSA countries, only 16 percent of the poorest quintile of the population was found to have access to improved sanitation, compared with nearly 80 percent of the population in the richest quintile (UN MDG Report, 2008). These findings have important gender implications, given that 71 percent of all domestic water is fetched by women and girls (UN MDG Report, 2008). Also, lack of sanitation facilities in schools is believed to affect dropout rate of girls at sexual maturity, with long term implications on welfare and gender equality.



Box 3: The MDG target on water and sanitation

The target is to “halve, by 2015, the proportion of the population without sustainable access to safe drinking water and basic sanitation”. Access to safe drinking water is defined as availability of at least 20 litres per person per day from a source within one kilometre of the dwelling. Improved sanitation facilities range from simple but protected pit latrines to flush toilets with a sewerage connection. The baseline year for measurement is 1990 (Source: WHO/UNICEF, 2000. For an updated classification, see: <http://www.wssinfo.org/definitions /infrastructure.html>).

Some countries have modified the target to suit their own specific situations. The following are a few examples (UNDP 2005):

- Benin: Ensure that 78 percent of the population has access to safe drinking water by 2015;
- Cameroon: Increase access to safe drinking water to 75 percent by 2015;
- Guinea: Increase the rate of access to portable water from 49 percent in 1999 to 90 percent by 2010
- Gabon: Provide three-quarters of the population with access to a better sanitation system by 2015.

Continuing along the past trends, it is now clear that SSA will not meet the MDG targets. By 2015, the region is likely to account for more than half of the global clean water deficit, and just under half of the sanitation deficit. In fact, recent statistics on progress indicate a widening gap between SSA and the rest of the world. To make matters worse, the divide between progress in water and sanitation is set to widen. Potential benefits of progress from improved water supply may be eroded by a failure to achieve commensurate advances in sanitation. Indeed, an increased supply of water where drainage and human waste disposal provisions are inadequate may exacerbate public health problems, especially in overcrowded cities (UNDP 2005).

To meet the MDG target on water, the figure for increased coverage will have to at least double (from 14 to 28 million per year). For sanitation, the number of people connected each year will need to increase four times (from seven million to almost 28 million per year) if the MDG target is to be reached (UNDP 2005). Under the prevailing financing circumstances, achieving these rates almost sounds impossible, unless concerted efforts are asserted and matched by increased funding.

In 2006, the AfDB questioned whether or not the MDGs were attainable within the set period (AfDB, 2006). The argument was that some variables that were included in the MDGs assessment could not be changed in the short or medium-term. Thus, argued the AfDB, the MDGs should have been considered more realistically as targets that countries were desirous of achieving. This would suggest that the effectiveness of aid should not be

assessed based only on whether the targets have been attained, but also on progress made towards achieving the targets. This is clearly a consideration in situations where countries have started from very different levels. The evidence provided in this report tends to corroborate this suggestion.

Although progress is slow on a regional basis, performance is heterogeneous across countries, and it is possible to identify the good performers (See Tables 5 and 6). Access rates to improved water sources increased in 41 out of 48 countries. The largest improvements were recorded by Malawi (from 40 percent in 1990 to 80 percent in 2008), Burkina Faso (from 41 percent to 76 percent), Namibia (from 64 percent to 92 percent), Ghana (from 54 percent to 82 percent), Mali (from 29 percent to 57 percent), Cameroon (from 50 percent to 74 percent), Lesotho (from 61 percent to 85 percent), Uganda (from 43 percent to 67 percent), and Ethiopia (from 17 percent to 38 percent). On the other hand, access regressed in five SSA countries. The magnitude of the drop ranged from one percent in Mauritius and Tanzania, to eight percent in Sudan and Sierra Leone. The latter experienced conflicts over the period covered by the analysis. The situation remains unknown for Seychelles, for which data is not available.

In terms of access levels, the best performers were Botswana, Comoros, Djibouti, Gambia, Mauritius, Namibia, and South Africa. All of them had access rates above 90 percent in 2008. As discussed in the introduction, the definition of access used to measure progress towards the MDGs does not account for the quality of services, which varies significantly across countries. This is an important caveat in the analysis. For example, although both Botswana and Comoros recorded that 95 percent of the population had access to an improved water source in 2008, the share of access to piped water within dwellings was 62 percent in the former country and only 30 percent in the latter. Access to piped water in SSA remained generally low -- improving only marginally from 15 percent in 1990 to 16 percent in 2008.

Improvement in sanitation coverage throughout SSA was disappointingly small. To this, it must be added that baseline coverage in 1990 was much lower than for improved water sources. Over the 1990-2008 period, 36 SSA countries recorded an increase in access to improved sanitation. The largest increases were recorded in Angola (from 25 period in 1990 to 57 period in 2008), Rwanda (from 23 period to 54 period), Botswana (from 36 period to 60 period) and Central African Republic (from 11 period to 34 period). Over the same period, however, five countries showed deterioration rather than improvement in access to sanitation, with the drop ranging from one percent for Togo to 10 percent for Djibouti. In 2008, access to improved sanitation remained extremely low. Only four countries (Botswana, Gambia, Mauritius and

South Africa) recorded rates of 60 percent or higher (Table 6). In 10 countries (Benin, Burkina Faso, Eritrea, Ethiopia, Ghana, Madagascar, Niger, Sierra Leone, Chad and Togo) access remained below 15 percent!

Countries performances in the water and sanitation sectors were not necessarily correlated. For example, Burkina Faso and Ghana achieved remarkable progress in access to water, while at the same time recording minor improvements in access to sanitation. Although

the breakdown of expenditure in the two sectors (and of development aid to them) is rarely available, it is known by sector experts that water generally receives higher priority, as it is seen by policy makers as a life-saving issue. The public health implications of access to improved sanitation facilities are seldom given the relevance they deserve. In Kenya, for example, the Ministry of Water and Irrigation estimates that sanitation received about eight percent of total aid to the water and sanitation sector in 2008.

Table 5: Access to improved water sources (percentage of total population).

Abb.	Country	Year					Variation (a)
		1990	1995	2000	2005	2008	
AGO	Angola	36	36	41	47	50	14
BDI	Burundi	70	71	72	72	72	2
BEN	Benin	56	61	66	72	75	19
BFA	Burkina Faso	41	49	60	70	76	35
BWA	Botswana	93	94	94	95	95	2
CAF	Central African Rep.	58	60	63	65	67	9
CIV	Côte d'Ivoire	76	77	78	79	80	4
CMR	Cameroon	50	57	64	71	74	24
COD	Congo, Dem. Rep.	45	44	44	45	46	1
COG	Congo, Rep.			70	71	71	1
COM	Comoros	87	90	92	95	95	8
CPV	Cape Verde		82	83	84	84	2
DJI	Djibouti	77	78	83	89	92	15
ERI	Eritrea	43	46	54	60	61	18
ETH	Ethiopia	17	22	28	35	38	21
GAB	Gabon		84	85	86	87	3
GHA	Ghana	54	63	71	78	82	28
GIN	Guinea	52	58	62	68	71	19
GMB	Gambia	74	79	84	89	92	18
GNB	Guinea-Bissau		52	55	58	60	8
GNQ	Equatorial Guinea		43	43	43		0
KEN	Kenya	43	48	52	56	59	16
LBR	Liberia	58	61	65	67	68	10
LSO	Lesotho	61	64	74	83	85	24
MDG	Madagascar	31	34	37	40	41	10
MLI	Mali	29	36	44	51	56	27
MOZ	Mozambique	36	38	42	45	47	11
MRT	Mauritania	30	36	40	45	49	19
MUS	Mauritius	100	99	99	99	99	-1
MWI	Malawi	40	51	63	74	80	40
NAM	Namibia	64	73	81	88	92	28
NER	Niger	35	39	42	45	48	13
NGA	Nigeria	47	50	53	57	58	11
RWA	Rwanda	68	67	67	66	65	-3
SDN	Sudan	65	63	61	59	57	-8
SEN	Senegal	61	63	65	68	69	8
SLE	Sierra Leone		57	55	51	49	-8
SOM	Somalia		21	23	28	30	9
STP	São Tomé e Príncipe		75	78	85	89	14
SWZ	Swaziland		53	55	64	69	16
SYC	Seychelles						
TCD	Chad	39	42	45	49	50	11
TGO	Togo	49	52	55	58	60	11
TZA	Tanzania, United Rep.	55	54	54	54	54	-1
UGA	Uganda	43	50	57	64	67	24
ZAF	South Africa	83	84	86	89	91	8
ZMB	Zambia	49	51	54	58	60	11
ZWE	Zimbabwe	78	79	80	82	82	4
SSA		49	52	55	58	60	11

Source: Joint Monitoring Programme (<http://www.wssinfo.org/en/welcome.html>). Note: (a) The variation is calculated as difference between latest and earliest access rate data.

Table 6: Access to improved sanitation facilities (percentage of total population).

Abb.	Country	Year					Variation (a)
		1990	1995	2000	2005	2008	
AGO	Angola	25	30	40	50	57	32
BDI	Burundi	44	45	45	46	46	2
BEN	Benin	5	8	9	11	12	7
BFA	Burkina Faso	6	7	8	11	11	5
BWA	Botswana	36	44	50	57	60	24
CAF	Central African Rep.	11	15	22	29	34	23
CIV	Côte d'Ivoire	20	21	22	23	23	3
CMR	Cameroon	47	48	47	47	47	0
COD	Congo, Dem. Rep.	9	12	16	20	23	14
COG	Congo, Rep.			30	30	30	0
COM	Comoros	17	22	28	35	36	19
CPV	Cape Verde		40	45	52	54	14
DJI	Djibouti	66	66	63	58	56	-10
ERI	Eritrea	9	10	11	13	14	5
ETH	Ethiopia	4	5	8	10	12	8
GAB	Gabon		36	36	33	33	-3
GHA	Ghana	7	8	9	11	13	6
GIN	Guinea	9	12	15	17	19	10
GMB	Gambia		60	63	65	67	7
GNB	Guinea-Bissau		16	18	20	21	5
GNQ	Equatorial Guinea		51	51	51		0
KEN	Kenya	26	27	29	30	31	5
LBR	Liberia	11	13	14	16	17	6
LSO	Lesotho	32	31	29	28	29	-3
MDG	Madagascar	8	9	10	11	11	3
MLI	Mali	26	29	32	35	36	10
MOZ	Mozambique	11	12	14	15	17	6
MRT	Mauritania	16	18	21	24	26	10
MUS	Mauritius	91	91	91	91	91	0
MWI	Malawi	42	47	50	54	56	14
NAM	Namibia	25	27	29	31	33	8
NER	Niger	5	5	7	9	9	4
NGA	Nigeria	37	36	34	32	32	-5
RWA	Rwanda	23	32	40	49	54	31
SDN	Sudan	34	33	34	34	34	0
SEN	Senegal	38	41	45	49	51	13
SLE	Sierra Leone		10	11	12	13	3
SOM	Somalia		21	22	22	23	2
STP	São Tomé e Príncipe		20	21	24	26	6
SWZ	Swaziland		48	49	53	55	7
SYC	Seychelles						
TCD	Chad	6	6	7	9	9	3
TGO	Togo	13	13	12	12	12	-1
TZA	Tanzania, United Rep.	24	24	24	24	24	0
UGA	Uganda	39	42	44	47	48	9
ZAF	South Africa	69	71	73	75	77	8
ZMB	Zambia	46	47	47	47	49	3
ZWE	Zimbabwe	43	43	44	44	44	1
SSA		27	28	29	31	31	4

Source: Joint Monitoring Programme (<http://www.wssinfo.org/en/welcome.html>). Note: (a) The variation is calculated as difference between latest and earliest access rate data

2.3.1 Trends in rural areas

Since 1990, 36 SSA countries have recorded a positive trend in access to improved water sources in rural areas. The region as a whole shows an increase of 11 percent, with performance varying greatly across countries. Growth in rural access rates to improved water sources ranged from one percent for the Democratic Republic of Congo to 44 percent for Malawi (Table 7). On the other hand, eight countries experienced a regression, with drops ranging from 23 percent in Sierra Leone and one percent in Tanzania. Surprisingly, even a country like Djibouti, which did not experience a conflict, recorded a considerable fall in rural water coverage (-17 percent).

The rural-urban disparity is even more pronounced in terms of access to sanitation. As indicated in Table 8, rural areas face the most serious problems in sanitation coverage. Rural access in the region increased only by three percent between 1990 and 2008, and over three quarters of SSA rural populations still lacked access in 2008. Yet, some relatively good performers can be identified. For example, rural access to sanitation grew by 33 percent in Rwanda, 23 percent in Central African Republic, 21 percent in Cape Verde. At the other end

of the distribution, access regressed in seven countries, with drops ranging from two percent for Tanzania to 35 percent for Djibouti. With these trends, it is clear that any hope of meeting the MDGs on sanitation need to be built on tremendous efforts by both donors and national governments.

Unfortunately, it is easy for policy makers to become detached from the real meaning of these figures. The figures show that millions of people across Africa, in particular in rural areas, are still suffering the indignity associated with poor sanitation. They are therefore exposed to the related health threats.

In some cases, the lack of an integrated approach can reduce the benefits of highly promising projects. For example, programmes that provide improved sanitation in rural schools without commensurate improvements in students' homes are likely to yield very little in aggregate terms. This means that while in some rural areas children benefit from better water and sanitation services provided in schools, their health (and learning) is compromised by poor sanitary conditions in their home environments. This is one of the reasons it is notoriously difficult to demonstrate positive health outcomes from sanitation programmes in rural areas.

Table 7: Rural access to improved water sources (percentage of rural population)

Abb.	Country	Year					Variation (a)
		1990	1995	2000	2005	2008	
AGO	Angola	40	40	40	39	38	-2
BDI	Burundi	68	69	70	71	71	3
BEN	Benin	47	53	59	65	69	22
BFA	Burkina Faso	36	44	55	65	72	36
BWA	Botswana	88	89	89	90	90	2
CAF	Central African Rep.	47	48	49	50	51	4
CIV	Côte d'Ivoire	67	67	67	67	68	1
CMR	Cameroon	31	37	43	48	51	20
COD	Congo, Dem. Rep.	27	27	27	28	28	1
COG	Congo, Rep.			34	34	34	0
COM	Comoros	83	87	92	96	97	14
CPV	Cape Verde		78	80	82	82	4
DJI	Djibouti	69	67	61	55	52	-17
ERI	Eritrea	39	42	50	57	57	18
ETH	Ethiopia	8	12	18	24	26	18
GAB	Gabon		49	47	43	41	-8
GHA	Ghana	37	47	58	68	74	37
GIN	Guinea	38	45	51	57	61	23
GMB	Gambia	67	72	77	83	86	19
GNB	Guinea-Bissau	37	41	45	48	51	10
GNQ	Equatorial Guinea		42	42	42		0
KEN	Kenya	32	38	43	48	52	20
LBR	Liberia	34	39	44	48	51	17
LSO	Lesotho	57	59	69	79	81	24
MDG	Madagascar	16	20	24	27	29	13
MLI	Mali	22	28	34	40	44	22
MOZ	Mozambique	26	26	27	29	29	3
MRT	Mauritania	26	32	37	43	47	21
MUS	Mauritius	99	99	99	99	99	0
MWI	Malawi	33	45	58	70	77	44
NAM	Namibia	51	62	72	82	88	37
NER	Niger	31	33	35	37	39	8
NGA	Nigeria	30	33	36	40	42	12
RWA	Rwanda	66	65	64	63	62	-4
SDN	Sudan	58	56	55	53	52	-6
SEN	Senegal	43	46	48	51	52	9
SLE	Sierra Leone		49	44	33	26	-23
SOM	Somalia		20	17	11	9	-11
STP	São Tomé e Príncipe		65	70	81	89	24
SWZ	Swaziland		43	46	56	61	18
SYC	Seychelles						
TCD	Chad	36	39	41	43	44	8
TGO	Togo	36	37	39	40	41	5
TZA	Tanzania, United Rep.	46	45	45	45	45	-1
UGA	Uganda	39	46	53	60	64	25
ZAF	South Africa	66	67	71	75	78	12
ZMB	Zambia	23	29	36	42	46	23
ZWE	Zimbabwe	70	70	71	72	72	2
SSA		36	38	42	45	47	11

Source: Joint Monitoring Programme (<http://www.wssinfo.org/en/welcome.html>). Note: (a) The variation is calculated as difference between latest and earliest access rate data.

Table 8: Rural access to improved sanitation facilities (percentage of rural population)

Abb.	Country	Year					Variation (a)
		1990	1995	2000	2005	2008	
AGO	Angola	6	7	11	15	18	12
BDI	Burundi	44	45	45	46	46	2
BEN	Benin	1	2	3	3	4	3
BFA	Burkina Faso	2	3	4	6	6	4
BWA	Botswana	20	25	31	36	39	19
CAF	Central African Rep.	5	9	16	23	28	23
CIV	Côte d'Ivoire	8	9	10	11	11	3
CMR	Cameroon	35	35	35	35	35	0
COD	Congo, Dem. Rep.	4	7	13	19	23	19
COG	Congo, Rep.			29	29	29	0
COM	Comoros	11	17	23	29	30	19
CPV	Cape Verde		17	24	34	38	21
DJI	Djibouti	45	42	30	18	10	-35
ERI	Eritrea	0	1	2	4	4	4
ETH	Ethiopia	1	2	5	7	8	7
GAB	Gabon		29	30	30	30	1
GHA	Ghana	4	5	5	6	7	3
GIN	Guinea	6	8	9	10	11	5
GMB	Gambia		58	61	63	65	7
GNB	Guinea-Bissau		6	7	8	9	3
GNQ	Equatorial Guinea		46	46	46		0
KEN	Kenya	27	28	30	31	32	5
LBR	Liberia	3	4	4	4	4	1
LSO	Lesotho	32	31	28	25	25	-7
MDG	Madagascar	6	7	8	9	10	4
MLI	Mali	23	25	28	31	32	9
MOZ	Mozambique	4	4	4	4	4	0
MRT	Mauritania	8	9	9	9	9	1
MUS	Mauritius	90	90	90	90	90	0
MWI	Malawi	41	46	50	55	57	16
NAM	Namibia	9	11	13	15	17	8
NER	Niger	2	2	3	4	4	2
NGA	Nigeria	36	34	32	29	28	-8
RWA	Rwanda	22	31	40	49	55	33
SDN	Sudan	23	21	20	19	18	-5
SEN	Senegal	22	26	31	36	38	16
SLE	Sierra Leone		4	5	6	6	2
SOM	Somalia		12	10	7	6	-6
STP	São Tomé e Príncipe		14	15	17	19	5
SWZ	Swaziland		45	46	50	53	8
SYC	Seychelles						
TCD	Chad	2	2	3	4	4	2
TGO	Togo	8	7	5	4	3	-5
TZA	Tanzania, United Rep.	23	23	22	22	21	-2
UGA	Uganda	40	43	45	48	49	9
ZAF	South Africa	58	59	61	64	65	7
ZMB	Zambia	36	38	40	41	43	7
ZWE	Zimbabwe	37	37	37	37	37	0
SSA		21	22	23	24	24	3

Source: Joint Monitoring Programme (<http://www.wssinfo.org/en/welcome.html>). Note: (a) The variation is calculated as difference between latest and earliest access rate data.)

2.3.2 Trends in urban areas

As may be expected, access to improved water sources is much higher in urban than in rural areas. However, it is very disappointing that no progress was made at the regional level between 1990 and 2008, with the urban access to improved water sources stagnating at 82 percent (Table 9). Once more, country performance was highly heterogeneous. Progress was recorded in 28 countries, with variations as high as 45 percent in Somalia, 39 percent in Niger, 30 percent in Angola, and 27 percent in Mali. On the other hand, 13 countries recorded a regression in urban water coverage, with access dropping by as much as 21 percent in Sudan, 19 percent in Rwanda, 14 percent in both Tanzania and Burundi, and 10 percent in the Democratic Republic of Congo.

In contrast, urban access to sanitation in the region was

disappointingly stable, increasing only marginally from 43 percent in 1990 to 44 percent in 2008 (Table 10). Some 28 countries recorded progress, with the best performances in Angola (+28 percent), Central African Republic (+22 percent), and Mauritius (+21 percent). Eleven countries regressed, with drops as high as 10 percent in Djibouti and eight percent in Sudan.

These apparently disappointing figures can to a large extent be explained by the increased population in urban areas in all countries. With most cities being ill prepared to expand service provision, urbanisation has resulted in low coverage, in spite of recent large investments in urban sanitation. However, while the percentage of population served may not have improved during this period, it is certain that the actual numbers served by improved sanitation will have increased. This issue is examined in more detail in the following sections.

Table 9: Urban access to improved water sources (percentage of urban population)

Abb.	Country	Year					Variation (a)
		1990	1995	2000	2005	2008	
AGO	Angola	30	32	43	54	60	30
BDI	Burundi	97	93	89	85	83	-14
BEN	Benin	72	75	78	82	84	12
BFA	Burkina Faso	73	79	85	91	95	22
BWA	Botswana	100	100	99	99	99	-1
CAF	Central African Rep.	78	81	85	89	92	14
CIV	Côte d'Ivoire	90	91	92	92	93	3
CMR	Cameroon	77	82	86	90	92	15
COD	Congo, Dem. Rep.	90	88	85	82	80	-10
COG	Congo, Rep.			95	95	95	0
COM	Comoros	98	96	93	91	91	-7
CPV	Cape Verde		86	86	86	85	-1
DJI	Djibouti	80	81	88	95	98	18
ERI	Eritrea	62	64	70	74	74	12
ETH	Ethiopia	77	82	88	95	98	21
GAB	Gabon		95	95	95	95	0
GHA	Ghana	84	86	88	89	90	6
GIN	Guinea	87	88	88	89	89	2
GMB	Gambia	85	88	91	94	96	11
GNB	Guinea-Bissau		78	79	82	83	5
GNQ	Equatorial Guinea		45	45	45		0
KEN	Kenya	91	89	87	85	83	-8
LBR	Liberia	86	84	82	80	79	-7
LSO	Lesotho	88	89	92	96	97	9
MDG	Madagascar	78	76	73	71	71	-7
MLI	Mali	54	61	69	77	81	27
MOZ	Mozambique	73	73	75	76	77	4
MRT	Mauritania	36	41	45	49	52	16
MUS	Mauritius	100	100	100	100	100	0
MWI	Malawi	90	92	93	94	95	5
NAM	Namibia	99	99	99	99	99	0
NER	Niger	57	68	78	89	96	39
NGA	Nigeria	79	78	77	76	75	-4
RWA	Rwanda	96	91	85	80	77	-19
SDN	Sudan	85	79	73	68	64	-21
SEN	Senegal	88	89	90	91	92	4
SLE	Sierra Leone		72	75	82	86	14
SOM	Somalia		22	36	58	67	45
STP	São Tomé e Príncipe		85	85	88	89	4
SWZ	Swaziland		85	86	90	92	7
SYC	Seychelles			85	94	100	15
TCD	Chad	48	54	60	66	67	19
TGO	Togo	79	81	83	86	87	8
TZA	Tanzania, United Rep.	94	90	86	82	80	-14
UGA	Uganda	78	81	85	89	91	13
ZAF	South Africa	98	98	98	99	99	1
ZMB	Zambia	89	88	88	87	87	-2
ZWE	Zimbabwe	99	99	99	99	99	0
SSA		83	82	82	83	83	0

Source: Joint Monitoring Programme (<http://www.wssinfo.org/en/welcome.html>). Note: (a) The variation is calculated as difference between latest and earliest access rate data.

Table 10: Urban access to improved sanitation facilities (percentage of urban population)

Abb.	Country	Year					Variation (a)
		1990	1995	2000	2005	2008	
AGO	Angola	58	60	70	80	86	28
BDI	Burundi	41	44	46	49	49	8
BEN	Benin	14	17	19	22	24	10
BFA	Burkina Faso	28	29	31	32	33	5
BWA	Botswana	58	63	67	72	74	16
CAF	Central African Rep.	21	25	32	39	43	22
CIV	Côte d'Ivoire	38	38	37	37	36	-2
CMR	Cameroon	65	63	60	58	56	-9
COD	Congo, Dem. Rep.	23	23	23	23	23	0
COG	Congo, Rep.			31	31	31	0
COM	Comoros	34	36	42	49	50	16
CPV	Cape Verde		64	64	65	65	1
DJI	Djibouti	73	72	69	65	63	-10
ERI	Eritrea	58	57	54	52	52	-6
ETH	Ethiopia	21	23	26	28	29	8
GAB	Gabon		38	37	34	33	-5
GHA	Ghana	11	13	15	17	18	7
GIN	Guinea	18	23	27	31	34	16
GMB	Gambia		63	65	67	68	5
GNB	Guinea-Bissau		41	43	47	49	8
GNQ	Equatorial Guinea		60	60	60		0
KEN	Kenya	24	25	26	27	27	3
LBR	Liberia	21	22	23	24	25	4
LSO	Lesotho	29	30	35	39	40	11
MDG	Madagascar	14	14	15	15	15	1
MLI	Mali	36	39	41	44	45	9
MOZ	Mozambique	36	36	37	37	38	2
MRT	Mauritania	29	31	38	45	50	21
MUS	Mauritius	93	93	93	93	93	0
MWI	Malawi	50	50	51	51	51	1
NAM	Namibia	66	64	63	61	60	-6
NER	Niger	19	23	27	32	34	15
NGA	Nigeria	39	38	37	36	36	-3
RWA	Rwanda	35	39	43	47	50	15
SDN	Sudan	63	60	58	56	55	-8
SEN	Senegal	62	64	66	68	69	7
SLE	Sierra Leone		21	21	23	24	3
SOM	Somalia		42	45	50	52	10
STP	São Tomé e Príncipe		27	27	29	30	3
SWZ	Swaziland		60	60	61	61	1
SYC	Seychelles			94	96	97	3
TCD	Chad	20	21	22	23	23	3
TGO	Togo	25	25	24	24	24	-1
TZA	Tanzania, United Rep.	27	28	29	31	32	5
UGA	Uganda	35	36	37	37	38	3
ZAF	South Africa	80	81	82	83	84	4
ZMB	Zambia	62	61	60	59	59	-3
ZWE	Zimbabwe	58	57	57	57	56	-2
SSA		43	43	43	43	44	1

Source: Joint Monitoring Programme (<http://www.wssinfo.org/en/welcome.html>). Note: (a) The variation is calculated as difference between latest and earliest access rate data.

2.3.3 The impact of population growth

Population growth can substantially affect (and cripple) progress towards the MDGs. Table 11 portrays how access to safe drinking water has been outstripped by population growth in many countries, with others just managing to keep pace. It means that even when the rate of access increases in a given country, in absolute terms there may be more people who lack access to safe drinking water due to population growth. The most striking example comes from the Democratic Republic of Congo, where the rate of access to safe drinking water grew by one percent and 13 million additional people gained access to safe water between 1990 and 2008. Yet, because of population growth in excess of 27 million, the number of individuals with no access has increased by 14 million. A similar problem is observed in other countries, including Nigeria, Ethiopia, Sudan and Tanzania, where the absolute number of people lacking access to safe drinking water continues to grow in spite

of reasonable progress in the rates.

The situation is even worse in the case of sanitation. As shown in Table 11, only a handful of countries have managed to keep access to sanitation in line with population growth. They are Angola, Botswana, Cape Verde, Gambia, Rwanda, Sao Tome and Principe, and Swaziland. In all the other countries, the absolute number of individuals with no access to improved sanitation increased between 1990 and 2008. In the case of Nigeria, Ethiopia, DRC, and Tanzania, the absolute numbers of individuals without access increased by more than 10 million. Therefore, the design of water and sanitation programmes needs to critically consider population dynamics if reasonable progress is to be made towards the MDGs. A challenge lies in the fact that population growth is accompanied by rural to urban migration, with migrants settling in areas that are not serviced with water and sanitation facilities.

Table 11: Comparison between increased access to water and sanitation and population growth (thousand individuals) between 1990 and 2008

Abb.	Country	Population growth	Change in number of individuals with access to safe water	Change in number of individuals with no access to safe water	Change in number of individuals with access to improved sanitation	Change in number of individuals with no access to improved sanitation
AGO	Angola	7360	5173	-2187	7607	247
BDI	Burundi	2393	1837	-556	1214	-1179
BEN	Benin	3867	3811	-56	800	-3067
BFA	Burkina Faso	6420	7964	1544	1147	-5273
BWA	Botswana	569	568	-1	666	97
CAF	Central African Rep.	1411	1209	-202	1153	-258
CIV	Côte d'Ivoire	7981	6889	-1092	2214	-5767
CMR	Cameroon	6855	8009	1154	3222	-3633
COD	Congo, Dem. Rep.	27241	12901	-14340	11448	-15793
COG	Congo, Rep.	579	441	-138	174	-405
COM	Comoros	223	247	24	164	-60
CPV	Cape Verde	101	93	-8	110	9
DJI	Djibouti	289	350	61	106	-183
ERI	Eritrea	1769	1648	-121	406	-1363
ETH	Ethiopia	32421	22461	-9960	7754	-24667
GAB	Gabon	364	349	-15	88	-276
GHA	Ghana	8383	11065	2682	1988	-6395
GIN	Guinea	3686	3785	99	1315	-2371
GMB	Gambia	764	864	100	1112	348
GNB	Guinea-Bissau	409	339	-70	144	-265
GNQ	Equatorial Guinea	280	0	-280	0	-280
KEN	Kenya	15332	12795	-2537	5925	-9407
LBR	Liberia	1626	1322	-304	406	-1220
LSO	Lesotho	447	764	317	82	-365
MDG	Madagascar	7838	4341	-3497	1200	-6638
MLI	Mali	4051	4605	554	2324	-1727
MOZ	Mozambique	8840	5645	-3195	2315	-6525
MRT	Mauritania	1227	979	-248	518	-709
MUS	Mauritius	224	211	-13	204	-20
MWI	Malawi	5395	8096	2701	4344	-1051
NAM	Namibia	713	1053	340	349	-364
NER	Niger	6800	4292	-2508	928	-5872
NGA	Nigeria	53874	41954	-11920	12373	-41501
RWA	Rwanda	2571	1457	-1114	3605	1034
SDN	Sudan	14257	5959	-8298	4847	-9410
SEN	Senegal	4673	3827	-846	3363	-1310
SLE	Sierra Leone	1571	2724	1153	723	-848
SOM	Somalia	2405	2678	273	2053	-352
STP	São Tomé e Príncipe	32	142	110	42	10
SWZ	Swaziland	199	806	607	642	443
SYC	Seychelles					
TCD	Chad	4809	3076	-1733	616	-4193
TGO	Togo	2533	1952	-581	265	-2268
TZA	Tanzania, United Rep.	17029	8941	-8088	4087	-12942
UGA	Uganda	13926	13586	-340	8280	-5646
ZAF	South Africa	12923	14700	1777	12890	-33
ZMB	Zambia	4710	3696	-1014	2545	-2165
ZWE	Zimbabwe	2002	2060	58	985	-1017
SSA		303372	239467	-63905	115016	-188356

Source: Authors' elaborations based on data from JMP (<http://www.wssinfo.org/en/welcome.html>). Note: (a) The variation is calculated as difference between the years of the latest and earliest access rate data.

2.4 The Watsan Index of Development Effectiveness

The principal objectives of this report are to compare countries' performance in the water and sanitation sector, and to analyse how effectively they used the development aid for the improvement of the sector. To address these issues, we develop a standardised measurement framework, called the Watsan Index of Development Effectiveness (WIDE). It compares drivers of progress with results achieved, and ranks countries by the level of outcome obtained per unit of available input. WIDE is made up of two composite information layers: the Resources (measuring the input drivers), and the Progress or Outcomes. Each of these is calculated as a composite index, based on a number of pre-defined factors influencing progress in the water and sanitation sector.

We consider four types of inputs, all measured over the 1995-2008 period:

1. Development aid to the water and sanitation sector, as measured by the average yearly per-capita ODA to the sector;
2. Domestic resources, as measured by the average per-capita GDP;
3. Water resources, measured by the quantity of per-capita renewable available water ;
4. Government capacity (a component of human resources), measured by the Ibrahim Index of African governance for rule of law, transparency and corruption.

Outcomes are measured across four dimensions:

1. Progress in the share of population with access to improved water sources over the 1995-2008 period;

2. Progress in the share of population with access to improved sanitation facilities over the 1995-2008 period;
3. Share of population with access to improved water sources in 2008;
4. Share of population with access to improved sanitation facilities in 2008.

All the data used in this analysis is collected from public sources. Data on ODA is from the OECD Creditor Reporting System, which contains information on commitments to the water and sanitation sector for the 1995-2008 period, and on disbursement for the 2002-2008 period. Series on population, GDP, and governance are from the AfDB data platform. Data on water resources is from the Food and Agriculture Organisation of the United Nations (FAO) AQUASTAT database. All information on access to water and sanitation is from the Joint Monitoring Programme.

More specific measures of governance in the water and sanitation sector are publicly available. For example, the Global Water Partnership (GWP) published an index of progress in the implementation of integrated water resource management policies (GWP 2006). Transparency International has information on the prevalence of corruption in the sector. However, these measures are available only for selected countries, or for single time periods. We therefore choose to use a more general index, which is applicable across all SSA countries.

For simplicity, resources and outcomes are aggregated by using an un-weighted average . This builds on the widely used arithmetic structure in other famous development indices, including the UNDP Human Development Index (HDI), and the Water Poverty Index (Sullivan 2002; Sullivan et al.2003). While the application of weights is possible, it implies a value judgment, which is left to policy makers. In the WIDE, all weights are implicitly assumed to be equal to 1.

¹⁰ Renewable water resources are the total resources that are offered by the average annual natural inflow and run-off that feed each hydrosystem (catchment area or aquifer). Source: FAO AQUASTAT Information System on Water in Agriculture, Food and Agriculture Organisation of the United Nations.

¹¹ In most cases of index development, additive formulae are used. It is, however, also possible to develop indices with multiplicative structure, but this is beyond the scope of this work. For more discussion of the use of Multiplicative indices for the HDI, see Herrero et al. (2007).

There are a number of assumptions underlying the assessment process presented here, which include the following:

- A country with a high level of either domestic resources or aid receipts should perform better than one with less financial resources;
- Natural factors such as availability of ground and surface water will impact on the effectiveness of aid flowing to the water and sanitation sector;
- Human capacity and good governance are a prerequisite for good water management;
- Corruption is likely to lead to inefficiency;
- A country that has adequate water resources and receives development aid should be able to exhibit measureable progress in water and sanitation provision, and this progress is facilitated by effective institutional arrangements.

While it is clear that an index methodology necessarily simplifies reality, it also provides useful insights into the complex relationship between resources, including aid and outcomes. In the following sections, we will provide further details on the structure of the index, and thereafter apply the WIDE to all SSA countries.

2.4.1 Structure of the WIDE

Before the estimations, the data is first normalised and converted to an index value that ranges between 1 and 100, with high values indicating positive conditions. This is to ensure that the index is not dominated by a single variable having large absolute values. The transformation of both input or drivers and outcome or progress is based on the following expression:

$$\bar{x}_i = \frac{x_i - x_{\min}}{x_{\max} - x_{\min}} \quad (1)$$

Where x_{\min} and x_{\max} are the minimum and the maximum value observed in the sample, and i is the subscript for each SSA country. The normalised variables are then combined in simple un-weighted averages. Two indexes are then calculated for inputs and outcomes, according to the following formulae:

$$Inputs_i = \frac{\bar{aid}_i + \bar{gdp}_i + \bar{wa}res_i + \bar{governance}_i}{4} \quad (2)$$

$$Outcomes_i = \frac{\bar{\Delta w}_i + \bar{\Delta s}_i + \bar{w}_i + \bar{s}_i}{4} \quad (3)$$

From the equation $\bar{aid}, \bar{gdp}, \bar{wa}res, \bar{governance}, \bar{\Delta w}, \bar{\Delta s}, \bar{w}, \bar{s}$ are the input drivers and the outcome indicators described in the previous section (in the same order), transformed as in expression (1). The two sub-indexes can be used to rank countries by intensity of inputs and results. These are then combined to obtain the overall index of performance:

$$WIDE_i = rank(Inputs_i) - rank(Outcomes_i) \quad (4)$$

A value of 0 indicates that the country has the same ranking for inputs and outcomes, e.g. the country with most resources achieved the best results. Positive values indicate that a country had an outcome ranking in excess of what could be expected, given its resources. Large negative values, on the other hand, suggest poor performance. The WIDE enables an assessment to be made of how effectively each country has used its resources to achieve progress in the water and sanitation sector

2.4.2 Empirical Evidence

Table 12 reports the (non-normalised) input drivers for all 48 SSA countries, ranked by the value of the overall input index. Data on water resources is missing for Djibouti and Seychelles, and GDP is unknown for Somalia. It was therefore impossible to calculate the WIDE index for these countries, hence they are not included in the ranking.

Normalised input indexes, as from expression (1), are presented in Table 13. Gabon and Mauritius are the most endowed countries. Both received more than USD 10 per capita per year of ODA to the water and sanitation sector, and had a per capita GDP in excess of USD 5,000 over the period covered in the analysis. Gabon has also the highest endowment of water resources, with about 131,216 m³ of renewable water per capita per year. This is about 58 times that of Mauritius. On the other hand, Mauritius exhibits the highest performance for the rule of law and absence of corruption in the region. At the other end of the spectrum, Zimbabwe and the DRC have the lowest resource endowment, with extremely low values of per-capita aid to the water and sanitation sector, and of the index of rule of law.

Outcomes are summarised in Table 14 (in absolute values) and 15 (normalised), in which countries are ranked by the outcome index. Data on access to sanitation is not available for Seychelles in the JMP data set. The best outcomes are reported for Malawi, Gambia, Botswana, and South Africa. Malawi made impressive progress in water provision (+28 percent). Access to sanitation,

although still at 56 percent, also grew by nine percentage points. Gambia, Botswana and South Africa report slower progress. However, this is due to the fact that all were in the right tail of the distribution of access rates for both water and sanitation in 1990.

Next to the best performers are Angola, Mauritius, Namibia, Comoros, Cape Verde and Swaziland, all with scores of above 50 points. At the other end of the

distribution, Sierra Leone and Madagascar recorded the worst results, both displaying slow progress and low access rates. For the former, regression in water access is largely due to the protracted civil war during the period covered by the analysis. Madagascar, on the other hand, did not experience a full blown war, but went through serious stress resulting from a turbulent power transition in 2002.



Table 12: WIDE input drivers (absolute figures)

Abb.	Country	AID (Average Yearly Per-Capita ODA to WSS)	GDP per capita	Water (in per capital renewable available resources)	wgovernance (Ibrahim Index)	input
GAB	Gabon	10.02	8,245	131,216	-0.52	72.1
MUS	Mauritius	14.46	5,021	2,251	0.84	54.9
GNQ	Equatorial Guinea	11.35	6,899	57,834	-1.24	48.4
BWA	Botswana	3.79	5,348	1,337	0.63	43.0
STP	São Tomé e Príncipe	25.00	664	14,699	-0.46	42.1
CPV	Cape Verde	8.87	2,372	616	0.43	36.9
ZAF	South Africa	0.47	4,998	956	0.13	33.7
NAM	Namibia	4.03	3,440	3,142	0.12	32.8
SEN	Senegal	9.05	859	2,291	-0.25	26.3
COG	Congo, Rep.	0.72	2,092	60,174	-1.29	22.9
GHA	Ghana	3.48	569	1,397	-0.15	20.5
LSO	Lesotho	2.57	744	2,699	-0.16	20.4
SWZ	Swaziland	3.15	2,244	2,410	-0.76	19.8
MDG	Madagascar	0.82	395	18,992	-0.26	19.7
ZMB	Zambia	4.03	844	7,226	-0.60	18.8
MLI	Mali	2.21	498	5,427	-0.30	18.4
GMB	Gambia	2.08	357	1,965	-0.17	18.4
MRT	Mauritania	3.97	827	142	-0.51	18.2
BFA	Burkina Faso	5.45	410	947	-0.55	18.2
BEN	Benin	3.46	628	1,281	-0.51	17.3
MWI	Malawi	1.67	231	1,279	-0.40	15.3
TZA	Tanzania, United Rep.	1.32	325	2,277	-0.46	14.9
LBR	Liberia	0.29	151	62,030	-1.51	14.7
GIN	Guinea	3.58	391	25,888	-1.21	14.7
MOZ	Mozambique	2.32	275	5,097	-0.70	14.0
UGA	Uganda	2.20	356	1,421	-0.67	13.7
SLE	Sierra Leone	1.51	252	30,684	-1.22	13.0
COM	Comoros	2.97	742	1,575	-0.99	12.6
CMR	Cameroon	0.34	1,059	15,962	-1.11	12.6
AGO	Angola	0.74	2,227	9,630	-1.41	12.5
NER	Niger	2.68	285	281	-0.81	12.4
ERI	Eritrea	1.04	312	663	-0.67	12.3
ETH	Ethiopia	0.47	210	1,615	-0.70	11.3
RWA	Rwanda	1.91	303	1,120	-0.88	11.2
TGO	Togo	1.23	424	1,948	-0.92	10.7
CAF	Central African Rep.	0.58	394	34,627	-1.52	10.5
GNB	Guinea-Bissau	2.68	281	10,540	-1.26	10.1
KEN	Kenya	0.81	656	607	-1.00	10.0
TCD	Chad	1.60	528	1,577	-1.15	9.1
CIV	Côte d'Ivoire	0.51	1,066	4,271	-1.42	7.6
NGA	Nigeria	0.21	874	1,633	-1.38	6.6
SDN	Sudan	0.17	891	842	-1.45	5.8
BDI	Burundi	0.65	121	1,333	-1.31	5.3
ZWE	Zimbabwe	0.30	446	947	-1.56	3.5
COD	Congo, Dem. Rep.	0.25	164	15,999	-1.80	3.2
SOM	Somalia	0.23	.	771	-2.27	.
SYC	Seychelles	13.38	9,061	.	0.29	.
DJI	Djibouti	2.90	964	.	-0.74	.

Source: Authors' calculations. Data are sourced from OECD CRS (aid); AfDB (GDP); FAO (water) and Governance5 (Mo Ibrahim databases).

Table 13: WIDE input drivers (normalised)

Abb.	Country	aid	gdp	watres	governance	input
GAB	Gabon	40	100	100	49	72.1
MUS	Mauritius	58	60	2	100	54.9
GNQ	Equatorial Guinea	45	83	44	21	48.4
BWA	Botswana	15	64	1	92	43.0
STP	São Tomé e Príncipe	100	7	11	51	42.1
CPV	Cape Verde	35	28	0	84	36.9
ZAF	South Africa	1	60	1	73	33.7
NAM	Namibia	16	41	2	73	32.8
SEN	Senegal	36	9	2	59	26.3
COG	Congo, Rep.	2	24	46	19	22.9
GHA	Ghana	13	6	1	62	20.5
LSO	Lesotho	10	8	2	62	20.4
SWZ	Swaziland	12	26	2	39	19.8
MDG	Madagascar	3	3	14	58	19.7
ZMB	Zambia	16	9	5	45	18.8
MLI	Mali	8	5	4	57	18.4
GMB	Gambia	8	3	1	62	18.4
MRT	Mauritania	15	9	0	49	18.2
BFA	Burkina Faso	21	4	1	47	18.2
BEN	Benin	13	6	1	49	17.3
MWI	Malawi	6	1	1	53	15.3
TZA	Tanzania, United Rep.	5	3	2	51	14.9
LBR	Liberia	1	0	47	11	14.7
GIN	Guinea	14	3	20	22	14.7
MOZ	Mozambique	9	2	4	42	14.0
UGA	Uganda	8	3	1	43	13.7
SLE	Sierra Leone	5	2	23	22	13.0
COM	Comoros	11	8	1	30	12.6
CMR	Cameroon	1	12	12	26	12.6
AGO	Angola	2	26	7	15	12.5
NER	Niger	10	2	0	37	12.4
ERI	Eritrea	4	2	0	43	12.3
ETH	Ethiopia	1	1	1	42	11.3
RWA	Rwanda	7	2	1	35	11.2
TGO	Togo	4	4	1	33	10.7
CAF	Central African Rep.	2	3	26	11	10.5
GNB	Guinea-Bissau	10	2	8	20	10.1
KEN	Kenya	3	7	0	30	10.0
TCD	Chad	6	5	1	25	9.1
CIV	Côte d'Ivoire	1	12	3	14	7.6
NGA	Nigeria	0	9	1	16	6.6
SDN	Sudan	0	9	1	13	5.8
BDI	Burundi	2	0	1	18	5.3
ZWE	Zimbabwe	1	4	1	9	3.5
COD	Congo, Dem. Rep.	0	1	12	0	3.2
SOM	Somalia	.	.	.	.	.
SYC	Seychelles	.	.	.	.	.
DJI	Djibouti	.	.	.	.	.

Source: Authors' calculations

Table 14: WIDE outcome drivers (absolute figures)

Abb.	Country	Δw	Δs	w	s	outcomes
MWI	Malawi	29	9	80	56	67.0
GMB	Gambia	13	7	92	67	62.9
BWA	Botswana	1	16	95	60	61.1
ZAF	South Africa	7	6	91	77	60.7
AGO	Angola	14	27	50	57	59.4
MUS	Mauritius	0	0	99	91	58.6
NAM	Namibia	19	6	92	33	55.8
COM	Comoros	5	14	95	36	54.9
CPV	Cape Verde	2	14	84	54	53.8
SWZ	Swaziland	16	7	69	55	51.8
RWA	Rwanda	-2	22	65	54	49.8
STP	São Tomé e Príncipe	14	6	89	26	49.0
UGA	Uganda	17	6	67	48	48.7
CAF	Central African Rep.	7	19	67	34	48.2
LSO	Lesotho	21	-2	85	29	46.6
BFA	Burkina Faso	27	4	76	11	46.3
SEN	Senegal	6	10	69	51	46.3
CMR	Cameroon	17	-1	74	47	45.7
GHA	Ghana	19	5	82	13	44.8
MLI	Mali	20	7	56	36	43.4
ZWE	Zimbabwe	3	1	82	44	40.2
GIN	Guinea	13	7	71	19	39.6
ZMB	Zambia	9	2	60	49	37.5
BEN	Benin	14	4	75	12	37.4
GAB	Gabon	3	-3	87	33	35.6
BDI	Burundi	1	1	72	46	35.3
KEN	Kenya	11	4	59	31	34.6
CIV	Côte d'Ivoire	3	2	80	23	33.8
MRT	Mauritania	13	8	49	26	33.6
ERI	Eritrea	15	4	61	14	32.9
LBR	Liberia	7	4	68	17	31.3
GNB	Guinea-Bissau	8	5	60	21	30.7
COG	Congo, Rep.	1	0	71	30	29.2
COD	Congo, Dem. Rep.	2	11	46	23	26.4
NGA	Nigeria	8	-4	58	32	26.0
ETH	Ethiopia	16	7	38	12	26.0
MOZ	Mozambique	9	5	47	17	24.9
GNQ	Equatorial Guinea	0	0	43	51	23.5
TGO	Togo	8	-1	60	12	23.2
NER	Niger	9	4	48	9	22.0
TCD	Chad	8	3	50	9	21.4
SDN	Sudan	-6	1	57	34	20.8
TZA	Tanzania, United Rep.	0	0	54	24	19.8
MDG	Madagascar	7	2	41	11	16.8
SLE	Sierra Leone	-8	3	49	13	11.4
DJI	Djibouti	14	-10	92	56	
SYC	Seychelles	0		88		
SOM	Somalia	9	2	30	23	

Source: Authors' calculations

Table 15: WIDE outcome drivers (normalised)

Abb.	Country	Δw	Δs	w	s	outcomes
MWI	Malawi	100	42	69	57	67.0
GMB	Gambia	57	35	89	71	62.9
BWA	Botswana	24	65	93	62	61.1
ZAF	South Africa	41	32	87	83	60.7
AGO	Angola	59	100	20	59	59.4
MUS	Mauritius	22	13	100	100	58.6
NAM	Namibia	73	32	89	29	55.8
COM	Comoros	35	58	93	33	54.9
CPV	Cape Verde	27	58	75	55	53.8
SWZ	Swaziland	65	35	51	56	51.8
RWA	Rwanda	16	84	44	55	49.8
STP	São Tomé e Príncipe	59	32	84	21	49.0
UGA	Uganda	68	32	48	48	48.7
CAF	Central African Rep.	41	74	48	30	48.2
LSO	Lesotho	78	6	77	24	46.6
BFA	Burkina Faso	95	26	62	2	46.3
SEN	Senegal	38	45	51	51	46.3
CMR	Cameroon	68	10	59	46	45.7
GHA	Ghana	73	29	72	5	44.8
MLI	Mali	76	35	30	33	43.4
ZWE	Zimbabwe	30	16	72	43	40.2
GIN	Guinea	57	35	54	12	39.6
ZMB	Zambia	46	19	36	49	37.5
BEN	Benin	59	26	61	4	37.4
GAB	Gabon	30	3	80	29	35.6
BDI	Burundi	24	16	56	45	35.3
KEN	Kenya	51	26	34	27	34.6
CIV	Côte d'Ivoire	30	19	69	17	33.8
MRT	Mauritania	57	39	18	21	33.6
ERI	Eritrea	62	26	38	6	32.9
LBR	Liberia	41	26	49	10	31.3
GNB	Guinea-Bissau	43	29	36	15	30.7
COG	Congo, Rep.	24	13	54	26	29.2
COD	Congo, Dem. Rep.	27	48	13	17	26.4
NGA	Nigeria	43	0	33	28	26.0
ETH	Ethiopia	65	35	0	4	26.0
MOZ	Mozambique	46	29	15	10	24.9
GNQ	Equatorial Guinea	22	13	8	51	23.5
TGO	Togo	43	10	36	4	23.2
NER	Niger	46	26	16	0	22.0
TCD	Chad	43	23	20	0	21.4
SDN	Sudan	5	16	31	30	20.8
TZA	Tanzania, United Rep.	22	13	26	18	19.8
MDG	Madagascar	41	19	5	2	16.8
SLE	Sierra Leone	0	23	18	5	11.4
DJI	Djibouti	.	.	.	.	.
SYC	Seychelles	.	.	.	.	.
SOM	Somalia	.	.	.	.	.

Source: Authors' calculations

2.4.3 Country Performance: The WIDE Index

The WIDE index is presented in Table 16, which ranks the countries according to the difference between output and input ranking¹². Values range between +25 to -35. The six best performers, all with WIDE values of 20 or above include Angola (the best performer with 25), Rwanda (23), Zimbabwe (23), Central African Republic (23), Malawi and Comoros (both with 20). Angola's performance is commendable. In spite of ranking 30th in resource availability, it achieved the 5th highest outcomes. This suggests that the scarce inputs were used relatively more effectively than in other SSA countries. Angola's exceptional performance can be explained by the government's implementation of aggressive capital investment programme to expand and rehabilitate WSS infrastructure, and institutional reforms after decades of persistent civil conflict.

The next sets of fairly good performers include Burundi, Gambia, Uganda, Côte d'Ivoire, Cameroon, Kenya and the DRC, with WIDE scores between 11 and 17. For some of these countries, good performance is likely to be the result of sector reforms, in particular for Burundi and Uganda, where water and sanitation issues have recently received significant attention. At the other end of

the performance distribution is Equatorial Guinea, which ranks 38th out of 45 countries, despite being the third most endowed country due to high levels of aid, GDP and water resources.

For illustrative purposes, the relationship between input drivers and outcomes is also presented graphically for a sub-sample of countries in Figure 4. The left hand panel shows that South Africa is well endowed in domestic financial resources as proxied by per-capita GDP and governance, while it is relatively poor in terms of water resources, and does not receive much development aid for its water and sanitation sector. On the other hand, Malawi receives more aid, but it shows extremely low values of domestic financial resources and water availability. Gabon is the most endowed country in the sub-sample for GDP, aid and water resources, but it has the lowest level of governance. Yet, as illustrated on the right hand side graph, Gabon has the worst results in the sub-sample, performing well only in the provision of improved water. South Africa has the highest access rates, while Malawi displays the highest improvements in access to water and sanitation, and relatively high values for (end of period) access to both. This suggests that Malawi used the available resources effectively.

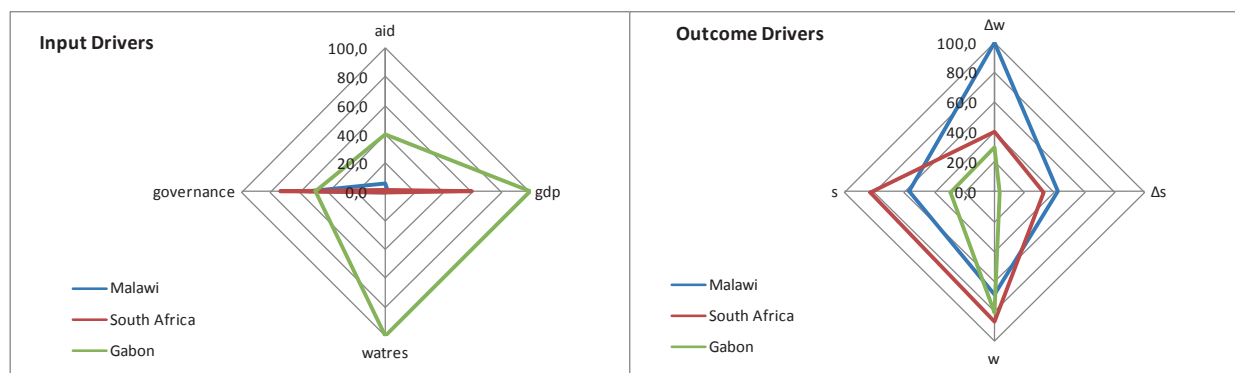
¹² All rankings refer to the sub-sample of 45 SSA countries for which all data on input and outcomes is available (all but Djibouti, Seychelles and Somalia). No attempt is being made to compare these African countries with other countries facing widely differing conditions, as found in most global comparisons.

Table 16: Watsan Index of Development Effectiveness

Abb.	Country	Inputs		Outcomes		WIDE
		Inputs	rank	Outcomes	rank	
AGO	Angola	12.5	30	59.4	5	25
RWA	Rwanda	11.2	34	49.8	11	23
ZWE	Zimbabwe	3.5	44	40.2	21	23
CAF	Central African Rep.	10.5	36	48.2	14	22
MWI	Malawi	15.3	21	67.0	1	20
COM	Comoros	12.6	28	54.9	8	20
BDI	Burundi	5.3	43	35.3	26	17
GMB	Gambia	18.4	17	62.9	2	15
UGA	Uganda	13.7	26	48.7	13	13
CIV	Côte d'Ivoire	7.6	40	33.8	28	12
CMR	Cameroon	12.6	29	45.7	18	11
KEN	Kenya	10.0	38	34.6	27	11
COD	Congo, Dem. Rep.	3.2	45	26.4	34	11
NGA	Nigeria	6.6	41	26.0	35	6
GNB	Guinea-Bissau	10.1	37	30.7	32	5
ZAF	South Africa	33.7	7	60.7	4	3
SWZ	Swaziland	19.8	13	51.8	10	3
BFA	Burkina Faso	18.2	19	46.3	16	3
GIN	Guinea	14.7	24	39.6	22	2
ERI	Eritrea	12.3	32	32.9	30	2
BWA	Botswana	43.0	4	61.1	3	1
NAM	Namibia	32.8	8	55.8	7	1
SDN	Sudan	5.8	42	20.8	42	0
TCD	Chad	9.1	39	21.4	41	-2
CPV	Cape Verde	36.9	6	53.8	9	-3
LSO	Lesotho	20.4	12	46.6	15	-3
ETH	Ethiopia	11.3	33	26.0	36	-3
MUS	Mauritius	54.9	2	58.6	6	-4
MLI	Mali	18.4	16	43.4	20	-4
BEN	Benin	17.3	20	37.4	24	-4
TGO	Togo	10.7	35	23.2	39	-4
STP	São Tomé e Príncipe	42.1	5	49.0	12	-7
SEN	Senegal	26.3	9	46.3	17	-8
GHA	Ghana	20.5	11	44.8	19	-8
ZMB	Zambia	18.8	15	37.5	23	-8
LBR	Liberia	14.7	23	31.3	31	-8
NER	Niger	12.4	31	22.0	40	-9
MRT	Mauritania	18.2	18	33.6	29	-11
MOZ	Mozambique	14.0	25	24.9	37	-12
SLE	Sierra Leone	13.0	27	11.4	45	-18
TZA	Tanzania, United Rep.	14.9	22	19.8	43	-21
COG	Congo, Rep.	22.9	10	29.2	33	-23
GAB	Gabon	72.1	1	35.6	25	-24
MDG	Madagascar	19.7	14	16.8	44	-30
GNQ	Equatorial Guinea	48.4	3	23.5	38	-35
DJI	Djibouti	.	.	.	.	.
SYC	Seychelles	.	.	.	.	.
SOM	Somalia	.	.	.	.	.

Source: Authors' calculations

Figure 4: Input drivers and outcomes in Malawi, Gabon and South Africa



Source: Authors' calculations

2.4.4 Caveats to the use of the WIDE

Every index attempts to summarise complex phenomena in one single figure. The results are inevitably affected by the structure chosen for measurement and aggregation of the different components. To avoid value judgments on the relative importance of each input and outcome, we used unweighted averages, implicitly accepting a weight of 1 for each of them. Nonetheless, some variables may have close to uniform distributions that increase the relative weight in the input or outcome sub-index¹³. For example, the distribution of per-capita aid to the water and sanitation sector is positively skewed, meaning that most countries receive less than USD 1 per capita per year, while small island states report high values (e.g. USD 25 per capita per year for Sao Tome and Principe). The variable transformed according to expression (1) will have a low sample mean. On the other hand, the Mo Ibrahim index of governance has a more uniform distribution and a higher mean after normalisation.

We looked into the possibility of transforming some variables (e.g. by taking their logarithm) to reduce distribution skewness. We found that this changed the ranking of some countries by a few positions, but it did not alter the overall picture. We therefore choose to keep the structure of the index as simple and as transparent as possible. As a way of overcoming any implicit weighting

of component values influencing overall scores, we recommend that comparisons of inputs and outcomes be made on the basis of the ranking in the group, rather than on the raw score. The structure of the WIDE was chosen accordingly (as a difference of rankings, rather than as a ratio between outcome and input indexes, for instance).

Data limitations also need to be highlighted, since alternative sources provide different estimates of access to water and sanitation, sometimes due to differences in the definition of access. The same can be said of any measure of governance. It is for this reason that we selected publicly available and reputable sources for all components of WIDE. This ensures the maximum possible harmonisation in definition and measurement.

An important consideration regards the ease of replicability. Given the clear and simple structure of the index, and the choice of publicly available data, researchers and government officers can easily re-calculate it while applying different weights to inputs and outcomes. They can also use different data (for example at the regional level), or select alternative input and outcome drivers. For example, attempts have recently been made by Development Finance Institutions to reach agreement on the definition of standardised results indicators to be used in evaluation of water and sanitation programme management.

¹³ For a discussion on the issue of scale relating to the use of indices in water management, see Sullivan and Meigh, 2007

The indicators identified for regular collation could be used to refine the calculation of the WIDE on a more refined geographical scale. This could then provide a tool useful for planning and monitoring progress in water and sanitation provision.

Finally, it is important to notice that the structure of the outcome drivers partly penalizes countries that had already achieved high percentages of access to water and sanitation in the baseline year. For example, a country that had reached universal access in 1995 and maintained it in 2008, will have two positive outcome drivers (for end of the period access to water and sanitation). Another country that had no access in 1995, and recorded progress to reach universal access in 2008 will have four positive outcome drivers (two for progress and two for access at the end of the period). The latter will record a higher outcome score.

A country like Mauritius, which recorded high rates of access for both water and sanitation in 1995 and in 2008, and has considerable financial resources and good governance, is ranked 30th out of 45 countries by the WIDE. This is due to the comparison of the 2nd input ranking with the 6th ranking for outcomes, the latter being affected (as previously explained) by the initial high access rates (translating in a WIDE of -4). This does not mean that the country did not manage its aid effectively. It rather indicates that, when the analysis focuses on how to effectively manage limited resources to achieve progress starting from low levels of access to water and sanitation, other countries represent a preferable model to look at. A country like Tanzania, with little resources, may learn more by analysing the policies put in place by Malawi, which achieved much faster progress while relying on the same levels of inputs.

Making comparisons between places or countries using the WIDE framework presumes the use of unweighted averages for the components of WIDE. But for internal national level or regional variation analysis, the comparison between the Driver and Outcome scores is most important. The inclusion of a weighting scheme within the structure of WIDE calculation allows site specific weightings to be determined locally for local use. However, it must be clear

that if locally determined weights are applied to the WIDE calculation, comparisons with other places are no longer appropriate or accurate.

The WIDE framework provides a standardised and accepted approach by which progress in the water and sanitation sectors can be evaluated, both between different places, and within individual places

Further exploration of the use of weights goes beyond the scope of this report. In the application of the WIDE approach throughout this report, the weights have been kept constant at a value of one to ensure that country comparisons are valid. The use of data from standardised international databases, while imperfect, means that data anomalies resulting from local terminology will be reduced.

More effort is needed to streamline the WIDE approach, should there be a wish to implement it. Such further development goes beyond the scope of this initial preparatory work.

It is important to note that the WIDE has been designed specifically to capture linkages between the various factors, including ODA, which will give rise to a better performance in the WSS sectors. While it is possible to describe these factors, it is not always practical to capture them accurately in available statistics. If an approach such as this is considered useful, it can provide the framework for the establishment of a comprehensive database of relevant information, allowing temporal comparisons of performance to be made. Further evaluation of the effectiveness or impact of WSS earmarked aid money could employ multivariate analysis (Botting, et al 2010).

What we have presented here is a first step, which must be built upon to create a robust and reliable tool to evaluate development in the water and sanitation sectors. There now remains only four years before the 2015 deadline for the achievement of the MDGs. Though it is clear that there will be a shortfall in many areas, better monitoring of progress and better understanding of the causal linkages of aid effectiveness will make an important contribution to their overall achievement.



3 Country Case Studies : Madagascar, Kenya, Uganda and Burkina Faso.

Adeleke Salami, Abdul B. Kamara, Regassa Namara and Caroline Sullivan

3.1 Introduction

3.1.1 Background

To understand the factors that influence progress in the WSS sector and the use of ODA to support it, we look at the situation from a variety of scales. In Chapter 2 of this report, we have examined a number of factors at the macro scale, and we have looked at the exogenous factors that can influence performance and aid effectiveness in water and sanitation provision. To standardise our assessment approach, we have developed an analytical framework for the assessment of countries' performance in water and sanitation sector, i.e., the Wastsan Index of Development Effectiveness. This approach allows us to make a rapid appraisal of the situation on the basis of available data from each country.

This chapter presents information from four case study countries, namely Madagascar, Kenya, Uganda and Burkina Faso. The objectives of these case studies were to:

- a) Collect local level data for the study on 'Development Aid and Access to Water and Sanitation in SSA';
- b) Engage in discussions with relevant government agencies, NGOs, international organisations, private sector representatives and other stakeholders in each country, with a view to generate additional insights;
- c) Evaluate the progress of AfDB funded projects in each country through discussions with project management teams and beneficiaries. This will shed light on some of the key project level issues from the perspective of the beneficiaries.

These countries have been examined here in detail, and similarities and differences between the cases identified. The WIDE methodology has been illustrated in each of these case studies. We use the collated data about the case studies to illustrate the application of the WIDE analytical framework. We feel that this serves to validate the approach, as the conditions described by that methodology reflects our findings and observations from the field visits. In other words, the case study results helped to 'ground-truth' findings from the macro level information presented in Chapter 2, and to gain more detailed insights into the water and sanitation situation from the sub-national perspective.

These case studies also provide the opportunity to get direct feedback from beneficiaries and government

departments, about a selection of AfDB funded projects, the results of which are presented in Chapter 4 of this report. Carrying out the case studies was an important part of the information gathering process. It provided the opportunity for the assessment to capture both formal and informal perspectives. An example of this is the insights gained when a supposedly successful project providing rural water in Uganda was, in fact, malfunctioning due to the unwillingness of communities to take responsibilities themselves to maintain the system. This example highlights the importance of community 'ownership' in making aid effective.

Much has been written on Development Aid Effectiveness, but the focus of attention has often been on how the donors operate, and how the recipients use the money. This report takes the analyses further by combining them in an interdisciplinary approach with other available primary and secondary information. In addition to applying the WIDE framework, we have used a multi-criteria approach to analyse linkages between factors designed to promote development, and the outcomes from that development process, in the water and sanitation sector.

In this chapter, we provide some specific insights into the endogenous factors that can give rise to success or failure in water and sanitation provision within a country. While limited in this effort by both budgetary constraints and time, we have derived a broad understanding of the factors impacting on aid effectiveness and water supply and sanitation sector performance, which are important in specific places. In each of the four countries, the study focused on the way in which development aid has been spent in the water and sanitation sector, both at the general macro level and at the level of Bank funded projects. Results from each of the case study visits are reported here, and the information presented is to be seen in the context of the macro-level assessment provided and the methodological framework of the WIDE, presented in Chapter 2.

3.2.1 Methodology

Kenya, Uganda, Madagascar and Burkina Faso were selected as case-study sites: Madagascar and Burkina Faso representing Francophone countries, and Uganda and Kenya representing Anglophone countries. Furthermore, the countries were selected from South (Madagascar), East (Uganda and Kenya) and West Africa (Burkina Faso) – three of the four SSA regional groups. The case studies were selected as they bore many similarities to other countries in SSA, and as such, the

findings from the four cases have generic application across the region. For example, the situation in Kenya, in some ways, is typical of many places in Africa: scarce water resources, and a rapidly rising population. Prior to the visit in each country, key government departments and other relevant bodies were informed and their consent was guaranteed. In each of the case study countries, a well-defined itinerary was in place before arrival. During the visits, both formal and informal meetings and interviews were carried out to evaluate as widely as possible, how development projects were viewed from a range of perspectives.

Definition of terms and clarification of concepts

There are variations in how facilities are defined, and many countries use their own definitions. This makes comparisons and aggregations difficult. The definitions for 'Improved and unimproved' drinking water sources have been defined according to the World Health Organisation and the United Nations Children's Fund Joint Monitoring Programme for Water Supply and Sanitation (WHO/UNICEF,2008), but there is still much variability in how water services are defined and counted. This gives rise to data uncertainty (see Table 17).

Table 17: Definitions used in international assessments of water provision services

Improved drinking water sources	Unimproved drinking water sources
Piped water into dwelling, plot or yard	Unprotected dug well
Public tap/stand pipe	Unprotected spring
Tube well/borehole	Cart with small tank/drum
Protected dug well	Tanker truck
Protected spring	Surface water (river, dam, lake, pond, stream, canal, irrigation channel)
Rainwater collection	Bottled water (Bottled water is considered to be improved only when the household uses water from an improved source for cooking and personal hygiene. Where this information is not available, bottled water is classified on a case-by- case basis.)
Improved sanitation facilities	Unimproved sanitation facilities
Flush or pour-flush to: - piped sewer system - septic tank - pit latrine	Flush or pour-flush to elsewhere (Excreta are flushed into the street, yard or plot, open sewer, a ditch, a drainage way or other location.)
Ventilated improved pit latrine	Pit latrine without slab or open pit
Pit latrine with slab	Bucket
Composting toilet	Hanging toilet or hanging latrine
	No facilities or bush or field (open defecation)

Because different organisations use varying definitions and various ways of measuring things, it is not really possible to combine and aggregate this information across

statistical assessment units. Some of the difficulties of using data from different sources are highlighted in Box 4.

Box 4: Problems of using data from different sources

Progress towards the MDGs in Kenya

The situation in Kenya with respect to progress in water and sanitation provision varies considerably, depending on location and data sources used. Figures collected from national sources vary from those collected from international databases. This may be partly due to time lags in updating international figures, but these discrepancies must be pointed out. According to national data, coverage in both water and sanitation is highly variable across the country, with very low levels of sanitation and water access in some rural areas. These figures suggest that the most poorly served area in terms of water access is Bondo district in Western Kenya, where only 13.5 percent have access to safe water. For sanitation, the most poorly served area is the Wajir district, where only some 15.3 percent of people have access to any form of improved sanitation.

In terms of national averages, data is also variable. Regarding water service provision, there is less of a discrepancy. In 2008, national sources placed coverage at 89 percent in urban areas, while international measures found it to be 83 percent. This data is obtained from the WHO/UNICEF sources, where the data were last updated in June 2010, based on best available estimates from surveys and other sources. From this international data, sanitation coverage in urban areas of Kenya was as low as 27 percent in 2008, while for rural areas, it was as high as 32 percent in the same year.

It is interesting to note that when comparing water and sanitation provision in rural areas, water provision is often a greater problem than sanitation provision, while in urban areas (mostly due to population density); the provision of sanitation may be more problematic. This is a pattern that to some extent explains why sanitation continues to lag behind in densely populated urban areas all over the world. As illustrated here in both Kenya and Uganda, the figure for 'urban' largely relates to the large and rapidly growing capital cities with a high number of informal settlements that make service provision both technically and institutionally difficult.

The discrepancies between national and international data are a very common issue in relation to measurement towards the MDGs. There are many problems with definitions of what are considered as improved sources, who, should be counted within each area, etc. As a result, all data must be treated with caution. Of all the four case studies examined in this report, Kenya is the one with most of these differences. In spite of these difficulties, the challenge remains large. Even using the more favourable national figures, according to the national MDG report (GOK, 2006), "to achieve the MDGs in the water and sanitation sector, the people without access to safe water and improved sanitation need to be halved, which translates to 80 percent nationwide coverage of safe water supply (urban 96 percent and rural 66 percent) and 96 percent coverage of improved sanitation (urban 96 percent and rural 89 percent)".

3.2 Madagascar

3.2.1 Introduction

The Republic of Madagascar is an island nation in the Indian Ocean, off the south-eastern coast of Africa. At 587,000 km², Madagascar is the world's 46th largest country and the fourth largest island. Madagascar's main landforms are an interior highland and flanking lowlands, which are narrow on the east coast and broad on the west. Elevations in the highland are generally between 1220 and 2740 m above sea level. All major rivers drain westward or northward. The climate is tropical in the coastal regions, but more temperate in the highlands. Abundant rainfall occurs in the north-east, but the southwest is dry. Savannahs are widespread, and about one-tenth of the land is forested. However, extensive deforestation has taken place in parts of the country due to mining and logging operations.

Renowned for its biological diversity, Madagascar is a key habitat of many native species, including a range of different types of endemic Lemur. There is much global concern that this rich island biome is now threatened by serious ecological problems, including deforestation and soil erosion. Poverty is widespread and significant pressure on natural resources remains, with little prospect of reduction in the foreseeable future.

Over three-quarters of Madagascar's 17 million inhabitants live in rural areas. Agriculture dominates the economy, accounting for a third of GDP. Nonetheless, manufacturing is expanding. In 2005, 61 percent of Malagasy people lived on less than \$1 per day (World Bank, 2008a), with most of the population depending on subsistence farming, based on rice and cattle. A poorly developed transport infrastructure constitutes a major constraint to strong economic growth that could reduce

poverty and improve food insecurity (IRIN, 2007a). The country is classified as a low-income food-deficit nation and the Human Development Report 2007/2008 ranks the country at 143rd out of 177 countries (UNDP, 2007, p236.).

In Madagascar, diarrheal illnesses are the second biggest cause of morbidity, affecting 51 percent of all children under five. About 2.5 million Madagascans are infected with bilharzia, and 60 percent of children's deaths are due to polluted water and bad sanitation (AfDB/OECD, 2007).

3.2.2 Outcomes: Status of Access to Water and Sanitation

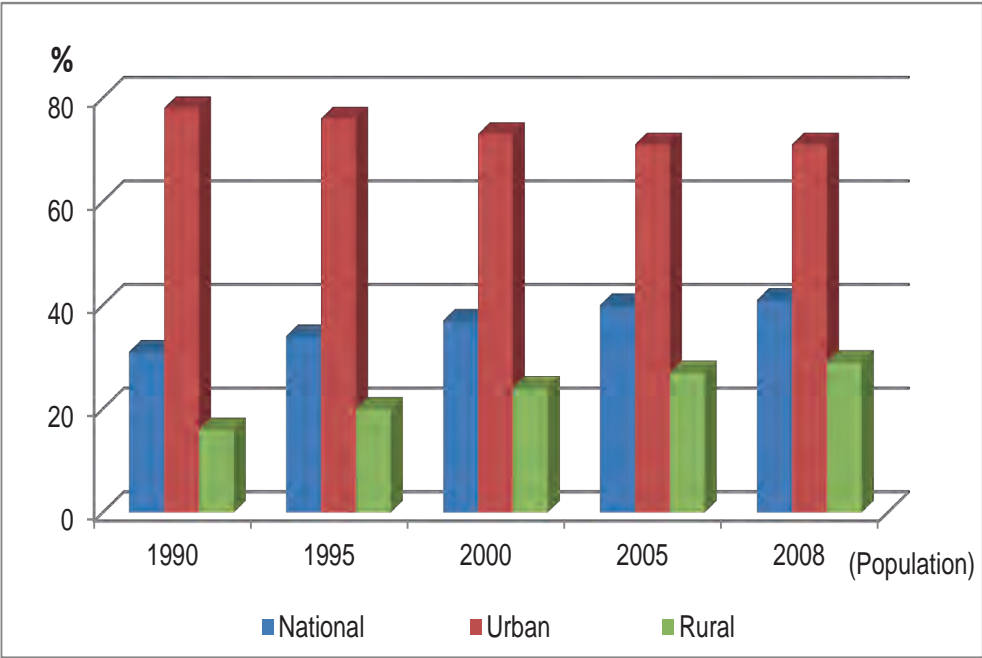
3.2.2.1 Access to Water and Sanitation

Figure 5 reveals that in 2008, the proportion of Malagasy's urban and rural populations with access

to improved water supply stood at 71 percent and 29 percent respectively. These figures represent significant improvement over the years in rural area. Though access to improved water sources is far more in urban area than rural areas, there has been retrogressing trends for urban water access from 1990 to 2008. At the national level, access to improved water sources increased from 31 percent in 1990 to 41 percent in 2008, an increase of 10 percent in 18 years (Figures 5 and Annex A1.1). This improvement, however, is not uniform across the country with a significant rural-urban variation. In terms of sanitation, the country's progress has been gradual, but consistent for both rural and urban areas (Figure 7). As depicted in Figure 7, the gap between rural and urban areas, in terms of access to water, is shrinking in favour of the rural population. In 1990, about 62 percent more urban people had access to water compared to rural dweller, but in 2008 this difference dropped to 52 percent.

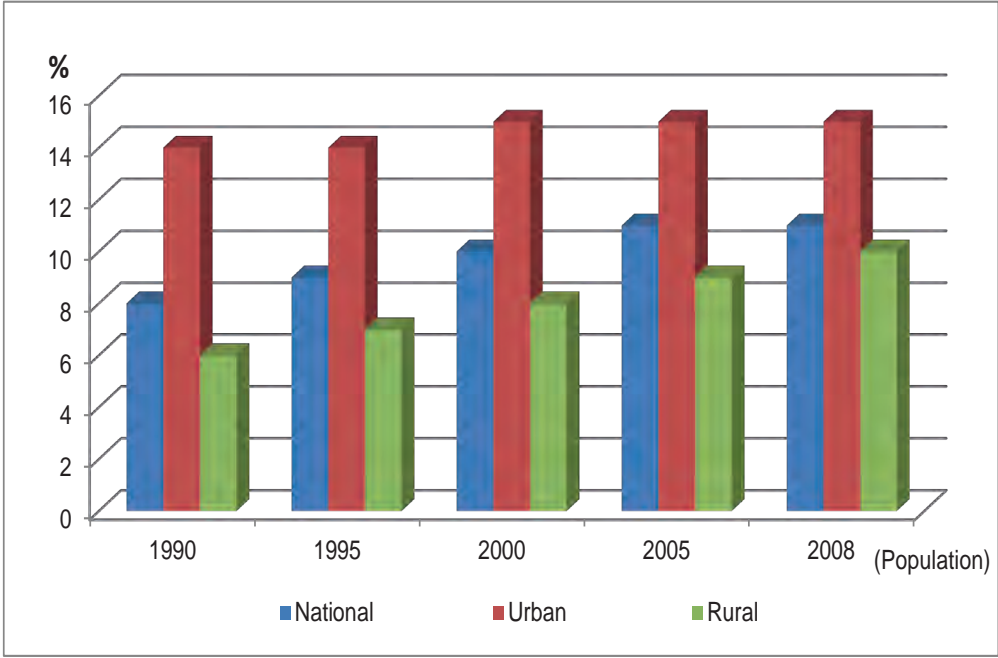


Figure 5: Access to improved water sources for Madagascar



Sources: Authors, using online databases of WHO / UNICEF

Figure 6: Access to improved sanitation facilities for Madagascar

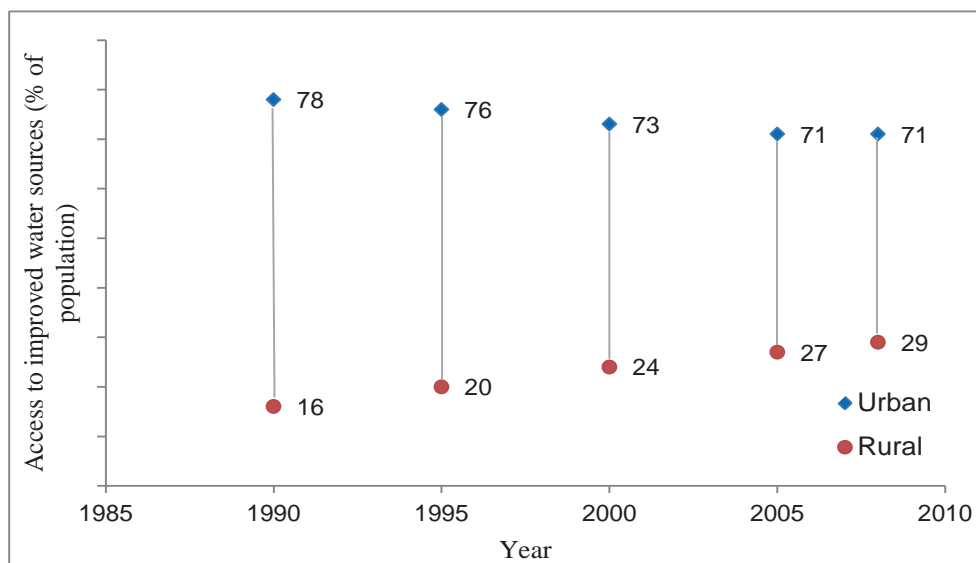


Sources: Authors, using online databases of WHO / UNICEF

Overall, between 1990 and 2008, the country made less progress in the sanitation sector than in the water sector. At the national level, the proportion of Malagasy with access to improved sanitation increased only from eight percent in 1990 to 11 percent in 2008, an increase of three percent point in 18 years (Figures 6 and Annex A1.2). Though access to basic sanitation has improved nationwide in Madagascar, rural areas still lag behind the urban areas, but the gap between rural and urban areas

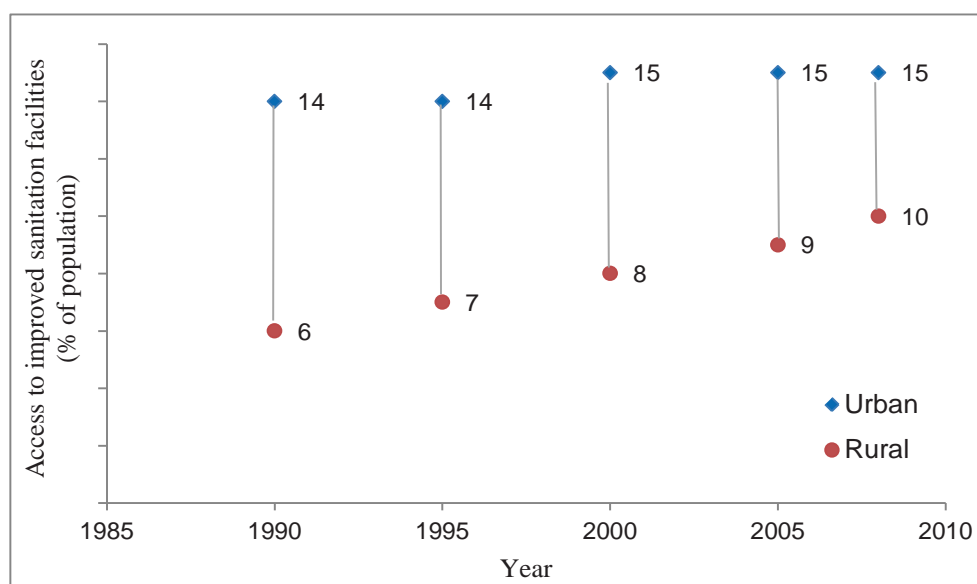
in terms of access to sanitation is shrinking in favour of the rural population. In 1990, about eight percent more urban people had access to water compared to rural dweller, but in 2008 this difference dropped to five percent (Figure 8). Currently, the proportion of urban and rural population with access to improved sanitation facilities is 29 percent and 10 percent respectively.

Figure 7: Access to improved water-urban /rural gap in Madagascar



Sources: Authors, using online databases of WHO/UNICEF

Figure 8: access to improved sanitation-urban/rural gap in Madagascar



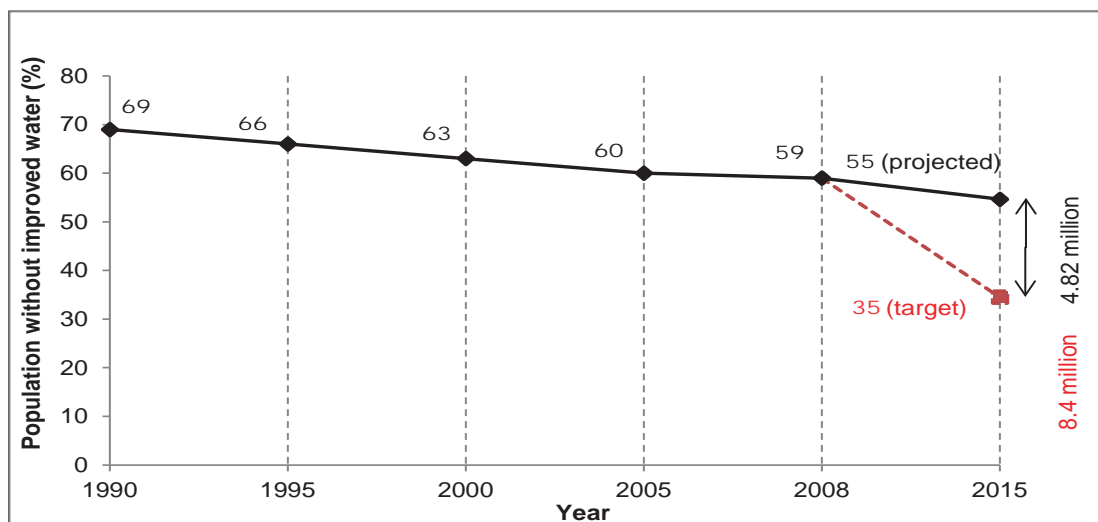
Sources: Authors, using online databases of WHO/UNICEF

3.2.2.2 Progresses towards the MDGs in Madagascar

Progress towards water and sanitation targets of the MDGs has been very slow in Madagascar. For the water sector, in 2008, 59 percent of the population was without

improved water compared to 69 percent in 1990 (Figure 9). Projections indicate that by 2015, some 13.2 million Malagasy's will still be without access to improved water sources. This is about 20 percent more than the MDG target of 8.4 million people, a difference of about 4.82 million people.

Figure 9: Access to improved water: Madagascar's progress towards the MDG target

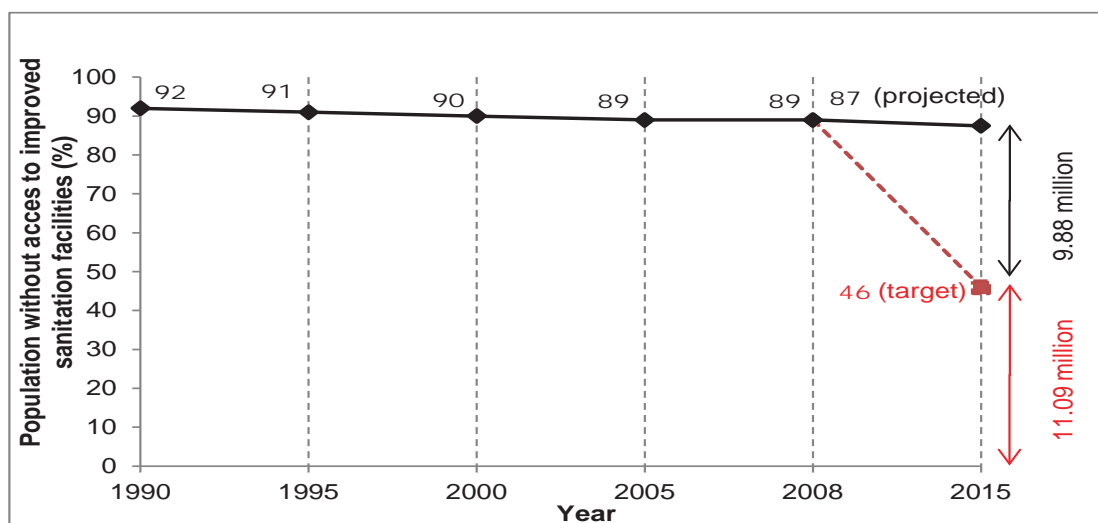


Sources: Authors, using online databases of WHO / UNICEF

The situation is worse in terms of improved sanitation coverage, as the proportion of people without access to improved sanitation in 2008 was 89 percent, down by only three percentage points compare to 92 percent in 1990 (Figure 10). The projection for the sanitation sub-sector is expected to be even worse, with a projected 21 million people lacking access to improved sanitation

services in 2015 (Figure 10). This is about 10 million people more than the 11 million targeted in the MDG. From these trends therefore, it is difficult for Madagascar to meet the MDG target of halving the proportion of the population without improved drinking water and basic sanitation by 2015.

Figure 10 : Access to improved sanitation- Madagascar's progress towards the MDG target



Sources: Authors, using online databases of WHO / UNICEF

3.2.3 Drivers of Access to Water and Sanitation Services

3.2.3.1 Water Resources Availability and Utilisation

There are two major drainage basins in Madagascar: one flowing to the west to the Madagascar Channel and the other draining to the east to the Indian Ocean. According

to the FAO Aquastat database (Table 18) the total internal renewable water resources was estimated at about 33.7 billion m³. The average precipitation in volume is 888.2 billion m³ per year. As at 2008, the per capita renewable water resources were about 17,634 m³ per inhabitant per year. The per capita volume of renewable internal water resources for Madagascar decreased drastically by 10,517 m³ per inhabitant per year, in about 20 years, mainly due to population growth and climate change.

Table 18: Water resources and water pressures in Madagascar

	1988-1992	1993-1997	1998-2002	2003-2007	2008-2012
Total population (1000 inhab)	11,971	13,953	16,190	18,604	19,111
Water resources: Total internal renewable per capita (m ³ /inhab/yr)	28,151	24,153	20,815	18,114	17,634
Agricultural water withdrawal as % of total water withdrawal (%)			95.66 (2)		
Municipal water withdrawal as % of total withdrawal (%)			2.807 (2)		
Industrial water withdrawal as % of total water withdrawal (%)			1.537 (2)		
Percentage of total actual renewable freshwater resources withdrawn (%)			4.439 (1)		

Source: FAO AQUASTAT; Note: (1) FAO estimates (2) modelled data.

These figures indicate the continuing decline in water availability per capita, and also the very high percentage of water resources, which are diverted to support irrigated agriculture. This suggests that domestic requirements for water and sanitation represent a very small demand on the total water system, a point which should be borne in mind by those responsible for bulk water resources planning.

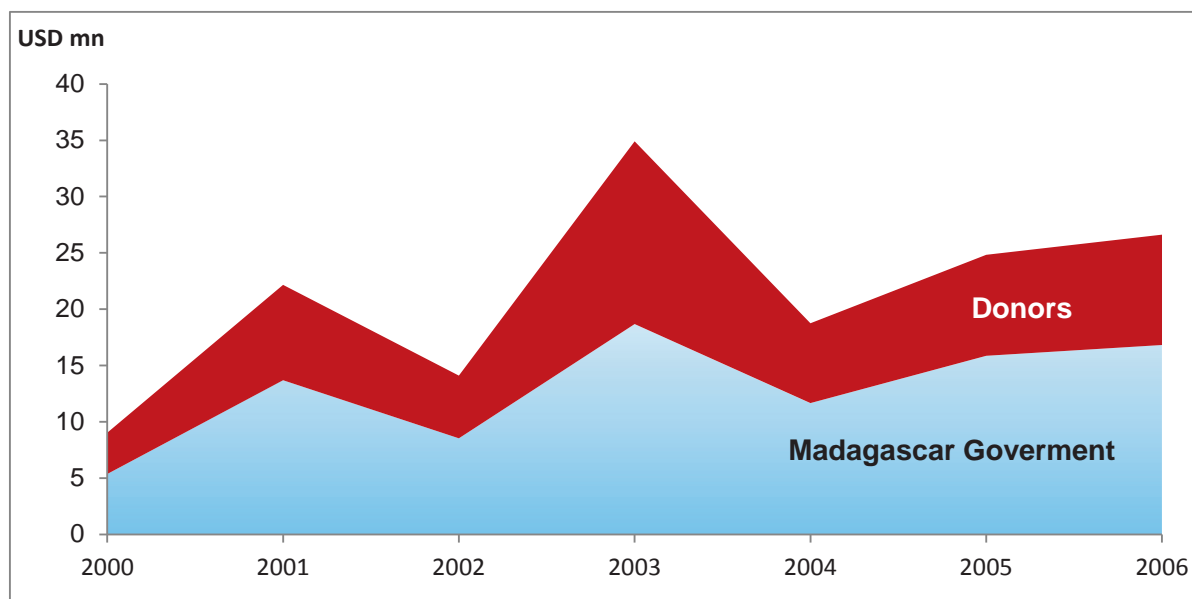
3.2.3.2 Public Investments and Development Aid

As a nation, Madagascar is heavily dependent on donor funding. Total ODA for 2004 represented 28.3 percent of the GDP (US\$1.2 billion.) (IRIN, 2007a). Both the AfDB and the World Bank have funded rural water supply and sanitation projects under the umbrella of the National Programme for Safe Water Supply and Sanitation (PNAEPA). The AfDB activities involved institutional capacity building and management reforms in urban and rural water supply and sanitation sub-sectors', and rural water supply and sanitation infrastructure rehabilitation

and expansion (USAID, 2007a). The level of total aid from all donors has been relatively low in absolute terms. It represents about 40 percent of the total funding for WSS in Madagascar on the average during 2000 to 2006 (Figure 11 and Annex A2.1).

Since 2008, when the Ministry of Energy and Mining was established, nearly all donor financing in the sector passes through the ministry, but the Government of Madagascar has the intention to move to a programme approach, where most donors will pass their funding through the Ministry of Finance. The implementation of the Medium-term Expenditure Framework, which was scheduled for implementation in seven of the country's 22 regions, will make tracking expenditures easier. In spite of this, to date, pro-poor expenditure of funds is not fully defined within government finance data. There is a need for better alignment with the county's poverty reduction strategy, both generally and in relation to water and sanitation.

Figure 11: GoM budget and development aid to WSS in Madagascar (USD mn)

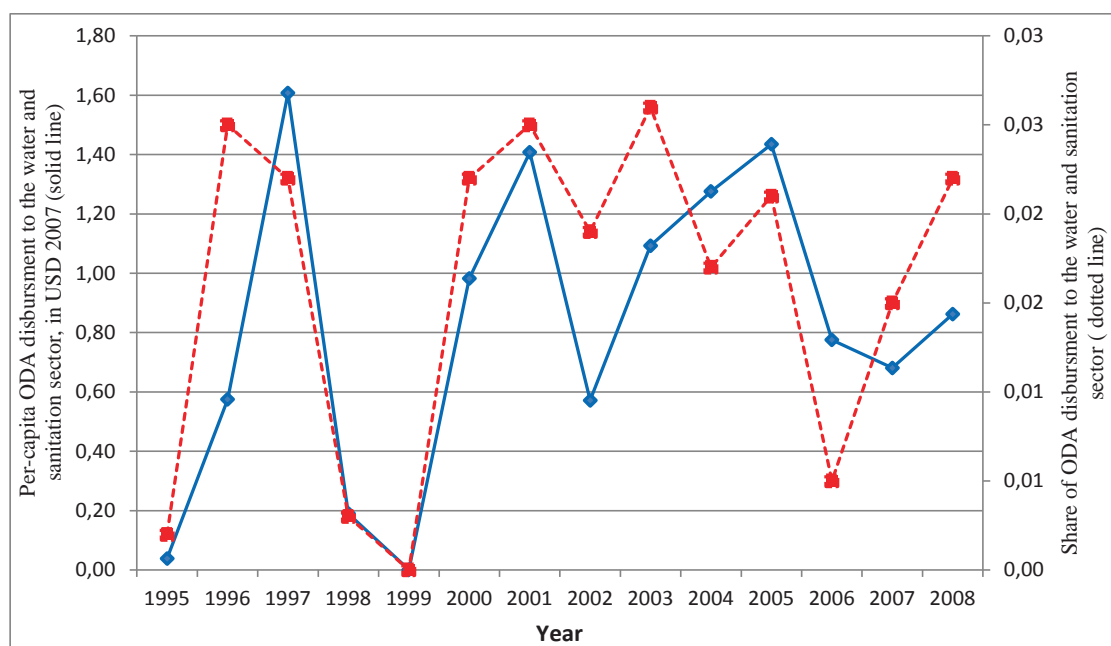


Sources: AfDB/OECD (2009), OECD and Ministry of Energy and Mines databases

Figure 12 revealed significant variation in per capita ODA allocations. 1995 and 1999 recording the lowest per capita ODA allocations to both sectors, while the highest

per capital ODA was recorded in 1997. Per capita ODA in 2008 was USD 0.86. A similar trend was witness for share of ODA to WSS during the 1995-2008 period.

Figure 12: Gross ODA to WSS in Madagascar

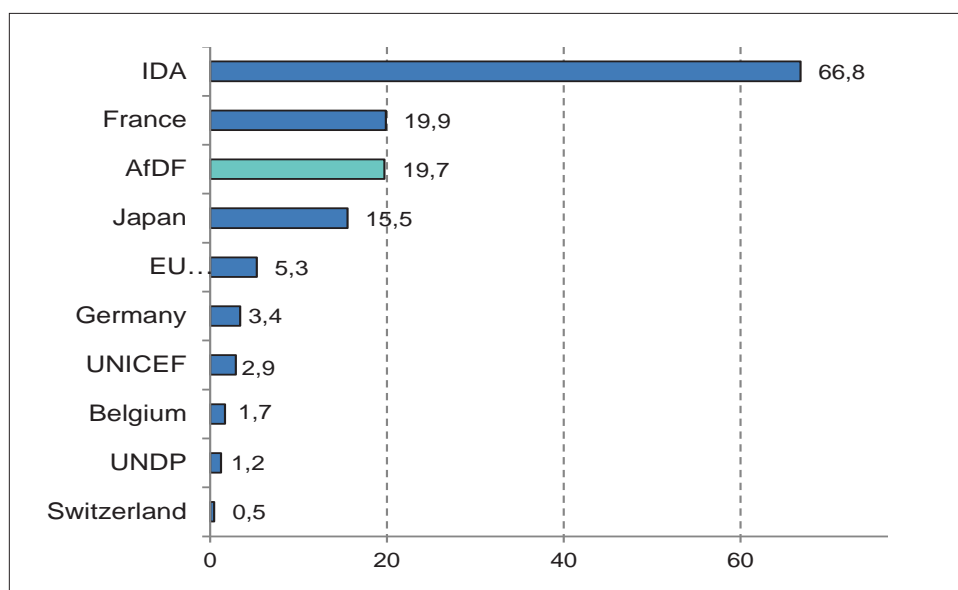


Source: Author's using data from OECD CRS online Databases

The major bilateral and multilateral donors in Madagascar and their cumulative ODA to the country during 2002-2009 period is presented in Figure 13. International Development Association (IDA) led all other donor agencies with an aggregate aid of USD 66 million between 2002 and 2009. IDA support to Madagascar is three times more than the aid flow from the second largest donor, France (USD 19.9 million), during the same period. France was followed by AfDF (USD 19.7 million) and Japan (USD 15.5 million). Other donors in the top 10 list are European Union, Germany, UNICEF, Belgium, UNDP, and Switzerland.

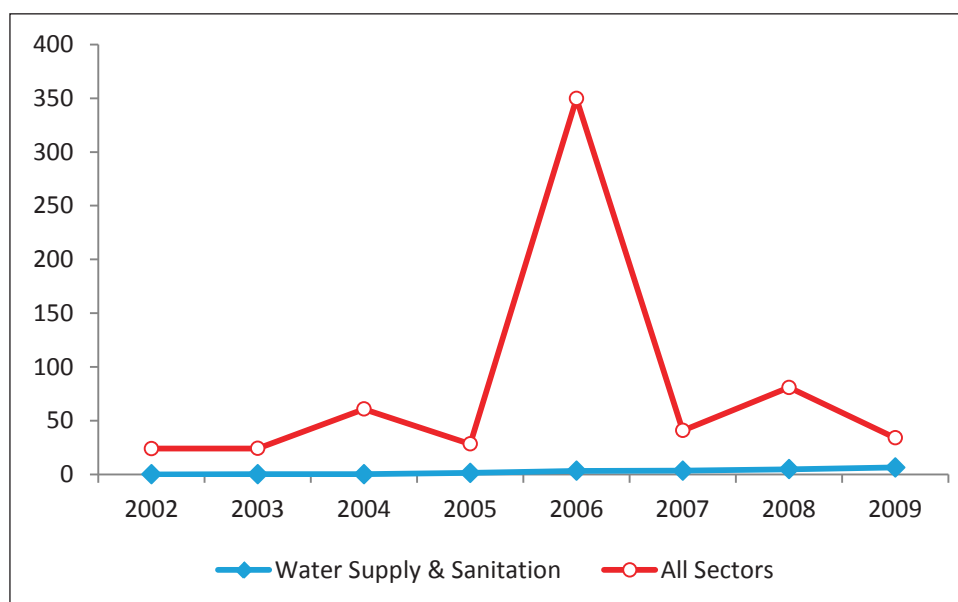
The USD 19.7 millions ODA disbursed by the AfDF on the water and sanitation sector in Madagascar between 2002 and 2009 represents 3.1 percent of the Bank's total ODA for that period on all sectors in the country. This very low amount is one of the reasons why Madagascar today is poorly served in terms of water and sanitation provision. Aid receipts by sector in Madagascar are illustrated in (Figure 14). This highlights the low proportion of aid budgets being allocated to the water and sanitation sector

Figure 13: Aggregate aid to Madagascar's water and sanitation sector 2002 to 2009 USD millions



Source: Author's using data from AfDB and OECD CRS online Databases

Figure 14: AfDF disbursements to water and sanitation in Madagascar

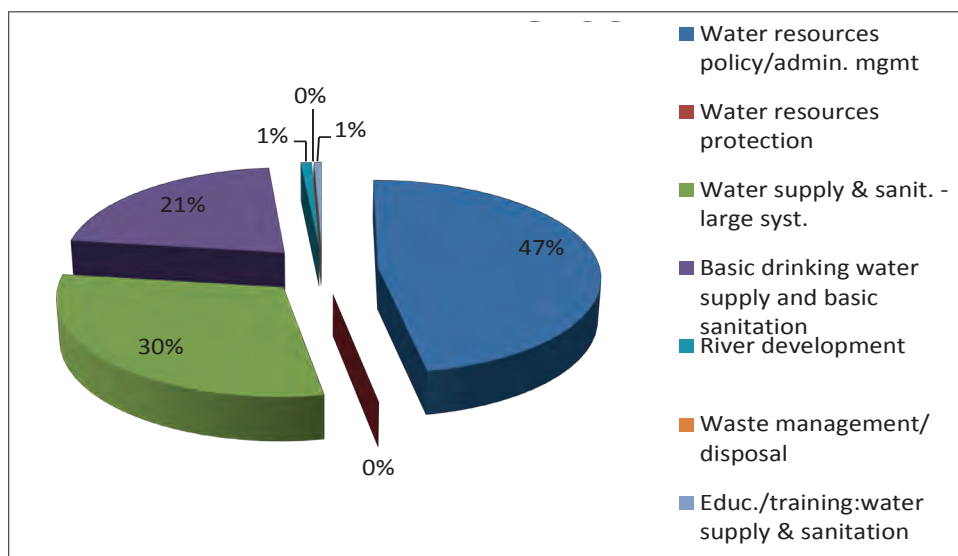


Source: Author's using data from AfDB and OECD CRS online Databases

A summary of some recent projects carried out by the AfDB in the country is shown in Annex 3. Water resources policy and administrative management received the largest share (47 percent) of spending on water and sanitation sector from all donors (bilateral and multilateral) over the 2002-2008 period. Large water and sanitation systems received the next largest share, receiving 30 percent. Basic drinking water supply and basic sanitation

(a sub-sector associated with direct benefits to the poor, especially those in rural areas) was boosted with 21 percent share of total aid to water sector. Others, such as education and training, river development, waste disposal and water protection, received negligible attention from donors (see Figure 15). This fairly comprehensive distribution of aid across various sub-sectors form a good basis for enhancing development in the water sector.

Figure 15: Gross disbursement by sub-sectoral priorities, 2002-2008



Source: Author's using data from OECD CRS online Databases

As presented in Annex 4, the total investment required per year for the next five years in order to achieve the WSS MDG targets by 2015 is USD 119 million per year – water supply (USD 54 million) and sanitation (USD 65 million). Rural areas require over 76 percent for both water supply and sanitation.

3.2.3.3 Water Sector Governance

In May 1994, GoM adopted a Sector Strategy Paper and Plan of Action (SSPA) for water and sanitation. In the same vein, GoM adopted a policy on Water and Sanitation in 1997 to improve the use of water resources and supply sufficient drinking water to the entire Malagasy population. A new Water Law was established in 1999 and all related by-laws by 2003, stating the right to water and sanitation in Madagascar (Law No. 98-029). In 2005, the PNAEPA was adopted with the objective of meeting the MDGs targets by 2015. A Sanitation Policy and Strategy (Politique nationale et stratégie pour l'assainissement – PNSA) was developed in 2006. An action plan in the WSS for 2005-15 has been drafted.

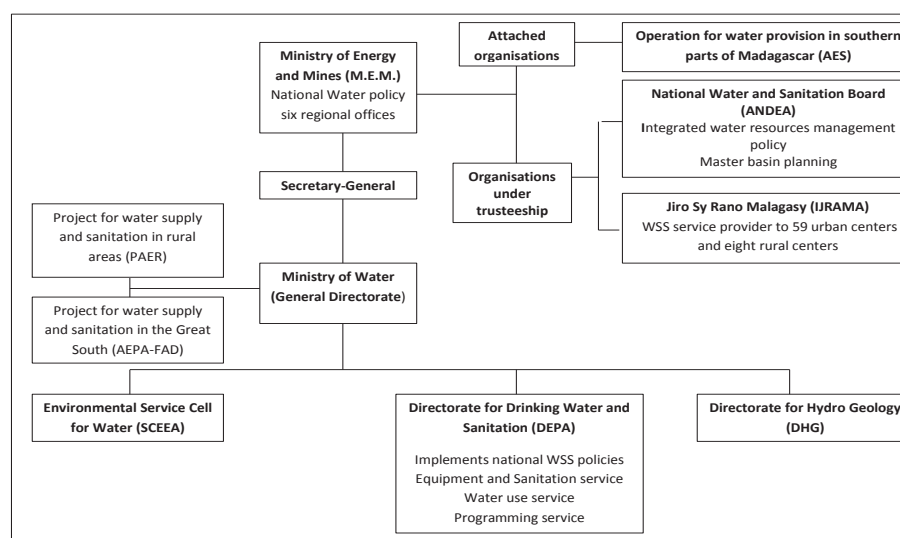
3.2.3.4 Capacity of institutions: Structure and quality

Created in 2008, the Ministry of Energy and Mining's (MEM) is now responsible for developing and promulgating water and sanitation policy, and assessing water resources, among other water supply undertakings. The Ministry of Water, also created in 2008, was established as a general water directorate. It sits under the authority of the Ministry of Energy and Mines. The Ministry of Water is responsible for designing, managing and implementing the general policy of the Ministry of Mines and Energy in drinking water and sanitation, aiming to facilitate economic growth and ensure the well-being of the population.

The National Authority for Water and Sanitation (Autorité Nationale de l'Eau et de l'Assainissement – ANDEA) is responsible for the implementation of IWRM strategy (Gestion intégrée des ressources en eau – GIRE). The JIRAMA (Jiro Sy Rano Malagasy) is responsible for water, sanitation and electricity in about 67 centres (59 urban and eight rural).

The development of this new institutional framework has been examined, but it is a little too early to say how effective this new water ministry will be. Key institutions involved in the water and sanitation sub-sector in Madagascar are presented in Figure 16.

Figure 16: Chart of the key water and sanitation institutions in Madagascar



Source: M.Bonjean, with information from field visit, Government of Madagascar Ministry of Energy and Mines, 2007 and USAID, 2007a

It is hoped that this new managerial structure within the Ministry of Energy and Mines will be able to put more emphasis on increasing budget allocations for sanitation in particular, which has been overlooked in the past. There is a risk, however, that in a Ministry with so many responsibilities, domestic water and sanitation provision may be of marginal importance. Hopefully, the need for action towards the MDGs will overcome any risk of this. Human and institutional capacity is crucial to effectiveness of any management system.

3.2.3.5 Private Sector, Community and Non-governmental Organisation

The Malagasy NGOs and private sector are very active in WSS. For example, the NGO are involved in such activities as identification of demand, technical studies and even construction and works supervision. A 'Water Network' consisting of some NGOs such as SAF-FJKM, Wateraid, Fikrifama, Taratra, and Caritas, was set up to provide an opportunity to develop complementarity of actions, skills transfer, and information exchange and advocacy. The NGOs are more visible in water supply projects in rural areas of Madagascar.

Like the NGOs, the private operators also participate in the activities of the WSS sector. But most of the time they compete for jobs with the NGOs and do not enjoy exemption from various taxes and duties like the NGOs. The communities, especially the users, are always carried along and consulted when decisions are taken. They also contribute towards the preparation of studies and work implementation, and play a significant role in maintenance and management of facilities, especially through the payment for access charges.

3.2.3.6 Monitoring and Evaluation

Madagascar has in place a monitoring and evaluation system reporting and tracking progress. Madagascar's M&E uses a computerised database to maintain an inventory of latrines and safe water supply systems, and conduct surveys to improve M&E (UNDP, 2009a). However, the country needs to harmonise the different concepts and definitions used in the various surveys and tools to enhance the quality and relevance of the result of data and information obtained from surveys in the WSS sector.

3.2.4 Relationships between inputs (drivers) and outcome: Application of the WIDE

In this section, we proceed to estimate the WIDE index so as to establish the relationships between drivers and economic outcomes. The WIDE comprises the input drivers and progress outcome¹⁴. Table 19 and Annex 5 provide the basic information, and summaries on Madagascar's WIDE analysis. Madagascar's composite score for the Input Drivers is 20, while that for the Progress Outcome is 17. The WIDE analysis shows that Madagascar's input drivers are stronger than progress outcomes, which are very low indeed. Considering the factors that can give rise to progress, a remarkably low level of improvement in both water and sanitation provision has been achieved between 1990 and 2008, and the country is still experiencing one of the lowest levels of water and sanitation coverage in the region. The fact that there are good potential water resources, and population pressure is less than elsewhere, provides some hope for the future. Similarly, there are some indications that water policy and management is improving, although new institutions are in their infancy and have yet to have an impact. Much more emphasis on sanitation is needed if real progress in national development is to be made.

¹⁴ For details of methodology see Chapter 2, Section 4.

Table 19: Input drivers and progress outcomes of the Watsan Index for Madagascar

Watsan Index of Development Effectiveness components		Scores	O v e r a l l Index	Rank ¹⁵	WIDE
Input Drivers	Development aid to the water and sanitation sector, as measured by the average yearly per-capita aid to the sector	3	20	14	-30
	Domestic resources, as measured by average per-capita gross domestic products	3			
	Water resources, measured by the quantity of per-capita renewable available water	14			
	Government capacity (a component of human resources), measured by the Ibrahim index of African governance for rule of law, transparency and corruption	58			
P r o g r e s s Outcomes	Progress in the share of population with access to improved water sources, over the period 1995-2008	41	17	44	
	Progress in the share of population with access to improved sanitation facilities, over the period 1995-2008	19			
	Share of population with access to improved water sources in 2008	5			
	Share of population with access to improved sanitation facilities in 2008	2			

Source: Author's Calculations

Madagascar experienced, on the average, a gradual rise in access to improved water and basic sanitation, consistent with increase in aid, except for the year 2008, during which per capita ODA disbursement to water and sanitation sector declined. Nonetheless, access to sanitation and water increased or remained the same.

The relationships between access to water and sanitation and some variables, including ODA, were explored in a correlation analysis and results presented Table 20. As expected, the per-capita ODA disbursement to the

WSS correlates positively with access to improved water sources and improved sanitation facilities with a coefficient of 0.716 and 0.515 respectively. Similarly, there is a positive association between GNI per capita, ODA Disbursement to Water and Sanitation and the proportion of the population using improve water source. Surprisingly, the propotion of people using improved sanitation facilities correlates negatively with GNI per capita, which may reflect the subdued attention that the sanitation sometimes get in budgetary allocations.

¹⁵ All rankings refer to the subsample of 45 SSA countries for which all data on input and outcomes is available (all but Djibouti, Seychelles and Somalia).

Table 20: Correlation with access to water and improved sanitation facilities

	Population	Human poverty index	Life expectancy	Mortality rate	ODA Disbursement to Water and Sanitation	Per capita ODA	GNI per capita
Improved water source, (% of total population with access)	0.6871 (0.0597)*	0.0294 (0.2157)	0.6655 (0.0717)	-0.6613 (0.0742)	0.7698 (0.1279)	0.7157 (0.174)	0.721 (0.0436)
Improved sanitation facilities (% of population with access)	0.1447 (0.7103)	-0.8717 (0.1283)	0.1748 (0.6529)	-0.1769 (0.6489)	0.5363 (0.3515)	0.5153 (0.3742)	-0.2043 (0.6275)

Source: Authors based on data from AfDB and OECD data platform

*Figures in parenthesis show probabilities at which the statistical significance of the correlation coefficient may be evaluated

3.2.5 Lessons learned

A key concern for Madagascar is the very low level of access to water and sanitation in both rural and urban communities. With average water and sanitation access being less than 30 percent in 2008, there is clearly a need for urgent action. Throughout the country, high levels of poverty are endemic, and low capacity exists at both local and national levels. Dogged by poor quality data, the poorly resourced government achieves low outcomes, reflecting relatively low levels of aid. As a consequence of the pernicious inequity and high levels of hardship, political instability is a recurring issue.

Added to this, the economy has suffered from high levels of inflation, and capacity to absorb development aid effectively is limited. Much effort is needed to develop a whole range of operational and management capacities if real progress is to be made towards better provision of water and sanitation. It is important to note, however, that even if the MDG targets are achieved, a large proportion of the total population would still remain unserved. Thus, it is vital that long term development strategies should be put in place. In Madagascar, a major constraint in WSS is inadequate capacity, especially for skilled

manpower, such as engineers, technicians, and project and financial managers. Another major cause for concern is the funding gap, and the ability of the government to adequately absorb and effectively manage outside donor contributions. To increase the Water and Sanitation sector's ability to mobilise additional funding, capacity building for financial management must be increased (USAID, 2007a).

3.2.6 Conclusion

The major challenge for Madagascar is to make progress on sanitation provision, which is amongst the lowest on the continent. From the analysis provided by the WIDE methodology, it appears that the provision of sanitation services is still lagging far behind water services, even though these themselves are not progressing at the rate needed to reach the MDG targets. While additional sources of funding will help to address this, it is likely that in Madagascar, there is a need to implement new institutional arrangements and continue to develop political will to support more widespread water and sanitation provision. Once again, capacity development will be crucial if real progress is to be made.

3.3 Kenya

3.3.1 Introduction

Kenya is classified as a water scarce country¹⁶, with an average renewable freshwater per capita of 534 cubic metres. In spite of this classification, the country has abundant unutilised water potential. Average rainfall is 366 mm, with substantial variation ranging from 250 mm in Arid and Semi-Arid areas to 2000 mm in the high mountain areas. This uneven rainfall distribution leaves the northern parts of the country arid and sparsely populated. The bulk of the country's 39.1 million people live in the highlands. The milder climate of the highland and the rich and fertile soils of the western parts make these areas attractive and thus home to a majority of the country's rural population. About 25 percent of Kenya's population is urban, concentrated in the few large cities of Nairobi, Mombasa, Nakuru, and Kisumu. The country is relatively poor, with 46 percent of its population living below the poverty line (AfDB/OECD, 2010). The country is ranked 147 out of 182, with a Human Development Index (HDI) score of 0.541 (UNDP 2009b), which denotes a huge concern for access to basic services. In particular, access to water and sanitation services in most parts of the country is poor, though some improvements are recently observed.

3.3.2 Outcomes: Status of Access to Water and Sanitation¹⁷

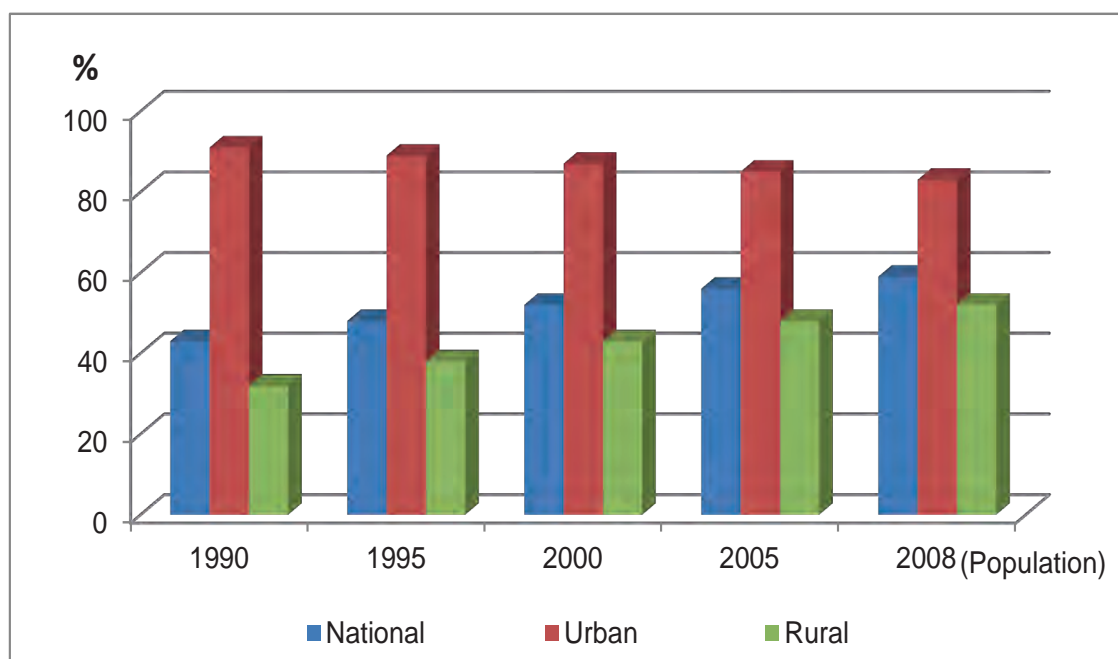
3.3.2.1 Access to water and sanitation

In 2008, the proportion of Kenya's urban and rural populations with access to improved water supply stood at 83 percent and 53 percent respectively. These figures represent significant improvement over the years, especially in rural area. At the national level, access to improved water sources has increased significantly, from 43 percent in 1990 to 59 percent in 2008 – an increase of 16 percent in 18 years (Figures 17 and Annex A1.1). This improvement, however, is not uniform across the country. There is a significant rural-urban variation. Over the years, progress in the provision of water services in rural areas has been significant, while that in urban area has been relatively slower, with retrogressing trends for urban water access from 1990 to 2008. As depicted in Figure 19, the gap between rural and urban areas, in terms of access to water, is shrinking in favour of the rural population. In 1990, about 59 percent more urban people had access to water compared to rural dweller, but in 2008, this difference dropped to 31 percent. One reason for this is the rapid growth of urban centres such as Nairobi and Mombasa, without expansion in the provision of water utilities and services.

¹⁶ A country is categorised as 'water stressed' if its annual renewable fresh water supplies are between 1,000 and 1,700 cubic metres per capita and per year and 'water scarce' if its annual renewable freshwater supplies are less than 1,000 cubic metres per capita and per year (MWI, 2005).

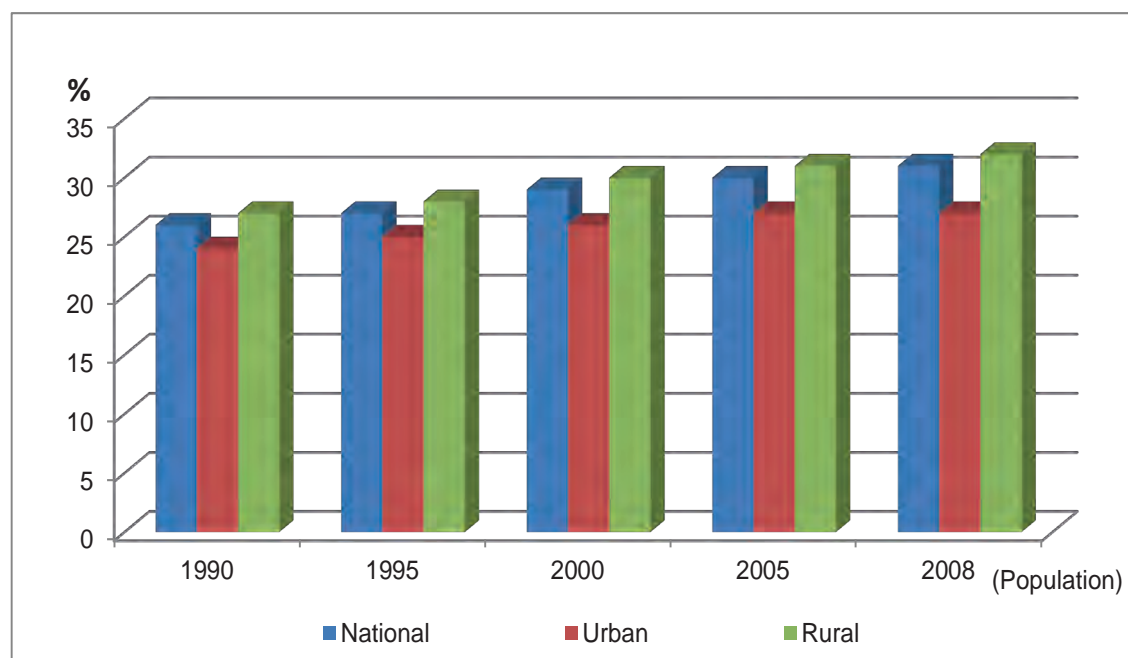
¹⁷ The information on progress in water and sanitation in Kenya varies considerably depending on data sources. For example, data from government sources is different from those international sources like JMP and UNDP. There are also noticeable discrepancies in data from international sources. However, analyses in this report are based on data from WHO/UNICEF JMP.

Figure 17: Access to improved water sources for Kenya



Sources: Authors, using online databases of WHO / UNICEF

Figure 18: Access to improved sanitation facilities for Kenya



Sources: Authors, using online databases of WHO / UNICEF

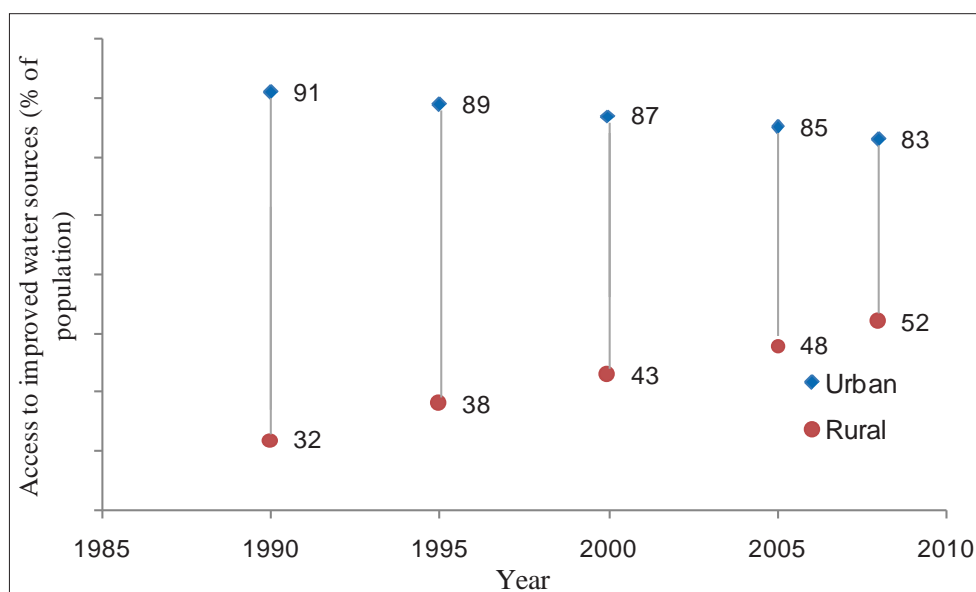
In terms of sanitation, the country's progress has been gradual but consistent for both rural and urban areas (Figure 18). Overall, between 1990 and 2008, the country made less progress in the sanitation sector than in the water sector. At the national level, the proportion of Kenyans with access to improved sanitation increased only from 26 percent in 1990 to 31 percent in 2008, an increase of five percent point in 18 years (Figures 18 and Annex A1.2). This improvement is attributed to the success in reducing the use of unimproved facilities by 11 percent of the population. Nevertheless, unhygienic practices such as open defecation increased marginally to 15 percent in 2008 from 14 percent in 1990. It was also observed that the practice of open defecation is more common in rural than urban areas. Nonetheless, at current progress rate of 31 percent, access to improved sanitation in Kenya is still low. In addition, increase in industrial wastewater and sewer effluent is also observed, resulting largely from rapid population growth (estimated at 2.8 percent) and urbanisation.

Though access to basic sanitation has improved nationwide, rural Kenya still lags behind urban areas by a gap that has widened from eight percent in 1990 to 25 percent in 2008 (Figure 20). Currently, the proportion

of urban and rural population with access to improved sanitation facilities is 52 percent and 32 percent respectively.

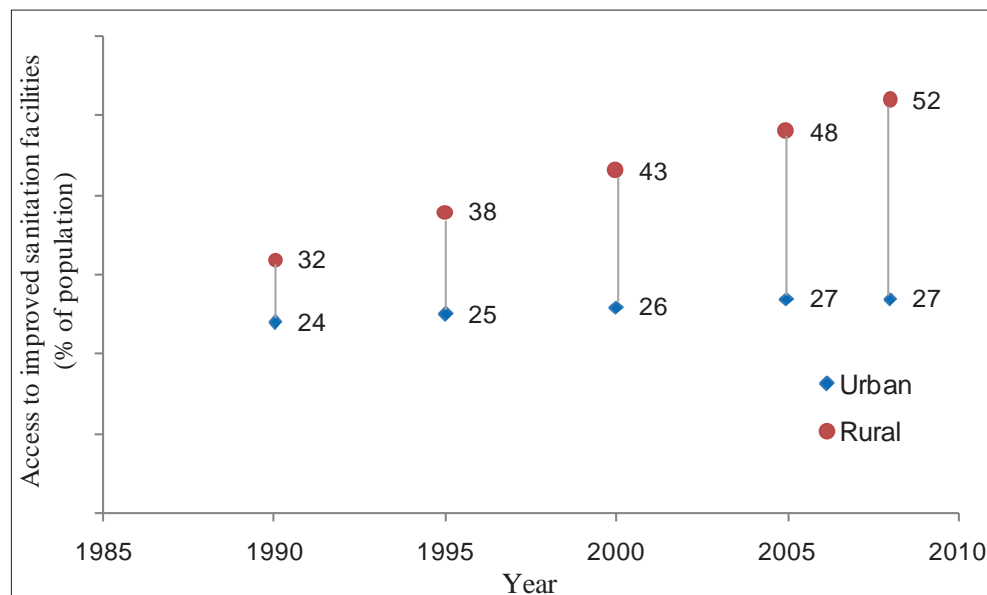
Generally, coverage in both water and sanitation is highly variable across the country. National figures suggest that the most poorly served area with water services is Bondo District in Western Kenya, where only 13.5 percent of the population have access to safe water. For sanitation, the most poorly served district is Wajir, with only about 15.3 percent of its people having access to any form of improved sanitation. Long distances to the nearest water points also pose a challenge particularly to women and girls who bear the responsibility of fetching water. In the dry areas of the Northeast Kenya, for example, only 22 percent of the population can access safe water within 15 minutes of their homes. Most of the household time is spent on this activity, which sometimes deprives girls from attending schools and women from participating in other productive activities. This exposure to undeveloped water sources also increases vulnerability to water borne diseases, thus increasing the country's health care budget (Kenya Environment, Water and Irrigation Sector Report, 2006).

Figure 19: Access to improved water-urban/ rural gap in Kenya



Source: Authors, using online databases of WHO / UNICEF

Figure 20: Access to improved sanitation-urban/ rural gap in Kenya



Source: Authors, using online databases of WHO / UNICEF

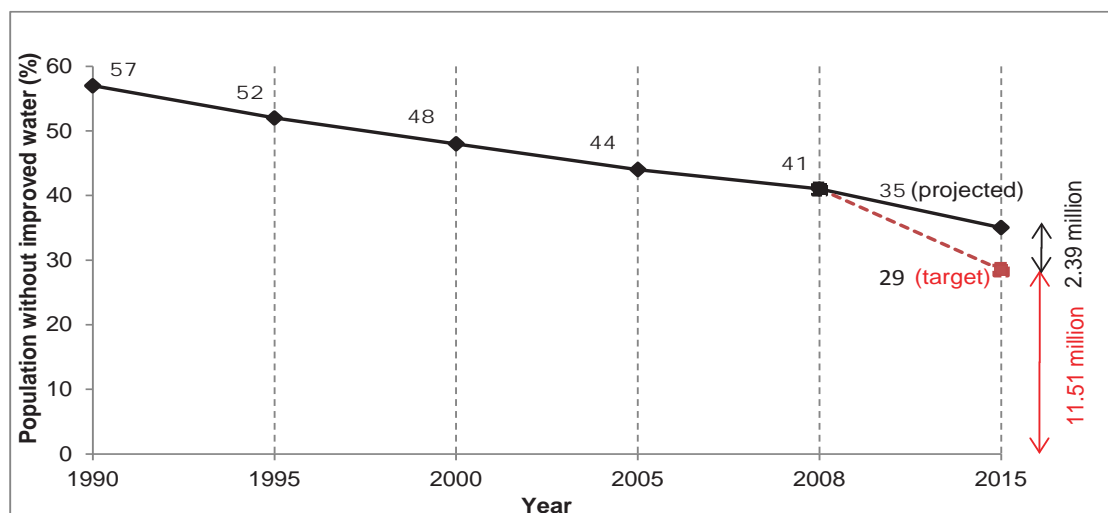
In an attempt to monitor the progress of UfW (Unaccounted for Water)¹⁸, which continues to plague the operations of water services providers, the Ministry of Water and Irrigation (MWI) carried out an assessment that showed that the average UfW stood at 45.4 percent. This is regarded as very high. The second impact report provides a figure of about 47 percent for 2006/2007, indicating that a lot needs to be done in addressing water losses.

3.3.2.2 Progresses towards the MDGs in Kenya

In spite of the recent progress recorded in Kenya in the water and sanitation sectors, movement towards the MDGs on these sectors remains slow (Figure 21) for the water sector. Projections indicate that by 2015, some 14 million Kenyans will still be without access to improved water sources. This is about six percent more than the MDG target of 11.5 million people, a difference of about 2.4 million people.

¹⁸ Unaccounted for water is the total amount of water produced or purchased and/or appropriated under water right; minus the amount of water sold to all customers or distributed free. Unaccounted for water includes leakages; unauthorised use; or water lost due to faulty meters.

Figure 21: Access to improved water- Kenya's progress towards the MDG target

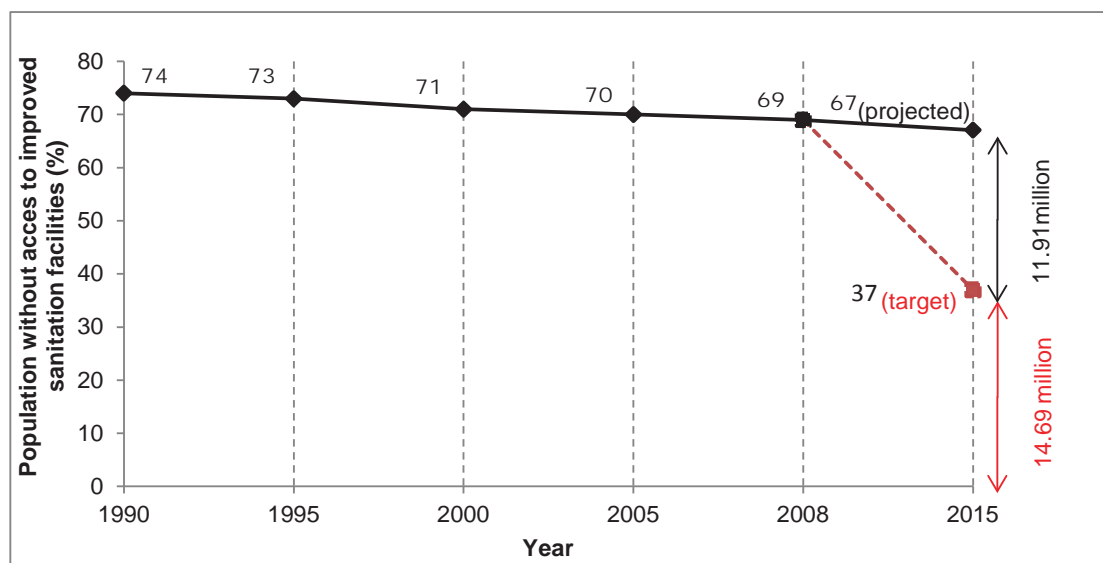


Source: Authors, using online databases of WHO / UNICEF

For the sanitation sector, Kenya's performance is expected to be even worse, with a projected 26.6 million people lacking access to improved sanitation services in 2015 (Figure 22). This is about 12 million people more than the 14.7 million

targeted in the MDG. From these trends therefore, it is difficult for Kenya to meet the MDG target of halving the proportion of the population without improved drinking water and basic sanitation, by 2015.

Figure 22: Access to improved sanitation- Kenya's progress towards the MDG target



Source: Authors, using on line databases of WHO / UNICEF

3.3.3 Drivers of Access to Water and Sanitation Services

Water resources availability is determined by natural resource endowment, availability of public and private investments, governance and institutional capacity. These factors are also key in influencing the status of a country's access to improved water and basic sanitation facilities.

3.3.3.1 Water Resources Availability and Utilisation

The average precipitation in Kenya is 365.6 billion m³ per year. The country has a low water endowment, currently 534 m³ per capita per year, which is projected to fall to 359 m³ by 2020 due to population growth (Table 21). The country is often plagued with droughts that affect food security, and underscores again the need for greater water storage. Climate variability, coupled with rapid population growth, has given rise to increasing water stress. High levels of poverty across the country are putting additional pressure on the natural resource base, exacerbated by the influx of refugees from the politically unstable areas of the north (Njuguna-Githinji, 2001; UNESCO, 2006).

Table 21: Water resources and water pressures in Kenya

Variables	1988-1992	1993-1997	1998-2002	2003-2007	2008-2012
Total population (1000 inhab)	25,050	29,065	33,119	37,755	38,765
Water resources: total internal renewable per capita (m ³ /inhab/yr)	826.3	712.2	625	548.3	534
Agricultural water withdrawal as % of total water withdrawal	76.43		63.92 (2)	79.16 (1)	
Municipal water withdrawal as % of total withdrawal	19.67		29.75 (2)	17.18 (1)	
Industrial water withdrawal as % of total water withdrawal	3.904		6.329 (2)	3.656 (1)	
Percentage of total actual renewable freshwater resources withdrawn (%)	6.674 (1)		5.148 (1)	8.909 (1)	

Source: FAO AQUASTAT; Note: (1) FAO estimates (2) modelled data.

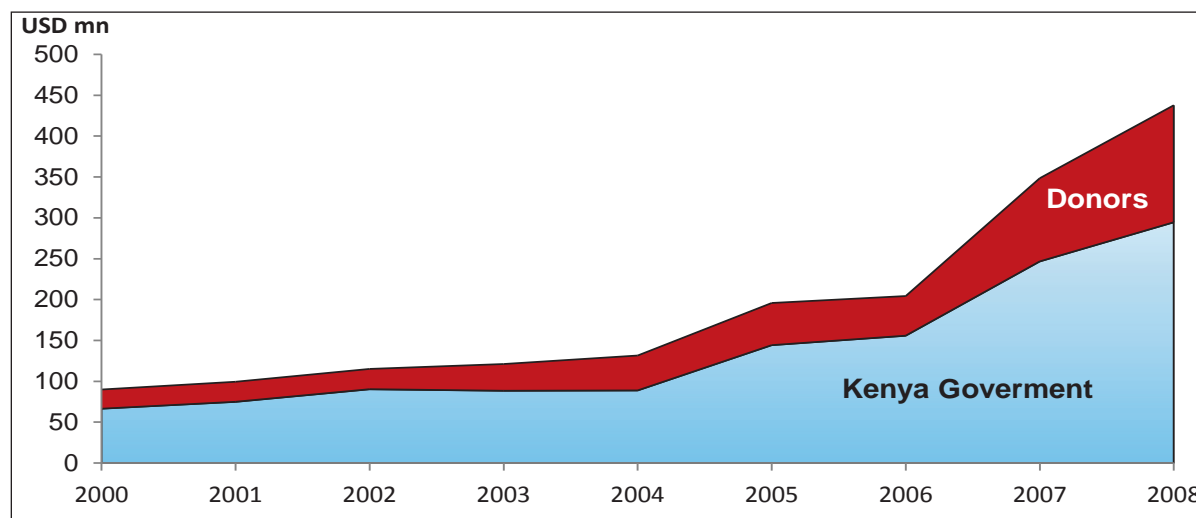
One of the major reasons for the poor water and sanitation coverage rates is lack of maintenance of the many systems put in place some 20 to 40 years ago. This has been due to lack of resources for rehabilitation, upgrading and expansion of water supply and sewerage facilities (GoK pers com 2009). The country still has a huge water potential, as only 15 percent of the safe yield of renewable freshwater resources has been exploited to date. This suggests that there is still a huge opportunity for investment in Kenya's water sector by the government and development partners.

3.3.3.2 Public Investments and Development Aid

Following the water sector reform in 2002, there was

significant increase in government budgetary allocation and donor's support for the water sector. From USD 66 million in 2000, government budgetary allocations increased by almost five fold to USD 294.6 million in 2008 (see Annex A2.2 and Figure 23). Within the same period, ODA from development partners increased by more than six times – from USD 23.5 million in 2000 to USD 143.2 million in 2008. Consequently, total funds from the Government of Kenya (GoK) and development partners to the water sectors reached a record of about USD 438 in 2008, up from about USD 90 million in 2000. Over the last eight years, an average of about 70 percent of funding for WSS has originated from GoK, while only about 30 percent came from the donors.

Figure 23: GoK budget and development aid to WSS (USD million)

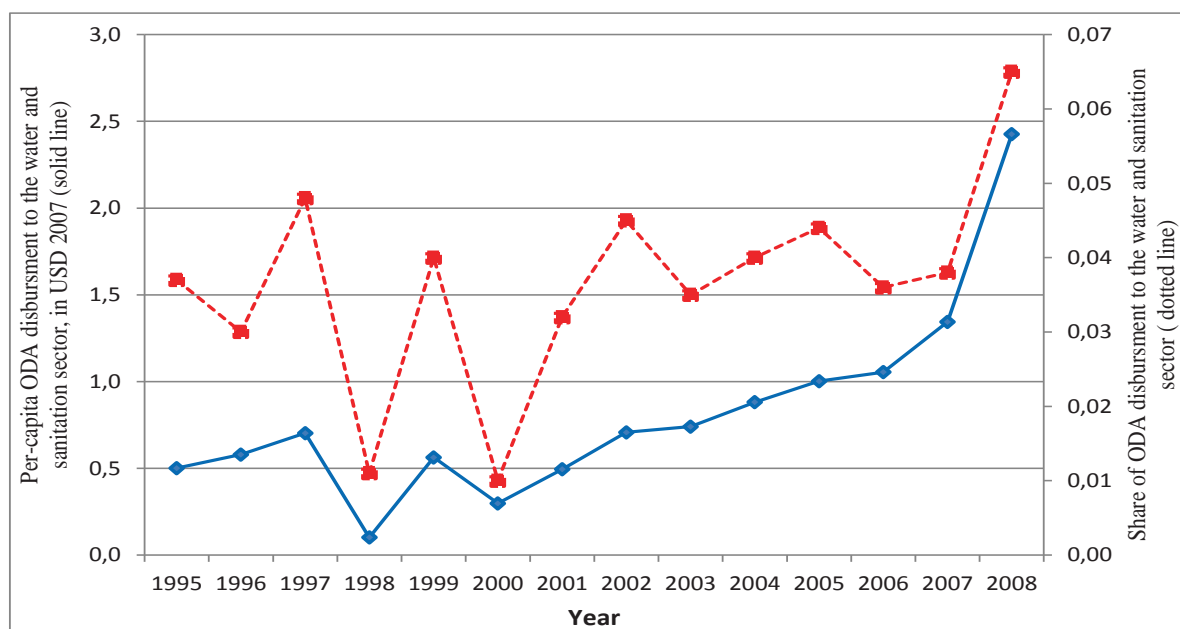


Sources: Gok Ministry for Water and Irrigation, AfDB Data platform and OECD CRS online Databases.

The increase in ODA to the WSS is also appreciable in per capita terms (Figure 24). For the water sector, the period 1995 to 2008 recorded a dramatic increase in ODA per capita, from about USD 0.5 to a peak of USD 2.4 in 2008. The sanitation sector recorded a similar increase of ODA allocation, from about USD 1.6 in 1995 to USD 2.8 in 2008. The trends also reveal significant variations, with 1998 and 2000 recording the lowest per capita ODA allocations to both sectors. The water sector recorded its lowest per capita aid allocation of about USD 0.2 in 1998, while sanitation sector recorded its lowest of about USD 0.4 in 2000 (Figure 24).

In spite of the increase in government and donors contributions to WSS sector, funding is still low, especially in terms of total provision. This has constrained the implementation of planned projects and programmes. Programme implementation in WSS has also been constrained by the unpredictability of funds from development partners as well as delays in the release of funds from the government. In 2008/2009 fiscal year, for example, MWI (2010) reported that actual receipt from the GoK was about 91 percent of the approved estimates, while that from Development Partners was about 67 percent of the approved estimates.

Figure 24: Gross ODA to WSS in Kenya



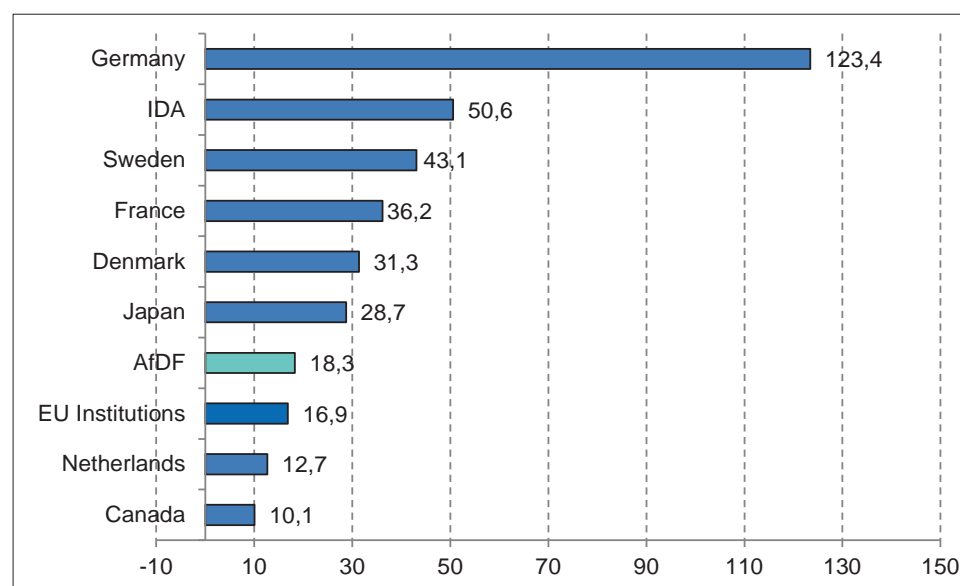
Source: Author's, using data from AfDB data platform and OECD CRS online Databases

As indicated in Figure 25 below, Germany was cumulatively the largest (including both Multilateral and Bilateral source) donor to water and sanitation sector in Kenya over the 2002 to 2009 period. During that period, Germany provided over USD 123.4 million, more than twice as much as IDA, the next largest donor with USD 50.6 million. Other donors in the top five are Sweden (USD 43.1), France (USD 36.2 million), and Denmark (USD 31.3 million). The African Development Fund (AfDF) ranked seventh among the donors to WSS in Kenya, providing a cumulative amount of USD 18.3 million over the 2002-2009 period. This represents 8.8 percent of the Bank's total ODA for that period on all sectors in the country. It is interesting to note that the overall level of spending (ODA)

by the Bank in that country has increased significantly (Figure 26). A selection of AfDB funded projects in Kenya is shown in Annex 3.

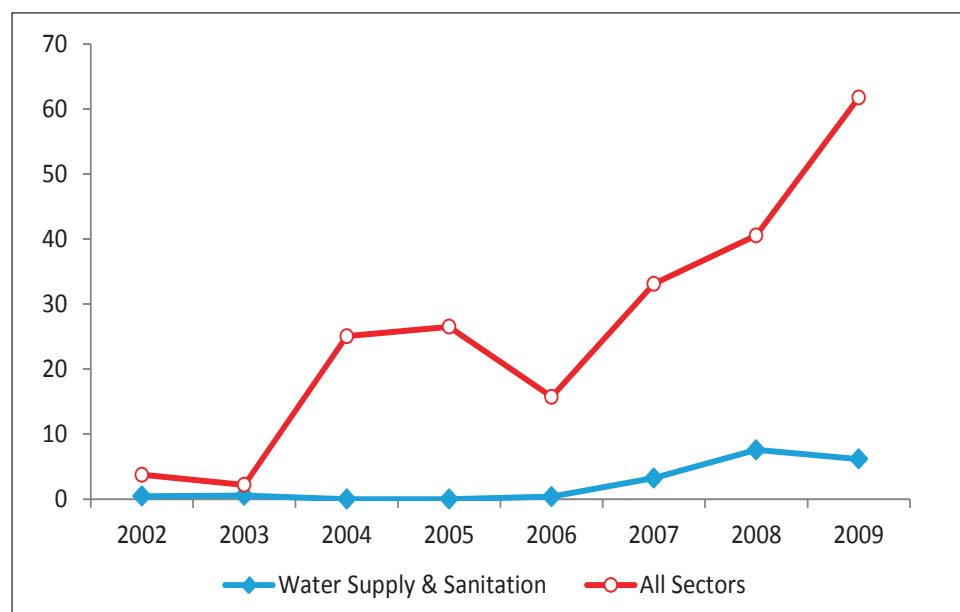
The establishment of the Water Sector Technical Group (WSTG) in Kenya, which meets once every two months, has significantly scaled up collaboration among donors. In 2003, the GoK and the donor group also established a Harmonisation, Alignment and Coordination (HAC) group to better harmonise, align, and coordinate their activities in line with the Paris Declaration. The HAC group has now expanded to 17 donor partners, with the AfDB coming on board in January 2007.

Figure 25: Aggregate aid to Kenya's water and sanitation sector 2002 to 2009 USD millions



Source: Author's using data from AfDB and OECD CRS online Databases

Figure 26: AfDF disbursements to water and sanitation in Kenya

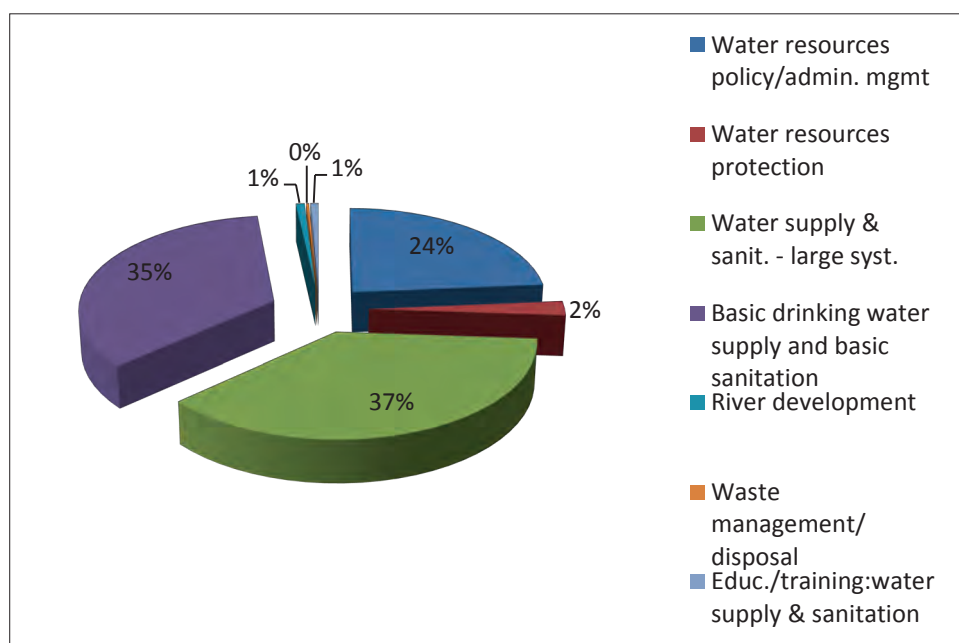


Source: Author's using data from AfDB and OECD CRS online Databases

All the development partners active in the water sector in Kenya currently have a cumulative commitment of over USD 1 billion in water and sanitation projects (AfDB, 2010a). The breakdown of this figure by donor contributor and by sub-sector is presented in Figures 25 and Figure 27. Large water and sanitation systems received the largest share (37 percent) of spending on water and sanitation sector from all donors (bilateral and multilateral) over the 2002-2008 period. Basic drinking water supply and basic sanitation (a subsector associated with direct

benefits to poor especially those in rural areas) was the next, receiving 35 percent. Water resources policy and administrative management was boosted with 24 percent share of total aid to water sector. Others, such as education and training, river development, waste disposal and water protection, received negligible attention from donors (Figure 27). This fairly comprehensive distribution of aid across various sub-sectors form a good basis for enhancing development in the water sector.

Figure 27: Gross disbursement by sub-sectoral priorities, 2002-2008



Source: Author's, using data from OECD CRS online Databases

3.3.3.3 Water Sector Governance

As an upstream riparian country of the River Nile, Kenya is a member of the Nile Basin Initiative, and participates in the various activities carried out under the trans-boundary benefit sharing scheme. Within the whole of the Horn of Africa, water security has become a major political concern, pointing to a strong need for Kenya to have an effective water policy, both national and international. In response, the government passed the 2002 Water Act into law. The Act made major reforms to water policy and created a new institutional framework, which is the basis for the current national water management regime.

In addition, the GoK clearly spells out a road map for achieving the water and sanitation sector's critical role in economic and social development in the Kenya's Vision 2030 economic development plan, and the Medium Term Plan (MTP).

A key element of the 2002 Water Act is the need to introduce water tariffs with a view to raising adequate financial resources to support continued improvements in the sector. However, given the level of poverty, the challenge of developing acceptable and affordable levels of tariff across the population remain daunting as illustrated in Box 5.

Box 5: Tariff setting in Kenya: The example of Nakuru

Setting appropriate tariffs for water services is a difficult task. While it is important that tariffs be used to generate revenue for water providers, the imposition of a system of full cost recovery is not always possible. In Nakuru, the AfDB funded Rift Valley Water Supply and Sanitation Project aims eventually to provide water not only to the half a million people in Nakuru town, but also to provide for another 1.5 million in the 13 other small towns in the area, as well as the 2 million or so rural residents of the district.

Water provision in rural areas includes the establishment of boreholes, shallow wells with hand pumps, and rainwater harvesting in scooped out pans. In urban areas, metered household connections are preferred, although in very low income areas, water is provided through water kiosks. Water delivery is metered at these kiosks, and a person is appointed to supervise and charge for water delivery. Tariffs are normally set for one year. While these have been designed for bureaucratic simplicity, the charges can be both high, and somewhat inequitable. For example, for households consuming up to 6m³ per month, a fixed charge of 200 Kenya Shillings is imposed (or Kshs 0.40 per 20 litre). An additional 50 shillings is charged per month for the meter itself.

From kiosks, water is charged at 2 shillings for 20 litres (vending price), which is five times the price for water in metered households. This means that the poorest people in Nakuru are paying higher water tariffs than better off households, in spite of the fact that they often have to queue for a long time to have access to the kiosk

water supply. This situation is made worse by the fact that the supply to the kiosks is not available 24 hours per day, and so sometimes people without a household connection struggle to get their domestic water. This problem is further exacerbated by the actions of private water vendors, who buy from the kiosk at 2 shillings per 20 litres, but then sell it for up to 20 times that amount.

In Nakuru, some 27 percent of households have connection to a sewerage treatment system. A further 40 percent are connected to septic tanks. Sewerage services are charged as 75 percent of the water bill. This makes it very expensive in some households. It also creates problems in situations where facilities are shared, or in commercial units where water charges are high (at 130 sh/M³). The inclusion of one toilet can almost double the water bill. To make progress in improving sanitation, the emphasis has been on the provision of pit latrines. The water services board provides the concrete slabs etc. needed to establish the facility, while the household or community is required to dig the pit. There is increasing interest in the provision of ecosan toilet systems, but this has to be introduced gradually, after public awareness and sensitisation has been carried out.

While it is clear that in Nakuru, the Rift Valley Water Supply and Sanitation Project is achieving its goal of increasing water and sanitation access, there is a need to review the water charges associated with it, and to provide capacity to support the activities of the staff in the project, and in the various water boards.

Thus, given the high levels of poverty, it is important that any tariff system be designed to ensure cross subsidisation is possible to support the poorest communities, perhaps with exemptions from these charges. The cost of metering itself is high, and tariff setting is sometimes besieged in conflicting policy guidelines¹⁹. In rural areas in particular, the distances involved and the degree of water scarcity make rural provision very difficult. As a result, communities in these areas tend to be last to be served. Other difficulties relate to local and national politics, power relations, and the unwillingness of some individuals and organisations to honour and comply with the new institutional arrangements. Added to this are the ethnic tensions, which have become more evident in Kenya in recent times, coupled with recurrent severe droughts and emergency relief needs.

The Kenyan Government, since 2006, has started to develop a Sector Wide Approach to Planning (SWAP) for the water supply and sanitation sector. The SWAP increases donor coordination and reduces the likelihood of overlapping and duplication of initiatives, and further enhances harmonisation of programmes. As a result of

this coordinated plan, the government and major donors have developed a common sector policy framework and programme, with possibilities for the pooling of resources and using common monitoring systems. The African Development Bank, for example, provides support to the regional water service boards, and contributes to the development of urban and rural infrastructure for water supply and sanitation, which promotes better management through local capacity development. A frequently cited issue in the WSS in Kenya is that of accountability and corruption, whose scope, nature, impact and costs are subject to further investigation. The government is scaling up anti-corruption efforts in the water sector to ensure transparency and accountability in all governance processes in WSS (MWI, 2010).

3.3.3.4 Institutional Capacity

Through the establishment of the MWI, the government consolidated the responsibility to develop water resources, policy, and overall sector monitoring functions in MWI, while water supply and sanitation services were decentralised to local water operators (Figure 28). Under

¹⁹ When water tariffs are calculated in Nakuru, for example, the way sanitation (sewerage) charges are included in some commercial water bills acts as a disincentive to provide sanitary facilities. The water bill can be significantly reduced simply by removing all sanitation facilities. This highlights the need for tariff reform and capacity building in tariff development and calculation.

these arrangements, an independent regulator, the Water Regulatory Services Board (WSRB), was created for the regulation of water and sewerage services, including licensing, quality assurance, and issuance of guidelines for rates, fees, and handling service complaints (USAID, 2007b). Nationwide, seven Water Services Boards (WSBs) are responsible for the efficient and economical provision of water and sewerage services within their areas of jurisdiction. The seven WSBs are responsible for asset development and bear overall responsibility for services. The WSBs delegate the provision of water services to Water Service Providers (WSPs), which may be community groups, NGOs, or autonomous entities established by local authorities or other persons (USAID, 2007b). The result of these reforms does allow prioritisation of water and sanitation services. However, water resources management is now treated separately, water policy has become the responsibility of the MWI (Orgut Consulting AB, 2009). The roles and responsibilities of these institutions are described in Annex 6.

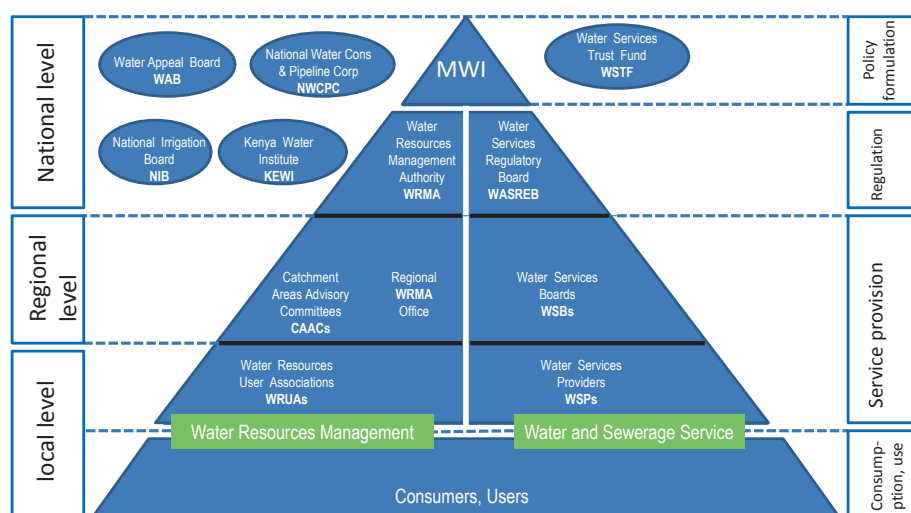
Another significant outcome of the 2002 reform is the establishment of Water Services Trust Fund (WSTF). The WSTF mobilises funds from various sources (government budgetary allocations, development partners, grants and donations from institutions and individuals in Kenya and abroad), specifically for WSS infrastructure development

for poor communities. CBOs also have the opportunity to access these funds to reach out to poorer communities and settlements. The annual pool of fund in WSTF increased from Ksh 134.6 million in 2005/06 to Ksh 443.5 million in 2008/09, more than 60 percent of which was contributed by development partners (MWI, 2010).

The Kenya Water Institute (KEWI), established in 2002 as part of the reform, also plays a key role in capacity building in the water sector through training of technical personnel. In this context, KEWI trained 227 officials in 2008/2009. The Water Sector Institutions (WSIs) also carry out staff capacity building to complement these efforts (MWI, 2010). However, further challenges remain in areas like good governance, data collection and collation, asset management and revenue collection efficiency (MWI, 2010). This requires that training efforts be scaled up and adapted to training needs and skills gap of personnel in WSS.

Overall, the current capacity of the service institutions in the WSS is inadequate for executing the sector's mandate as defined in the reform agenda. There is a need to augment capacity, especially for planning, management, maintenance, monitoring and evaluation activities. However, this has considerable human resources implications for the government.

Figure 28: Institutional framework for the water sector under the Kenya's Water Act 2002



Source: Kenya Ministry of Water and Irrigation, 2007

On the positive side, the revised water policy has resulted in an increase in water and sanitation provision in both rural and urban areas, and has contributed to some progress towards the MDGs. However, the political upheaval that occurred in 2008 after the December 2007 general election has delayed progress in the sector.

There is notable progress in donor funded projects, including those supported by the AfDB Group. In spite of the gloomy picture presented in section 2.3.2.2, the recent reform and a scaling up of funding by donors gives hope that the country may reach the WSS MDG target by 2015.

3.3.3.5 Role of Private Sector and Non-Governmental Organisation

The private sector plays a key role in Kenya's economy, accounting for over 80 percent of GDP. It is an important source of government revenues. The government has adopted a private sector development strategy to address all problems of private sector development (KJAS, 2007). In water and sanitation sector, service provision has been dominated by the public sector. Private sector participation is largely limited to water vendors and consultants. The latter are involved in the execution of contracts for the construction and installation of water systems, and the production and retail of bottled drinking water. In addition to investment financing, the private sector has the potential to contribute significantly to the much needed skills and expertise in the sector. Indeed, creating an enabling environment for private sector participation in WSS will boost employment and economic growth.

The civil society is actively involved in promoting good governance and social economic development in Kenya. In fact, the NEPAD APRM Kenya report considers the country's civil society organisations as one of its strengths. Kenya has many well-functioning civil society institutions, including the media and faith-based organisations that provide leadership, mobilise resources and coordinate support. They are especially active in promoting the rule of law in environmental management, delivering health, education, HIV/AIDS, water services, advocating for human rights (women, children and vulnerable groups). However, civil society organisations need to address the issues of accountability, commitment, capacity and focus on results and sustainability (KJAS, 2007).

3.3.3.6 Monitoring and Evaluation

Monitoring and Evaluation (M&E) remains a challenge in Kenya. M&E activities are generally limited to donor funded projects. This situation adversely affects data quality. It also hinders effective and efficient planning and policy processes. Presently, the MWI is responsible for M&E at the national level, through the compilation of project progress reports and performance contracts received from project implementing agencies/sector institutions. Unfortunately, reporting formats are not standardised, and coverage does not usually reflect national focus. It is difficult in Kenya to see a participatory monitoring and evaluation process, especially at the community level in rural areas, where it is critical to enhance the voice of the people in policy planning and decision making processes. Therefore, the National Water Supply and Sanitation (NWSS) targets and other data are reported here with the caveat that they may be at variance with internationally available data.

However, reporting by Water Services Providers (WSPs) and Water Services Boards (WSBs) to WASREB is improving but still falls short of the required quality, especially with the WSBs lagging behind. With the assistance of UN Habitat, Kenya is undertaking MajiData²⁰ project for the purpose of closing the information gap in the urban areas (underserved low income areas in approximately 200 towns), and will allow a focused up-scaling of access to water and sanitation. This will help to improve investment planning and thereby enhance aid effectiveness. The new database gives an opportunity to revise the MDGs for coverage in the urban setting to reach 68.5 percent. For rural areas, there are many data gaps, hence the need to carry out an exercise like MajiData to ensure that a solid database is established, and updated in the future.

Furthermore, the government is making progress to address the issue with the establishment of Water Resources Information System (WARIS) and a sector-wide Information and Management System (IMS) by the Water Services Regulatory Board, in coordination with the Ministry of Water and Irrigation. This will ensure efficient data collection through a wide area network (WAN).

3.3.4 Relationship between inputs and outcomes: Applying the WIDE

In this section, we proceed to estimate the Watsan Index of Development Effectiveness, so as to establish the relationships between drivers and economic outcomes. The WIDE comprises the input drivers and progress outcome²¹. Table 22 and Annex 5 provide the basic information and summaries on Kenya's WIDE analysis. Kenya's composite score for the Input Drivers is 10, while that for the Progress Outcome is 35. The WIDE analysis shows that Kenya has a very low Input Drivers with which it has made significant progress in terms of Progress Outcomes. This suggests that given Kenya's scarce water resources, the country has utilised these effectively in generating the observed outcomes in access to water and sanitation. It is very clear that the biggest constraint for water and sanitation development in Kenya is actually in terms of water resources themselves, and in the pressure of human needs on the biophysical system. Since 1990, increased volumes of aid have led to progress in both water and sanitation, which is also due to institutional strengthening over the year.

While overall coverage is still low, there is room for some optimism given the recent progress, and given the continued commitments of the international community. The slow pace in the performance of the sector with regards to attainment of MDG is indicative of the fact that more funds are required for developments in the sector.

²⁰ MajiData is a UN Habitat project. See: <http://www.unhabitat.org/content.asp?typeid=19&catid=635&cid=7661>

²¹ For details of methodology see Chapter 1, Section 4 of this report.

Table 22: Input drivers and progress outcomes of the Watsan Index for Kenya

Watsan Index of Development Effectiveness components		Scores	Overall Index	Rank ²²	WIDE
Input Drivers	Development aid to the water and sanitation sector, as measured by the average yearly per-capita aid to the sector	3	10	38	11
	Domestic resources, as measured by average per-capita gross domestic products	7			
	Water resources, measured by the quantity of per-capita renewable available water	0			
	Government capacity (a component of human resources), measured by the Ibrahim index of African governance for rule of law, transparency and corruption	30			
Progress Outcomes	Progress in the share of population with access to improved water sources, over the 1995-2008 period	51	35	27	
	Progress in the share of population with access to improved sanitation facilities, over the 1995-2008 period	26			
	Share of population with access to improved water sources in 2008	34			
	Share of population with access to improved sanitation facilities in 2008	27			

Source: Author's Calculations.

As presented in the preceding sections, access to water and sanitation increased, though at a pace less than expected over the 1990 to 2008 period. A critical question is whether this observation is attributable to ODA. On average, Kenya experienced a rise in access to improved water and basic sanitation. At the same time the per-capita ODA disbursement to the water and sanitation sector increased from 1995 to 2008, except for the year 2000.

The relationships between access to water and sanitation and some variables, including ODA, were explored in a correlation analysis. The results are presented in Table 23. As expected, the per-capita ODA disbursement to the WSS correlates positively with access to improved water sources and improved sanitation (statistically not significant) facilities. The negative and significant

correlation between life expectancy at birth and improved water source is unexpected. Similarly, the positive correlation between infant mortality rate and improved access to water source is against the intuition. The unexpected relationship signifies the importance of access to improved sanitation as corroborated by the expected association between access to sanitation, life expectancy at birth and infant mortality rate. Similarly, there is a positive association between GNI per capita and the proportion of the population using improve water source. Surprisingly, the propotion of people using improved sanitation facilities correlates negatively with GNI per capita. This reflects the subdued attention that the sanitation sometimes gets in budgetary allocations. It also reflects the concentration of Kenyan population in four cities in search of economic opportunities, resulting in congestion and unhygienic conditions.

²² All rankings refer to the sub-sample of 45 SSA countries for which all data on input and outcomes is available (all but Djibouti, Seychelles and Somalia).

Table 23: Correlation with access to water and improved sanitation facilities

	Population	Human Poverty Index	Life expectancy	Mortality rate	ODA Disbursement to Water & Sanitation	Per capita ODA	GNI per capita
Improved water source, (% of total population with access)	0.8322 (0.0054)	0.8193 (0.1807)	(-0.8276) (0.0059)	(0.1820) (0.6393)	0.8227 (0.0872)	0.7514 (0.1432)	0.8493 (0.0076)
Improved sanitation facilities (% of population with access)	(-0.2686) (0.5200)	0.8855 (0.1145)	0.3283 (0.4272)	(-0.2747) (0.5102)	0.4082 (0.4951)	0.4315 (0.4682)	(-0.5031) (0.2038)

Source: Authors based on data from AfDB and OECD data platform

*Figures in parenthesis show probabilities at which the statistical significance of the correlation coefficient may be evaluated

3.3.5 Lessons learned

This analysis, which is complemented by field visits to the project sites and meetings with key stakeholders has revealed a number of important factors that may influence development aid effectiveness in Kenya. In particular, the following issues are important:

- Sanitation provision is still inadequate throughout the country. There is much scope for further development of large scale eco-sanitation systems in urban areas.
- Strong financial and technical skills in the implementation units are a success factor. However, capacity is often insufficient, both at the national and local level.
- The local communities' ability and willingness to pay for WSS services is a constraint that should always be taken into account in project and programme planning.
- Good technical design must be accompanied by the establishment of the appropriate institutional set up. Accountability is a key factor for success.
- Financing from multiple donors may ensure that all the lessons from previous experience be taken into account, but it is also essential that excessive bureaucracy is avoided.
- Communities' involvement in the design, implementation and maintenance of projects is still low. In some projects, the beneficiary communities are hardly involved, yet their participation is fundamental to ensure project success and sustainability.
- Tariff-setting and cost-coverage are key to ensure that the project is properly maintained. This has implications on the choice of the project's type and size.

- Tariffs can often be regressive. As noted, poor people pay higher prices than the rich for the water they consume, usually from private vendors. They spend significant proportion of their household income on water. In addition, individuals in low income areas spend more time to collect water, as they do not have home connections. They are penalised by low water pressure that makes water supply less reliable. Tariffs-setting fundamentally affects both project sustainability and equity outcomes.
- Approximately 80 percent of the outpatient hospital attendance in Kenya is due to preventable diseases, while 50 percent of these are water, sanitation, and hygiene related.
- Kenya has adopted Medium Term Expenditure Framework (MTEF) processes in budgeting for WSS activities for more than eight years now, in addition to the SWAP process already in operation. These are clearly paying dividends.

3.3.6 Conclusion

Significant progress has been made in increasing access to water and sanitation in Kenya, owing to donor commitment and recent reforms in the sector. However, there is still a need for consolidation on what has been achieved so far, and to ensure the built infrastructure is maintained and capacity gaps addressed. There is also a need to ensure greater equity in access to water and sanitation between rural and urban, and more importantly, in specific areas plagued by political unrest and associated setbacks.

Various forms of water storage systems should be put in place as part of this process to help the country deal with the high levels of climate variability being experienced, and to prepare for a potential worsening of longer term climatic conditions.

The MWI adopted a sanitation concept for the water sector with the participation of all major stakeholders. This is a very important step in regard to the little progress achieved in sanitation coverage (relative to water access) and needs to be taken further with the effective implementation of the concept. The evaluation of projects implementing sewerage systems have documented that the connection rate is very low (around 20 percent), which makes sewerage systems a very high per capita investment. This calls for particular attention to improving sewage systems.

With the reforms instituted in the water and sanitation sector, and the harmonisation and coordination of development efforts in Kenya, access to water and sanitation has steadily improved. This increased access need to be sustained with increased government budget allocation and donor support, with deliberate efforts to narrow the gap between commitments and actual disbursements. Full implementation of the milestones in the National Water Services Strategy (NWSS) 2007-2015, remain key. This will ensure that the overall framework of water and sanitation provision builds on the current achievements and facilitate the realisation of MDGs and the vision 2030 targets.

3.4 Uganda

3.4.1 Introduction

Uganda is a landlocked country in East Africa. About one-sixth of the country consists of lakes, rivers and wetlands. Since the late 1980s, democratic reforms have helped the country to recover from civil war and economic catastrophe to become relatively peaceful and stable. With about 43,942 km² of wetlands and open water comprising 16 percent of total area, Uganda is considered fairly well endowed with water resources. The country's total annual renewable water resources are estimated

to be 66 km³, with an annual average of 2,800 m³ of water available per capita. Uganda therefore has more water resources than many African countries. However, rapid population growth, increased urbanisation and industrialisation, uncontrolled environmental degradation and pollution, are placing increasing pressure on the utilisation of freshwater resources (UNESCO, 2005).

The country's major water bodies include Lake Victoria, the world's second largest freshwater lake, shared with neighbours Kenya and Tanzania. Other lakes include Kyoga, Albert, George, and Edward. The major rivers are the Nile, Ruizi, Katoga, Kafu, Mpologoma, and Aswa. Uganda lies almost entirely within the Nile Basin and most of its water resources are shared with other countries. The country occupies a dual position in the Nile riparian context, being a lower riparian with respect to its neighbours Rwanda, Burundi, Tanzania, Kenya and the DRC, and an upper riparian with respect to Sudan.

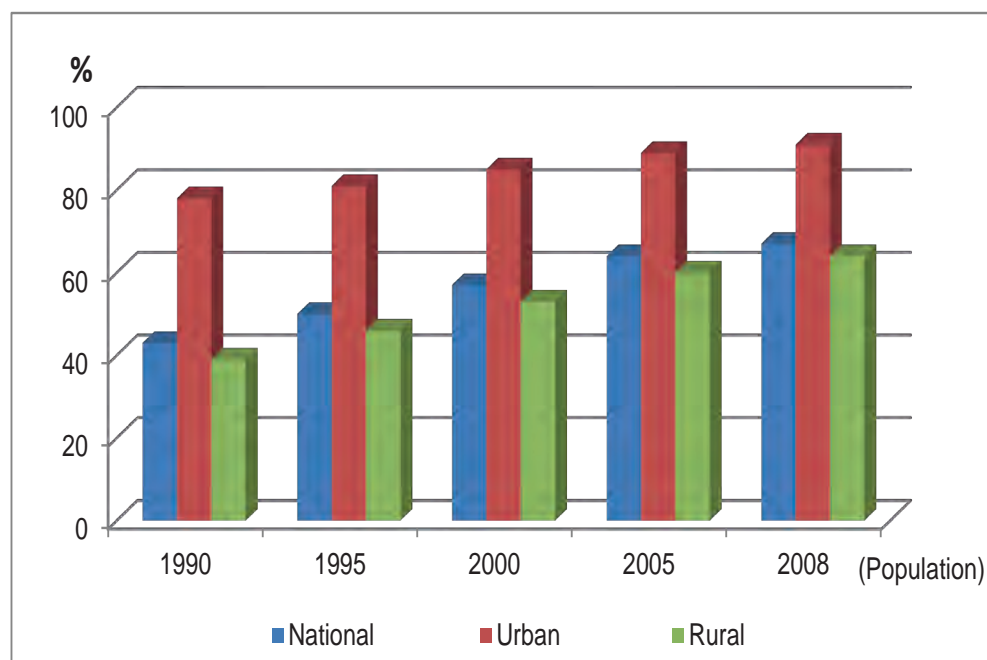
3.4.2 Outcomes: Access to Water and Sanitation

3.4.2.1 Status of Access to Water and Sanitation

Between 1980 and 2008, access to improved drinking water supplies and sanitation steadily increased at the national, urban and rural areas in Uganda. The most marked improvement has been in access to improved water, which recorded a 24 percent increase from 43 percent to 67 percent over the 18 year period (Figure 29 and Annex A1.1). The increase in access to sanitation services over the same period was less impressive, rising from 39 percent to 48 percent (Figure 30 and Annex A1.2).

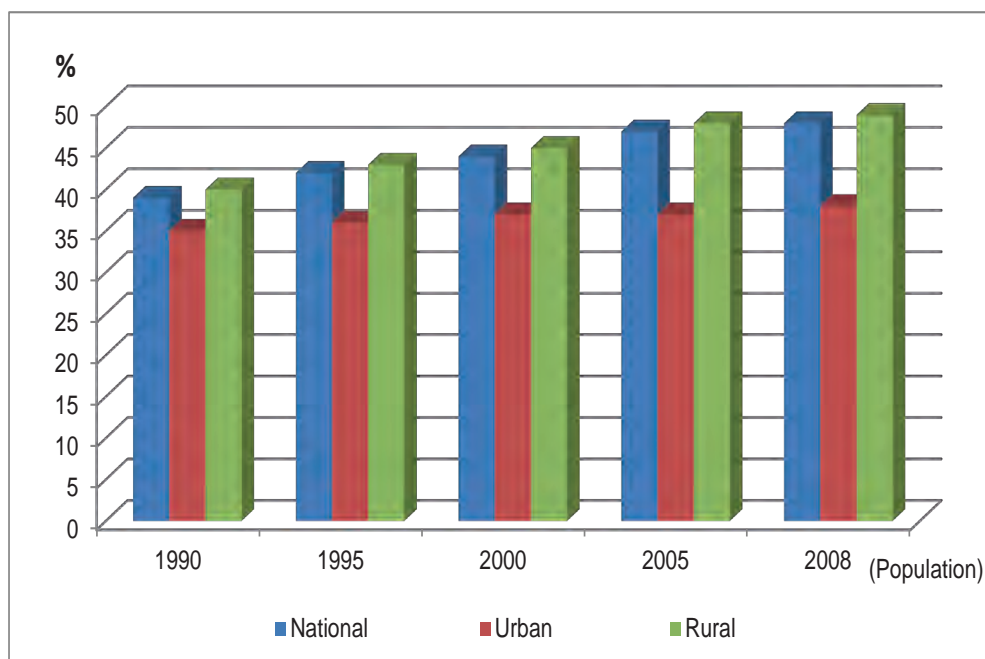
Through this period, the urban population of the country enjoyed far more access to improved water, which rose from over 70 percent in 1990 to about 91 percent in 2008. This is an impressive performance, thanks in part to the emerging water purifying and bottling private enterprises. On the contrary, access to improved sanitation services recorded more progress in rural than urban areas throughout the period, due to increasing urbanisation, which is not matched by increased service provision.

Figure 29: Access to improved water sources for Uganda



Source: Authors, using online databases of WHO / UNICEF

Figure 30: Access to improved sanitation facilities for Uganda

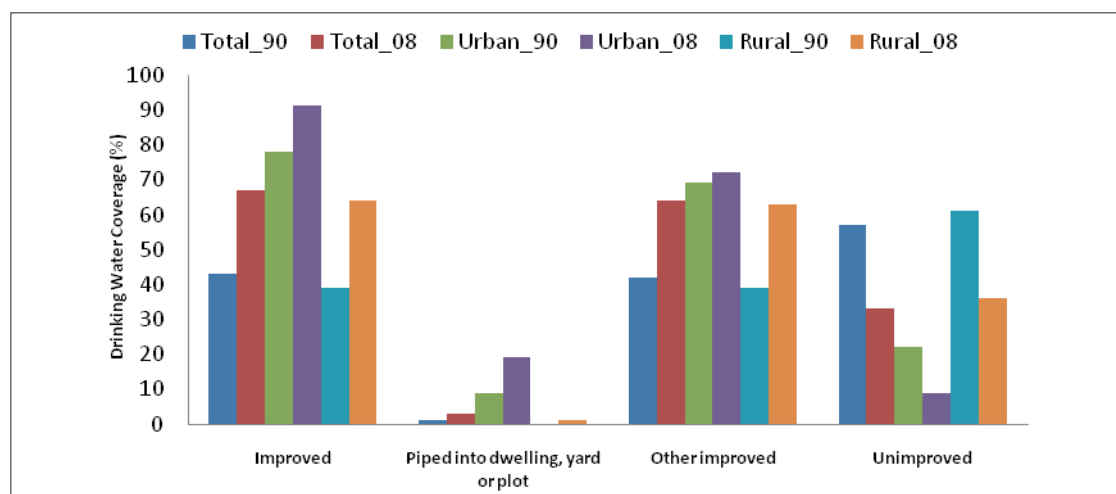


Source: Authors, using online databases of WHO / UNICEF

As indicated in Figure 31, the sharp increase in access to improved water sources is matched by corresponding decline in the use of water from unimproved drinking water sources. However, the provision of piped water

through dwellings, plots or yards, remains low over the same period, indicating that the observed trends may not be sustainable.

Figure 31: Uganda Drinking Water Coverage by Sources (1990 - 2008)



Source: Authors, using online database of WHO/UNICEF

Though lagging behind urban areas, the rural areas also witnessed a steady increase in access to improved water sources in the last two decades, from below 40 percent in 1990 to over 60 percent in 2008. The improvement was

worthwhile because of the achievement of the national objectives of development of groundwater abstraction sources (springs, wells and boreholes) as well as high success rate for the installations highlighted in Table 24.

Table 24: Progress toward improved rural water supply

Type of Water Source	Planned	Achieved	% Achieved
Spring protection	458	370	81
Shallow wells	691	677	98
Boreholes	831	779	94
Piped Water Supply (Taps)	23 (345)	17 (255)	74
Gravity Flow Schemes (Taps)	30 (300)	21 (210)	70
Rainwater tanks (10m ³)	773	478	61

Source: AfDB (2010b)

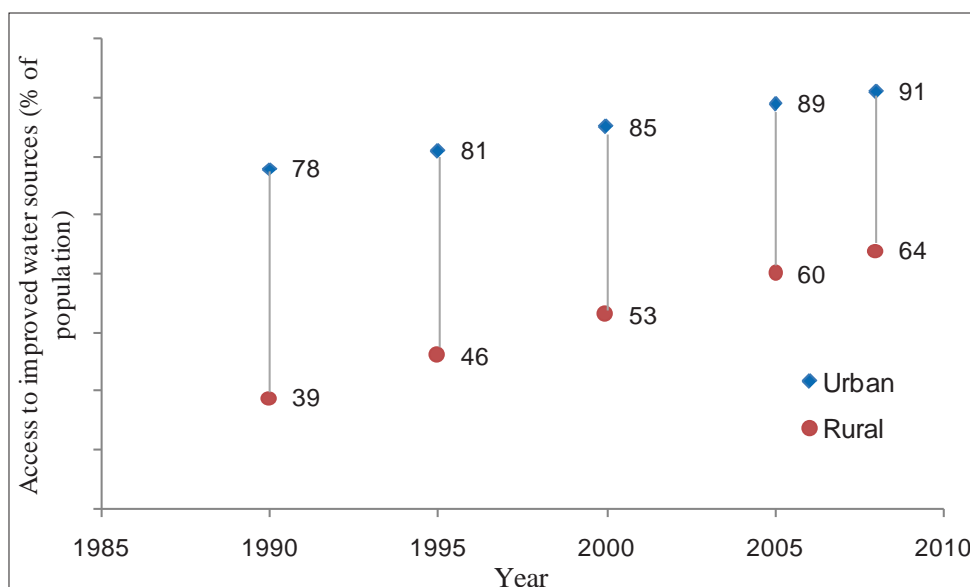
Even though urban areas currently enjoy better access to improved water sources, the rate of improvement is higher in rural than urban areas. In this context, the gap between urban and rural areas in terms of access to improved water sources narrowed down from 39 percentage points in 1990 to 27 percentage points in 2008 (Figure 32). With regards to sanitation, relatively fast progress are observed in the rural areas, widening the gap with the urban areas, from five percentage points in 1990 to 11 percentage points in 2008 (Figure 33). Overall, as of 2008, the proportion of urban and rural population with access to safe water supply was 91 percent and 64 percent respectively. For the same year (2008), access to basic sanitation in urban and rural areas was estimated at 49 percent and 38 percent respectively.

In rural areas, improvement in sanitation includes not only the construction of sanitation facilities, but also

education in the form of seminars, home visits, staged plays, radio spots, distribution of posters, and baseline surveys. Various campaigns to promote better sanitation have been launched, including “Sanitation for family prosperity”, “Home Improvement Campaigns” (HICs), and the “Hand washing campaign”. Progress with certain provision has been commendable in some towns. In Kabaale town, for example, a total of 178 improved latrines were constructed for 92 primary schools as well as three public toilets in a single year. Additionally, 148 Ecological Sanitation (ECOSAN) toilets were completed in 19 towns, out of a target of 150 in 2008.

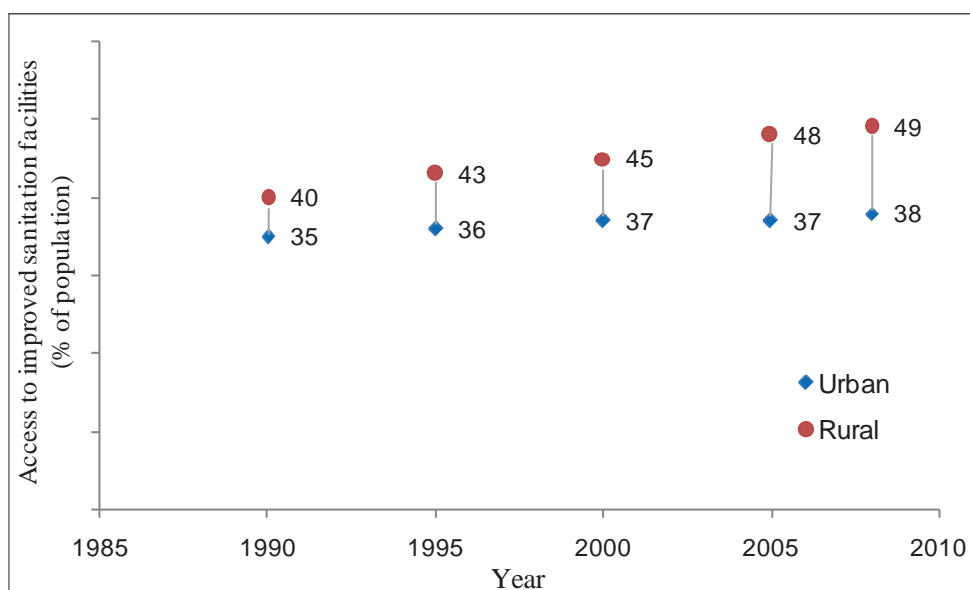
The use of ECOSAN technology has further been promoted and demonstrated by several NGOs. The technique is particularly suitable for areas with poor soils, rocky terrain or a high water table, where the construction of pit latrines is less feasible.

Figure 32: Access to improved water - urban /rural gap in Uganda



Source: Authors using WHO/UNICEF online databases

Figure 33: Access to improved sanitation - urban/rural gap in Uganda



Source: Authors using WHO/UNICEF online databases

Coverage for sewerage services in large towns stood at 6.4 percent as of June 2009. Despite the introduction of a new simplified sewerage connection policy by the National Water and Sewerage Corporation (NWSC) in 2006/07 fiscal year, new sewer connections have averaged only about 250 per annum (Table 25). The major reason for the low connection rate is the limited

network coverage. Some of the NWSC areas have no water borne or piped sewerage services. Also, there is reluctance of customers to connect to the network when they already have on-site sanitation facilities. Efforts have been made to develop master plans for expansion of sewer coverage in all towns and to implement activities set out in the Kampala Sanitation Master Plan.

Table 25: Trend of sewer connections, Uganda

Year	2005/06	2006/07	2007/08	2008/09
New Sewerage Connections	229	333	232	262
Total Sewerage Connections	13853	14186	14418	14703
% Growth		2	2	2
Sewer Extensions (km)	5.7	2.3	9.0	0.53

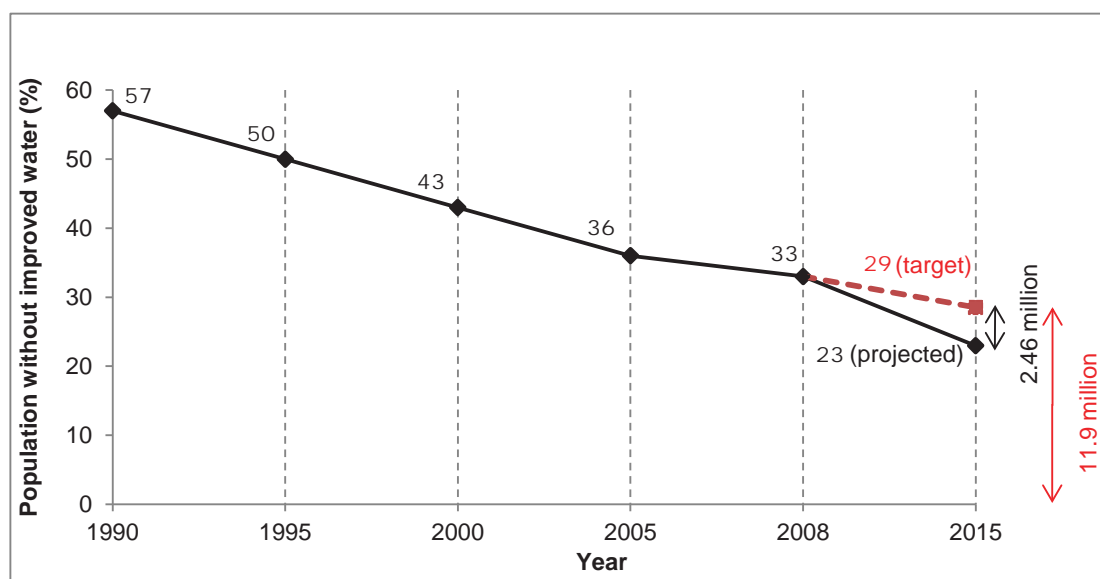
Source: MWE (2009)

3.4.2.2 Progresses towards the MDGs in Uganda

Uganda has undoubtedly made significant progress towards the water related MDG targets. At the current progress rate, it is probable that Uganda will surpass the MDG target on access to improved water sources. By 2015, only 23 percent of the population or 9.44 million Ugandans are likely to lack access to improved water source, as against an MDG target of 29 percent or 11.9 million people (Figure 34). If achieved, this would

be a commendable accomplishment under the difficult economic circumstance of successive food and financial crises. However, UNESCO (2005) noted the burden of water collection from distant locations. The burden falls squarely on women and children, the most vulnerable tiers of society. The long distance travel in search of water significantly reduces the time they spend on productive activities. They miss out on important economic opportunities that can contribute to growth.

Figure 34: Access to improved water- Uganda's progress towards the MDG target

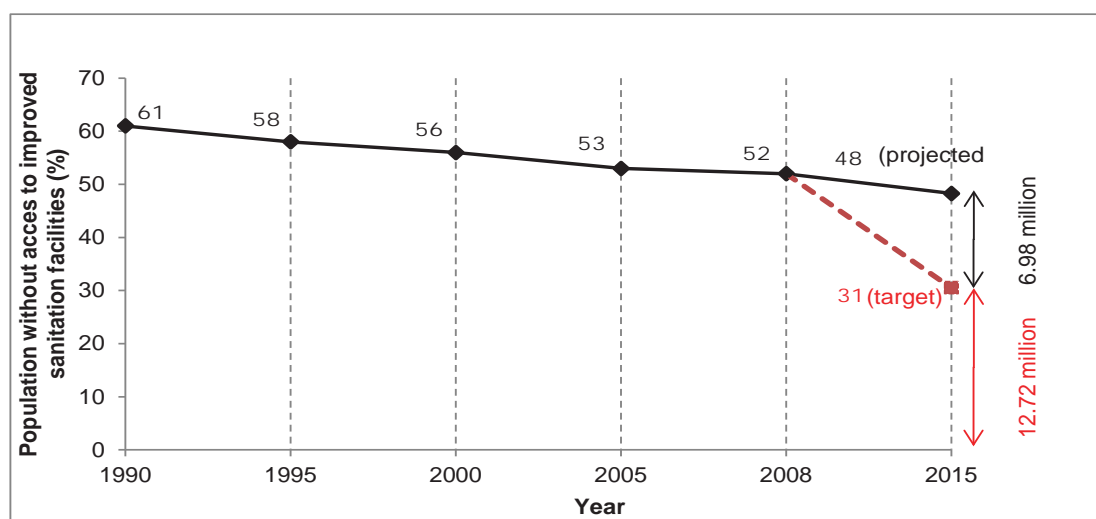


Source: Authors, using WHO / UNICEF on line database

With regards to sanitation, there are still doubts if the country will achieve the MDG target. As indicated in Figure 35, it is highly likely that the country will miss the MDG sanitation by about 17 percent or 6.98 million by 2015, given current trends. This number includes some 12.72 million people (31 percent) who would still lack access to basic sanitation even if Uganda meets MDG

target. This situation is based on the premise of high poverty rate of 50 percent (living on less than \$1.0/day) and civil unrest in large part of the rebel besieged north. Uganda is ranked 142 out of 162 countries in term of poverty. There is also concern about low hygiene and sanitation awareness in spite of the existence of various campaigns and initiatives.

Figure 35: Access to improved sanitation- Uganda's progress towards the MDG target



Source: Authors, using WHO / UNICEF online databases

3.4.3 Drivers of Access to Water and Sanitation Services

In spite of reasonable progress, Uganda still grapples with several factors that impede satisfactory performance in service provision in the water and sanitation sectors. These include the pressures on water resources, the financial resources and the capacity of the infrastructure. These pressures are compounded by demographic shifts, the challenge of HIV/AIDS and persistent rebel incursion in the north, which have combined to hold back progress. Without concerted efforts to address these issues it is difficult to see the situation changing for the better in the near future.

3.4.3.1 Water Resources Availability and Utilisation

The total renewable water resources of Uganda is estimated to be about 39 billion m³. The volume of renewable water resources for Uganda from 1988 to 2010 have declined from 2053m³ to 1232 m³ per inhabitant per year, marking a reduction by 40 percentage points. At the same time, population over the same period has risen from 19 million to 31.7 million – an increase of about 40 percent. Given that the average annual rainfall (1300mm) has not changed significantly over this time, the increased demographic pressure implies less water availability per capita. Major water users are the agricultural and the domestic sectors. They consume 40 percent and 43 percent of total withdrawals respectively. Industrial users account for 17 percent of the abstraction.

Although these figures may suggest a scenario of future water scarcity, there is still room for increased abstraction, since only 0.45 percent of the country's renewable water resources have been developed to date (FAO AQUASTAT). The problem thus is not physical water

scarcity, but economic water scarcity or lack of adequate investments to increase water abstraction. While 100 percent abstraction can never realistically be achieved nor desirable, there is nevertheless considerable scope to increase the current rate to a level that can meet the future needs of the country. Achieving this requires considerable financial investment and the establishment of an efficient water and sanitation infrastructure, both for the captive and storage (dams), and for the delivery to users.

Under these circumstances, Uganda's progress in availing water and sanitation services should be noted as commendable. The major challenge lies in keeping the pace of service provision with that of demographic trends and urbanisation. The country's population growth rate is among the world's highest, at 3.2 percent annually. In some areas of Kampala, for example, populations in peri-urban areas are growing so fast that even the best possible action and policy would struggle to keep up.

The major water and sanitation (and other development) challenges posed by the rapidly growing population are hoped to be met with 'The National Population Policy of 2008' (MOFPED 2008). Under the theme, 'Social Transformation and Sustainable Development', this policy aims to slow down the current rate of population increase that is much too high for the country's economy to sustain. Impacts of such a policy are medium to long term, and so the pressure of rising population in the context of service provision must be addressed.

3.4.3.2 Public Investments and Development Aid

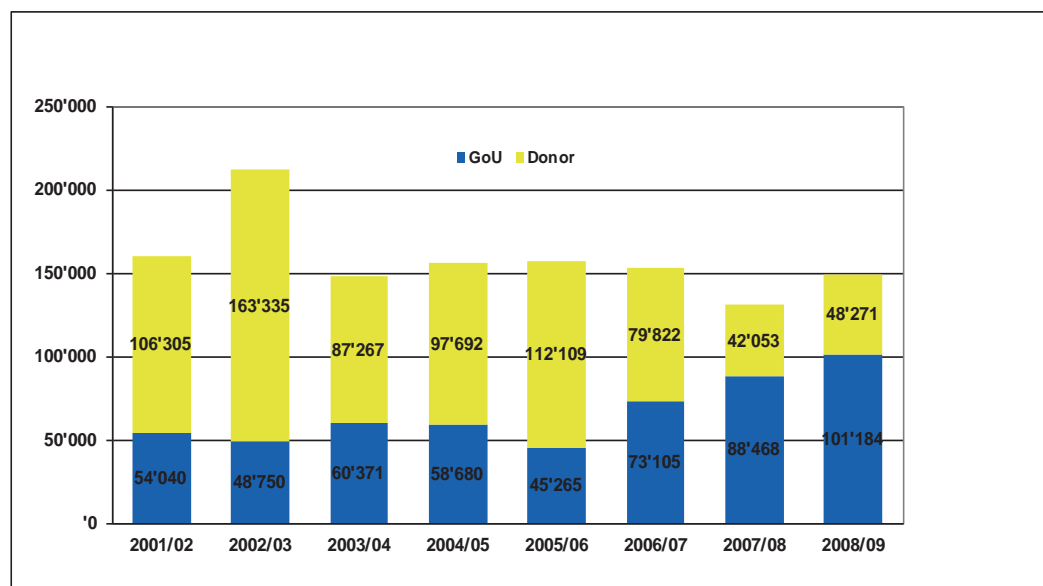
Overall the total budget has remained fairly constant from 2001/02 to 2008/09. However, the relative contributions from external donors and the GoU has changed markedly. From 2005 to 2009, the contribution of the GoU has

steadily increased from 35 percent to 66 percent of the total amount (See Figure 36 and Annex A2.3). GoU's increased budgetary allocation to the sector is a confirmation of its sincere commitment to the implementation of the Poverty Eradication Action Plan (PEAP) with increased allocation to key priority sector, including WSS. Unfortunately, while the contribution of the GoU has continued to increase, it has been matched by a corresponding decline in external funds. The result is that the overall budget has remained constant. This has meant that the extra funding required to boost the sector has not materialised. Given the current situation, it is even more vital that funds ring-fenced for the WSS sector from the GoU budget are provided in full. Otherwise, progress in the sector will be greatly affected. Though, government allocation to WSS has been increasing recently, the share of WSS budget unfortunately has gone down.

Despite the fact that the water and sanitation (WSS)

sub-sector has been allocated a ring-fenced budget, the sub-sector's share of the national budget has declined from 7.9 percent of the national budget in the Financial Year 2002/03, to 2.4 percent in 2008/9 (Figure 37). Also a similar downward trend was witnessed for ODA allocation to WSS between 1995 and 2008. This is shown clearly in Figure 38, where WSS ODA declined from 13 percent in 1995 to about four percent in 2008. Also, Figure 38 shows that per-capita ODA disbursement has ever remained below USD 4 during the 1995-2008 periods. The weak appetite of donors support to WSS is not a true reflection of total aid flow to Uganda. For example, the total ODA from all donors to Uganda amounted to USD 663 million in 1990, and rose to some USD1575 million by 2008. From the foregoing, it is clear that this huge surge in the aid effort was not matched by a corresponding improvement in the sanitation and water sector. This implies that the aid was provided in areas other than water and sanitation.

Figure 36: Budget allocation for the water and sanitation sub-section (Millions UGsh)

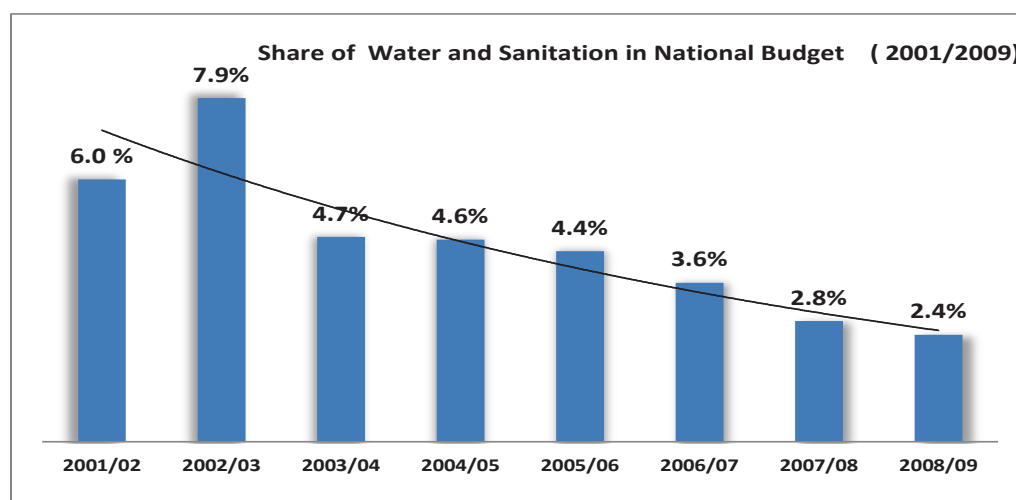


Sources: MWE (2009)

Thus, available data reflect a reduced priority for the sub-sector over the period, despite the fact that there is concern that funding levels are insufficient to meet the national PEAP and MDG targets. Further, it has been

noted that the development partners' support to the sub-sector provided through earmarked budget support is not always translated into additional funds for the sub-sector.

Figure 37: Share of water and sanitation in national budget (2001/2009)

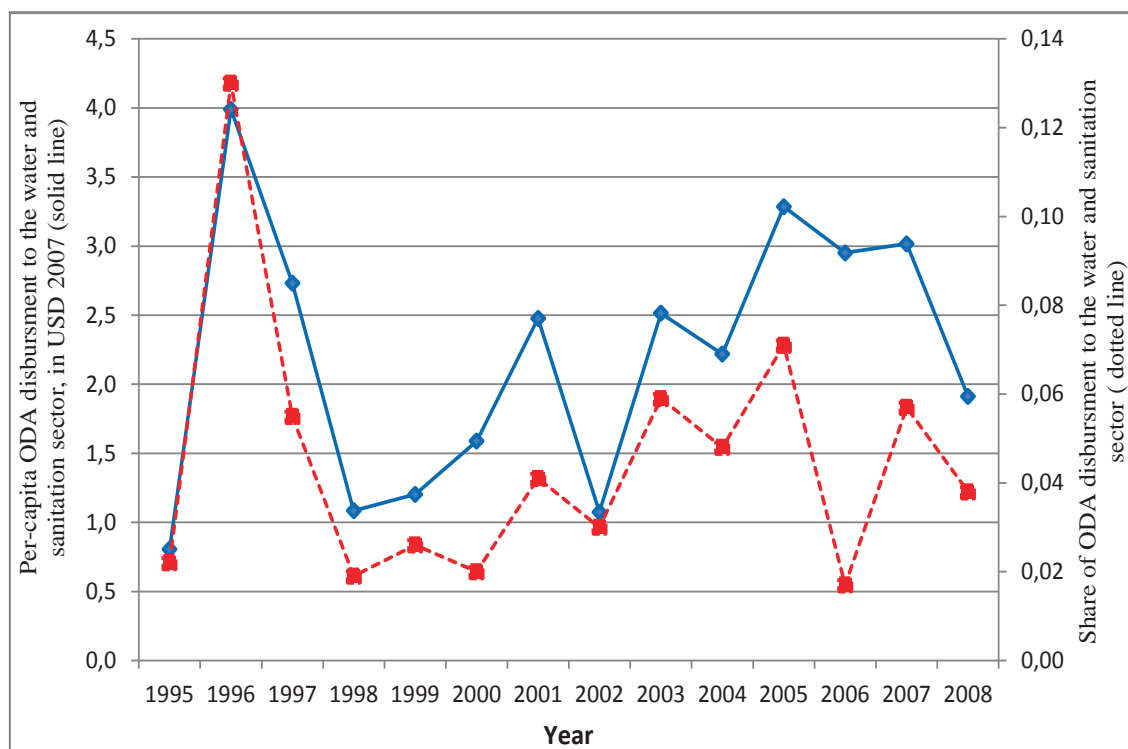


Sources: MWE (2006, 2009)

The major bilateral and multilateral donors in Uganda and their cumulative ODA to the country during 2002-2009 are presented in Figure 39. International Development Association (IDA) led all other donor agencies with an aggregate aid of USD 203.8 million between 2002 and 2009. IDA support to Uganda is more than double the aid flow from the second largest donor Germany (USD 100.1 million) during the same period. Germany was followed

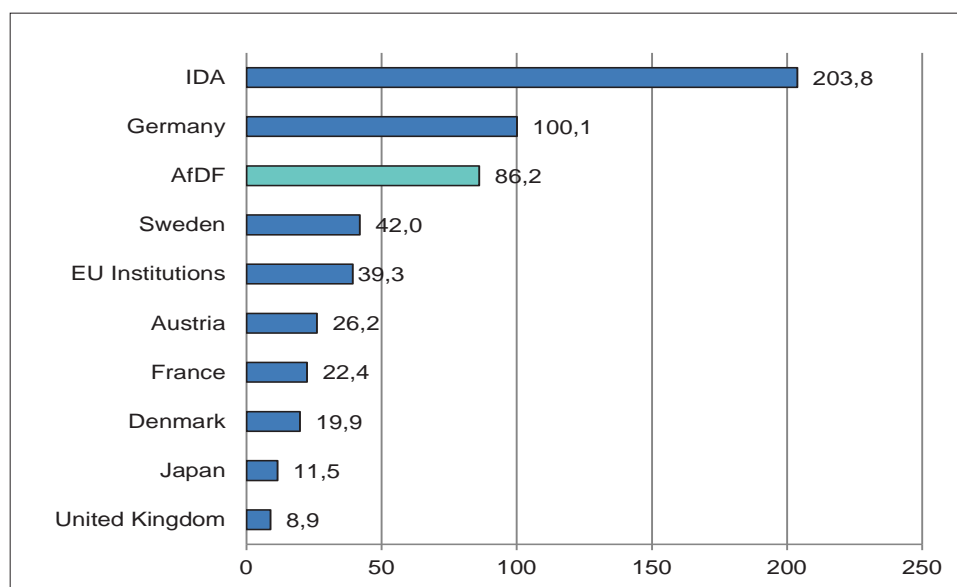
by AfDF (USD 86.2 million). The AfDF disbursements represent only 8.6 percent of the Bank's total ODA to Uganda for that period on all sectors (Figure 40). Other donors in the top 10 list are Sweden, European Union, Austria, France, Denmark, Japan and United Kingdom. A selection of the Bank's funded projects in Uganda is shown in Annex 3.

Figure 38: Gross ODA to WSS in Uganda



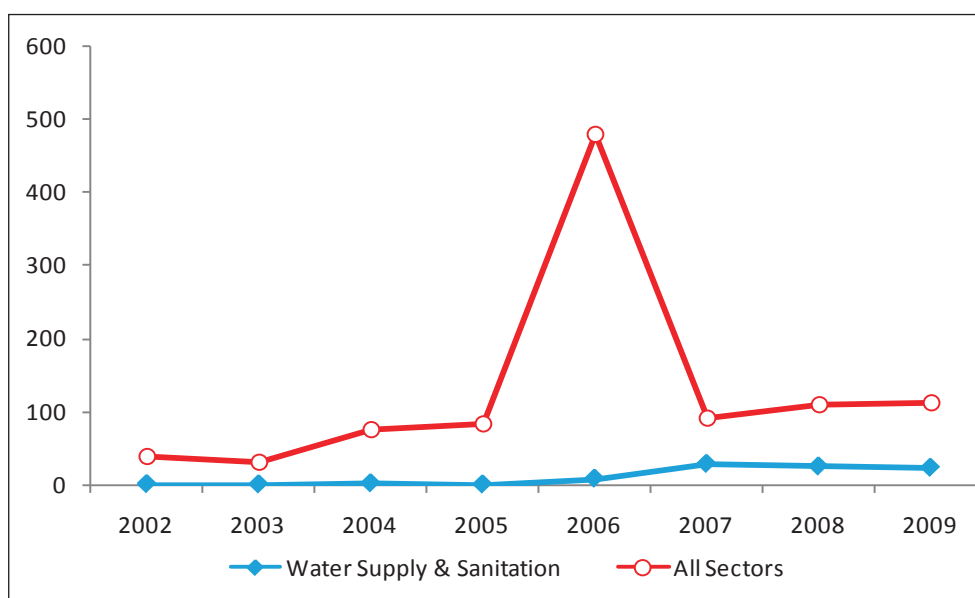
Source: Author's using data from OECD CRS online databases

Figure 39: Aggregate aid to Uganda's water and sanitation sector 2002 to 2009 USD millions



Source: Author's using data from AfDB and OECD CRS online databases

Figure 40: AfDF disbursements to water and sanitation in Uganda

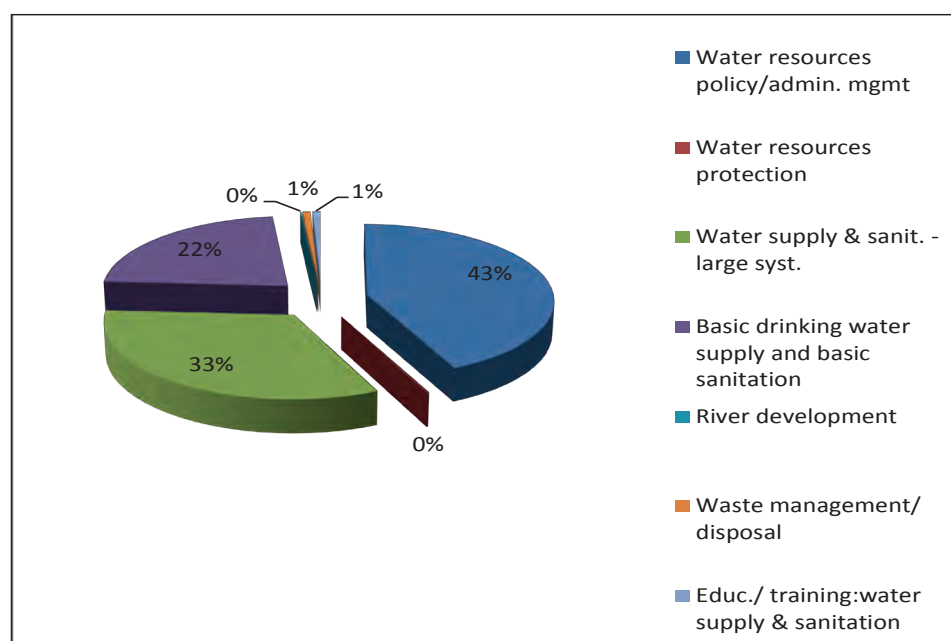


Source: Author's using data from AfDB and OECD CRS online databases

Over the 2002-2008 period, Uganda's main focus on the account of allocation of funds to different sub-sectors within water and sanitation sector is on water resources policy and administrative management. This include, water sector policy, planning and programmes; water legislation and management; institution capacity building and advice; water supply assessments and studies; groundwater, water quality and watershed studies; hydrogeology; excluding agricultural water resources. In

this context, the water resources policy and administrative management received the largest share of ODA (43 percent), followed by large water and sanitation systems (33 percent) and basic drinking water supply and basic sanitation (22 percent). Others, such as education and training, river development, waste disposal and water protection received about one percent from donors (see Figure 41).

Figure 41: Gross disbursement by subsectoral priorities, 2002-2008



Source: Author's using data from OECD CRS online Databases

As presented in Annex 4, the total investment required per year for the next five years in order to achieve the WSS MDG targets by 2015 is USD 242 million per year, shared between water supply (USD 95 million) and sanitation (USD 147 million). Rural areas require over 70 percent for both water supply and sanitation. The combined annual allocated budget and donors flow cannot meet this requirement, based on historical data. For example, the government allocation and donor commitments in FY 2008/09 were only USD 149 million, divided into GoU (USD 101 million) and donors (USD 48 million). These projections tally with a range of USD 1.5 billion to USD 1.85 billion estimated in 2007 by AfDB/OECD (2007) as the total investment requirements for achieving the Water Supply and Sanitation (WSS) MDG target.

3.4.3.3 Water Sector Governance

The water resources in Uganda are governed by a number of agreements and conventions on international waters, although not all are ratified. These include the Protocol for Sustainable Development of Lake Victoria, the Lake Victoria Basin Commission (LVBC), the East African Community (EAC) and the Nile Basin Initiative (NBI). Uganda also participates in international, regional and basin-wide groupings such as the Technical Cooperation Committee for the Promotion of the Development and Environmental Protection of the Nile Basin (TECCONILE), the Inter-Governmental Agency for Drought (IGAD), the African Water Facility (AWF), Lake Victoria Fisheries Organisation (LVFO), and the African Ministers Council on Water (AMCOW) programmes.

The overarching national development framework has been the PEAP. The PEAP has been Uganda's medium-term planning tool and its poverty reduction strategy (PRSP), guiding the formulation of government policy and the implementation of programmes through sector wide approaches and a decentralisation system of governance (AfDB, 2008). The Uganda Water Action Plan (1995), the Water Statue (1995), the National Water Policy (1999), Water Act (2000), and National Environmental Health Policy (2005), among others, give sufficient legal basis for developing and strengthening governance approaches in the water and sanitation sector.

Water and sanitation sector governance in Uganda is implemented through a number of overarching governance frameworks. They are: (i) The Water Policy Committee, comprising ministers, permanent secretaries, and heads of key sector departments (NWSC, DWD, DWRM, NEMA, Ministry of Health etc.), sets the policies and guidelines; (ii) the Water Sector Working Group (WSWG), which comprises technical staff from all key WSS sector departments and donors, vets technical issues, implements policies, and reviews progress of undertakings; and (iii) the Good Governance Sub-Sector Working Group (GGSWG), which is subordinate to the WSWG, handles governance related undertakings.

In 2001, a sector-wide approach (SWAP) to planning, implementation, reporting and accountability in the WSS sector was adopted and numerous individual projects

reviews were phased out. It is a mechanism whereby the government, the civil society and development partners support a single policy, development plan and expenditure programme that is under government leadership, and follows a common approach. It de-emphasises donor-specific project approaches, but promotes funding for the sector through general, sector earmarked budget support or through basket funding.

Rural water and sanitation is the most advanced in terms of SWAP implementation in Uganda's water and environment sector. The switch to this approach attempted to overcome the problems inherent in the implementation of individual projects operating in isolation from each other. A SWAP approach is more amenable to integrated, sustainable development, and to more active involvement of the stakeholder community. Compared with most other SSA countries, Uganda projects are noted for high level of ownership – a prerequisite for aid effectiveness. For example, a report on a study conducted by OECD in 2006 gave Uganda a score of moderate progress in harmonisation and mutual accountability, and a better score of high progress for ownership, alignment and managing for results (Welle et al. 2008).

Corruption remains a critical challenge in Uganda. The country's global ranking in the Transparency International's 2009 Corruption Perception Index (CPI) was 130 out of 180 countries, with CPI score of 2.5. This cankerworm permeates all sectors of Uganda, including WSS, especially in the award of contracts. Government is implementing several measures to address the problem. For instance, a central contracts committee was constituted at the central government level. The

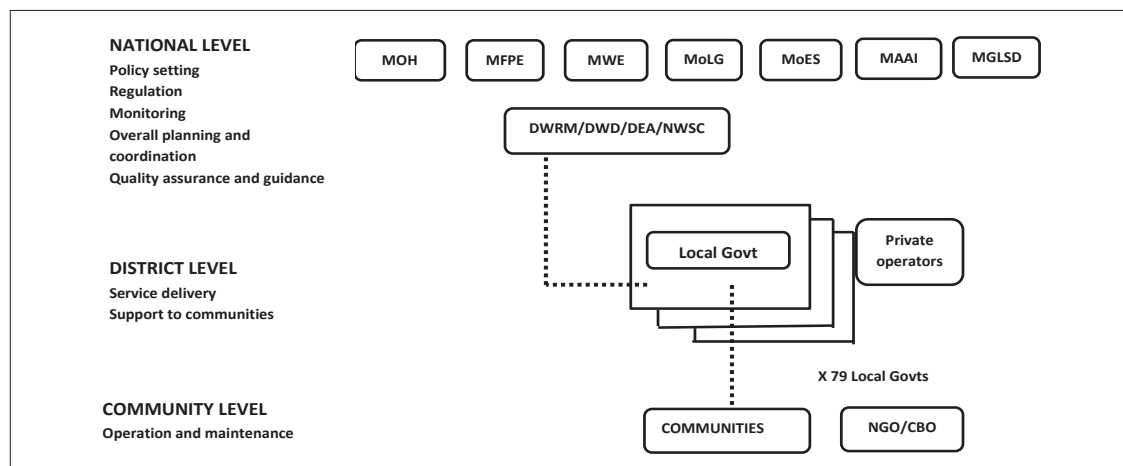
committee is largely independent of political patronage or interference.

3.4.3.4 Capacity of institutions: Structure and quality

In Uganda, the overall responsibility for formulating national water policies rests with the Ministry of Water, Lands and Environment (MWLE), implemented by the Directorate of Water Development (DWD) and National Water and Sewerage Corporation (NWSC). At the local government level, the districts, towns, and sub-counties, together with the local communities, participate directly in the provision of water and sanitation services at the national, district and community levels.

Apart from these institutions, there are a number of other ministries that have an important role in the WSS sector. The Ministries of Health and Education, for example, have a direct responsibility to promote good sanitation practices. Other ministries play different roles. The Ministry of Gender, Labour and Social Development is responsible for gender responsiveness and community development, an important factor when attempting to involve stakeholders in development programmes, while the Ministry of Agriculture promotes the more efficient use of agricultural water. While for the most part ministries will endeavour to cooperate with each other, there are inevitable conflicts. One is the competition for limited human and financial resources. Each Ministry will naturally attempt to secure maximum resources for their own use, and there will also be conflicts within ministries about where to direct available funds and manpower. This may not always be in favour of the WSS sector. A representation of the organisation of the water and sanitation sector in Uganda is shown in Figure 42.

Figure 42: Water and sanitation sector institutional framework in Uganda



NB The 80th local government of Kampala District does not benefit as its water and sewerage is handled by NWSC Source: MWE (2009)

Uganda is challenged with the issue of inadequate capacity in the water and sanitation sector. Though the government is addressing the issue, more work need to be done in this direction. For example, some restructuring at the district level has left many District Water Officers overwhelmed with work, implying that follow up of community management and sanitation activities cannot be implemented. Gaps in the human resource of district organisations have not been met because of competi-

tion with the agriculture and health sectors. The result is that there are still staffing gaps in many districts. This undermines the capacity to effectively implement and co-ordinate water and sanitation activities. The current drive by the Ministry of Water and the Environment (MWE) to make it possible for Districts to engage NGOs in mobilisation for Water and Sanitation activities is intended to address this challenge.

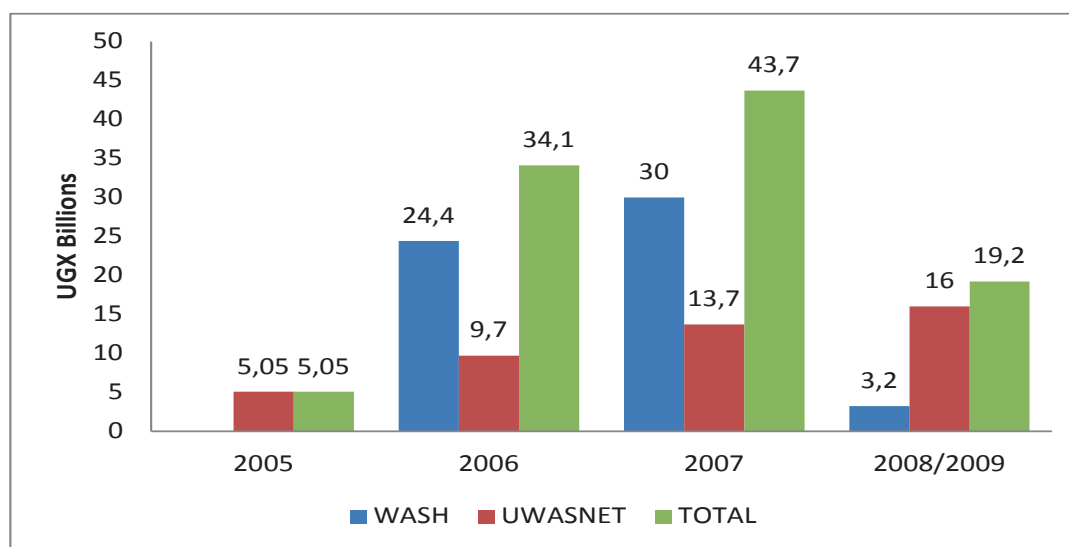
3.4.3.5 Private Sector, Community and Non-governmental Organisation

Private Sector Participation (PSP) in Uganda's WSS has been very complementary. The sector has benefited from the private sector's expertise and financing in project planning and implementation. The private-sector firms operate under contract to local and central governments. They provide maintenance services to water users in rural and peri-urban areas, and they manage piped water services in the majority of small towns that have piped water. In the urban sector, for example, AMCOW et al. (2006) revealed that of 61 small towns with networked water supply, 57 are operated by the private sector, while four are run by town councils. However, the private sector capacity to cope with the enormous task is limited.

The local community involvement in the planning, financing, implementation, monitoring and management of community based and sanitation development is

inadequate (UNESCO, 2005). But the NGOs and CBOs are more involved in WSS activities than the communities. The involvement of NGOs and CBOs participation in water and sanitation sector include construction of facilities, community mobilisation, training of communities and local governments, hygiene promotion, as well as advocacy and lobbying (AfDB/OECD, 2007). They are also involved in planning and monitoring activities, especially in the rural areas. The various NGOs are organised into two networks known as the Uganda Water and Sanitation NGOs Network (UWASNET) and the Water, Sanitation and Hygiene (WASH), for sharing of experiences and for improved coordination of activities. Commendably, some NGOs were reported in MWE (2006) to have demonstrated ability to innovate (e.g. domestic roof water harvesting, biosand filters, and leverage of household investments). The investment in water and sanitation provided by these two networks from 2005 to 2009 are shown in Figure 43. The total investment over the five year period (2005 to 2009) was 102.05 Billion UGX (about 42.9 million USD).

Figure 43: Trends in NGO investments in water and sanitation



1USD=2381.0UGX
Sources: MWE (2006; 2009)

The allocation of funds by members of UWASNET during 2008/2009 focussed on rural water supply, sanitation and hygiene (about UGX15.33 billion), of which sanitation and hygiene received only UGX 3.58 billion. The balance was invested in other sectors, such as water for production, hand washing facilities in schools, and community management, which received a total of UGX0.72 billion. About 75 percent of the UGX 0.72 billion was spent on community management.

3.4.3.6 Monitoring and Evaluation

Monitoring and Evaluation (M&E) is coordinated by the quality assurance department in the MWE in close liaison with the respective sub-sectors (water resources, rural water, urban water and sanitation, and water for production). Also the joint Government/Development Partners Sector Review (JSR) held annually in September/October receive reports and generate important outcomes that feed into the monitoring processes. Participants at the JSR include sector ministries, development partners, civil and political leaders and local government staff. The performance monitoring sub-committee of the WSWG also has important M&E responsibilities.

However, the M&E system in the various subsectors is still disaggregated and data integration relies on periodic calls from the various subsector players, especially towards times of joint sector reviews. This is creating problems of data consistency, authenticity, and verification. The MWE, with technical assistance from GTZ, is implementing an integrated information management system that will ensure harmonisation of data capture methods, data verification and holistic trend analysis for key WSS performance indicators (AfDB, 2008). In order to enhance project performance, Uganda developed a set of 10 'golden indicators' for sector monitoring and evaluation of development projects in WSS. They are: Access, functionality, investment, cost, hygiene, sanitation, water

quality, gender, management, and equity.

3.4.4 Relationships between inputs and outcomes²³ Applying the WIDE

As a way of evaluating the WSS situation in Uganda the Watsan Index of Development Effectiveness (WIDE) has been calculated. Table 26 and Annex 5 provide the relative level of input driver scores against progress outcomes derived from the WIDE analysis. On the basis of this information, the composite scores for input drivers is 14, and that for progress outcomes is 49 index points respectively.

Table 26: Input drivers and progress outcomes of the WIDE for Uganda

Watsan Index of Development Effectiveness components		Scores	Overall Index	Rank ²⁴	WIDE
Input Drivers	Development aid to the water and sanitation sector, as measured by the average yearly per-capita aid to the sector	8	14	26	13
	Domestic resources, as measured by average per-capita gross domestic products	3			
	Water resources, measured by the quantity of per-capita renewable available water	1			
	Government capacity (a component of human resources), measured by the Ibrahim index of African governance for rule of law, transparency and corruption	43			
Progress Outcomes	Progress in the share of population with access to improved water sources, over the 1995-2008 period	68	49	13	
	Progress in the share of population with access to improved sanitation facilities, over the 1995-2008 period	32			
	Share of population with access to improved water sources in 2008	48			
	Share of population with access to improved sanitation facilities in 2008	48			

Source: Author's Calculations.

The WIDE revealed a very low Input Drivers; however, significant progress has been made in terms of Progress Outcomes. This suggests that Uganda utilises the available resources effectively. As illustrated in Annex 5, all Uganda's input drivers scores are generally below SSA average, while all the four output outcomes scores are equal or far above SSA means. As presented in the preceding sections, the water sector in Uganda is on the right track to meet MDG target by 2015 especially in the water sub-sector. Is the evolution attributable to ODA?

Uganda experienced a rise on the average in access to improved water and basic sanitation, while the per capita ODA disbursement to the water and sanitation sector increased from 1995 to 2005, but declined from 2005 to 2008. It is noted that despite the drop in aid per capita from 2005 to 2008, the country still made progress in the water sector. Thanks to increased GoU spending, government reforms and participation of stakeholders in the sector.

An attempt was made to explore the nature of the relation-

ships between access to water and sanitation and some variables including ODA, using correlation analysis (Table 26). As expected, the per capita ODA disbursement to the water and sanitation sector correlates positively with access to improved water sources and improved sanitation facilities, but is statistically significant only for access to improved water sources. Similarly, there is a positive association between GNI per capita and the proportion of the population using improved water source. Surprisingly, the relationship between people using improved sanitation facilities and GNI per capita is negative and statistically significant as in the case for Kenya. This may be because sanitation is mostly given less attention in financial allocation and the effect of rapid population growth. Table 26 also reveals that proportion of people using improved water and sanitation facility is associated with the general wellbeing of the people, with poor people lacking access to improved water and sanitation. The negative correlation of the proportion of people with access to improved sanitation with population portends a problem, especially with Uganda's high population growth rate.

²³ See Chapter 2, Section 4 for more details

²⁴ All rankings refer to the sub-sample of 45 SSA countries for which all data on input and outcomes is available (all but Djibouti, Seychelles and Somalia).

Table 27: Correlation with access to water and improved sanitation facilities

	Population	Human Poverty Index	Life expectancy	Mortality rate	ODA Disbursement to Water & Sanitation	Per capita ODA	GNI per capita
Improved water source, (% of total population with access)	0.8976 (0.0025)	(-0.8558) (0.1442)	0.7211 (0.0435)	(-0.8880) (0.0032)	0.9465 (0.0147)	0.9374 (0.0186)	0.6660 (0.0714)
Improved sanitation facilities (% of population with access)	(-0.2543) (0.5434)	(-0.1286) (0.8714)	-0.3300 (0.4246)	0.2284 (0.5864)	0.1091 (0.8614)	0.0841 (0.8931)	(-0.7928) (0.0189)

Source: Authors based on data from AfDB and OECD data platform

*Figures in parenthesis show probabilities at which the statistical significance of the correlation coefficient may be evaluated

3.4.5 Lessons learned and open issues

The high population growth rate in Uganda is a threat to progress in the field of WSS, but in spite of this, the country has made good progress over the last 20 years. The challenge now is how to sustain the progress made. There is a need to promote more involvement of the private sector, and progress towards the MDG and PEAP targets will depend on the government's ability to increase the efficiency and effectiveness of their spending, as well as to improve domestic resource mobilisation. Budgetary discipline and increased transparency involving more stakeholder engagement will contribute to maintaining the momentum, and fiscal decentralisation and streamlining of the procurement process will be another important way of improving aid effectiveness.

It is unfortunate that inadequate finance still remains a major constraint. Despite the fact that the WSS sub-sector has been allocated a ring-fenced budget, the sub-sector's share of the national budget has declined over the last seven years from 7.9 percent of the national budget in the Financial Year 2002/03 to 2.4 percent in 2008/9. Effective and adequate financial support is still needed so that Uganda continues to make progress in water and sanitation provision. At present, it is estimated that only 17 out of 53 small towns are able to cover their operation and routine maintenance costs.

The average per capita cost of providing improved water to people in rural areas is \$34, with considerable variation between districts. There has been a steady increase in per capita costs arising from a marked reduction in the availability of low cost options, such as springs and shallow wells, increased expenditure on overheads (in part as a result of the creation of new districts), and an increase in the cost of other resources (e.g. fuel,

construction materials). According to AMCOW et al. (2006), average production costs in small towns are three times that in large towns. While large towns are able to cover 100 percent of their operational costs, small towns collect just 76 percent of the same. As a result, small towns rely on government subsidies for operation and maintenance O&M costs as well as any extensions or rehabilitation.

The local communities are rarely involved in planning, financing, implementing, monitoring and managing of community based and sanitation development projects. However, the NGOs and CBOs are involved in community mobilisation, training of communities and local governments, hygiene promotion as well as, advocacy and lobbying.

The government institutions are challenged by weak capacities. For example, the district and lower administrative levels are challenged by weak capacities to plan and implement project activities. In the same vein, the capacity of the private sector is limited to cope with the numerous activities in the sector. Therefore, strong, engaged project management is difficult when local capacity is low. More human capital is needed to support the scale of the effort needed to attain the MDG targets.

All effort must be made to build on the progress so far achieved in more coordinated actions by donors. Regular interaction with donor representatives, project staff and beneficiaries needs to be further embedded in regular practice.

Action is needed to consolidate and digitise records to support the development of IWRM, and how this can support improved water and sanitation provision.

3.4.6 Conclusion

Uganda has made good progress over the last 20 years, and the challenge now is how to sustain the progress. Though the government and international donors have made substantial investments in the provision of rural and urban water supply and sanitation services in the last two decades, more needs to be done to strengthen the capacity of the sector to translate these resources into service delivery that will make a difference to poor people's lives and sustain all the progress made so far.

Uganda is on track for meeting the MDG targets for improved water, but is likely to lag behind in the case of access to sanitation. The greatest challenge to meeting MDG target is mobilising the necessary financial resources for future development in the water and sanitation sector. The funds required for achieving those targets are enormous in the neighbourhood of USD 1.5 billion, an amount well above the current combined financial commitments of the government and donor agencies. Hence an urgent need to secure an alternative arrangement for filling the financing gap is imperative. Finally, more attention is required on improving the weak technical capacities within NGOs, as well as governmental and private institutions. The current situation with the capacities of stakeholders, if not addressed swiftly, may jeopardise progress in the sector.

3.5 Burkina Faso

3.5.1 Introduction

Burkina Faso is a landlocked nation in West Africa. It is surrounded by six countries: Mali to the north, Niger

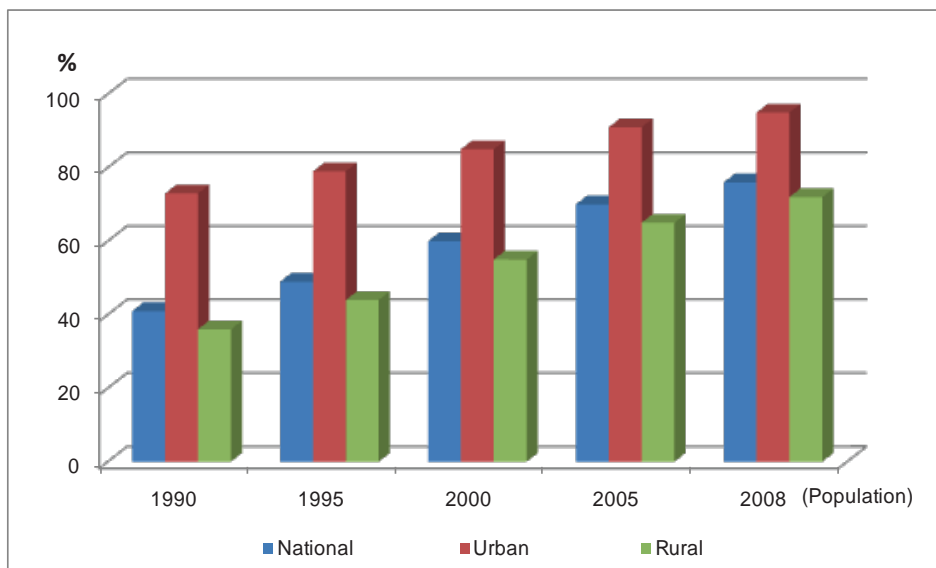
to the east, Benin to the south east, Togo and Ghana to the south, and Côte d'Ivoire to the south west. The major rivers are the Niger and the Volta. The latter has three tributaries, the Black Volta (or Mouhoun), the White Volta (Nakambé) and the Red Volta (Nazinon). Of these three, only the Black Volta flows all year round. Similarly, the tributaries of the Niger River only flow for four to six months a year, although the basin overall drains 27 percent of the country's surface area. Every year, Ouagadougou receives some 700mm of rainfall. This is more than London, which only gets about 585mm. Unfortunately, due to local hydro geological-conditions, flat topography, and the intense nature of rain events, much of this rainfall is unavailable for use, and Burkina Faso is faced with water scarcity for much of the year. As much as 16 percent infiltrates the soil, but with few aquifers, little is available as groundwater (Savadogo, 2006).

3.5.2 Outcomes: Status of Access to Water and Sanitation

3.5.2.1 Access to water and Sanitation

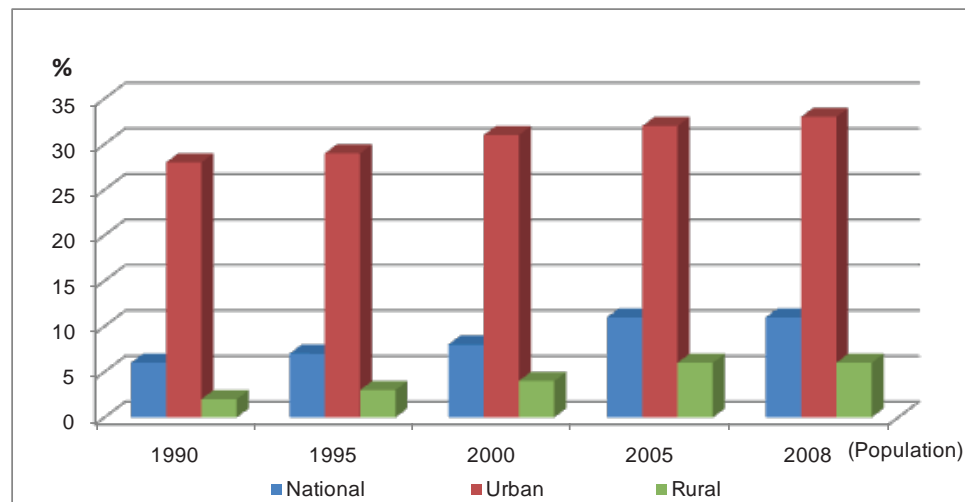
The improvement of access to water and sanitation facilities in Burkina Faso from 1990 to 2008 is summarised in Figures 44, 45, Annex A1.1, and Annex A1.2. The figures reveal a startling disparity between the performances of the water and sanitation sectors. While access to improved water has increased significantly over the reporting period, the corresponding access to improved sanitation has only improved slightly. From 1990, improved access to better water facilities increased steadily from 41 percent of the total population in 1990 to 76 percent in 2008, a 35 percent increase over an 18-year period (Figures 44 and Annex A1.1).

Figure 44 : Access to improved water sources for Burkina Faso



Source: Authors, using WHO / UNICEF online databases

Figure 45: Access to improved sanitation facilities for Burkina Faso



Source: Authors, using WHO / UNICEF online databases

World Bank (2008b) noted that in Ouagadougou, the number of people with direct access to piped water through household connection more than tripled in six years from 300,000 in 2001 to 1,040,000 people in 2007, surpassing the end-of-project target by 30 percent. Furthermore, compared to the situation in 2001 when the water service in Ouagadougou was chronically intermittent with insufficient pressure, 24 hours a day water supply service is now assured to 94 percent of the population (1,390,000) having access to piped water through 104,000 household connections and 1,160 standpipes. The impressive performance in the proportion of Burkinabe's with improved access to water facilities is generally believed to be the outcome of government, donors, and community commitment to implementation of water related development projects.

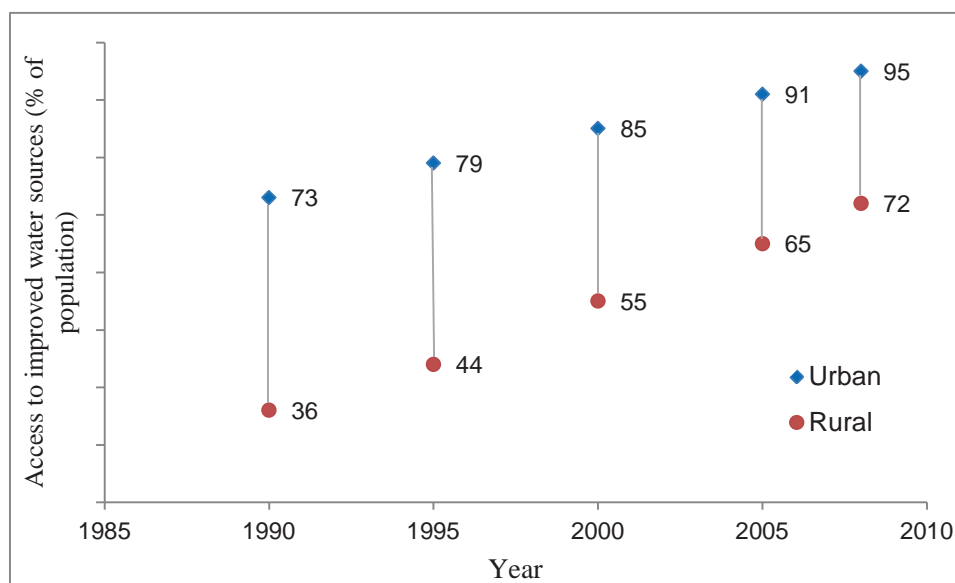
The sanitation sub-sector, on the other hand, has not performed as well. Access to improved sanitation increased from six percent in 1990 to 11 percent in 2008 – an improvement of just five percent over what was already a low base (see Figures 45 and Annex A1.2). These records on sanitation in Burkina Faso are among the lowest in SSA.

Clearly, the concerns of access to improved water and sanitation in Burkina Faso lie largely in the sanitation sub-sector. The reason is partly because water provision is

seen as a life-saving action that is obvious to recipients, whereas the benefits of sanitation, although equally important, are not so readily appreciated. There is also some cultural resistance to the use of latrines (Ditmer, 2009). Thus, the practice of open defecation is still very high. It stood at 64 percent of the populace in 2008, and this was a reduction from 79 percent in 1990. The most recent JMP data in 2008 revealed that Burkina Faso was only better than two countries in the world with regards to open defecation, namely, Niger (79 percent) and Eritrea (85 percent).

As shown in Figure 46, progress was made in access to improved water and sanitation between 1990 and 2008 in both rural and urban areas. A much faster progress was, however, recorded in the rural areas. Accordingly, the gap between urban and rural with access to improved water source narrowed from 37 percent in 1990 to 33 percent in 2008. On the other hand, the gap between the people using improved sanitation facilities in urban and rural areas of Burkina Faso was relatively constant over the 1990 to 2008 period (Figure 47). As of 2008, the proportion of urban and rural population with access to safe water supply was 95 percent and 72 percent respectively. For the same year (2008), access to basic sanitation in urban and rural areas was estimated at 33 percent and six percent respectively.

Figure 46: Access to improved water-urban /rural gap in Burkina Faso



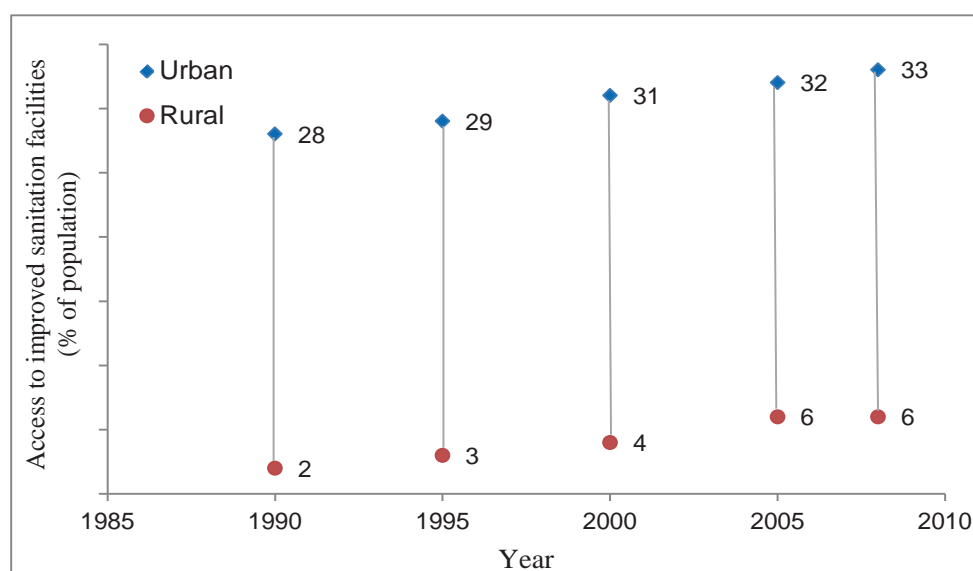
Source: Authors, using WHO / UNICEF online databases

3.5.2.2 Progresses towards the MDGs in Burkina Faso

Considering the current progress rate, Burkina Faso is among the few countries in Africa that will surpass the

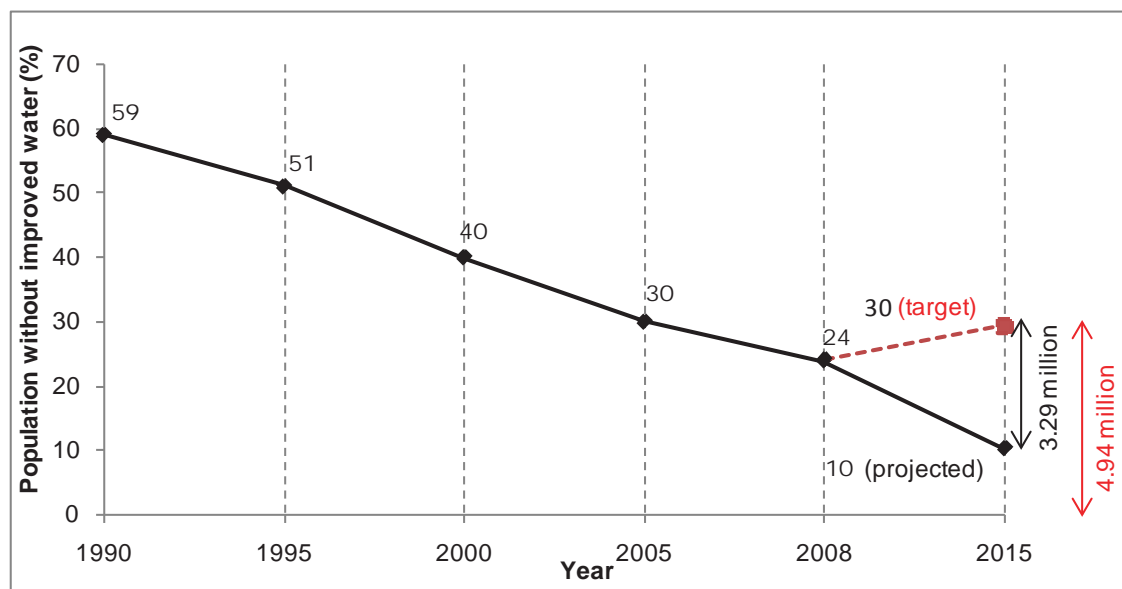
MDG target on access to improved water source. By 2015, only 10 percent of the population or 0.65 million Burkinabe will lack access to improved water source as against MDG target of 30 percent or 4.94 million people (Figure 48).

Figure 47: Access to improved sanitation-urban/rural gap in Burkina Faso



Source: Authors, using WHO / UNICEF online databases

Figure 48: Access to improved water- Burkina Faso's progress towards the MDG target

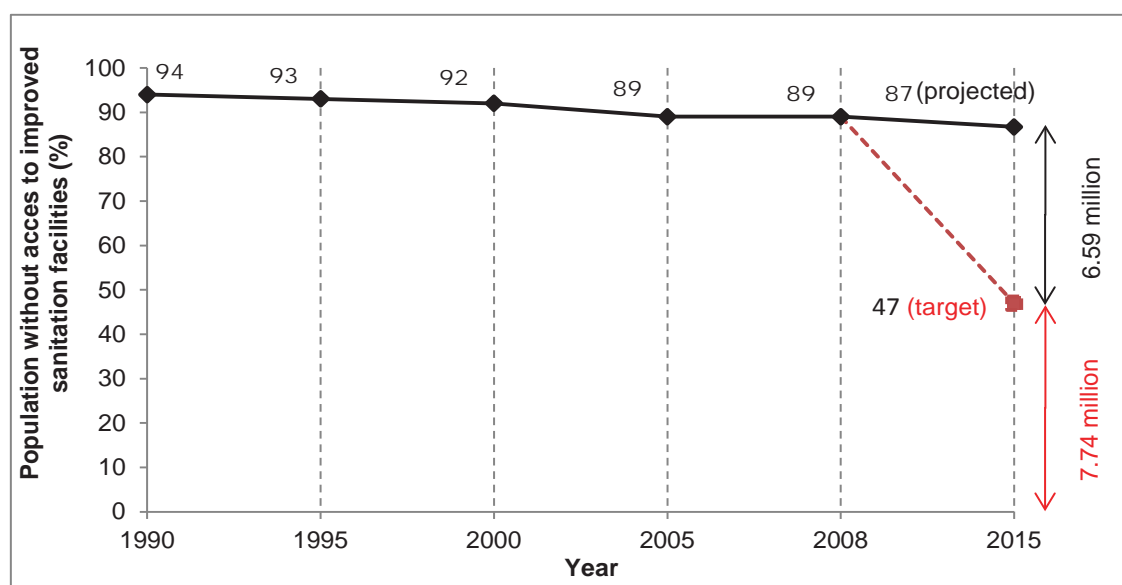


Source: Authors, using WHO / UNICEF online databases

However, as presented in Figure 49, Burkina Faso will miss access to basic MDG sanitation target by 40 percent (6.59 million people) by 2015. These 40 percent (6.59 million

people) excludes about 47 percent (7.77 million people) who would still lack basic sanitation even if Burkina Faso met MDG target.

Figure 49: Access to improved sanitation- Burkina Faso's progress towards the MDG target



Source: Authors, using WHO / UNICEF online databases

3.5.3 Drivers of Access to Water and Sanitation Services

3.5.3.1 Water Resources Availability and Utilisation

A summary of water resources available in the country from 1998-2012 and the pressures on these resources in the form of demand from the agricultural, industrial and domestic supply sectors is given in Table 28. The average precipitation is about 205 billion m³ per year. In terms of the amount of renewable water resources (in m³ inhabitant/yr), Burkina Faso has scant supplies.

From Table 28, it can be seen that between the 1988-1992 and 2008-2010 periods, per capita volume fell steadily from 1342m³ to 820m³. The reduction works to about 40 percent over a 22-year period. This has been caused by a rapidly increasing population because according to data, rainfall has remained fairly constant. During the same period, the population increased from 9.3 million to 15.3 million – a rise of 40 percent, which neatly accounts for the 40 percent fall in available water per person.

The main consumer of water in the country is agriculture,

which in 2002 accounted for 86 percent of total water withdrawn. Although this picture looks bleak, it should be noted that by 2002, it was estimated that 6.4 percent of renewable resources in the country was being abstracted. The implication is that there remains considerable scope for increasing the amount of abstraction to meet the rising demands of a growing population, provided the financial resources and infrastructure are made available.

Water shortages are a special problem in the north of the country. Low rainfall levels and recurring droughts in this part of the country have brought hardship to the rural poor, who traditionally rely on farming for a living. Many of these have chosen to migrate to the towns and cities looking for work. As a result, unplanned informal squatter settlements without water and sanitation services are increasingly found across the country (WaterAid, 2009).

This problem is adding to the challenge of service provision. Just as progress is made in one area, other problems spring up. The problem of water supply is exacerbated by two factors: population growth and the effects of desertification. During 1998-2002 period, the population affected by water relate diseases were about 655,000 inhabitants. The volume of wastewater produced during the same period was 0.001 billion m³.

Table 28: Burkina Faso- Water resources and pressures

	1988-1992	1993-1997	1998-2002	2003-2007	2008-2010
Total population (1000 inhabitants)	9,317	10,703	12,438	14,721	15,234
Water resources: total internal renewable per capita (m ³ /inhab/yr)	1,342	1,168	1,005	849.1	820.5
Agricultural water withdrawal as % of total water withdrawal	80.59		86.25 (2)		
Municipal water withdrawal as % of total withdrawal	19.41		13 (2)		
Industrial water withdrawal as % of total water withdrawal	0		0.75 (2)		
Percentage of total actual renewable freshwater resources withdrawn (%)	3.008 (1)		6.4 (1)		

Source: FAO AQUASTAT; Note: (1) FAO estimates (2) modelled data

With an estimated population of about 15 million in 2008, Burkina Faso's population growth rate of 2.9 percent per annum is putting water resources under great stress. At this rate by 2020, the total population will exceed 20 million. In a water scarce country such as Burkina Faso, this will pose a serious problem. Yet water resources are also being placed under increasing pressure by the frequency of droughts, which have increased in recent years. The current water stress in the country is being made worse by a general warming and drying of the regional climate, leading to desertification. This process is being further hastened by the effects of overgrazing, slash-and-burn agriculture, and overexploitation of wood for fuel. Unless there is an unlikely increase in long term rainfall, desertification will inevitably intensify, and its impact will be exacerbated as population pressure continues to mount.

In view of the inadequate rainfall, a programme to increase precipitation by cloud seeding has been introduced, with the support of Morocco, the African Development Bank, and the Organisation for Economic Co-operation and Development (OECD, 2008). This is an uncertain process and has been only marginally successful in increasing water availability. Other efforts to improve the situation have involved the construction of a large dam, which provides resources for municipal systems in the capital, and also supplies irrigation water to local farmers in communities located around the dam. Due to the very hot summer temperatures, however, and the large surface area, high levels of evaporation occur, leading to potentially significant water loss.

3.5.3.2 Public Investments and Development Aid

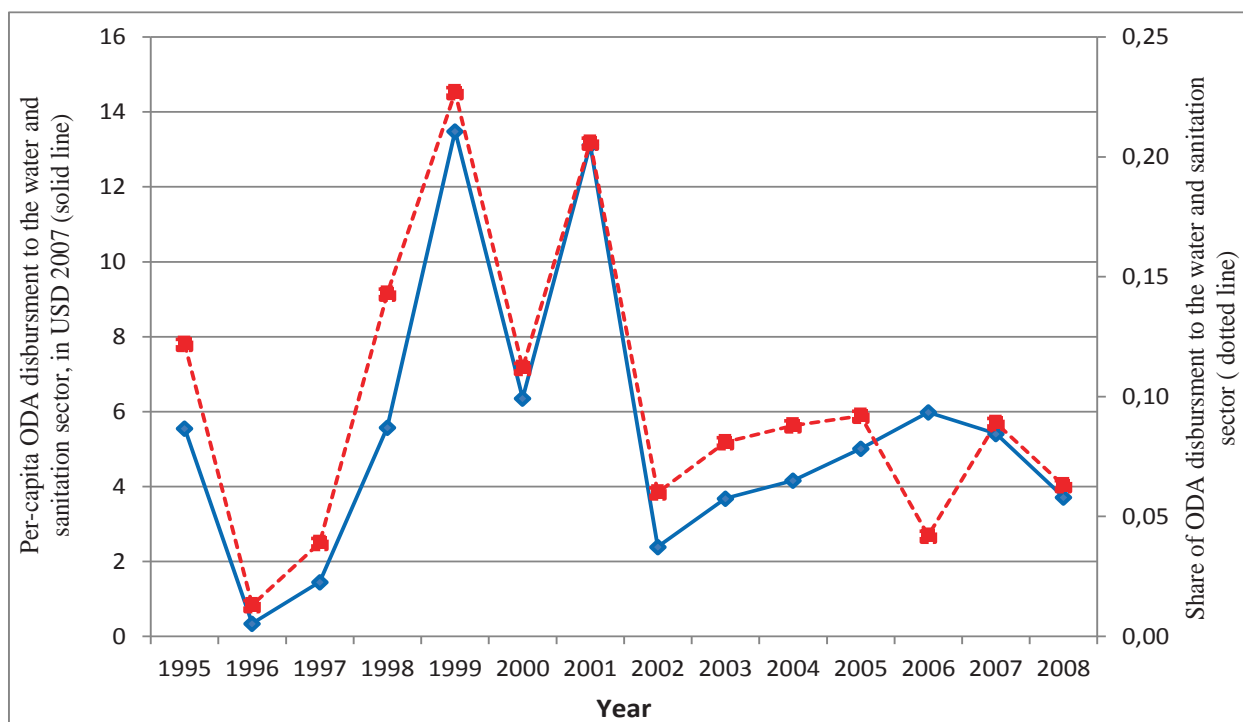
Based on data from the OECD, the total development aid

contribution from all donors has increased from just over 300 million US\$ in 1990 to 1000 million US\$ by 2008. From the OECD data, it is not possible to isolate the aid given specifically to the water and sanitation sector by country. However, data obtained from a government source (*Circuit informatisé de la dépense*) provide some breakdown of the amount of aid spent on the two sectors.

It should be noted that the OECD and the Burkina Faso government estimates of total aid do not match. However, this may be due to the way in which total aid is calculated and which elements of aid are included or omitted. Still, the figures serve to demonstrate the disparity between the amounts spent on the water and sanitation sectors. From Annex A2.4, the share of water sub-sector in the WSS aid from 2004 to 2008 on the average is 95 percent. In contrast, the contribution toward sanitation sub-sector during the same period ranged from 1.7 percent (2005) to 10.6 percent (2008). This highlights the contrast in financial commitment between the two sectors, and explains why the figures on improved access to water are so much better than those for sanitation. The message from the data is clear: Much more investment into sanitation is required to bring this sector into line with that of water.

The proportion of the ODA that makes its way to the WSS sector, both in terms of amount per capita and as a percentage of the total aid budget, is shown in Figure 50. In both cases, a sharp fall was noticed in the last eight years. The per capita amount in US dollars ranges from 0.34 in 1996, to 13.49 in 1999, with the figures swinging around a 14-year average of 5.4. The percentage of ODA aid given to the WSS sector ranged from 1.3 percent in 1996 to 22.7 percent in 1999, with an average over the 14 year period of 9.5 percent.

Figure 50: Gross ODA to WSS in Burkina Faso



Source: Author's using data from OECD CRS online Databases

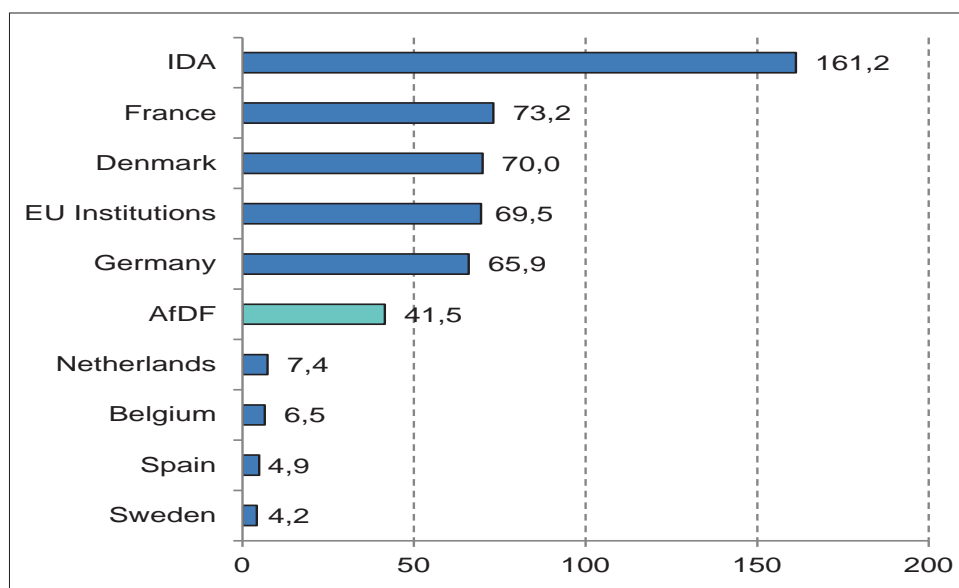
Since 2009, some progress has been made through a joint aid strategy for Burkina Faso, set up through the establishment of a technical secretariat by donor institutions and Burkina Faso's Plan d'Action National de l'Efficacité de l'Aide (PANEA) - National Action Plan for Aid Effectiveness. The aim is to better coordinate aid to Burkina Faso to improve the country's relatively poor monitoring and evaluation system in the WSS sector. The major providers of ODA over the 2002-2009 period are shown in Figure 51 below. World Bank's International Development Association is the largest donor to water and sanitation sector in Burkina Faso, cumulatively from 2002 to 2009. The institution provided over USD 161.2 million, more than twice as much as the next largest donor, France (USD 73.2 million). Other donors in the top five range are Denmark (USD 70.0 million), EU Institutions (USD 69.5 million) and Germany (USD 65.9 million). African Development Fund ranked 6th among the donors in Burkina Faso, providing (USD 41.5 million) cumulatively

within the 2002-2009 period. This represents only 5.0 percent of the total AfDF funding for that period on all sectors (Figure 52). A selection of AfDB funded projects in Burkina Faso is shown in Annex 3.

Figure 52 illustrates the very low priority assigned to water and sanitation within the AfDB development budget. Given the very low levels of sanitation coverage in that country, it is important that this percentage be increased in the future and in favour of sanitation sub-sector. Indeed, Burkina Faso has been identified by AfDB as a Priority 2 country in phase 2 of its on-going Rural Water Supply and Sanitation Initiative (RWSSI). Some UA 25 million²⁵ has been earmarked for the country under that plan. This should make a big difference to conditions within Burkina Faso, but it will be important that the use of these resources is monitored to ensure maximisation of aid effectiveness.

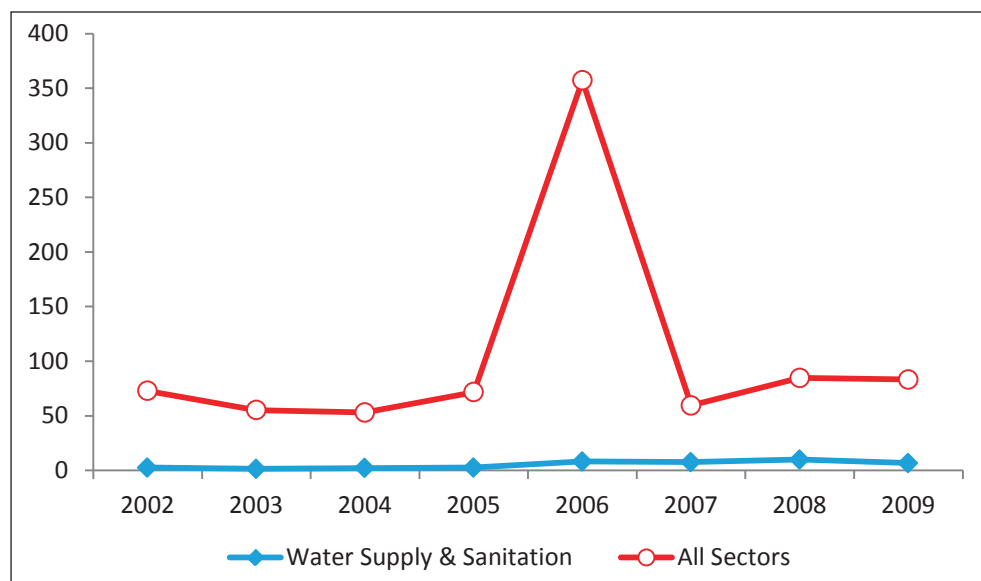
²⁵ Units of Account, multinational exchange rate calculated on a basket of currencies (e.g. 1UA = 1.6\$US ,2009)

Figure 51: Aggregate aid to water and sanitation 2002 to 2009 USD millions



Source: Author's using data from OECD CRS online Databases

Figure 52: AfDF Disbursements to water and sanitation in Burkina Faso

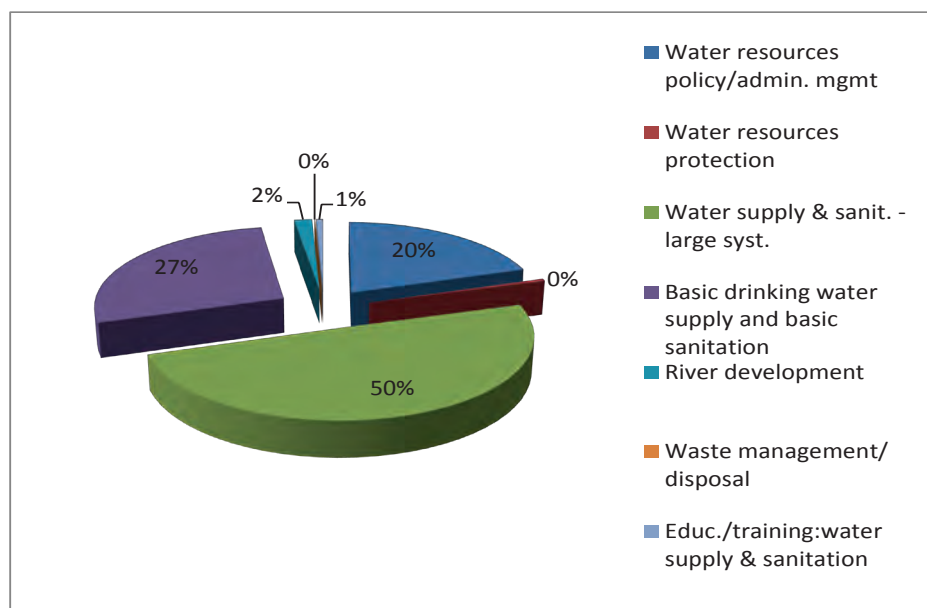


Source: Author's using data from OECD CRS online Databases

Large water and sanitation systems received the largest share (50 percent) of spending on water and sanitation sector from all donors (bilateral and multilateral) over the 2002-2008 period. Basic drinking water supply and basic sanitation (a sub-sector associated with direct benefits to the poor, especially those in rural areas) was

the next, receiving 27 percent. Water resources policy and administrative management was boosted with 20 percent share of total aid to water sector. While others, such as education and training, river development, waste disposal and water protection, received negligible attention from donors (see Figure 53).

Figure 53: Gross disbursement by sub-sectoral priorities, 2002-2008



Source: Author's using data from OECD CRS online Databases

An estimate of the scale of financial investment required by Burkina Faso to reach specific MDG targets and the current gaps in the investment level as computed by AMCOW et al. (2006) is summarised in Annex 4. The cost of meeting the MDG water and sanitation goal per year until 2015 is estimated to be USD 116.25 million – USD 88 million a year for the water sector and USD 28.25 million a year for sanitation. Total public investment is estimated at USD 17.76 million per year – USD 13.3 million for water and USD 3.96 million a year for sanitation. Based on the estimates as presented in Annex 4, there is an investment gap of USD 96 million a year until 2015 (USD 73 million for water and USD 23 million for sanitation).

3.5.3.3 Water Sector Governance

In 1998, the Government in Burkina Faso began to implement an Integrated Water Resource Management (IWRM) strategy. A preliminary study on the water sector in Burkina Faso was conducted, followed by the development of a strategic plan. This succeeded in providing a wide understanding of the needs and goals of IWRM in Burkina Faso. An 'orientation law' defined the various roles and responsibilities of sector actors involved in water provision.

A few years later in 2003, Burkina Faso adopted an action

plan for integrated water resources management, known in French as the *Plan d'Action pour la Gestion Intégrée des Ressources en Eau* (PAGIRE). The action plan laid out the decentralisation of the WSS sector over the next six years, and established a distinction between urban centres, semi-urban zones and rural areas. In 2004, the government adopted the General Charter of Territorial Collectives (CGCT), which dictated that water supply service in rural areas would become the responsibility of local communities. However, the legal framework and technical plan to transfer authority have not been fully developed. This has slowed the implementation of the CGCT.

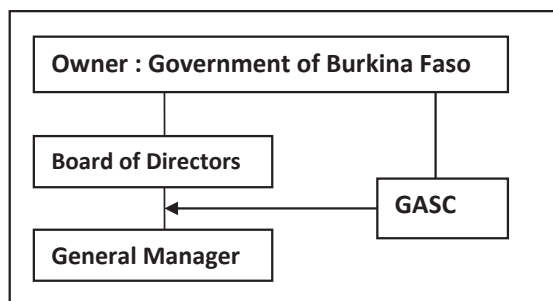
In contrast, the sanitation sub-sector has seen the adoption of strategic sanitation plans in Ouagadougou and Bobo Dioulasso and the development of a national sanitation plan for the rest of the country. In 2005-2006, the national programme for water supply and sanitation (PN-AEPA) was initiated under the overall responsibility of the *Direction de Gestion des Ressources en Eaux* (DGRE) – General Directorate for Water Resources. Beside the PN-AEPA, other programmes, policies and mechanisms for coordination, such as the Basin Management Committee (CGB), National Water Council (CNE) and the Water Technical Committee (CTE) has been implemented.

Population growth in peri-urban settlements in particular will continue to place pressure on existing water supply and sanitation (WSS) systems as investments and the capacity to manage the systems fall behind. In contrast, urban areas are relatively well-served by the Office *National de l'Eau et de l'Assainissement* (ONEA) – the National Water and Sanitation Office. Major constraints that the WSS sector must overcome include the expansion of water supply, especially sanitation service to rural and rapidly growing peri-urban areas. All WSS service providers including ONEA, require significant investments in human resources, financial management, and procurement systems.

3.5.3.4 Institutional Capacity

In the WSS of Burkina Faso, overall technical supervision is provided by the Ministry of Hydraulics. The Ministry of Finance provides financial supervision, and the Ministry of Trade provides management supervision. The water management department, the DGRE and the ONEA share responsibility for infrastructure and water and sanitation projects. Created in 1985, ONEA today is a limited liability company owned by the government. It has hundreds of employees, and a staffing rate (the percentage of management and middle management of total employment) of 25 percent. The organisation of ONEA is shown in Figure 54.

Figure 54: Management structure of ONEA, Burkina Faso



Note: GASC - General Assembly of State Companies

ONEA is Burkina Faso's urban WSS service provider. It has an excellent record of performance in West Africa. ONEA operates on a public-private partnership, serving approximately 45 cities and towns throughout the country. ONEA's greatest challenge is accommodating the rapid population growth in peri-urban areas and balancing the capital expenditures required to expand coverage while continuing the operation and maintenance of its core systems. In addition, ONEA's ability to balance its revenue stream is dependent upon accurately gauging the affordability of its water rates and their effect on consumption demand. Inadequate human resources capacity, especially those with relevant qualification and experiences in the water and sanitation sector remain, a critical challenge.

3.5.3.5 Role of Private Sector, Community and Non-Governmental Organisation

The inclusion of the private sector in the Burkina Faso WSS infrastructure has taken place but at a relatively low level. Since 1990, several civil engineering firms (for example 76 in 2004) have worked together with ONEA in drilling, work provision and the establishment of small networks. A five-year service contract was signed between a private company and ONEA in 2001, and extended for two years. Furthermore, a Build, Operate and Transfer (BOT) contract has been signed for construction of the new water supply facility for Ouagadougou. The

arrangement is an innovation to improve the participation of the private sector and ensure long-term quality and sustainability of water supply services. The contractor is expected to operate and maintain the installations for about seven years from commissioning, and will be entirely responsible for recovering the tariffs.

Although private companies have started to become involved in the WSS sector, so far, Burkina Faso has not introduced any regulatory bodies with which to control such operations. This is one area where the country needs to act with some urgency. In the formal sector, private sector has been very active through intervention in peri-urban irrigation, the building of equipment for water storage and distribution, the supply of goods and services. In addition, the private sector is involved in the resale of water to mostly poor households in peri-urban areas and the management of household waste. However, like the public sector, the private sector is characterised by insufficient skill and capacity, and lacks sufficient capital for operation.

Community and NGOs participation in Burkina Faso's WSS was stepped up in 2004 with the creation of Consultation Framework for NGOs and Associations for Potable Water, Hygiene and Sanitation. The NGOs are involved in the local water development plans. They participated in the development of the PN-AEPA, and are members of the regional steering committees.

3.5.3.6 Monitoring and Evaluation (M&E)

Monitoring and Evaluation (M&E) activities are an integral part of WSS programmes in Burkina Faso. For example, PN-AEPA has M&E components with tools and piloting instruments developed to implement the concept of “unified operation framework”. These tools and instruments include the national information system on water (SNIEau), MDG roadmap, the PN-AEPA implementation manual and the joint sector review. Specifically, a special unit was established in ONEA for collecting the information and producing indicators. Also, an annual consumer satisfaction surveys were conducted by the Service Contractors.

One of the problems encountered in Burkina Faso, like common with many African States, was the inconsistency between different sources of information. Data disparities create a serious problem when attempting to assess the current situation with a view to planning future policy in the water and sanitation sectors. The kind of problems that can arise as a result of unreliable data are illustrated by the fact that since 1960, the state, NGOs and the UN have together installed some 50,000 wells around the country, but, according to a survey carried out in 2006, as many as half of these are believed to be out of service

(IRIN 2007b), either through inappropriate location or lack of maintenance. The data based on what was installed already is likely to be used in a country's water master plan, but in actual fact, this does not represent the reality.

While sanitation planning is underway, defining the institutional roles of key agencies in the WSS sector is yet to be completed. Institutional roles for the delivery of urban WSS services are well-defined. However, conflicts between administrative, regulatory, and sanitation service delivery responsibilities are much less defined. In addition, the relationship between Burkina Faso's poverty reduction strategy and the WSS sector remains weak. The budget allocation for the sector is still low, since much of the allocation has gone to increase water supply through reservoir construction rather than WSS.

3.5.4 Relationship between inputs and outcomes²⁶ : Applying the WIDE index

As a way of evaluating the input drivers and economic outcomes in Burkina Faso, the Watsan Index Development Effectiveness was estimated. Table 29 and Annex 5 provide the basic information and summaries on the Burkina Faso's WIDE analysis. On the basis of this analysis, Input Drivers is 18, while the project outcome is just 46.

Table 29: Input drivers and progress outcomes of the WIDE Index for Burkina Faso

Watsan Index of Development Effectiveness components		Scores	Overall Index	Rank ²⁷	WIDE
Input Drivers	Development aid to the water and sanitation sector, as measured by the average yearly per-capita aid to the sector	21	18	19	3
	Domestic resources, as measured by average per-capita gross domestic products	4			
	Water resources, measured by the quantity of per-capita renewable available water	1			
	Government capacity (a component of human resources), measured by the Ibrahim index of African governance for rule of law, transparency and corruption	47			
Progress Outcomes	Progress in the share of population with access to improved water sources, over the period 1995-2008	95	46	16	
	Progress in the share of population with access to improved sanitation facilities, over the period 1995-2008	26			
	Share of population with access to improved water sources in 2008;	62			
	Share of population with access to improved sanitation facilities in 2008	2			

Source: Author's calculations.

²⁶ See Chapter 2, Section 4 for more details

²⁷ All rankings refer to the sub-sample of 45 SSA countries for which all data on input and outcomes is available (all but Djibouti, Seychelles and Somalia).

From the analysis presented here, the level of progress outcomes is higher than input drivers. This suggests that available resources are being used effectively. In particular, aid-funded water projects were implemented with satisfactory performance. The projects have been very effective in increasing access to safe water, especially for the urban populace. In this context, progress in water provision has been more significant between 1990 and 2008, but it is hoped that the current push for increased sanitation will have a strong impact in the country. Water resources are already at a premium, and there is a need to encourage a reduction in population growth.

As presented in the preceding sections, the level of progress outcomes is higher than input drivers over the 1990 to 2008 period. A critical question is whether this observation is attributable to ODA. Burkina Faso experienced, on the average, a rise in access to improved water source, in spite of the decline in per-capita ODA from 1995 to 2008. The increased performance of the water sector in Burkina Faso, despite the aid depression,

is a further confirmation of the country's efficient use of available financial resources. Like the water sub-sector, the sanitation sub-sector received progressively less aid per capita over the 1995 to 2008 period, but less than impressive performance.

The relationships between access to water and sanitation and some variables, including ODA, were explored in a correlation analysis and the results presented in Table 30. The relationship between access to improved water source and all of the variables are as expected. However, the relationship was significant only for ODA disbursement to WSS, per capita ODA, and Human Poverty Index variables. There is a strong association between life expectancy at birth, infant mortality rate, and access to improved sanitation facilities. ODA disbursement to water and sanitation, per capita ODA, and GNI per capita variables had unexpected relationship with access to sanitation facilities, indicating the sub-optimal attention that the sanitation sometimes get in budgetary allocations.

Table 30: ODA instead of ODA disbursements to water & sanitation

	Population	Human Poverty Index	Life expectancy	Mortality rate	ODA Disbursement to Water & Sanitation	Per capita ODA	GNI per capita
Improved water source, (% of total population with access)	0.5745 (0.1364)	(-0.9882) (0.0981)	0.5475 (0.1601)	(-0.5484) (0.1593)	0.4418 (0.4563)	0.0329 (0.9528)	0.4475 (0.2663)
Improved sanitation facilities (% of population with access)	0.9749 (0.0009)	(-0.9222) (0.2528)	0.9796 (0.0006)	(-0.9714) (0.0012)	(-0.6311) (0.2536)	(-0.8304) (0.0817)	(-0.2404) (0.5663)

Source: Authors based on data from AfDB and OECD data platform

*Figures in parenthesis show probabilities at which the statistical significance of the correlation coefficient may be evaluated

3.5.5 Lessons Learned

Burkina Faso suffers from inequity and entrenched poverty. It has been neglected in donor allocations, and is consequently faced with many institutional and resource-based problems. There is a low level of human capacity, in data collection, analysis, statistics, management, and evaluation of progress. In this situation, there are difficulties of implementing policy, and the quality of data available to support it is unreliable. If real progress is to be made in improving peoples' lives across the region, a significant shift in the nature and scale of international assistance to African rural economies, including Burkina Faso's, is needed. There has been a significant rise in funding to Burkina Faso in recent years, but the country needs to be heavily supported if targets on sanitation are to be met.

Currently, access to sanitation is estimated at 16 percent in rural areas and at 19 percent in urban areas, but this estimate is based on a definition of sanitation not compatible with the MDG (including lower quality facilities). While the need for safe drinking water is universally understood, improved sanitation is often perceived as a higher-income household's option. As a result, government departments have tended to give less attention to sanitation than to water provision. This is a situation that must be changed if real progress is to be made.

In terms of actual water and sanitation coverage, it is clear that Burkina Faso is currently the most poorly served of the four study countries. The country, according to internationally recognised indicators, is one of the poorest in the world (World Bank 2008a). It is also amongst the most vulnerable to the impacts of climate change (Sullivan and Meigh, 2005). Without a doubt, the country should be targeted by the international community as a special case in need of urgent attention. Indeed, this is beginning to be seen in some quarters. This attention must of course address vital water and sanitation provision issues, but it is essential that this is backed up by a wholesale push to support real development at all levels of the economy²⁸.

As a result of this low level access to water and sanitation in Burkina Faso, a figure of 2,670 new water points per annum has been set as a national goal. This clarifies what has to be done to address the problem. Through new financing methods, involving more cooperation between financial and technical staff, a more unified budgetary framework can be devised. Much more cooperative dialogue between different government agencies is needed, and it is clear that the main problem here is not lack of finance, but rather an insufficiency of qualified personnel at both the central and local levels. Only 50 percent of available financial resources are used,

mostly due to problems of planning, and the complexity of financial procedures and reporting requirements. Recurrent costs account for only two percent of all expenditure carried out in the 2001-2006 period, and it is essential that human and technical capacity be enhanced so that this can be increased by a factor between five and eight (World Bank, 2008b). Taking the action required by this recommendation would demand a significant injection of resources into education, capacity building and general economic development.

This situation illustrates the cross-cutting nature of the water and sanitation sector, and its potential to have two-way effects: economic development stimulates the provision of sanitation, but lack of sanitation holds back economic development. Recognition of the pervasive benefit that results from improving water and sanitation provision will be an important factor in achieving an attitude change in decision-makers. This is necessary to bring about an appropriate reallocation of both central government funding and donor aid, to support increased water and sanitation provision.

Although a commitment to IWRM has been made by the government since 2003, very little has been done in the country to make this possible. There is a clear need to set up the right infrastructure to make IWRM a practical possibility. This also applies to the development of SWAP as encouraged in a number of countries. These are all aspects of essential institutional development, and, along with the creation of regulatory bodies to monitor private sector activities, all governments must make serious efforts to implement these new developments more effectively and in a streamlined manner.

The case in Burkina Faso has provided an example of a situation where simple lack of finance has led to the continuation of very poor access, particularly in the provision of sanitation. There are also sometimes cultural factors that can slow up progress and lead to inefficiencies. There may be resistance to the use of latrines, particularly in rural areas. There is a need to recognise the valuable role that can be played by the private sector, but it is vital that a system of regulation is put in place to ensure this is managed correctly.

3.5.6 Conclusion

Burkina Faso will surpass the MDG target on access to improved water source by 2015. However, in the case of sanitation, increased investment in facilities, particularly in the rural areas, is urgently required if the MDG set for the country are to be achieved. Overall, the great challenge confronting the government in these sectors is to improve its capacity to implement the various national strategies.

²⁸ Here, the term 'real development' means development as measured by the components of the Human Development Index.



4 Experts, Beneficiaries, and Other Stakeholders' Viewpoints

Marco Stampini and Caroline Sullivan

Introduction

Quantitative and qualitative information and data were collected from a range of stakeholders, including professionals, water and related ministries, directorates, sub-sectors, departments, donors, NGOs, and diverse groups of beneficiaries. The specific methods involved are highlighted as follows:

First, structured questionnaire survey of 36 professionals identified to be knowledgeable about water supply and sanitation issue in SSA was implemented. The objective of the survey was to solicit for views on factors influencing project success and the effectiveness of development aid. Detailed information from this survey has provided useful information from which recommendations and conclusions can be derived.

Secondly, informal or group discussions were conducted through meetings with senior officials from relevant ministries, donor groups, local government, etc. During the field visits, all efforts were made to meet and talk with as wide a range of individuals as possible. To a large extent, they were beneficiaries of water and sanitation projects, and were therefore able to put forward valuable perspectives to the study. The survey team discussed individual circumstances with householders, water vendors, officials, engineers, teachers, health workers, urban planners, and staff from NGOs.

Thirdly, field visits were made to few AfDB financed water supply and sanitation related projects. These are:

- Rift Valley Water Supply and Sanitation Project, Nakuru, Kenya
- Primary Schools Water Supply and Sanitation project, Kisumu, Kenya
- Mityana and Mpigi Water Supply and Sanitation Project, Uganda
- Buhesi Gravity Flow Scheme, Uganda
- Ouagadougou/Ziga Drinking Water Supply Project and

- AEPA-FAD Grand South Project, Madagascar

AfDB had about 37 WSS projects in the four case study countries – eight in Uganda, 10 in Kenya, 13 in Burkina Faso, and six in Madagascar (see Annex 3.).

Fourth, discussions were made with beneficiaries, including householders, staff and students in primary schools and other stakeholders, such as project representatives, local officials, etc. Finally, relevant data and secondary information, including reports, were gathered.

4.2 A Consultative Survey of Water Professionals

4.2.1 Survey instruments and methods

In an attempt to gain more insights into the factors influencing the effectiveness of development aid in the water and sanitation sector in SSA, a survey of practitioners and policy makers who have worked in Africa for many years was carried out as part of this study. The objective was to identify the wide range of environmental, social, economic, and political circumstances that influence those aspects of development that have been successful in improving water and sanitation, and those that have failed²⁹.

Survey respondents were drawn from as wide geographical area in the continent as possible, and they represented a range of organisations and disciplines. Opinions were obtained from individuals at different levels of seniority and included respondents from both Francophone and Anglophone countries. Responses were elicited through a questionnaire sent by email. Considerable thought went into the design and scope of the questionnaire, with a balance being struck between having sufficient detail, while at the same time ensuring that it was not too demanding on the time of individual respondents. The range and quality of the responses obtained suggests that the right balance was achieved³⁰.

²⁹ The main caveat regards the representativeness of the sample of respondents. Not every country in SSA is represented in the survey, so it is possible that some aspects of water and sanitation development may be missed. Under ideal circumstances, it would have been preferable to have a larger and randomly drawn sample, but this was prevented by constraints of time and finance. Every effort, however, was made to ensure that the group was as representative as possible and not drawn from too narrow a field of experience or geographic range.

³⁰ To make responses easier, questions were multiple-choice where possible, though some required short comments. A further feature designed to facilitate completion was the inclusion of a 'don't know' option, which meant the respondent was not forced to select an inappropriate answer when unsure of how to respond. Care was also taken to ensure that questions were not vague or ambiguous, but specific, well focused and easy to understand.

Questions were carefully selected to draw out responses capable of being interpreted in terms of the way in which water and sanitation aid has impacted on the lives of ordinary people. To do this, it was necessary to look beyond the simple matter of how many water points had been installed, how much water was available, or how many sanitation facilities existed. These questions were obviously important, but the survey was designed to look beyond such immediate issues and to include the impact on specific sectors, such as education; the capacity of local organisations to deliver services; the extent to which WSS aid was enabling floods and droughts to be managed; and the important issue of operation and maintenance once installation was complete. Prior to the survey, questions were piloted to ensure clarity of understanding.

A total of 36 responses were received covering experience in 22 countries³¹, plus one representing a global perspective. Respondents were government officers (13), consultants (6), staff of NGOs (5), international organisations (4), research institutions (4), universities (2), and utilities (2). All respondents, even when not directly involved with the delivery of aid, were able to provide expert opinion based on many years of involvement in the water and sanitation sector.

4.2.2 Survey Results

Not surprisingly given the sample, all 36 respondents considered water and sanitation to be essential (75 percent) or extremely important (25 percent) in terms of its contribution to the development process. Respondents identified the most important factor for increased access to safe drinking water and improved sanitation to be the availability of adequate financial and technical resources to carry out the necessary work (33 percent). The second most important factor was the existence of the political will to implement the changes (15 percent), and the third was found to be the necessity for capacity building and reform of existing institutions (14 percent). Seven other factors were identified, ranging from awareness and education (11 percent) to the agreement of external agencies (one percent). Results are summarised in Table 31.

The picture is slightly different when only the first choice factor for each respondent is taken into account. In this case political will (39 percent) comes out ahead of capacity building and reform (24 percent) with adequate financial resources (21 percent) being in third place. Nevertheless, in both cases the top three responses remain the same. From the perspective of the donors, it is interesting to note that agreement with external agencies was not considered to be important.

Table 31: Which factors are necessary to achieve progress in increasing access to safe drinking water and improved sanitation?

Factors	Three most important factors (%)	The single most important Factor (%)
Adequate financial and technical resources	33	21
Government and political will	15	39
Capacity building and reform	14	24
Awareness raising and education	11	12
Better maintenance and monitoring	8	3
Flexible and adaptive approach	6	
Clear well focused policies	6	
Transparency	4	
Integrated multi-disciplinary approach	1	
Agreement and cooperation of external agencies	1	

Respondents thought that to ensure successful outcomes, projects must be clearly focused, well financed and sustainable (33 percent). This was closely followed by the suggestion that projects must have active community participation (32 percent). The third most popular feature was that any project must include training in operation, maintenance and monitoring, to ensure that the long term operation and maintenance of the system can be guaranteed (12 percent). There

were five other suggestions ranging from the need to 'incorporate appropriate technology' (eight percent) to the 'need for some external input' (one percent). Based on the first choice only, the result is very much the same with the need for a 'clear focus and sound finances' and for 'active community involvement', both accounting for 41 percent of respondents. Results are summarised in Table 32.

³¹ Burkina Faso, Burundi, DRC, Ethiopia, Ghana, Guinea, Kenya, Malawi, Mali, Mozambique, Niger, Nigeria, Rwanda, Senegal, Somalia, South Africa, Sudan, Tanzania, Togo, Uganda, Zambia, Zimbabwe.

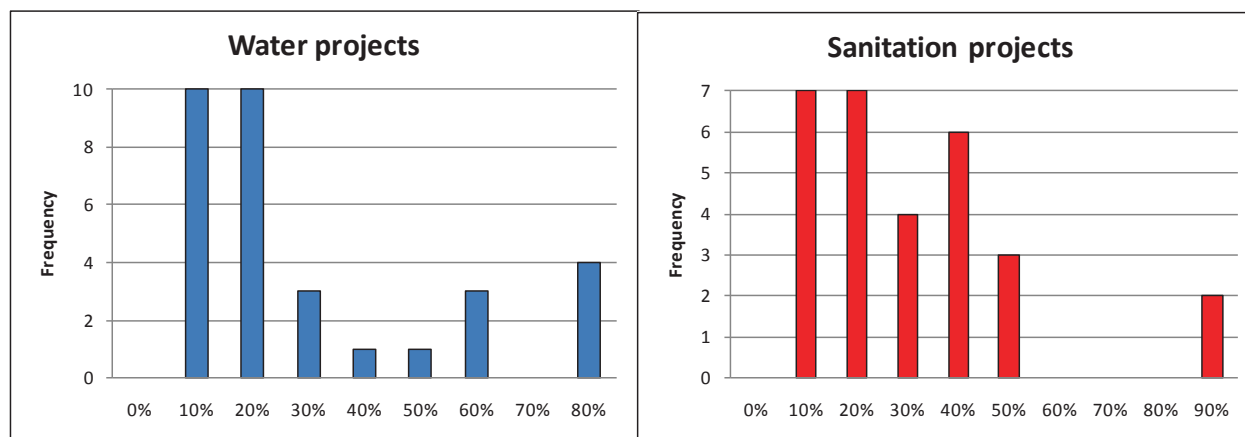
Table 32: Which features must a WATSAN project have to ensure a successful outcome?

Project feature	Three most important factors (%)	The single most important factor (%)
Project must be clearly focused, well financed and sustainable	33	41
Must have active community participation	32	41
Operation and maintenance, monitoring and training must be a part of the programme	12	
Needs to incorporate appropriate technology	8	6
Needs to be integrated and multi-disciplinary; takes social and economic factors into account	7	6
Must be a long term programme in harmony with country policies	6	6
Some external input is needed	1	
Must be accompanied by political will	1	

Most respondents assessed that between 10 and 20 percent of water project budgets should be dedicated to social aspects (soft side). Some thought that social aspects should receive higher budget shares of up to 80 percent, while four respondents did not know how to answer the question. It is worth noting that the

distribution of responses is less skewed for sanitation projects, indicating that the soft components (most likely awareness-raising and education) are relatively more important to ensure that results are achieved. Responses are summarised in Figure 55.

Figure 55: What proportion of the project budget should be allocated to community training, awareness raising, sensitisation, development of community associations, etc.?

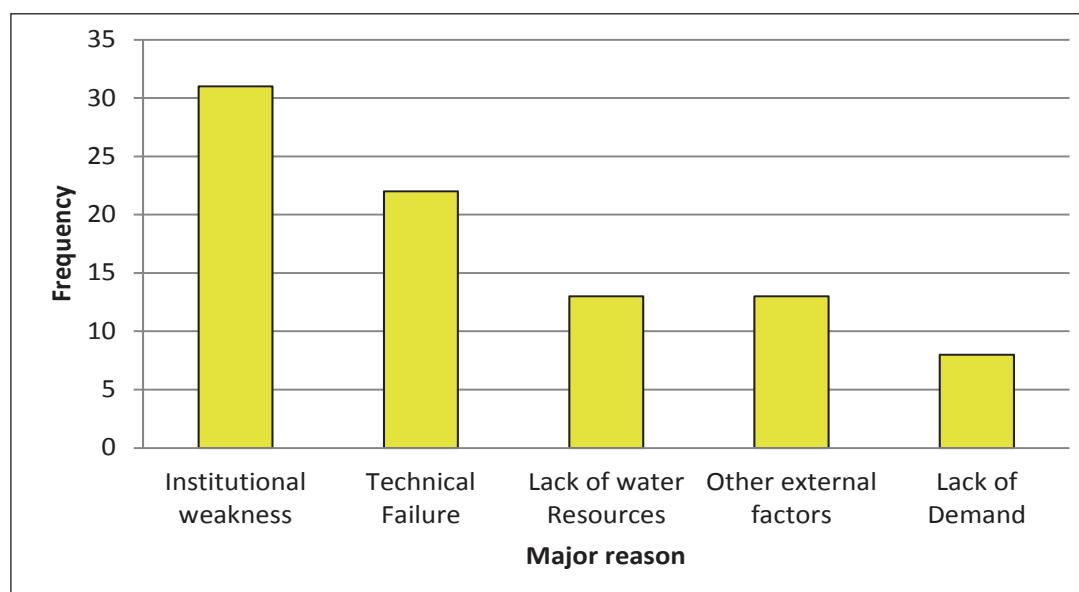


Monitoring and evaluation should take up to 10 percent of project budgets for both water and sanitation, although in the latter case, a significant minority of respondents thought that a figure of 20 percent was justified.

When asked how many past water and sanitation projects were still functioning as they were designed, based on the SSA countries in which they had experience in, 14 (39 percent) of respondents said most, 15 (41 percent) said

some, five (14 percent) talked of few and two didn't know. Significantly, none replied that all projects were running as designed. The reasons given for failure are summarised in Figure 56. The most common is weakness of managerial and institutional capacity, followed closely by technical failure. Both of these causes may be related to lack of financial resources to provide the support required to maintain such projects.

Figure 56: Major reasons for WSS project failures



Respondents were also asked to comment on any external factors contributing to project failure. The main reason to emerge was the absence of an adequate operation and maintenance programme, often stemming from lack of finance. This leads to a lack of spare parts and inadequate training and community support, all of which contribute to the eventual collapse of even the best capitalised projects. The responses to this question highlight a serious issue for project planning and programme implementation. Inadequate operation and maintenance programmes to support projects that have been donor financed are a major reason why development aid effectiveness is lower than it should be.

There are many examples across the world where excellent infrastructure has been put in place, but this has rapidly deteriorated due to small breakdowns in the overall system, and lack of delegation of effective responsibility to make repairs.³² For instance, in

Ghana, less than a quarter of the available 46 treatment plants are in operation and none of them meet the EPA effluent guidelines (Lydecker and Dreschel, 2010). Other responses include the perception that many projects are externally driven and as such, lack a sense of community ownership. Corruption and a failure to implement laws and regulations were also put forward as reasons for failure.

Apparently contradicting the previous answers, the majority of respondents reported that most or some projects included both an Operation and Maintenance component (Figure 57) and had sought the support and input of local communities during the design period (Figure 58). This may suggest that these components, although present, were not properly designed or funded, and that innovative design solutions need to be found to increase results sustainability.

³² It is often the case that attempts have been made to delegate a community representative to take a lead in this, but this was frequently found to be unsuccessful, and at times, divisive in the community

Figure 57: What proportion of completed projects have had an element of training in 'operation and maintenance' put in place?

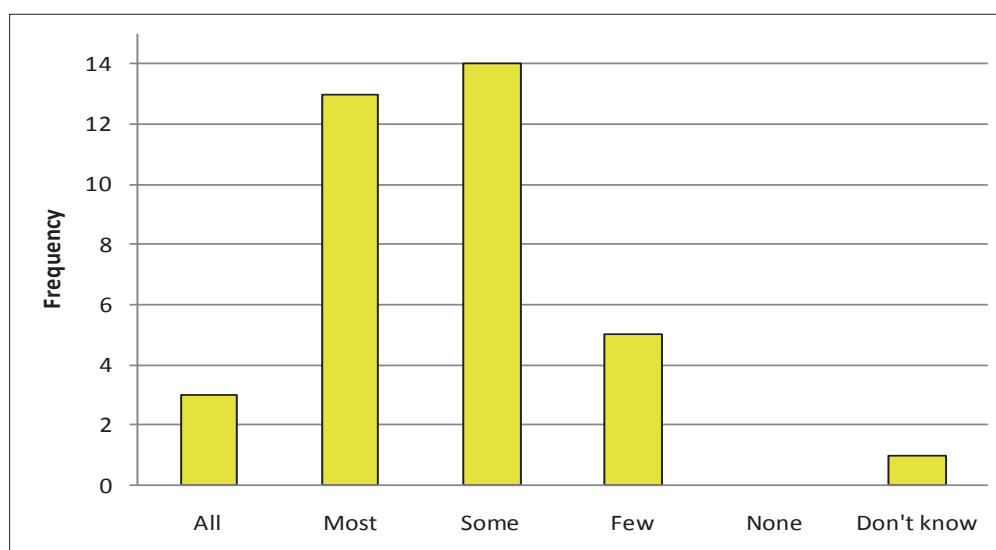
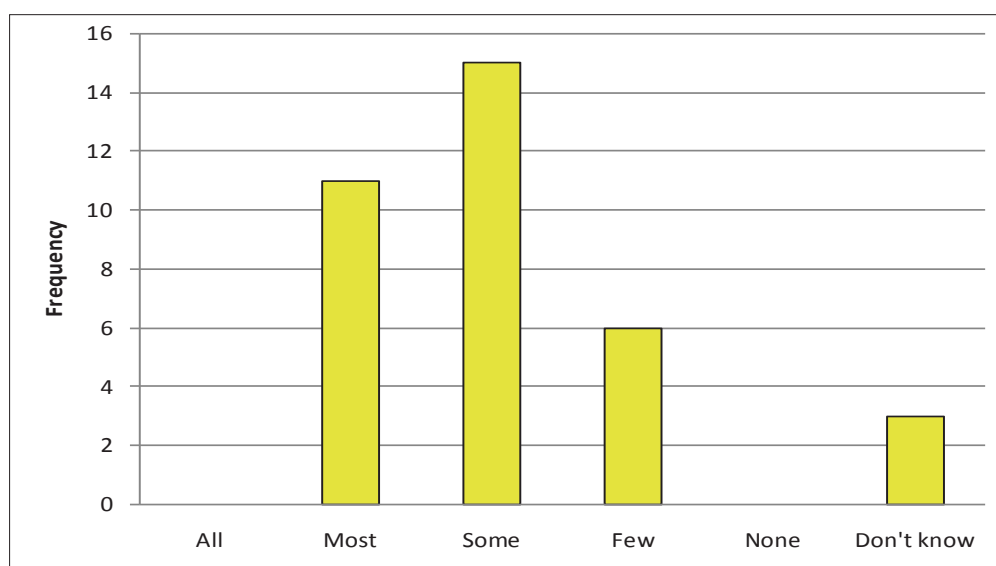


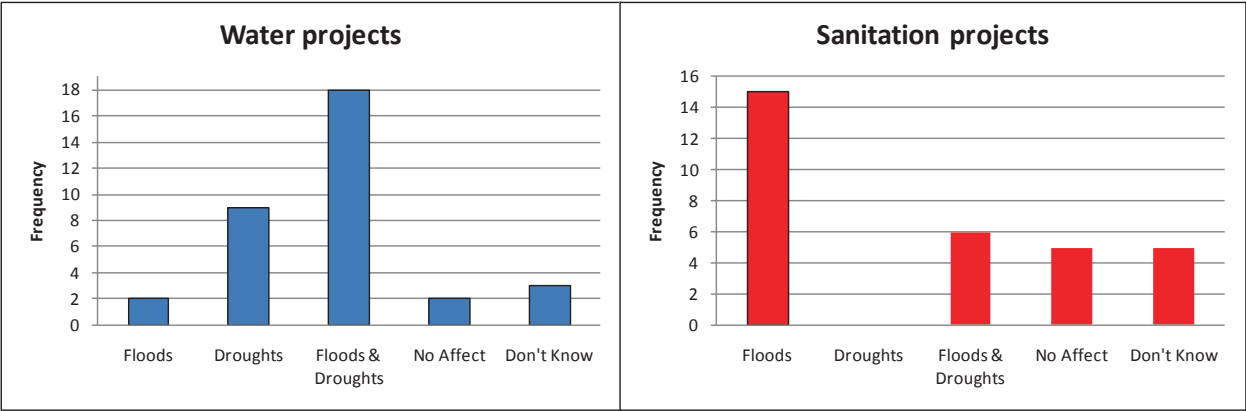
Figure 58: How many of the water and sanitation projects carried out to date have been designed together with the communities?



Failure to maintain performance may also be due to weather-related events. Respondents assess that over 50 percent of water projects are likely at some stage to be affected by drought, and almost 40 percent by floods (Figure 59). This high proportion reflects the prevalence of extreme climate conditions in SSA. Not surprisingly, sanitation projects are more at risk from floods than

droughts, with almost 60 percent of projects being affected. These responses carry an important message for the donor community, given the current concern with climate change. There is a need to review new service provision activities in the context of their resilience to climate impacts.

Figure 59: Weather impacts: Are the facilities likely to be affected by either floods or droughts?

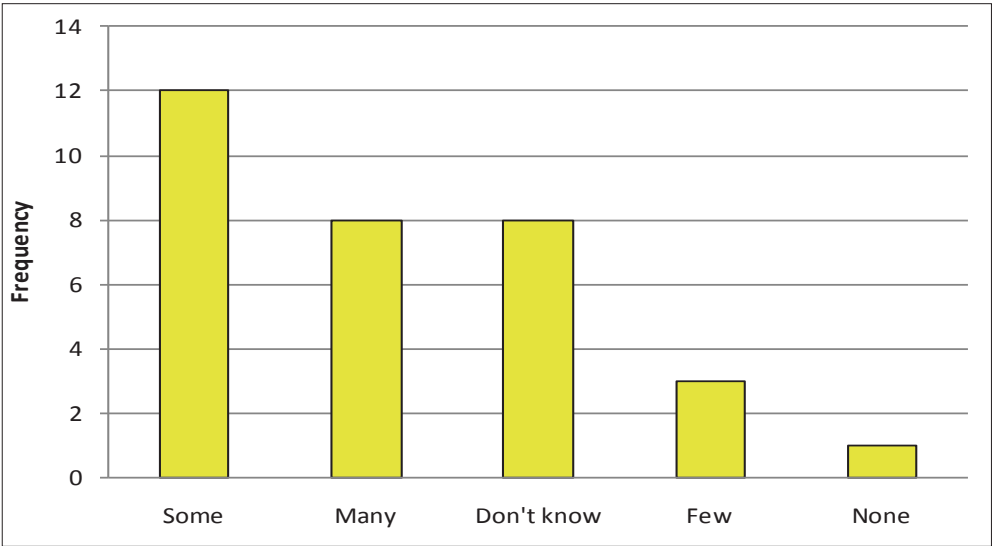


All respondents but one affirms that institutional arrangements act as barriers to progress in the provision of water and sanitation in their country of expertise. By far, the most commonly cited constraint is the tendency toward a short term approach to projects leading to apaucity of post construction support mechanisms. This lack of long term planning also stems from poor coordination between agencies, which often leads to the blame game. Other institutional problems include:

- The need for more involvement from the private sector;
- Excessive bureaucracy;
- Nepotism and corruption;
- Lack of technical expertise;
- Lack of personal and professional accountability;
- The large gap between policy and reality;
- Placing water and sanitation under the same organisations leading to under representation of

sanitation. Most respondents report that it is common for water and sanitation departments to have unfilled positions. About 25 percent of respondents claim that ‘many’ jobs are available, while more than 35 percent say that ‘some’ jobs exist (Figure 60). Whether these jobs cannot be filled due to lack of available expertise, a lack of applicants, or simply a lack of funding, is not known. It is clear though that having a large number of unfilled vacancies in any organisation will reduce efficiency. This is another factor that may be contributing to the lack of aid effectiveness in some countries. Donors must consider more closely the capacity of local institutions to carry out water and sanitation programmes, and if necessary, implement rapid training procedures or provide a suitable level of technical assistance to ensure capacity is both developed and maintained in accordance with the extra demands on staff that any development project will make.

Figure 60: What is the current level of unfilled vacancies in government departments responsible for water and sanitation?



Thirty two out of 35 respondents indicate that in the past, water supply has been given priority over sanitation. Recently, the picture seems to have changed. For the 2008-2010 period, only 58 percent of respondents (19 out of 33) claimed that water enjoyed a priority status. About 18 percent (six out of 33) believed that sanitation was afforded priority. The remaining 24 percent claimed that the two were given equal importance. Only 44 percent of the respondents reported that the countries of their expertise had national policies to provide water to the poor.

In many places, pressure to reduce 'unaccounted for costs' has led to a decrease in the availability of water from stand pipes and other services designed for the poorest. This may hinder countries' efforts to achieve the water and sanitation targets of the MDGs. Respondents report that the involvement of the commercial private sector in the provision of water and sanitation is limited. Over 50 percent of them (18 out of 35) report participation to be 'a little'. Only 11 percent suggest that private participation is 'a lot'.

The survey results confirm that urban schools enjoy far better water and sanitation facilities than their rural

counterparts. While almost 70 percent of respondents report that 'most' urban schools have water and sanitation facilities, the percentage falls to just over 10 percent for rural areas. For rural areas 15 percent of responses indicate that 'no' schools have facilities. In the case of urban schools, this figure is zero (Figure 61 and Figure 62). When schools lack sanitation facilities, the numbers of female students drops significantly when girls reach the age of puberty.

This lack of infrastructure and facilities is a serious issue. It needs to be readdressed, and there should be greater intensification of hygiene training. Both should be aspects of an effective development strategy for water and sanitation provision. Sanitation in schools is also a significant issue for community health and welfare. If water and sanitation services are introduced in schools but not in homes (and vice versa), the impact of the project will be reduced. Children continue to suffer from diarrheal diseases resulting in high child mortality rates. These results suggest that there is a need for more emphasis on the provision of water and sanitation in rural schools if progress towards the water and sanitation MDG targets is to be meaningful in terms of its impact on health.

Figure 61: Please estimate how many schools in rural areas have sanitation facilities?

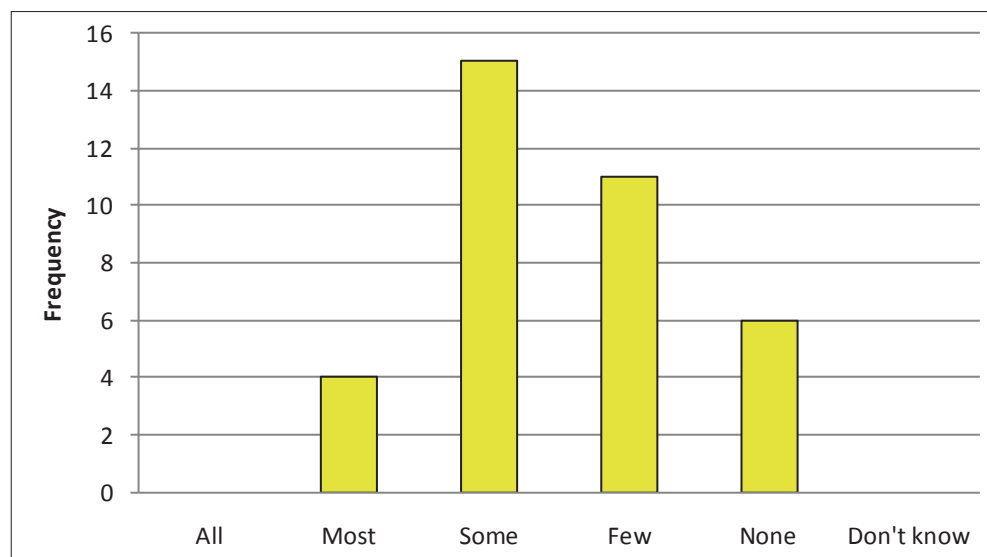
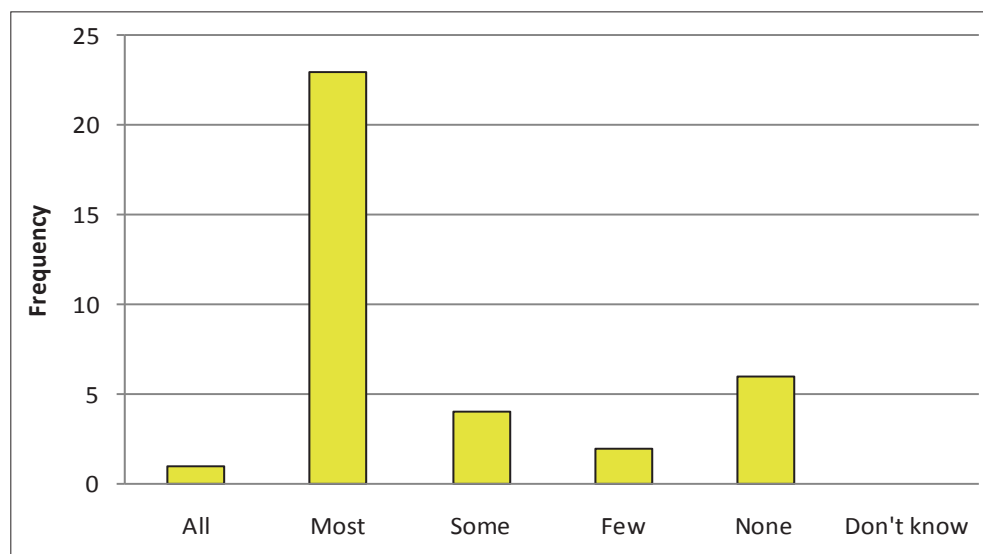


Figure 62: Please estimate how many schools in urban areas have sanitation facilities?



When asked if they thought water and sanitation budgets had been spent wisely and effectively, more than half answered “partly”. About 30 percent said “mostly”. Only six percent of the respondents felt that money had not been wisely and effectively spent at all. Considering the problems being faced by SSA, this is quite encouraging. Twelve respondents judge the existing pricing mechanisms as appropriate, while 11 deem them too regressive. Regressive prices mean that the poor pay the highest unit prices, an impression confirmed during the field missions conducted for this study. A significant number of respondents think prices are too high (seven responses) or too low (seven responses). Results demonstrate the contentiousness and sensitiveness of pricing, an issue which needs to be carefully handled when designing water and sanitation development projects.

The majority of respondents (66 percent, or 22 out of 33) did not know the proportion of total annual development aid that was spent on water and sanitation. Of those that made an estimate, 27 percent suggested a figure of 10 percent or below. Only two other figures were mentioned, one of 15 percent and a high one of 60 percent from a Burkina Faso respondent. All figures quoted, save one, were based on expert opinion. The lack of awareness of the very small percentage allocated to this sector is one of the reasons why progress towards the water and sanitation MDGs is slow. More public awareness may lead to an increase in this allocation.

Finally, only nine percent of the 35 respondents think that the MDGs for water and sanitation will certainly be met before 2015. On the other hand only three percent are sure they will not be met. Most respondents are uncertain, and believe that the goals could possibly be achieved or achieved with great difficulty. The fact that over 90

percent of respondents do not think that the water and sanitation targets of the MDGs are likely to be achieved by 2015 underlines the need for more concerted action to support faster progress.

4.3 Beneficiaries and Other Stakeholders View Points

Field visits were carried out to each of the four case study countries at different times. Discussions were made with beneficiaries including householders, students and teachers. The objectives of the field visits were to seek views on factors relating to the effectiveness of aid at national and local levels; to evaluate the institutional framework of water and sanitation sectors; and to collect secondary data, such as level of government budget for water and sanitation sector, development aid allocated to the sector, and share of the population with access to safe drinking water. Some of these are presented in the preceding chapter. Visits were made to selected project sites financed by AfDB. During these visits, key informant interviews, group discussions, and observations were made to glean out key aspects of the projects that led either to success or failure.

All efforts were made to meet and talk with as wide a range of individuals as possible. To a large extent, these were all beneficiaries of water and sanitation projects, and were therefore able to put forward a perspective that was valuable to the study. The team discussed individual circumstances with householders, water vendors, officials, engineers, teachers, health workers, urban planners, and staff from NGOs. This provided a valuable insight into people’s perceptions of water provision, and the effectiveness of what was being done. Amongst the most valuable of these were informal meetings carried

out independently, of official visits at many sites selected randomly by the consultants during the visits. The inputs from many of the beneficiaries consulted outside of organised meetings are recorded anonymously.

4.4 Key Lessons

Community participation: A recipe for project success

The visits to AEPA-FAD Grand Sud project in Madagascar revealed some innovative characteristics in terms of community involvement and capacity building. The impacts of this project have provided some useful insights into development aid effectiveness, in that it demonstrated the importance of involving the community in the whole project process. Particular care was taken in involving local stakeholders in project design, execution, and maintenance. As a result, the installed water points produced benefits in terms of water quality, which reduced the frequency of water borne diseases and of saved time for water collection (with important consequences on gender balance).

The beneficiaries confirmed that the two main outcomes of the provision of safe drinking water were household time savings and the reduction in the incidence of water borne diseases. The former especially benefits women and has major effects on gender balance and household wellbeing. The latter mostly benefits children, and potentially leads to human capital accumulation. The AEPA-FAD Grand Sud project experience also highlights the importance of incorporating awareness raising and education into water and sanitation development strategy.

Sanitation: A neglected sub-sector

In the general government budget allocation and WSS project preparation, the sanitation sector is often neglected or given less priority. Therefore, there is a need for some of the funds to be ring-fenced to ensure adequate representation of water and sanitation in central and local government budget allocation decisions. There is clear evidence of neglect of sanitation in each of the case study countries. More worrisome is the insignificant donors support for household sanitation. Generally, substantial proportions of on-site household sanitation expenditure on facilities like latrines are household-financed.

Sanitation provision is still inadequate in all the case study countries. Millions of people across the whole of the SSA region and across the world face poor or zero access to sanitation. As a result, the millennium target on sanitation is unlikely to be met by 2015, or in some places, even by 2050.

It is important to note, however, that even when this MDG target is reached, there will still be millions of people across SSA continuing to face conditions of open defecation. While this situation holds, the donor community must guarantee that the impetus generated by MDGs is maintained to ensure that all the remaining unsanitary conditions will be totally eradicated on every continent during the next period of global development planning.

While the need for safe drinking water is universally understood, in some countries, improved sanitation is often perceived as a higher-income household's option. This could be one reason why financial allocations have not been made to support the provision of sanitation. We must promote the idea that sanitation is valuable to society, and its products (human wastes) are a valuable resource.

From the visits carried out in Uganda, it appears that there is often a disconnect between latrine location and water provision for hygiene. Although there was some simple infrastructure in place to support sanitation and hygiene (water buckets hanging from the latrines), many of them were not functioning due to them not having been filled with water. In terms of water provision from the rural water programme, it is clear that there was an improved water supply throughout the rural community located along the gravity pipeline, but for this to have the full impact, hygiene must be promoted and made easy to carry out.

Input from NGOs in both Nakuru and Nairobi highlighted the potential for implementation of large scale ecosanitation systems, a cost effective and sustainable option for rapid improvement in the rate of sanitation provision. This kind of sanitation system was less well known in the other cases. There is much scope for further development of large scale eco-sanitation facilities in urban areas, and perhaps in line with capacity development, the donor community should promote the uptake.

Operation & Maintenance: A key factor for infrastructure sustainability and development aid effectiveness

The visits also revealed that there was usually a discrepancy between the water points installed and those correctly working. According to the sector technical support team in Uganda, the community is supposed to take the responsibility for maintenance of the system, but representatives of the Water Users Committee claimed that people did not have money to purchase the parts needed for the repairs, and also that such parts were not easily obtainable locally. While there was evidence from both Nairobi and other areas that there was a degree of willingness to pay for services on the part of the public, this must not be overestimated.

The ability of local communities to be able to pay will always be a real constraint on service development. It was also clear from a number of examples, including those in Kenya, that tariff-setting and cost-coverage were key to ensure that the project was properly maintained. This has implications on the choice of the project's type and size. The costs of operation and maintenance should be factored in from the planning stage (Table 33). There is a disconnect between the expectations of the donors (on the possibility or feasibility of locally managed and implemented maintenance programmes), and the capacity and perceptions of the communities to deliver this. It is our view that this situation is widespread, and frequently gives rise to inefficiencies in both water and sanitation systems.

**Table 33: The share of fees collected in the total operational expenses of WSPs:
Example from Kenya**

WSBs	Subsidies (Kshs)	Fees collected from WSPs(Kshs)	Total income (Kshs)	Total operational Cost (Kshs)	Fees collected as % of total operational cost
Rift Valley	50,431,795	28,707,321	79,139,116	106,415,948	74.37%
LVN	13,360,000	30,792,263	44,152,263	64,596,221	68.35%
Athi	26,000,000	163,117,232	189,117,232	127,258,767	148.61%
Northern	89,255,625	3,578,821	92,834,446	51,483,785	180.32%
Tana	NA	11,071,691	11,071,691	82,946,603	13.35%
Coast	65,279,750	78,840,000	144,119,750	128,259,085	112.37%

In this context, it is recommended that the donor community therefore reassesses this option when considering how any water and sanitation provision scheme is to be maintained after installation. A revolving fund, which could then be used as the 'cash float' to support the operational maintenance of schemes, should be included right from the project proposal stage.

Data quality and management: A condition for proper planning and implementation

The field visits also revealed that data being collected at the local level must be scrutinised before being accepted for use in publications, including, for example, in the African Economic Outlook. It is possible that some of the information provided during the visit is subject to a high degree of uncertainty, possibly containing errors. What may be recorded in official water master-plans may be far from the reality of what is actually functioning in practice. Sometimes water is said to be delivered to households, but the reality could be that it may be available only during certain times of the day, or at a very low pressure. In Urban areas, there was clearly a feeling of pressure on the public water points, as these often had large queues around them. Indeed in some places, water was only available at certain times.

In many places, valuable data was collected on water and sanitation coverage, government expenditure in the sector, and the amount of development aid allocated to the sector. What was striking however, was that in all cases, there were few similarities between different sources of relevant data. Some efforts had to be made to gather what actually existed. It will be in the interests of all stakeholders if efforts can be made to streamline data collection and reporting on all issues relating to water and sanitation provision. At this point, it is important to note that there is currently a real need for greater harmonisation of data collection strategies if water management at all scales is to become more effective. This need has been illustrated repeatedly in this study.

Another important institutional issue, which arose from discussions during field visits, was that institutional memory was important for both recipients and donors. Support should be provided for improved record-keeping and data-archiving, particularly for long term hydrological and meteorological datasets which may be at risk of deterioration without proper administrative attention.

International agencies such as the WMO should be encouraged to get more engaged in this process. Similarly, at the continental scale, the value of effective hydromet monitoring and good data quality cannot be underestimated, particularly in the context of potential climate change impacts. Governments must endeavour to put pressure on such agencies through their UN representatives, to ensure participation in relevant global initiatives.

Integrated large scale multipurpose infrastructure: A promising option

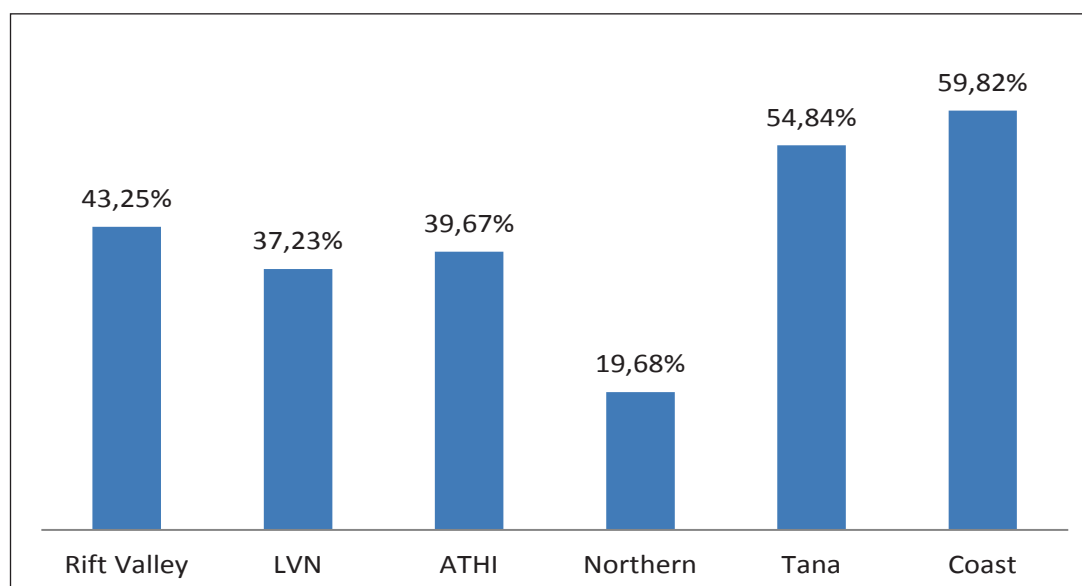
In Uganda, discussions with stakeholders and beneficiaries provided useful insights into areas of future intervention by AfDB and other donors. It was felt that donors could make important contribution to regional water development through funding large scale multipurpose integrated water project rather than through individual smaller projects. This would be in line with the sector-wide approach to planning, implementation, reporting, and accountability in the WSS sector adopted by Uganda.

WSS sector has an alarming staffing deficit

In some cases, water and sanitation departments are understaffed, not just in absolute numbers but also in the number of people equipped with the required technical qualification. As has already been stressed in the previous section, most water and sanitation departments have unfilled positions for possible reasons, such as lack of available expertise and lack of funds to recruit the right expert. This is particularly so at the sub-national or regional level, such as districts where most of pro-poor projects are physically located (See Annex 7 and Figure 63).

From the data on Kenya (Annex 7), one can comprehend that the WSPs not only vary in the number of staff per thousand connections, but also in the average gross salary per staff per month, probably indicating the differences in the qualities of staff engaged in the WSS sector. Alternatively, the differences in the level of staff among Kenya's regions is shown by the percentage of personnel cost in the total operational expenditure (Figure 63). The northern looks severely understaffed. These conditions may severely affect the implementation, operation, and maintenance of WSS projects.

Figure 63: Personnel cost as percentages of total operational expenditure in Kenya



Need for understanding the socio-economic contexts of beneficiaries

Informal meetings with the project beneficiaries in urban areas emphasised the relevance of socio-economic factors or behavioural responses, with access and use not deterministically depending on technical success. For instance, one household of four families in Ouagadougou gave up using the home connection provided by the water company because: a) The connection in the yard was shared, as was the monthly bill; b) the lack of habit to a home connection and the fact that the bill was shared led to a consumption in excess of the household financial means, creating intra-household conflict. After giving up the home connection, the four families went back to buying water from vendors, paying a higher unit price and reducing the quantity consumed. Thus, even tiny household cash flow problems can reduce effectiveness of ODA. In many places, the major factor slowing down progress in sanitation provision is lack of organisation. Evidence from a number of sites in Kenya suggests that people are willing to pay the cost of having access to water and sanitation if it is made available in a way that is convenient for them (Annex 7).

There would be a marginal cost in adding some additional water points to any system, but it may be that greater efficiencies could be designed into that system if local preferences are pursued. This suggests that donors and governments must put greater emphasis on social needs of communities when engaging in support for development planning. Meeting with beneficiaries and integrating their views into all aspects of the project and

its evaluation are, thus, essential.

Financial and technical management skills of project staff: A key limiting factor

The field missions to project sites, and meetings with stakeholders in both urban and rural areas of Kenya revealed a number of important factors that may influence development aid effectiveness. It became very clear that strong financial and technical skills in the implementing unit are a success factor, but corresponding capacity is often insufficient at the local level. This again highlights the importance of education and capacity development, specifically within the water and sanitation sectors.

There is a clear need for the donor community to work together to identify the various pathways available to support greater commitment and effective financial support for greater water and sanitation provision. There is some evidence that this is beginning to happen, but the need for strong technical and financial skills in any Project Implementation Unit is clear. It is required to support insufficient local capacity. Since more effective accounting and management practices will contribute to donor aid efficiency, capacity building in project management, financial management, and proposal writing will be of value.

Intra-household relations is often neglected

There are often conflicts over water resources at the household scale, and sometimes the introduction of piped water or a billing system were the cause of this

There needs to be more attention paid to public education on how water service delivery should be managed at the household scale. Almost everywhere, women remain the weaker partners in the process of water and sanitation delivery. They traditionally bear most of the effort associated with delivering water to homes, but today, even with improved coverage, and access, this is still the case. There is no doubt that when water is scarce, women are bullied. Donors should recognise the benefits of installing more distributed water points within a reticulation network, located in a variety of sites to cater for different human preferences.

The need for promoting multiple use systems

In some places, around the Ziga dam in Burkina Faso, benefits of the water development programme were very evident from well tending productive horticulture around the edge of the reservoir. On the other hand, not far from the same place, people commented on the fact that although the scheme had brought some benefits (such as better water access, a health post etc.), their major constraint was on being able to make a livelihood, since the road network was such that it was impossible for them to sell their products. Sometimes floods isolated their communities completely. Donors and others should recognise the need for all types of development schemes to be integrated together, rather than treated in a sectoral manner as is often the case today.

4.5 Conclusions and Lessons

The survey proved to be informative, providing a wealth of information from respondents with many years of experience in diverse organisations covering a wide geographical range. However, the nature of the exercise

means that inevitably, there are some limitations and drawbacks that need to be acknowledged. The main caveat regards the representativeness of the sample of respondents. In addition, there is inevitably a possibility that the opinions expressed are affected by the policies of organisations in which the respondents work. Bearing in mind these caveats, the analysis of the survey results proved to be extremely useful in terms of identifying what features contribute to the success of water and sanitation development at country and programme level. The survey has successfully identified a number of elements that can be considered as prerequisites to the success of projects to increase access to improved water and sanitation. The crucial factors that need to be addressed are:

1. The allocation of adequate financial and technical resources;
2. The design of a capacity building programme for relevant local and national organisations;
3. An effective nationwide awareness raising and education campaign to stress the importance and need for improved water and sanitation facilities;
4. Transparency at all levels of government;
5. A flexible approach to management (adaptive management);
6. Improved maintenance and monitoring during the post-construction phase;
7. Having well thought out clearly defined policies, rather than vague objectives.



Toward Realising Sustainable

5 Access to Water and Sanitation and Development

Aid Effectiveness: Conclusions and Recommendations

Regassa Namara, Adeleke Salami, Marco Stampini and Caroline Sullivan

5.1 Introduction

There is no doubt that we are now at a tipping point in human development, and it is universally accepted that not only do we need more data and information about our resource management systems and how they are valued, but it is also vital that we organise this information effectively to enable useful analysis to be carried out in a standardised way. In the preceding chapters, the performance of WSS sector in general and the effectiveness of development aid in particular have been analysed from different angles-synthesis of primary and secondary data, structured questionnaire survey of water and sanitation professionals, key informant interviews, informal discussions with ultimate beneficiaries of WSS projects (both in group and individually), and at different scales, i.e., at continent (or SSA), country, and project levels.

The major issues covered at the continental or macro level include:

- Gross ODA disbursements to all sectors in SSA for the 1995 to 2008 period;
- Gross ODA disbursements to WSS sector in SSA over the 1995 to 2008 period, and the share of AFDB;
- Access to water and sanitation in SSA over the 1990 to 2008 period, differentiated by rural and urban; and
- Comparative analysis of the WSS sector performance of 48 SSA countries using the WIDE index methodology.

The country case studies further strengthened the understandings obtained at continent level. It specifically analysed whether the countries were on course to meet the WSS sector-relevant MDGs and the reasons why some were better positioned to attain the goals than others. The results from the formal survey of WSS

professionals and discussions with various stakeholders deepened the understanding of the working of WSS institutions and projects, and shed additional lights on determinants of WSS sector performance. In this chapter, the key WSS sector policy relevant messages and lessons are flagged out and recommendations that are expected to redress the past failures in WSS sector and revitalise it are provided.

5.2 Progress in Water and Sanitation Sector: A Comparative Analysis

When considering water and sanitation coverage across countries, it is essential to incorporate the many diverse issues associated with achievements. Progress made in the water and sanitation sectors is the result of a multidimensional process, not all of which is fully understood. There are many uncertainties associated with data quality and varying national statistical processes that make an evaluation of the impact of ODA on progress in the water and sanitation sectors very difficult. A whole diversity of issues, such as variations in water quality, time needed to gain access to water, how it is used and managed, etc., will influence the reliability of any assessment of progress. For instance, it is difficult to definitively gauge how much ODA money is actually spent on the improvement of water and sanitation because ODA payments to other sectors, such as water resources development, IWRM, irrigation infrastructure, education, etc., may contribute to improvements in access to water and sanitation. Even if it were possible to measure accurately the ODA disbursement level on WSS, it is not easy to know exactly what the measures of coverage of water and sanitation actually represent. Figures from different data sources in Burkina Faso illustrate this point rather well, as shown in Table 34.

Table 34: Water and sanitation coverage rates in Burkina Faso: The problem of divergent information from different data sources

		2000-2003	2004	2005	2006	2007	2008
Water access figures from the Burkina Faso National Institute of Statistics and Demography (INSB)	Rural	53			72		
	Urban	94			94		
Water access figures from the Ministry	Rural			52	52.8	54.1	54.6
	Urban						
Water coverage figures from the Ministry	Rural	78-85	88	89	95	98	99
	Urban						
Sanitation access figures from the Burkina Faso National Institute of Statistics and Demography (INSB)	Rural	7			10		
	Urban	78			54		
Sanitation access figures from the Ministry	Rural			10	12	14	16
	Urban			14	16	17	19

Key	
Demographic and Health survey	
Multiple Indicator Cluster Survey	
Rate estimated by projection	

ODA data from OECD may also underestimate the magnitude of disbursements to WSS sector because it does not include donations from some Arabian and Asian states, which at times may be substantial for certain countries. Due to lack of accountability and reliability of this other type of ODA, they were excluded from the current analysis. The major donors include IDA, which is the largest donor), Germany, AfDB, France, EC, Denmark, Sweden, and UNICEF.

The difficulty in determining precise data for a country also arises from the wide range of coverage in different rural and peri-urban parts of a country. There are significant sub-national or regional variations in access to improved water and sanitation coverage. For example, in Burkina Faso, the national average for access to improved water source is 60 percent. However, there is significant regional variation. Minimum coverage of 36 percent was reported for the Sahel region, and the maximum coverage was reported for central region of Burkina Faso (Base de donnees, INOH, DGRE). Cognizant of these limitations, this report has focussed on data from internationally accepted sources.

Despite the challenges, water and sanitation coverage has improved in SSA, though not at the expected pace or magnitude. Progress in sanitation sector was extremely sluggish. Over the period of 1990 to 2008, the number of people with access to safe drinking water increased by

14 million per annum, while the number of people with access to improved sanitation facilities increased by mere seven million people a year in SSA. Alternatively, the rate of access to improved water source in SSA increased from 49 percent in 1990 to 60 percent in 2008, a marginal increase of less than one percent per annum. Access to improved sanitation increased from 27 percent in 1990 to 37 percent in 2008.

Yet progress towards MDG of having the proportion of people without sustainable access to safe drinking water and improved sanitation facilities by 2015 remains low, indicating the challenges for donors, governments, and NGOs. In 2008, there were 328 million people without access to drinking water and 567 million people without access to improved sanitation in SSA. To meet the MDG target on access to improved water, the rate of improvement or coverage will have to at least double from 14 million to 28 million per annum.

For sanitation the coverage rate has to increase four times from seven million per annum to almost 28 million per annum. By 2015, the region is likely to account for more than half of the global clean water deficit, and just under half of the sanitation deficit, indicating the widening gap between SSA and the rest of the world in clean water and sanitation service provisions. To add to the injury, the largest proportion of those not blessed with improved drinking water and sanitation services are poor people.

This is an alarming revelation for anyone concerned.

However, not all of the SSA countries share these gloomy pictures. Obviously, performance is heterogeneous across countries as illustrated in Tables 35 and Table 36. In Table 35, the SSA countries were classified into four groups, based on the size of the difference in the

proportion of people with access to improved water sources and sanitation in 2008 and 1990. Some countries have actually either regressed or remained the same over the 18-year period.³³

Table 35: Grouping of SSA countries based on progress made in drinking water and sanitation between 1990 and 2008

Performance group	Access to improved water source	Access to sanitation
Best performers	Malawi, Burkina Faso, Ghana, Namibia, Lesotho, Uganda, Mali, Cameroon, Ethiopia, Eritrea, Guinea, Gambia, and Mauritania	Angola, Rwanda, Botswana, CAR, Comoros, DRC, Malawi, Cape Verde, Senegal, Mali, Mauritania, Guinea,
Medium performers	Kenya, Swaziland, Djibouti, Angola, Sao Tome & Principe, Niger, Nigeria, Chad, Togo, Zambia, Mozambique, CAR, Comoros, Madagascar, South Africa	Uganda, South Africa, Namibia, Swaziland, Benin, Gambia, Ethiopia, Liberia, Ghana, Sao Tome & Principe, Burkina Faso, Eritrea,
Poor performers	Somalia, Zimbabwe, Senegal, Guinea Bissau, Liberia, Gabon, Cape Verde, Congo Republic, DRC, Ivory Coast, Botswana, Burundi,	Burundi, Cameroon, Guinea Bissau, Madagascar, Niger, Sierra Leone, Somalia, Chad, Zambia, Zimbabwe
Regressed or no change	Tanzania, Sierra Leone, Sudan, Rwanda, and Mauritius	Djibouti, Gabon, Lesotho, Nigeria, Togo, Tanzania, Mauritius, Congo Republic, Cameroon, Sudan

There is slight difference in the grouping of countries using the WIDE index methodology as shown in Table 36 and the above results. For instance, Zimbabwe, which was considered as poor performer in Table 35, turned out to be one of the best performers when using the WIDE index methodology. The result of the WIDE index makes

a lot of sense because Zimbabwe had already achieved an incredibly high coverage rate in access to improved water source in 1990. The coverage rate for Zimbabwe was 78 percent in 1990, slightly growing to 82 percent in 2008.

³³ The performance indicator adopted in Table 4.2 is sensitive to the baseline condition. For instance, the percentage of people with access to improved water in Mauritius in 1990 was 100 percent, and declined only one percent in 1995. Thereafter, it remained at 99 percent until 2008. The access rate to improved sanitation in Mauritius over the 18-year period stayed at 91 percent, yet the country was considered as bad performer.

Table 36: Grouping of SSA African countries according to performance in WSS sector based on the WIDE index

Performance scale	Country groups
Best performers	Angola, Rwanda, Zimbabwe, CAR, Malawi, Comoros, Burundi, Gambia, Uganda
Good performers	Ivory coast, Cameroon, Kenya, DRC, Nigeria, Guinea-Bissau, South Africa, Swaziland, Burkina Faso
Medium performers	Guinea, Eritrea, Botswana, Namibia, Sudan, Chad, Cape Verde, Lesotho, Ethiopia,
Fair performers	Mauritius, Mali, Benin, Togo, Sao Tome & Principe, Senegal, Ghana, Zambia, Liberia
Bad performers	Niger, Mauritania, Mozambique, Sierra Leone, Tanzania, Congo Republic, Gabon, Equatorial Guinea, Madagascar

5.3 Drivers or Determinants of Performance

The determinants of performance in the WSS sector in general and WSS ODA effectiveness can be approached from different perspectives or angles. One approach is to analyse it according to the inherent nature of the determining or conditioning factors – that is if the identified determinants are of technical/biophysical, institutional, social, economic or of financial nature. However, the influencing factors are actually complex interacting with each other in a multidimensional way necessitating a holistic approach in trying to remedy the problems. For instance, Madagascar is endowed with ample water resources. However, this endowment can only be translated into access to improved water sources and sanitation for Madagascans people if the resource is backed by the right institutions and policies, and financial clout to translate the water resource into infrastructure. The other way is to adopt scale approach and analyse the determinants of performance and WSS ODA effectiveness at international, national, sub-national and project levels. In this report we follow the first approach in conceptualising the determinants of WSS sector performance and WSS ODA effectiveness in SSA.

Technical/physical factors: These factors encompass a range of issues. They include the water resources endowment of countries, namely climate change and climate variability posing flood and drought hazards, and the geographic area size of the countries. They also include availability of basic meteorological and hydrological data, availability and choice of technologies, and availability of manpower with relevant technical and managerial skills.

Water institutions and policies: The prevailing water policies and institutions in particular, and the general policies and institutions observed in a country, greatly condition or determine the effectiveness of

both WSS domestic investment and that of WSS ODA disbursements. The water institutional environment and structure provides clearly defined water laws, water policies, and water rights. The water laws give legal backing to water policy and provide the operational framework. They also enforce the power of water administration.

The water administration in many of the SSA countries is characterised by centralised and bureaucratic tendencies, dispersed organisational responsibilities, and weak functional linkages. Water policies relate to the declared statements as well as the intended approaches of governments for water-resources planning, development allocation, and management. It includes statements not only on the overall policy framework but also on specific policy issues, such as project selection, water pricing and cost recovery, and user and private participation (Saleth, 2004). In plain words, the water policy of the country is the barometer for measuring the degree of political will of SSA governments to improve access to clean drinking water and improved sanitation services and others. The water policies and institutions, for example, dictates the harmonisation of donor efforts in WSS sector, creates synergies among projects and strategies, and lays down the conditions for monitoring and evaluation, and institutional accountabilities.

Social milieu and localised institutions: Many elements are recognised under this category of aid effectiveness and WSS sector performance conditioning factors. The main issues relate to population size (including growth rate and human settlement pattern), socioeconomic and behavioural characteristics of the beneficiary communities, and the prevailing local water institutions. Uncontrolled high population growth rate dwarfs governments, donors and NGOs current efforts in extending water access coverage in some SSA countries.

In particular, the high rate of rural-urban migration and rapid urbanisation pushes the demand for access to clean drinking water, shelter, and sanitation beyond the capacities of major SSA cities and towns. Failure to understand the socio-economic and behavioural features of intended beneficiaries and the indigenous African water institutions will inevitably limit communities' participation in projects or programmes, severely constraining the success of the latter. Although formal policies tend to erode them, SSA communities have rich indigenous institutions, especially in water scarce areas like the Sahel. These institutions are in the form of informal customs and conventions for water sharing. They are operating at the periphery of the formal water sectors, but they can and are still providing informal water rights, and are therefore valuable in water supply project design.

Economic factors: Needless to say, the general water supply and sanitation situation of the country is *ceteris paribus* conditioned by the level of economic development of the country. Global economic shock may also contribute to the worsening of the WSS sector by, for example, affecting the level of bilateral and multi-lateral WSS ODA. Macro-economic instability such as inflationary pressures may also hamper the effort of the national governments to provide clean drinking water and sanitary services to their citizens.

Financial factors: Since water resource has a public good feature, it is mainly the governments that are responsible for financing, cost recovery, and management of clean drinking and sanitation water supply. SSA governments finance water development schemes from their revenue and by borrowing from financial institutions. The financial resources are always limited and the governments have to make hard decisions on where and how to allocate the limited financial resources. In this process, it is often the WSS sector that suffers the most. In particular, allocations to the sanitation sub-sector are on the margin. Corruption also shrinks the effective amount of financial resources meant for project implementation, compromising the quality of infrastructure. The current level of donor allocations to WSS sector is not at the level desired. When allocated, the often complicated procurement procedures of some financial institutions derail project implementation process. The water tariff setting mechanism often penalises the poor, which may fundamentally affect both project sustainability and equity outcomes.

5.4 Key Recommendations: Redressing Past Anomalies in WSS Sector for Greater Performance and Development Aid Effectiveness

The recommendations discussed in the following sections are derived from the knowledge acquired during the field missions, surveys through sector practitioners, country case studies, and comparative analysis of the WIDE results. These recommendations are well in line with the findings of independent evaluation exercises of some

international organisations, such as AfDB's Operations Evaluation Department (OPEV), which stress the importance of integrated management, capacity building, including monitoring and evaluation, and community participation (AfDB 2010c). The recommendations presented in this report are also supported by the 2006 AMCOW meeting report, which identifies a number of key issues required for maximising benefits from aid such as the need for capacity building, decentralisation, dialogue, and monitoring and evaluation (AMCOW et al., 2006).

5.4.1 Implement Effective Monitoring and Evaluation Systems

It is difficult for a driver to reach a destination by a predefined time without knowing the current location and the direction of motion. Such has been the case with development aid in the water and sanitation sector, which is often spent without setting up a proper baseline and proper monitoring and evaluation systems. In extreme cases, countries actually missed a baseline for the assessment of progress towards the MDGs.³⁴

Out of 27 SSA countries included in the 2009-2010 Country Status Overviews (CSO) and Global Annual Assessment of Sanitation and Drinking-Water (GLAAS) country survey, only four (Burkina Faso, Kenya, Senegal and Uganda) have a process of annual review of the results achieved, that is linked to the setting of new undertakings for both water supply and sanitation, in both urban and rural areas. Thirteen countries lack a review process in at least one sub-sector (WHO and UN-Water, 2010). Three countries (Burundi, Cameroon and Central African Republic) have no annual progress review at all.

Even when the review is undertaken, progress is often measured by the competent authorities in terms of outputs, i.e. number of water points and sanitation facilities, rather than in terms of actual outcomes. This is highly problematic. The assessment only conforms to the measurement of the MDGs if the assumption that all individuals living in the served area gain access to water or sanitation holds. However, this is not always true. There are cases where water points work only intermittently and fail to supply a satisfactory amount of water in a reasonable time. Also, there are situations in which sanitation facilities are put in place but people choose not to use them for several reasons. There is also the general observation that water and sanitation facilities become dysfunctional or partly functional a short time after completion due to improper use or lack of maintenance. It is therefore clear that making a mechanical link between the physical realisation of an output to the achievement of an outcome (i.e. access) does not account for the complicated behavioural responses that often lead to project failure.

The full set of benefits of water and sanitation projects goes well beyond the construction of the facility. Water projects' outcomes include:

- Reduction in the time spent for fetching water;
- Increase in the amount of available water;
- Change in the price for water (e.g. by replacing the service provided by vendors);
- Improvement in water quality and related favourable impacts on users' health;
- Greater service reliability; and
- Higher equity of access.

The benefits of sanitation facilities relate mostly to health and dignity. They fundamentally depend on behavioural changes that induce the use of the installed facility, a result that can hardly be taken for granted. In this context, outcomes measurement requires setting up proper monitoring and evaluation systems that collect micro-data on beneficiaries' behaviours, starting with baseline data, through project implementation and after completion, for a period long enough to reassure on the sustainability of the results achieved.

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It is generally believed that monitoring and evaluation require 1-2 percent of large projects' budget. In SSA, the percentage may be significantly higher, in the order of 5-10 percent, given the limited statistics and data collection capacity. Monitoring and evaluation systems are set up most effectively prior to specific projects, as part of national and regional capacity building, rather than as project specific components. Once a monitoring and evaluation system is in place, projects should integrate in its functioning as actions to achieve the pre-set goals.

Therefore, the existence of a good monitoring and evaluation system is bound to increase the effectiveness of development aid. In fact, the regular measurement of results increases accountability, especially when accompanied with the assignment of clear responsibilities to various implementation agencies and the establishment of quantified targets. At this point,

it is important to note that there is currently a real need for greater harmonisation in data collection strategies if water management at all scales is to become more effective. This need has been illustrated repeatedly in this study.

5.4.2 Set up Enabling Institutional Frameworks

It is important that aid recipients take specific action to remove inefficiencies within their own resource management systems. In many countries, different ministries are given responsibility for different parts of the same job. For example, it is not uncommon for one government department to have the responsibility for water resources and its allocation, while a completely different department bears responsibility for urban and rural water supplies. Inter-agency rivalry between government departments is a common phenomenon in countries throughout the world, and is certainly not limited to developing countries. It can lead to inefficiencies in the way funds are allocated and used, which in developing countries, can result in a reduction in the effectiveness of development aid (AMCOW, 2006). The diverse management responsibilities impacting on water and sanitation services must be streamlined for greater efficiency. Embedding water services within economic planning units is also worth consideration.

Of the 27 SSA countries included in the 2009-2010 CSO and GLAAS country survey, only eight have policies for both urban and rural water and sanitation, agreed upon with stakeholders and published. Surprisingly, Angola, Democratic Republic of Congo, Uganda and Tanzania reported the complete lack of sanitation policies for both urban and rural areas. Mauritania reported the absence of a policy on urban water provision (WHO and UN-Water, 2010). Despite the existence of policies, many countries reported either lack of clear definition of institutional roles for their implementation, or failure to operationalise the definition of institutional roles. Only Burkina Faso, Chad, Ghana, Senegal and South Africa reported that roles were clearly defined and implemented (WHO and UN-Water, 2010).

National governments have the fundamental task to clearly identify roles and responsibilities of ministerial stakeholders, including economic planning, water, agriculture, and environment departments. They should also set targets and allocate an appropriate budget for national and local programmes.

³⁴ This was found to be the case for sanitation in Burkina Faso and Madagascar during the field missions undertaken for this study.

The establishment of the legal framework of the sector includes also ruling on the implementation of international agreements, in particular on trans-boundary waters. Over 200 rivers worldwide share their waters between at least two countries. River basin commissions are increasingly being set up to contribute to the development of more integrated management of shared water resources at the basin scale. These institutions are large, often trans-boundary administrative units, usually driven by political forces to promote benefit sharing from international water use. In SSA, there are many large trans-boundary river basins already hosting established basin commissions. These include the Senegal, Zambezi, Orange, Okavango, Limpopo, Niger, Volta basins. International River Basin Commissions can play a role in increased aid effectiveness by helping to support the development of robust and comparative data collection, by building capacity in water management at various scales, and by promoting cooperation in the handling of trans-boundary water allocation and pollution externalities.

The roles and responsibilities of local governments also need to be clearly articulated. Although current emphasis on decentralisation varies considerably among countries, the move to devolve services from national level to regional and district levels is inherent in virtually all cases. Local governments are increasingly in charge of supplying water and sanitation services, and of ensuring waste water treatment, runoff water management and land use planning. The district level is the optimum level for monitoring and regulation, which is essential in determining whether or not water systems remain operational, and to ensure that private contractors are operating effectively.

Despite the apparent advantages, decentralisation also has a number of potential negative impacts that need to be mitigated so as to avoid service levels declining. These include: (a) Lack of coordination, with potential negative impacts on IWRM; (b) increased bureaucracy; (c) potential for multiple level corruption; (d) limited capacity.

In this context, it is interesting to note that Uganda and Ghana are ahead of many other African countries in the decentralisation process. Yet, in both countries, it is apparent that the push to decentralised implementation using the private sector has been too rapid, often with undesirable consequences. In some cases, decentralisation has led to sharp increases in costs of service delivery. In Uganda in 2003, for example, an audit conducted by the Ministry of Finance (under the title of 'Is the Water Sector Performing?') found that the cost of a single water point had increased by three to four times since the introduction of budget support and decentralised, privatised water service delivery in 2000-2001 (Harvey 2003). A key problem was insufficient capacity of lower levels of government (at District level and below), especially lack of capacity to mobilise communities to address operation and maintenance issues.

5.4.3 Develop Integrated Water Resource Management (IWRM) Policies

It is notable that many countries on the continent have developed IWRM policies, but some have made little progress in implementation. Integrated Water Resources Management policies aim to ensure that water is used to achieve social and economic development goals, while guaranteeing sustainable vital ecosystems for future generations to meet their water needs. For example, water development strategies need to promote the protection of river and wetland ecosystems. These provide a wide range of valuable services that contribute to poverty alleviation and the improvement of health, including:

- Water supply for households;
- Maintenance of groundwater recharge;
- Flood attenuation;
- Dilution and transport of biodegradable wastes;
- Moderation of microclimate;
- Fish harvesting;
- Transport routes;
- Preservation of cultural, customary and spiritual values;
- Aesthetics values, leisure, tourism.

Actions providing support to the ecological underpinning of the environment are generally medium to long term in nature, but the benefits can be significant. Moreover, the benefits generated from healthy functioning ecosystems are self-sustaining, and must become a fundamental part of any sustainable development programme. In the WSS sector, for example, this could involve the incorporation of wetland systems into waste management strategies. Well-functioning wetlands can generate, through their natural hydrology, important water quality improvements. Any process that can reduce the dependency of human waste management systems on chemical inputs is environmentally beneficial and less costly³⁵. Failure to consider these non-monetary benefits will lead to policies that are unsustainable in the long run.

It was with this recognition that the Plan of Implementation of the World Summit on Sustainable Development requests all countries to develop integrated water resources management and water efficiency plans by 2005. The Plan of Action was signed by 193 countries. Compliance has, however, varied widely across countries, despite attempts by donors to support the process. A useful attempt at assessing progress was made by the Global Water Partnership (2006) in its "Second informal survey by the GWP network, giving the status of the 2005 WSSD target on national integrated water resources management and water efficiency plans". Countries were classified in three groups, depending on the stage in the implementation of IWRM policies (advanced, intermediate or preliminary), plus one category for countries that either did not respond or were not included in the survey. The classification of SSA countries is presented in Table 37, while Box 6 provides an example of comparison between those at the advanced and preliminary stages of development of IWRM policies, taking Zimbabwe and Democratic Republic of Congo as illustrative cases.

Table 37: State of implementation of IWRM policies in SSA Africa

State of implementation of IWRM policies	Countries
Advanced: Countries that have plans/strategies in place, or a process well underway, and that incorporate the main elements of an IWRM approach	Burkina Faso, Namibia, Uganda, South Africa, Zimbabwe
Intermediate: Countries that are in the process of preparing national strategies or plans, but require further work to live up to the requirements of an IWRM approach	Benin, Botswana, Cameroon, Eritrea, Ethiopia, Ghana, Kenya, Mali, Mozambique, Mauritania, Mauritius, Malawi, Nigeria, Sudan, Senegal, Swaziland, Tanzania, Zambia
Initial: Countries that have taken only initial steps in the process towards preparing national strategies or plans and have not fully embraced the requirements of an IWRM approach	Angola, Burundi, Central African Republic, Cote d'Ivoire, Republic of Congo, Democratic Republic of Congo, Djibouti, Lesotho, Rwanda, Chad
Countries that have not submitted a survey reply, or been included in the survey	Comoros, Cape Verde, Gabon, Guinea, Gambia, Guinea Bissau, Equatorial Guinea, Liberia, Madagascar, Niger, Sierra Leone, Somalia, Sao Tome and Principe, Seychelles, Togo

Source: GWP 2006

³⁵ For an examination of the value of benefits of wetlands systems, see Sullivan et al. (2008).

Box 6: Examples of IWRM progress: Zimbabwe well advanced; Democratic Republic of Congo at an initial stage

Zimbabwe	<p>Establishing a vision. There is water policy from 2001 entitled, Towards Integrated Water Resource Management. The document contains the water policy and the water pricing policy. Zimbabwe takes water resources management into consideration in a number of official documents related to poverty reduction, agriculture, energy etc. Zimbabwe has also produced a Zimbabwe Millennium Development Goals: 2004 Progress Report.</p> <p>Legal framework. The Water Act, published in 1998, and the Zimbabwe National Water Authority (ZINWA) Act, published 2001, constitute the water laws. Together, they address most key elements of IWRM. Furthermore, Zimbabwe has many regulations addressing water resources management, such as, water permits, water levy, sub-catchment council rates, establishment of catchments and sub catchments, wastewater and effluent.</p> <p>Catalysing change: IWRM Action Plan/Strategy. The Water Resources Management Strategy (2001) covers IWRM and promotes “sustainable, equitable and economically feasible development in Zimbabwe through proper use of water resources whilst taking into account the shared watercourse systems”.</p> <p>Change areas. Several Ministries, farmer associations, civil society and the donor community were actively involved in the development of the Water Resources Management Strategy, which was adopted at national level. The Ministry for Water Resources and Infrastructure Development is responsible for monitoring its implementation. It contains capacity building programmes and a strategy for financing. Zimbabwe had made considerable progress on IWRM planning before the World Summit. Two water resources management institutions, ZINWA and Catchment Councils were formed in 2001. ZINWA is responsible for the technical side of implementation. Catchment Councils with their sub-units, sub-catchment councils, monitor the usage of water in their different areas of jurisdiction. They issue permits for accessing water as well as discharge. As of 2010, all the seven catchments have produced draft outline plans which are the guiding principles on water allocation and development and usage. At a national level, the country has not yet considered how IWRM (through all the policy, strategy and legal water instruments in place) will assist the country in achieving the MDGs as outlined in the national MDG report, though this is being considered at each catchment level. The role of the private sector is also outlined in the strategy and both the polluter-and user-pays principles and pricing are included.</p>
Democratic Republic of Congo	<p>Establishing a vision. The Democratic Republic of Congo (DRC) has a Water Supply and Sanitation Policy, but no specific Water Resources Policy. The country has several national planning documents that address water issues. They are: Document <i>de Strategie pour la Reduction de la Pauvrete</i> (Poverty Reduction Strategy); Roadmap to achieve MDGs that will be launched shortly with the assistance of WSP (Water and Sanitation Programme)/World Bank; <i>Plan Directeur de Développement de l'Agriculture en RD Congo</i> (Agricultural Development Plan for DRC) (2000); <i>Plan Directeur de l'Energie</i> (Energy Master plan); <i>Plan National d'Action Environnementale</i> (National Plan for Environmental actions) (1997); <i>Plan National de Development du Secteur de l'Eau Potable et de l'Assainissement à l'Horizon 2015</i> (1994); National Drinking Water and sanitation Master Plan (1996-2015).</p> <p>Legal framework. The Economic Legislation-Water-Obligations (1953) presently constitutes DRC's law for water. However, a national water code has been drafted and is pending endorsement by Parliament.</p> <p>Catalysing change: IWRM Action Plan/Strategy. An IWRM Action Plan preparation process is on the agenda and required consultations have recently started.</p> <p>Change areas. The government is implementing a project to reform the water sector with the support of the World Bank. The goal is to reorganise the water and sanitation sector, elaborate a national water policy and a law for the management of water resources. DRC has a drinking water strategy supported by CNAEA (Congo National Action Committee for Water and Sanitation) and the national water supply company (Regideso) under the Ministry of Energy. The new legislation will provide for a dialogue with stakeholders and their involvement. In addition, it will provide for the separation of responsibilities for management and use of water. The Democratic Republic of Congo faces many challenges and would benefit from assistance to deal with issues such as: decentralisation, management at catchments level and users' contributions towards water resources management and water efficiency. Increased political involvement, political will and awareness, would facilitate the necessary water sector reforms and the institutional changes required for a cross-sectoral approach.</p>

Source: GWP 2006 (pages 13 and 29).

5.4.4 IWRM and Progress in WSS

The analysis of the relationship between IWRM and effectiveness in the use of development aid in the water and sanitation sector is a complex task, mainly because of the significant time lag between the adoption of a policy, with all its related legislation, and the observation of a verifiable change on the ground. In practice, it is likely that impacts of policies introduced in the first decade of the 21st century will not be measurable until well into the second decade.

Table 38 relates the classification of the GWP with the results of the WIDE. Surprisingly, the highest median value of the WIDE is associated with a preliminary stage of implementation of IWRM policies. Yet, countries in this group show high variability of performances, with

WIDE indexes ranging from -23 to +25. On the other hand, countries at an advanced stage of implementation of IWRM are invariably on the positive side of the distribution of the WIDE, with values ranging from +1 to +23. Furthermore, the implementation of IWRM policies is associated with the highest outcomes. The median value of the increase in access to water is in this group +17%, against +12% for countries at an intermediate IWRM stage, and only +5% for those in a preliminary stage. Results for sanitation are consistent, with a positive correlation between IWRM and outcomes. Taken together, these results indicate that IWRM policies tend to be at a more advanced stage of implementation in countries with higher endowments of resources (which drives down the median value of the WIDE), yet they are associated with fast progress in terms of outcomes.

Table 38: WIDE and outputs in 28 SSA countries, by state of implementation of IWRM policies

		State of implementation of IWRM policies		
		Preliminary	intermediate	Advanced
WIDE	Min	-23	-21	+1
	Median	+12	-3	+3
	Max	+25	+20	+23
Median change in access to water		+5%	+12%	+17%
Median change in access to sanitation		+2%	+4%	+6%
Median access to water in 2008		69%	60%	82%
Median access to sanitation in 2008		32%	33%	44%

Source: Authors' calculations

5.4.5 Enhance the soft-side: Invest in Capacity Building, Awareness-Raising and Education

Aid absorption and effectiveness are fundamentally affected by countries' human capacity in both national and local governments, and in service provision bodies. Even the simple handling of donors' procurement procedures requires trained and highly skilled professionals, and failure to comply is often the cause of costly project delays. In this respect, donors should intensify existing efforts to simplify and harmonize their reporting requirements. Once aid is disbursed, project implementation and monitoring require the work of sector specialists, who are difficult to retain in local services in SSA. Governments and service providers also face the challenge of retaining trained workers, who have become competitive to bid for higher paid jobs in the private sector or abroad.

The need for human capital for aid management and project implementation highlights the critical role of educational institutions, which can be mobilised to supply the managerial, financial and technical skills required in each country by the water and sanitation sector. For example, many SSA countries need training courses on the implementation of IWRM, and a higher number of water engineers.

One area in which capacity needs to be developed and sustained is the ability of local and regional institutes to undertake the effective maintenance of existing structures and monitoring devices. Development programmes may finance the installation of boreholes, reservoirs and sanitation facilities, but unless there is the necessary infrastructure, expertise and finance to maintain these structures over the long term, growth can never be sustained. Donor agencies should continue to ensure that this type of capacity is built into all future visions and national programmes by supporting training within the local system.

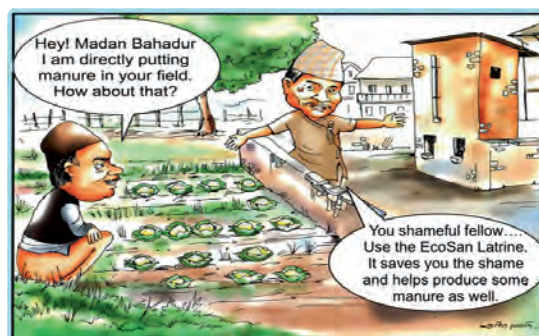
Another area that needs attention within the water and sanitation sector is public awareness-raising, and education. Government staff and members of the public both need increased understanding of the intricate links between water, sanitation and health. Sustainable policies can only succeed when people are adequately aware of the problems they face. It is therefore critical that the issue of water and sanitation be explicitly incorporated into the public education systems in order to promote, for example, knowledge transfer on sustainable water management. Integrated approaches such as the use of human waste for energy-generation through biogas, and other uses such as the growth of fodder crops, should be

introduced and promoted (Box 7). This approach has the potential of improving access to sanitation while promoting other productive activities. Much is already

known about the needed technologies, but progress is hampered by prejudice, ignorance, and inertia.

Box 7: Ecological sanitation and production of manure for fodder crops

There is increasing interest in the promotion of ecosan systems to address sanitation deficits across the world. By promoting a more positive attitude towards the use of human generated nutrients, it is possible not only to achieve a health benefit, but also to provide useful resources to support fodder and fuel wood production. In resource poor areas of the world, this can be a valuable outcome, particularly in peri-urban zones.



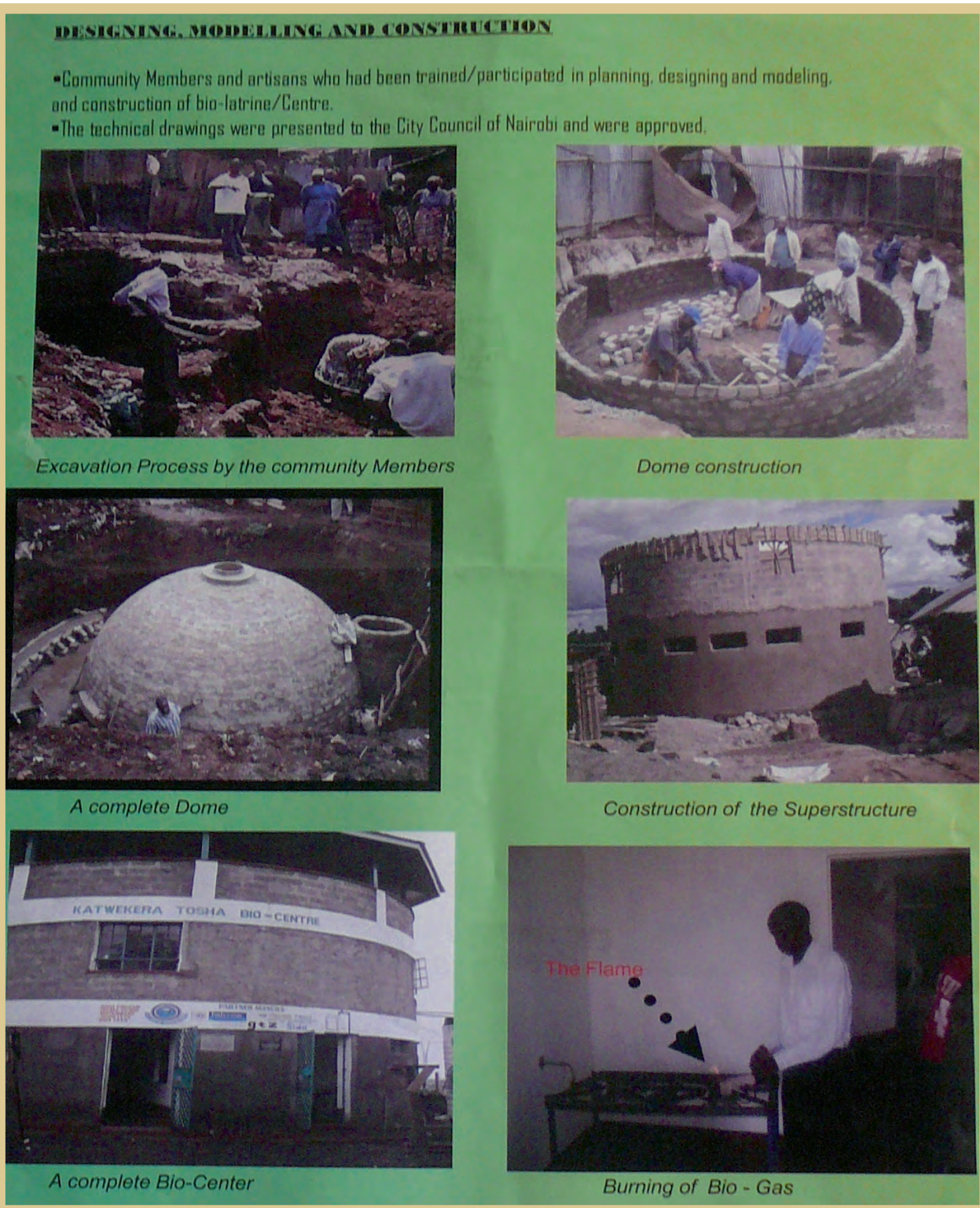
Sanitation generates economic benefits and helps the environment

(Source: Key Messages for International Year of Sanitation)

Biogas projects can form a valuable part of urban or rural sanitation systems. A practical example of harmonised approach to sanitation provision in Nairobi's informal settlements is presented in Figure 64, which shows how large public toilet and shower blocks provide the raw material for the biogas produced in a digester. The digester is housed in a building that also provides some commercial space and a community meeting room. The

facility is managed by one employee, who collects a small fee for the use of toilets and showers. This form of managing human excreta allows recycling of resources and prevents water pollution. By providing sanitation services for about 1,000 people at an investment cost of USD 15,000 (as of 2008), this ECOSAN system was a cost effective option, especially in urban areas where land is at a premium.

Figure 64: Ecological sanitation systems in Nairobi's informal settlements



Picture by Caroline Sullivan, at NGO Umande Trust office.

ECOSAN has also the advantage of easy climate proofing, as facilities can be built above any likely flood level. This is not possible for pit latrines, or septic systems. This is an important feature of ECOSAN, as the failure of sanitation systems during times of floods is one of the main reasons why people die when disaster strikes.

There is also a critical need for capacity building in the field of monitoring. For example, the network of hydro-meteorological monitoring stations across the whole SSA region should be strengthened; ensuring crucial data is available to assist in the management of water systems. Trained technicians are needed to support such systems, and academic institutions can play a fundamental role in their education. Furthermore, as the impacts of climate change are seen to become real, it is vitally important that nations and organisations ensure that the procedures and practices that they implement meet potentially changing conditions.

Finally, research institutions, and knowledge and capacity building organisations should intensify their work with donors to encourage the development and implementation of government communication strategies. The implementation of such strategies also needs to be facilitated by providing free and open access to technical assistance, analytical work and programme documents.

5.4.6 Strengthen Private Sector Participation

For the challenging task to meet the water and sanitation MDGs, all existing resources must be employed efficiently. Across the world, the provision of water and sanitation services depends traditionally on the public sector, and the share of private sector involvement is still rather limited. At present, the role of the private sector in rural water services in sub-Saharan Africa is largely limited to construction and installation of water systems. Unfortunately, low capacity and lack of competition for drilling contracts for hand-pump based water supplies means that the average cost of boreholes in SSA

countries is approximately five times that of a similar borehole drilled in near identical geological conditions in India (Carter, 2005).

Beyond installation, private sector participation is generally limited to the provision of spare parts, but in most cases, this activity is unviable as a stand-alone private sector venture. Selling spare parts is seldom a profitable business and the willingness of the private sector to take on this commercially uninteresting activity is minimal (Baumann 2000). Evidence from Ghana, Malawi, and Zambia indicates that even when the private sector is persuaded to become involved as a result of incentive provision by donors, supply chains remain unsustainable (Harvey and Reed 2004). This is clearly illustrated by the example of Ghana in 2001, described in Box 8.

At the micro level, the private sector ensures distribution where networks are missing through the intense activity of water vendors. Although vendors charge much more for the water than they pay for it (and this contributes to making poor people pay relatively more for the water they consume), it must be acknowledged that they provide a service to the community. Water vending also creates employment. Therefore, the real issue becomes to create competition among vendors and avoid monopolistic scenarios, which can be done through effective regulation.

Notwithstanding these challenges, the potential of the private sector can be leveraged through properly designed public-private partnership schemes. These can provide opportunities for increased sustainability of urban and rural water services, relative to community-managed services, since they are based on sustainable financial incentives. Local governments may retain the responsibility to build infrastructure, design appropriate regulations and foster community involvement, while transferring management to private actors with the incentive to ensure cost recovery and may therefore guarantee that sufficient resources are collected for operation and maintenance.

Box 8: Private Sector Spares Supply in Ghana in 2001

A joint government/donor initiative in Ghana in 2001 involved a USD 125,000 grant to hire a private contractor, rent appropriate warehouses and provide necessary marketing and promotion for a nationwide hand-pump spare parts supply network. In addition to this, USD 200,000 were provided to purchase and import the initial batch of spare parts (for all four standardised hand pumps found in Ghana), and establish quality control procedures. The intention behind this was for the initial batch of spares to act as a seed fund to generate profits for the private contractor, some of which would be used in a revolving fund to purchase more spares, leading to a fully privatised sustainable supply chain for spare parts. Despite the considerable investment, the private contractor established only five distribution outlets for

spares across the country, and did not intend to open any additional outlets due to limited profitability. The location of the existing outlets meant that travel from some communities to the nearest retail point took one or two days and involved considerable cost. The commercial viability, and hence sustainability, of spare parts provision in the country remained seriously doubtful, to say the least, since the use of imported pumps and parts was promoted and yet the demand for and turnover of spares remained very low due to the low density of rural water systems. Private sector stakeholders themselves questioned the viability of private sector participation. Most were reluctant to get involved.

Source: Harvey et al. (2002).

5.4.7 Ensure Sustainability by Expanding Projects' timelines

Lack of progress in the provision of water supply and sanitation in SSA is partly due to the non-sustainability of past development projects. The experience is that most of the water points just stops working after the projects have been completed and the donors have left an observation that is also applicable to small dams. Thus, even in cases where donors register the project as successful at the end of disbursement, there is a high probability that the results will not be maintained after only a few years.

As discussed above, the involvement of the private sector can have the potential to improve sustainability by setting the appropriate financial incentives. For example, during the field mission in Madagascar, it was found that many families who benefited from water points installed by the Grand South Rural Water Supply and Sanitation Project failed to pay the yearly contribution to the users association aimed to fund fountains maintenance. Where the social context allows it, tasking one individual with collecting fees can ensure that sufficient funds are raised to repair the infrastructure when the need arises.

Water pricing may sound unethical to many, but field evidence reveals that the poor are already paying high prices for water supply both in urban and in rural areas. For example, in the city of Nakuru in Kenya, the cost of water purchased at collective water points is about 20 times higher than the unit price charged by the utility to richer users who have a home connection. Prices are even higher when the water is purchased through water vendors who ensure home delivery. Although the appropriate system of cross-subsidies must be put in place (for example by using part of the revenues of urban utilities to supply water in rural areas, where costs may be higher), it is important to keep in mind that pricing is an important determinant of sustainability, and that a failed project implies much higher monetary and non-monetary costs for the poor.

The proper consideration of cost-recovery, maintenance and sustainability requires that the donors extend the timeline of their involvement in the project. Although spending in soft-side components, capacity building and monitoring and evaluation have the potential to increase the probability that development results are maintained after the donors disengage, it is important to remember that the creation of local capacity requires continued investments for an extended period. It is therefore recommended that, to increase the effectiveness of their investments, donors remain involved long after ending the disbursements that cover the initial capital expenditure. This means that instead of simply building the infrastructure and passing it on to the recipient government, donors may make provision for a substantial

share of the project's budget to be spent after the initial construction, and may remain involved to create capacity in central and local governments of the recipient countries for extended periods after project completion.

This would also make it possible to thoroughly understand the behavioral dynamics that often make the beneficiaries discontinue the use of project services, and in some cases choose not to use them at all. This observation is common in sanitation projects, where intended beneficiaries refuse to use the facilities, sometimes due to inadequate awareness-raising and lack of education prior to installation or cultural issues. Although less common, similar unpredicted behavioural responses happen also in water service provision.

As indicated in Chapter 3, during the field mission in Burkina Faso, for example, it was found that some of the beneficiaries of piped home water connections (to the network exploiting the waters of the Ziga dam) had requested that their connection be locked. The request was due to the fact that the connection was at the level of the dwelling, in a common court serving different families. Each family thought that the others used water inefficiently, and did not accept to share the monthly bill equally. Rather than share the bill, all the individuals in the dwelling had gone back to using public water points, with loss of benefits in terms of time savings for water fetching and increased water availability. This is an example of unexpected behavioural response that determines a failure to sustain results. Fixing the problem would require making family specific connections, which would come with a cost arising from the fitting of more meters.

Thus, alternative creative solutions could be found by investing in the understanding of the local context and discussing the solutions to be adopted with the beneficiaries. For example, many think that monthly bills are too expensive for poor beneficiaries that fail to accumulate the amount needed for the payment, and that other systems like prepaid water would be more effective.

5.4.8 Increase Stakeholder Participation and Coordination

Stakeholder participation in policy formulation and project design and implementation is particularly important to guarantee that the most urgent needs are prioritised, that the appropriate solutions are selected, and that outcomes are maintained after project completion. As discussed in different sub-sections of this report, the sector includes a multitude of actors with different interests and roles, ranging from development partners, international organisations, central and local governments, private sector, non-governmental organisations, civil society and end users (which include domestic and productive users).

Much remains to be done in SSA to increase ownership of policies and projects by creating and implementing the institutional arrangements that ensure proper consultation of all stakeholders. Of the 27 SSA countries included in the 2009-2010 CSO and GLAAS country survey, only South Africa established and systematically follows set procedures for local stakeholders' participation for both water supply and sanitation in both urban and rural areas. Benin, Ghana, Lesotho and Rwanda follow set procedures for rural water and sanitation, although gaps still exist in urban areas (WHO and UN- Water, 2010).

The role of NGOs and water users associations (WUA) are particularly important to ensure project ownership by the end users and results in sustainability, which is a key determinant of aid effectiveness. There are hundreds of NGOs in the world working on water and sanitation issues. The major international ones such as Wateraid, the Water and Sanitation Collaborative Council and the International Association of Red Cross and Red Crescent Societies, are in many countries complemented by local NGOs such as the Mvula Trust in South Africa, STIPA in Kenya, and by national NGO networks such as UWASNET in Uganda. In the past, these organisations were heavily involved in the implementation of projects on the ground. In recent years, however, the implementation of water provision and the maintenance of water systems have been increasingly assigned to private sector operators. NGOs have been moving away from service delivery to focus more on advocacy and capacity building. Through their soft-side work, NGOs provide a voice to beneficiary communities by which service quality assurance can be gauged. Such a voice can also be supported by quality journalism used to highlight key issues in the local press.

Water users associations (WUAs) represent that body of stakeholders who are closest to the main beneficiaries of water and sanitation projects. Through better involvement of WUAs, it is much more likely that local needs will be directly addressed. Also, being more representative of local communities, WUAs may often be in a strong position to lobby government departments to draw attention to ineffective programmes and inefficient spending. They can also address gender issues that pertain to the WSS sector, and ensure that policy makers recognise the special needs associated with women and the heavy burden that they often bear. Some WUAs also represent large water users. Through better information and awareness raising, they can support efficiency initiatives and more effective use of aid budgets. As with other stakeholders, national decision makers should take action to ensure that the views of WUAs are incorporated into the way things are done on the ground.

5.4.9 Reform Urban Utilities

Sub-Saharan Africa is experiencing the highest rates of urbanisation in the world, associated with a rapid growth of informal settlements with no access to basic environmental services. A burgeoning population, limited financing and capacity are stressing already weak service provision.

A study conducted by UN HABITAT (2008) noted that in many cities in East Africa, for example, water supplies have actually become significantly worse over the past 30 years, due to lack of maintenance and inevitable deterioration of infrastructure. The UN HABITAT report associates the deterioration in the quality of the service with the failure of the responsible institutions, stating that "...deficiencies in water and sanitation provision in cities are often as much a result of inadequacies in the institutions with responsibilities for providing water and sanitation, and governance structures within which they operate, as of lack of funds" (UN HABITAT, 2008). Nonetheless, some countries in recent years have made great strides in developing the necessary policy and governance frameworks to improve the performance of basic water and sanitation services. Countries that have adopted well-designed water utility reform plans are substantially increasing access to services, financial sustainability, and the quality of services provided. An example of such trends is presented in Box 9, which illustrates the successful case of the National Water and Sewerage Corporation of Uganda.

Reformed utilities have shown dramatic ability to expand quality water and sanitation services to the poor. The types of reform that have been demonstrated to be most successful in fixing troubled water and sanitation utilities include:

- Use of operating contracts with clear objectives and performance indicators between the utility and the public agency responsible for supervising water companies;
- Introduction of incentives for employees, that directly tie bonuses to performance;
- Introduction of improved commercial systems, including metering and metered billing;
- Introduction of knowledge and information systems for monitoring and evaluation;
- Models for delivering services to poor consumers that are financially sustainable and tailored to local needs; and
- Development and management of an infrastructure for annual and multi-year flow regulation, for floods and droughts, for multi-purpose storage, and for water quality and source protection.

Box 9: A success story: The National Water and Sewerage Corporation of Uganda

Uganda's National Water and Sewerage Corporation's (NWSC) is a public corporation established in 1972 and wholly owned by the government of Uganda. It is currently mandated to manage water and sewerage services in 19 urban areas. In 1998, the NWSC was not a financially healthy organisation and the World Bank¹ noted that: Over the last 10 years, the Government of Uganda in partnership with the World Bank and other donors, has made significant investments (over USD 100 million) in the urban water and sewerage sector. These investments have contributed immensely to rehabilitating the existing infrastructure under the NWSC management. Unfortunately, these investments have not been matched with the necessary efficient commercial and financial management capacity that can ensure the delivery of sustainable services in the medium to long-term.

This conclusion, based on a thorough analysis, found that the corporation had sound infrastructure, abundant water resources, and enabling legislative framework. However, the corporation had a large and inefficient labour force with conflicting and overlapping roles, high unaccounted-for water (more than 50 percent lost through leakage and theft), poor customer service, low collection efficiency (only about 71 percent, so 29 percent of the customers did not pay their bills), and corruption within the workforce, especially field staff. Because of these factors, the organisation was close to bankruptcy. A reform programme was launched in 1998 to initiate corrective actions led by management and staff to turn around performance. The main thrust of the reform was conducted under three main programmes;

- 100-Days Programme (February–May 1999) was a high-impact intervention that focused on reversing operational and financial inefficiencies. This was carried out through aggressive revenue collection strategies and cost cutting measures (including rationalisation of the staff medical scheme and reduction of travel costs).
- Service and Revenue Enhancement Programme (August 1999 – August 2000) aimed at restoring customer confidence in the ability of the NWSC to

deliver services. Under this programme, the NWSC established customer service centres and front desks, conducted customer surveys to capture customer wants, and instituted an amnesty for past illegal water use.

- Area and Service Performance Contracts (2000–2003) focused on making service providers reach commercial sustainability. Managers had the authority to make important decisions and were accountable for outcomes.

Within and around these programmes, the organisation embarked on a whole series of financial, institutional, and modernising actions designed to improve overall performance. And very significantly, it also introduced a system to monitor the progress of reforms so that a close track could be kept on the success or failure of the reforms.

The reform initiatives from 1998 to 2006 transformed the organisation and led to a string of positive impacts. Service coverage increased from 48 to 70 percent and the water network coverage by 52 percent. New connections increased from 3,317 to 23,312 per year, with the result that total connections rose from 50,826 to 148,312 (or 70 percent of target population served). Water loss through leakage or theft fell from 51 percent to 29 percent (34 percent in Kampala, against 15 percent in other cities). The percentage of connections on meters increased from 65 percent to 99.6 percent, while the proportion of active connections to total connections improved from 63 percent to 93.9 percent. On the financial side, annual turnover improved from USD 11 million to USD 34 million, effectively converting a loss of USD 0.4 million per year to a profit of USD 3 million. This profit has financed network expansion and enabled maintenance programmes. Despite the accomplishments, the NWSC still faces challenges in the area of sewerage, where the coverage is still only about 10 percent. Nevertheless, today NWSC is considered to be one of the best run and efficient water and sanitation organisations in Africa, and enjoys the full confidence of international donors. It has truly been one of Africa's success stories.

Source: Mugisha and Berg (2008)

In spite of these successes, water sector reforms and regulation are not without challenges. One of the major problems facing regulatory reform is the need to reconcile the commitment to universal provision with a market-oriented approach, where those served must pay full costs (Jaglin, 2002). There is still no agreement as to whether users should be charged operating and maintenance costs only, or if they should help cover also capital costs. In OECD countries, where such reforms have been implemented, they have tended to be in fully equipped areas where charges basically pay for operation and maintenance. In the towns and cities of low

to middle-income nations, one of the main challenges is to build the infrastructure. Yet low-income citizens mainly live on the urban fringes, where the lack of infrastructure is most striking, they are precisely the ones who could now be asked, via participation and charges, to pay cash for the installation and use of delivery systems hitherto enjoyed by well-off communities at subsidized prices. That certainly gives food for thought on the matter of "equitable" participation. While many participatory schemes can under certain conditions undoubtedly help towards the aim of ensuring wider access to water and sanitation, they are in no way a miracle solution, and

there is a considerable risk of institutionalizing two-tier services that lock low-income groups into more inconvenient poor quality services.

5.4.10 Develop Water Storage Capacity

Like most types of infrastructure, water storage capacity is less developed in Africa than in other parts of the world. This implies that the lack of water in many countries is economic water scarcity, rather than physical lack of endowments, since many are actually rich in water resources. However, the change of meteorological patterns (and the increased likelihood of extreme events) associated with global warming could have dramatic consequences on drinking water provision.

The construction of the Ziga dam in Burkina Faso is an excellent example of how development aid can be spent to manage water flows and ensure sustainable water provision to a large share of the population. This dam provides water storage for the whole of the capital city of Ouagadougou, and is designed to cater for the growth in that city's population for several decades to come. The project has substantially contributed to increasing urban access to improved water sources in the country from 79 percent in 1995 to 95 percent in 2008. This is a commendable achievement.

It is important that water storage projects are aligned with the recommendations of the World Commission on Dams (2000), which aim to ensure that the impacts on ecosystems and downstream livelihoods are minimised, and the potential for unintended consequences is reduced. In the case of the Ziga dam, while high level evaporation³⁶ is a problem resulting from the very flat topography, producing a large reservoir surface area, there are many benefits gained by local riparian populations. During the construction process, some communities had to be relocated, but during the case study visit to Burkina Faso, many local residents and beneficiaries consulted stated that the implementation of the dam had increased water security for both rural and urban dwellers, and had provided livelihood options in the form of small scale irrigated agriculture in the riparian

zone of the reservoir lake, and also in the form of fishing and fish farming.

In the face of global warming, it is also important that storage facilities, like any other infrastructure designed to address water and sanitation provision, are climate-proofed, at least against floods and droughts. This concept is already integrated in the work programme of many donors, including the Bank.

5.4.11 Governance and Procurement Rule

Corruption involves the improper use of funds, political power and resources, for the unauthorised benefit of individuals or groups. It can heavily impact on aid effectiveness by either reducing the amount of resources actually invested in the projects, or by distorting design and objectives. Although its extent is not fully known in any country, most practitioners acknowledge that corruption occurs widely in the water sector.

In large infrastructure projects, corruption can take several forms from bribery and kick-back payments to illegal procurement and distorted selection of the beneficiaries. Petty corruption is also alleged to be widespread in the sector, with illegal connections and unauthorised boreholes typical examples. To some extent, this type of corruption is captured under measures of 'unaccounted for' water, but this also includes free water delivery through standpipes, public drinking fountains, etc.

One way in which donors tackle corruption is by establishing rigorous procurement rules. However, as previously discussed, in absence of harmonisation across donor agencies, this places a heavy burden on recipients, and can negatively affect projects' execution timelines. A more systematic approach would involve strengthening the legal institutions of the recipient countries. This is complementary to previous recommendations to increase the share of soft-side investments, foster effective institutional frameworks, and increase capacity and ownership. Box 10 provides an example of a successful prosecution against corruption in the water sector, a case in which the joint action of donors and one SSA country

³⁶ Conventional dams where high rates of evaporation occur are often inefficient as forms of water storage, and both dam design and operation rules must be carefully considered before any large scale option is selected. There are now new approaches to water storage, which try to reduce dependence on large dams. For more details, see Acreman et al. 2009

Box 10: Fraud in the water sector being brought into the public domain

Three European companies guilty in African aid fraud case. Investigations of the European Anti-Fraud Office (OLAF) have contributed to court decisions against three European companies in a fraud case affecting a major development project in southern Africa. The companies were found guilty in proceedings before the judiciary in Lesotho, and were fined a total of EUR 4.4 million. The court decisions mark the closure of the follow-up to the OLAF investigations into the Lesotho Highlands Water Project that had been co-funded by the EU and other international donors.

The Lesotho Highlands Water Project was set up for the construction of dams, water transfer tunnels and an underground hydroelectric power plant. It is one of the biggest dam projects in the world and the largest bi-national (Lesotho – Republic of South Africa) construction project ever in Africa. The EU has been involved in this project since the early eighties. The total European Development Fund (EDF) financing for the project amounted to EUR 61.2 million and the European Investment Bank (EIB) funding was of EUR 122.5 million. Other donors and the Government of Lesotho itself also contributed to the financing.

The Lesotho investigation into suspicions of fraud and bribery in the context of the Highlands Water Project started in November 1999. Donors and individual

member states were informed of the findings of the criminal investigation. OLAF provided assistance to the Prosecuting Authorities of Lesotho and opened an investigative file of its own that was later split into separate investigations for each international company that was suspected of having participated in the bribe payments in order to obtain contracts in the framework of the Lesotho Highlands Water Project. The Chief Executive Officer of the project was found guilty of bribery by the High Court of Appeal of Lesotho and is serving a 15 year sentence in prison.

The Schneider Electric Company was brought before court in Lesotho and, once confronted with the findings, decided to plead guilty. It was convicted for 16 counts of bribery and fined EUR 1.19 million. A second company, Impregilo, pleaded guilty in the High Court of Lesotho to the alternative charge of attempting to Defeat the Course of Justice and was fined EUR 1.62 million. The Court of Appeal of Lesotho rejected the appeal of the third company, Lahmeyer engineering contractor, which was found guilty on eight counts of bribery and was fined EUR 1.6 million. This company is now assisting the prosecution of the second official charged with receiving bribes from this company.

Source: A. Buttice - Spokesman of the European Anti-Fraud Office (OLAF)

5.4.12 Allocate adequate financial and technical resources

While the concept of direct budgetary support is important, there is a need for some of the funds to be ring-fenced to ensure adequate representation of water and sanitation in central and local government budget allocation decisions. There is clear evidence of neglect of sanitation, in particular, in each of these case studies. Millions of people across the whole of the SSA region (and across the world), face poor or zero access to sanitation. As a result, the Millennium target on sanitation is unlikely to be met by 2015, or in some places, even by 2050. It is important to note, however, that even when this MDG target is reached, there will still be millions of people across SSA continuing to face conditions of open defecation. While this situation remains, the donor community must guarantee that the impetus generated by the MDGs is maintained to ensure that all unsanitary conditions remaining will be totally eradicated on every continent, during the next period of global development planning.

5.5 Implication for the African Development Bank and other Stakeholders

Given the fact that many facilities are not optimally operating after completion of projects, involvement of the Bank and other development partners beyond project term is worth consideration. In particular, continuous

capacity development led by the concerned governments is crucial for sustainable operation and maintenance. The design of innovative solution to resolve the issue of operation and maintenance is critical to increase results sustainability. A capital sum should be included right from the project proposal stage, to create a revolving fund that could then be used as the 'cash float' to support the operational maintenance of schemes. While this would incur a marginal increase in the overall budget, it would certainly increase the effectiveness of the spending by ensuring operation and maintenance issues were addressed in a timely manner. The implementation of such a system would of course require some institutional and human capacity development, but this is something that should be supported anyway within any overall national development strategy.

The weak technical and administrative capacities call for more donors' investment in capacity building for the sector's operators in both public and private sectors. Support from donor is also required to ensure budgetary discipline and increased transparency, as well as fiscal decentralisation and streamlining of the procurement process. Donors could make important contribution to regional water development through funding large scale multipurpose integrated water project rather than individual smaller projects. They and the recipient countries should leverage the contribution of the private sector, which can play an important role, both in terms of capital mobilisation and capacity support.

Greater participation of private sector is required, as the available resources from user tariffs, government and development aid, has not proven to be a reliable source of financing.

Discussions in the preceding chapters showed clearly that the sanitation sector was often neglected or given less priority in the general government budget allocation. This is reflected in the current low level of progress in the sub-sector. Hence, increased investment in sanitation facilities particularly in rural areas is highly recommended. Greater attention should, however, be given to adequate public awareness and sensitisation, including hygiene education for the correct use of latrines and cleaning of hands after defecation. With regard to household sanitation, government and donors can support the households in the construction of pit latrines, with the provision of the concrete slabs etc. The householder or

community will dig the pit and complete other works on the project. Evidence from Kenya and Uganda revealed that the implementation of the large scale ecosanitation systems has been effective. This kind of sanitation provision should be promoted for adaptation and uptake in other countries.

For the WSS sector to achieve greater performance and increase the effectiveness of development, the Bank and development partner has a role in the implementation of effective monitoring and evaluation systems. These would reduce or eliminate the divergence of information from different data sources in the WSS. The need for cross-subsidisation to ensure basic provision must be considered by relevant authorities. While this may reduce the number of projects that can be done, it will increase their long term viability and increase the effectiveness of service delivery.

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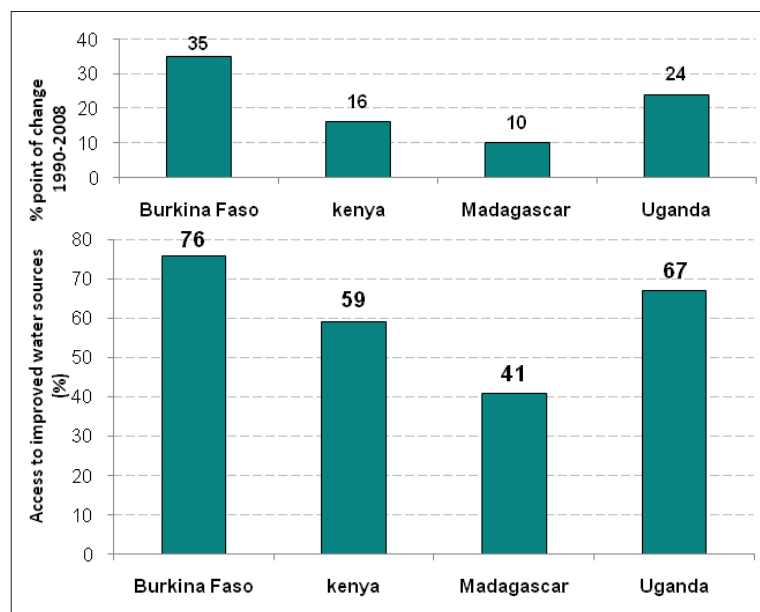
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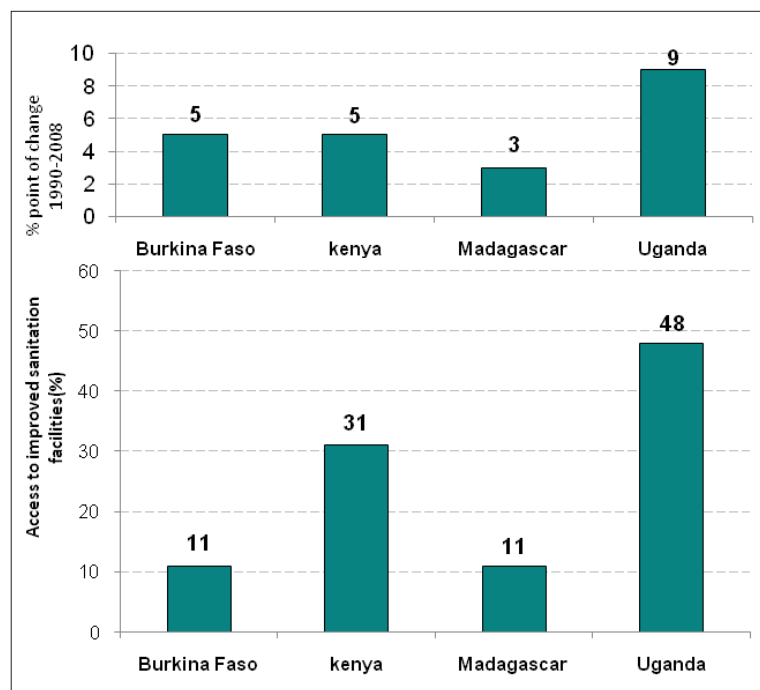
Annex 1: Changes in access to improved water and sanitation (1990-2008)

Figure A1.1: Percentage Change in Access to Improved Water Source (1990-2008)



Sources: Authors, using online databases of WHO / UNICEF

Figure A1.2: Percentage Change in Access to Improved Sanitation (1990-2008)



Sources: Authors, using online databases of WHO / UNICEF

Annex 2: Development aid and access to water and sanitation

Table A2.1: Development Aid and Access to Water and Sanitation in Madagascar (US\$ Million)

Variable	2000	2001	2002	2003	2004	2005	2006	2007	2008
Total Government Budget	700.0	832.2	714.4	1156.6	1097.9	1073.9	1179.8	1587.4	1838.0
Total Water, Sector Development (D) (USD mn)	5.4	13.7	8.5	18.7	11.7	15.9	16.8		
Total Development Aid (D External)	321.7	367.0	371.3	543.0	1249.6	916.9	749.9	892.0	741.0
Development Aid to the Water Sector (USD mn)	3.7	8.5	5.6	16.2	7.1	9.0	9.8	12.7	16.5
Total GoM WSS Budget and Deve Aid (USD mn)	9.0	22.2	14.1	34.9	18.8	24.8	26.6		
Share of W&S ODA in total funding to Water & Sanitation Sector (%)	40.6	38.2	39.5	46.5	37.8	36.1	36.8		
Share of GoK WSS Budget in National Budget (%)	0.8	1.6	1.2	1.6	1.1	1.5	1.4		
Share of Water & Sanitation Sector ODA in Total ODA (%)	1.1	2.3	1.5	3.0	0.6	1.0	1.3		

Sources: AfDB/OECD (2009), OECD and Ministry of Energy and Mines databases

Table A2.2: Development Aid and Access to Water and Sanitation in Kenya

Variable	2000	2001	2002	2003	2004	2005	2006	2007	2008
Total Government Budget, (USD mn)	2678.3	2919.2	3110.5	3597.3	3697.9	4541.1	5475.8	7466.8	9439.3
Total Water, Sector Devt (D), (USD mn)	38.0	39.3	45.6	60.6	68.5	114.2	117.9	189.2	228.3
Total Water Sector Devt (R), (USD mn)	28.4	35.6	44.7	27.9	20.3	30.0	37.9	57.6	66.3
Total Water Sector Budget (D+R), (USD)	66.4	74.9	90.3	88.4	88.8	144.2	155.8	246.7	294.6
Total ODA (D External), (USD mn)	509.9	468.0	391.1	521.4	654.4	767.2	942.9	1275.2	-
ODA to the Water Sector, (USD mn)	23.5	24.5	24.8	32.7	42.7	51.6	48.5	101.8	143.2
Total WSS GoK Budget and Devt Aid,	89.9	99.4	115.1	121.1	131.5	195.8	204.3	348.5	437.8
Share of GoK WSS	2.5	2.6	2.9	2.5	2.4	3.2	2.8	3.3	3.1
Share of WSS ODA in Total ODA (%)	4.6	5.2	6.3	6.3	6.5	6.7	5.1	8.0	9.8
Share of W&S ODA in total funding to	73.9	75.4	78.5	73.0	67.5	73.6	76.3	70.8	67.3

Sources: AfDB/OECD (2010), WMI Ministry for Water and Irrigation, AfDB Data platform and OECD CRS online databases

Table A2.3: Development Aid and Access to Water and Sanitation in Uganda (UGX Bns).

Data item (financial years)	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09
Total Government Budget	2,691	2,696	3,154	3,381	3,609	4,210	4,734	6,117
Total Water Sector Budget (D+R)	54	48.8	60.4	58.7	45.3	73.1	88.5	101.1
Total ODA								
ODA to Water Sector Aid	106.3	163.3	87.3	97.7	112.1	79.8	42.1	48.3
Rural WSS grant (bn)		24.48	25.42	27.98	27.73	40.66	45.44	45.44
Total WSS GoU Budget and Devt Aid, (Ugsh mn)	160.3	212.1	147.7	156.4	157.4	152.9	130.6	149.4
Share of Water and Sanitation in National Budget (%)	6.0	7.9	4.7	4.6	4.4	3.6	2.8	2.4
Share of WSS ODA in total ODA (%)								
Share of GoU W&S Budget in total funding to Water & Sanitation Sector (%)	33.7	23.0	40.9	37.5	28.8	47.8	67.8	67.7

Sources: AfDB/OECD (2010), WME Ministry for Water and Environment, AfDB Data platform and OECD CRS online Databases.

Table A2.4: Development Aid and Access to Water and Sanitation in Burkina Faso (Millions USD)

Data item (financial years)	2000	2001	2002	2003	2004	2005	2006	2007	2008
Total Water Sector Budget					557.6	404.0	848.6	639.9	365.2
Total Sanitation Sector Budget					10.7	7.0	24.0	26.7	43.5
Government WSS budget					568.3	411	872.6	666.6	408.7
Total ODA disbursement in SSA (million USD 2007)	664	763	496	585	626	747	2,010	890	900
ODA disbursement to the Water and Sanitation Sector (million USD 2007)	74.40	157.51	29.66	47.49	55.35	68.68	84.95	79.51	56.45
Share of Water in Water & Sanitation Sector Budget (%)					98.1	98.3	97.2	96.0	89.4
Share of Sanitation in Water & Sanitation Sector Budget (%)					1.9	1.7	2.8	4.0	10.6
Share of Water and Sanitation ODA in total ODA disbursed	11.2	20.6	6.0	8.1	8.8	9.2	4.2	8.9	6.3

Source: Integrated Expenditure System (Circuit Informatisé de la Dépense) and OECD CRS

Annex 3: Selected current and recent projects in the case study countries

Name	Fin.project	Status	Loan Number	Devison	CoCode	TSK Manager Name	Amount Disbursed	Netloan	Disb.Ratio	Project Cost	Proj Curr
Uganda	p-UG-E00-003	COMP	210015500386	OWAS2	2100	NUJUGUNA Peter Ephrai	1,244,196	1,244,196	100	1,780,000	UAC
Uganda	p-UG-E00-004	COMP	2000192000505	OWAS2	2000	KHOTLE kometsi	236,598	236,598	100	300	UAC
Uganda	p-UG-EA0-001	COMP	2,000,192,000,504	OWAS2	2000	?	2,868,013	2,868,013	100	3,000,000	UAC
Uganda	p-UG-E00-002	OnGo	2100150008849	OWAS2	2100	ASSFAW Mecuria	10,926,777	12,260,000	89	20,920,000	UAC
Uganda	p-UG-E00-002	OnGo	2100155006267	OWAS2	2100	ASSFAW Mecuria	5,866,408	6,150,000	95	20,920,000	UAC
Uganda	p-UG-E00-005	OnGo	2100155006267	OWAS2	2100	ASSFAW Mecuria	27,346,326	40,000,000	68	156,400,000	UAC
Uganda	p-UG-E00-006	OnGo	5600155000102	AWTF	5600	AKARI Peter Lamisi	276,911	687,657	40	865,575	EUR
Uganda	p-UG-E00-007	OnGo	5600155000551	AWTF	5600	AKARI Peter Lamisi	386,661	386,661	100	527,788	EUR
Kenya	P-KE-E00-005	APVD	2100150015546	OWAS2	2100	ALEOBUA Bonface Osi	0	35,190,000	0	56,900,000	UAC
Kenya	P-KE-E00-005	APVD	5800155000101	OWSA2	5800	ALEOBUA Bonface Osi	0	9,670,182	0	56,900,000	UAC
Kenya	P-KE-AAC-002	COMP	2100155000162	OSAN1	2100	MEND Alex Fred	1,089,178	1,089,178	100	1,188,000	UAC
Kenya	P-KE-E00-001	COMP	2100155000168	OWSA2	2100	JALLOW Seing Bbouc	782,278	782,278	100	985,798	UAC
Kenya	P-KE-EA0-001	COMP	2000192000232	OWAS2	2000	JALLOW Seing Bbouc	7,840,611	7,840,611	100	12,900,000	UAC
Kenya	P-KE-EA0-003	COMP	2100150000458	OWAS2	2100	HABTE-SELASSIE Wolde	6,904,187	6,904,187	100	13,132	UAC
Kenya	P-KE-EB0-001	COMP	2100150000459	OWAS2	2100	JALLOW Seing Bbouc	11,058,315	11,058,315	100	14,533,676	UAC
Kenya	P-KE-EB0-002	COMP	2100150000457	OWAS2	2100	JALLOW Seing Bbouc	7,349,783	7,349,783	100	11,381,000	UAC
Kenya	P-KE-E00-002	COMP	2100150007895	OWAS2	2100	ALEOBUA Bonface Osi	5,394,063	13,040,000	41	21,210,000	UAC
Kenya	P-KE-E00-002	OnGo	2100155002669	OWAS2	2100	ALEOBUA Bonface Osi	2,010,668	5,020,000	40	21,210,000	UAC
Kenya	P-KE-E00-006	OnGo	5600155000101	AWTF	5600	BADSTUE Lone Bach	196,503	196,503	100	235,806	EUR
Kenya	P-KE-E00-006	OnGo	5600155000501	AWTF	5600	BADSTUE Lone Bach	0	196,503	0	235,806	EUR
Burkina Faso	P-BF-EAZ-001	APVD	5600155001151	AWTF	5600	OSSETTE Jean Michel	0	386,807	0	450,000	EUR
Burkina Faso	P-BF-EAZ-001	APVD	5600155001251	AWTF	5600	OSSETTE Jean Michel	304,288	551,845	55	642,000	EUR
Burkina Faso	P-BF-AB0-008	COPM	2100155000014	OSAN2	2100	ALVES Hospice Horone	658,999	658,999	100	730,000	UAC
Burkina Faso	P-BF-E00-001	COPM	2100155000010	OWAS1	2100	M-BAYE Elhadi Amado	967,921	967,921	100	1,034,079	UAC
Burkina Faso	P-BF-EA0-003	COPM	2100150000033	OSAN2	2100	KIATTI Driess	7,602,428	7,602,428	100	9,460,000	UAC
Burkina Faso	P-BF-EA0-003	COPM	2150150000740	OSAN2	2150	KIATTI Driess	5,713,327	5,713,327	100	9,460,000	UAC
Burkina Faso	P-BF-EA0-022	COPM	2100155004168	OWAS1	2100	MOUMNI Monia	1,363,393	1,485,000	92	1,578,000	UAC
Burkina Faso	P-BF-EAB-001	COPM	2100150000026	OWAS1	2100	MOUMNI Monia	4,454,694	4,740,000	94	136,740,000	UAC
Burkina Faso	P-BF-EAB-001	COPM	2150150000665	OWAS1	2150	MOUMNI Monia	913,605	913,605	100	136,740,000	UAC
Burkina Faso	P-BF-E00-006	On-Go	2100150007175	OWAS1	2100	MOUMNI Monia	9,693,134	15,000,000	65	25,790,000	UAC
Burkina Faso	P-BF-E00-006	On-Go	2100155002011	OWAS1	2100	MOUMNI Monia	1,568,687,	5,000,000	31	25,790,000	UAC
Burkina Faso	P-BF-E00-008	On-Go	2100150014643	OWAS1	2100	MOUMNI Monia	87,966	20,000,000	0	34,970,000	UAC
Burkina Faso	P-BF-E00-008	On-Go	5800155000052	OWAS1	5800	MOUMNI Monia	0	9,551,561	0	34,970,000	UAC
Madagascar	P-MG-E00-001	COMP	2100155000186	OWAS2	2100	DIALLO Amadou Thiem	822?310	822,31	100	900,000	UAC
Madagascar	P-MG-EAA-001	COMP	2100155000537	OWAS2	2100	OUTAGUEROUINE Sidi A	5,101,640	5,101,640	100	8,000,000	UAC
Madagascar	P-MG-EAA-001	COMP	2150150001080	OWAS2	2150	OUTAGUEROUINE Sidi A	5,101,640	5,101,640	100	8,000,000	UAC
Madagascar	P-MG-E00-002	OnGo	2100150000566	OWAS2	2100	OUTAGUEROUINE Sidi A	5,903,787	7,930,000	74	8,920,000	UAC
Madagascar	P-MG-E00-002	OnGo	2150150001224	OWAS2	2150	OUTAGUEROUINE Sidi A	203,024	203,024	100	8,920,000	UAC
Madagascar	P-MG-E00-005	OnGo	2100150011344	OWAS2	2100	OUTAGUEROUINE Sidi A	4,733,074	51,000,000	9	60,000,000	UAC

Source: OWAS, AfDB

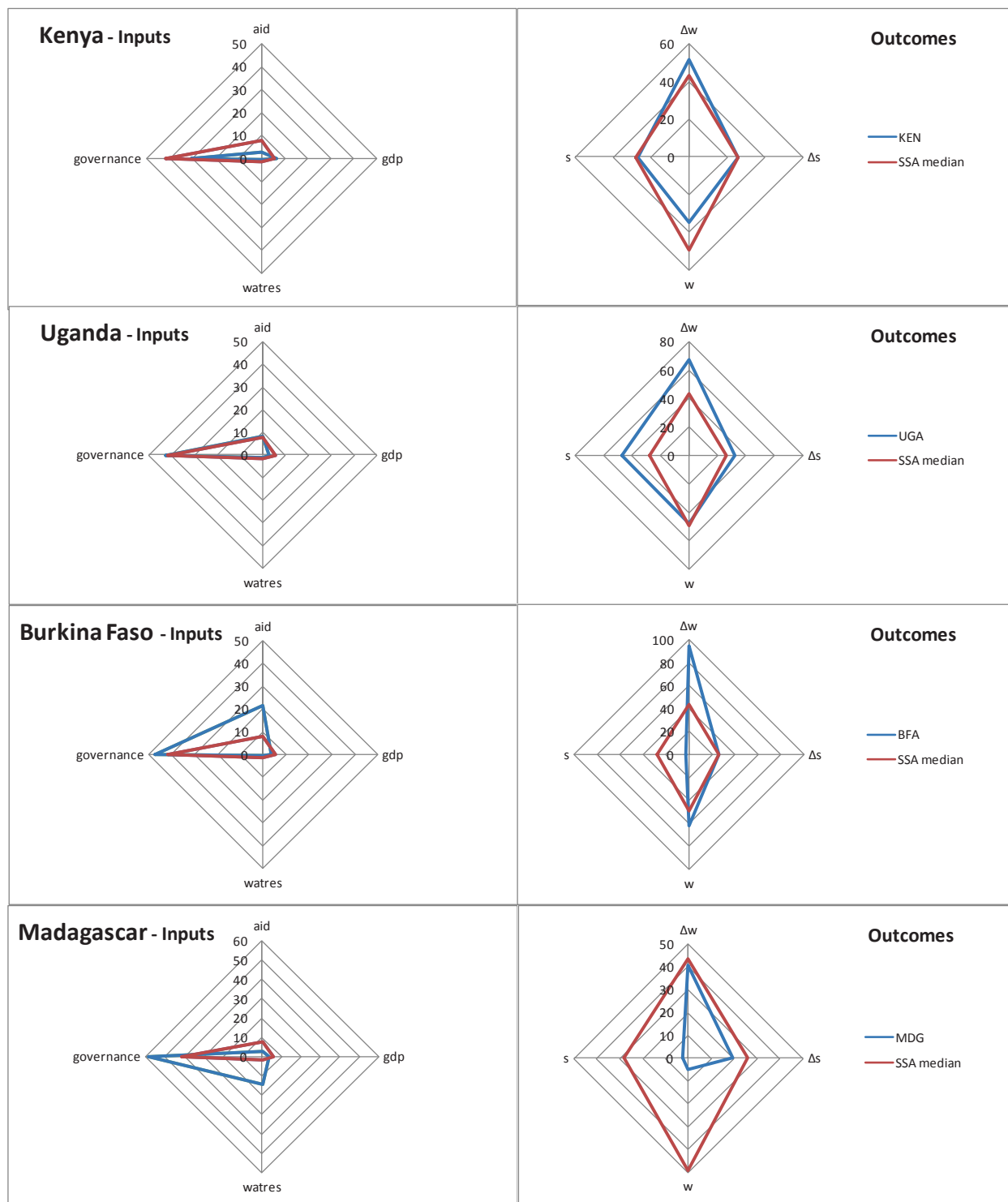
Annex 4: Investment requirement

Country	Water/ Sanitation	Rural/ Urban	Total Investment Required			Public Invest Required	Planned Public Invest	Surplus (Funding Gap)
			New	Rehab	Total			
			(m USD/year)					
Burkina Faso	Water	Rural	62	8	70	69	11	-58
		Urban	1	17	18	18	2	-15
		Sub-total	64	24	88	87	13	-73
	Sanitation	Rural	15	1	17	15	0	-14
		Urban	12	–	12	12	4	-8
		Sub-total	27	1	28	27	4	-23
Kenya	Water	Rural	12	51	63	57	33	-24
		Urban	53	22	75	67	77	10
		Sub-total	65	73	138	124	110	-14
	Sanitation	Rural	9	25	34	0	2	2
		Urban	51	14	65	59	14	-45
		Sub-total	60	39	99	59	16	-43
Madagascar	Water	Rural	24	7	31	26	52	26
		Urban	14	9	23	7	21	14
		Sub-total	38	16	54	33	73	40
	Sanitation	Rural	18	41	59	6	4	-2
		Urban	2	4	6	1	15	14
		Sub-total	20	44	65	6	19	13
Uganda	Water	Rural	29	44	73	69	46	-23
		Urban	14	6	20	20	54	34
		Sub-total	43	50	95	89	100	11
	Sanitation	Rural	35	68	103	35	10	-25
		Urban	38	10	49	18	9	-9
		Sub-total	73	78	147	53	19	-34

Source: Computed using data from AMCOW et al(2006)

Annex 5: Country profiles of the Watsan Index of Development Effectiveness

Comparison of each country with the SSA sample median score: When the solid line indicating the country itself is outside of the dotted line (median), it suggests that the specific country is either benefiting from relatively high input drivers, or the country is achieving relatively high progress outcomes. Note that in some cases, the country score and sample median are so similar that they are difficult to discern



Source: Authors' calculation

Annex 6: Responsibilities of WSS sector institutions in Kenya

Institution	Roles and Responsibilities
1	Ministry of Water and Irrigation (MWI)
	<ul style="list-style-type: none"> • Development of legislation, policy and strategy formulation, sector coordination and guidance, and monitoring and evaluation. • Overall sector investment planning and resource mobilisation.
2	Water Service Regulatory Board (WASREB)
	<ul style="list-style-type: none"> • Regulation and monitoring of service provision (Water Services Boards and Providers). • Issuing of licenses to Water Services Boards. • Setting standards for provision of water services. • Developing guidelines (Water tariffs etc.).
3	Water Services Boards (WSBs)
	<ul style="list-style-type: none"> • Efficient and economical provision of water services. • Developing water and sewer facilities, investment planning and implementation. • Rehabilitation and replacement of infrastructure. • Applying regulations on water services and tariffs. • Procuring and leasing water and sewerage facilities. • Contracting water service providers (WSPs).
4	Water Service Providers (WSPs)
	<ul style="list-style-type: none"> • Provision of water and sanitation service, ensuring good customer relation and sensitisation , adequate maintenance of assets and reaching a performance level set by regulation
5	Water Services Trust Fund (WSTF)
	<ul style="list-style-type: none"> • Financing provision of water and sanitation to disadvantaged groups (pro-poor) as water poverty fund
6	The Water Appeals Board(WAB)
	<ul style="list-style-type: none"> • Arbitration of water related disputes and conflicts between institutions and organisations
7	National Water Conservation and Pipeline Corporation (NWCP)
	<ul style="list-style-type: none"> • Construction of dams and drilling of boreholes
8	Kenya Water Institute(KEWI)
	<ul style="list-style-type: none"> • Training and research

Annex 7: Regional variation in staffing, coverage and costs in water and sanitation provision in Kenya

WSP	No. of Staff	Staff/1000 connections	Av. Gross salary/staff/month	Billing/staff/month	Collection Efficiency	Collection/staff/month**	% Personnel cost of O&M cost
Nairobi	1200	3.08	52252.92	253472.06	70.9	3899.7	47.4
Mombasa	420	11.53	18145.38	126990.08	83.2	2016.4	22.77
Eldoret	75	2.58	55124.38	228711.11	107.2	6676.5	
Nakuru	291	12.27	15109.73	68679.96	119.1	1316.1	29.64
Nzowasco	123	7.21	23723.41	47861.57	103.3	1801.9	41.63
Tavevo	75	14.97	23532.69	5800	76	1019.4	43.79
Nanyuki	84	10.86	10775.4	134843.14	90.3	2157	17.54
Kericho	164	21.33	16919.46	24607.86	95.6	596.5	71.26
Garissa	42	6.37	16666.67	42827.82	87.6	2148.3	46.67
Embu	44	5.26	12543.95	142243.06	63.3	1291.6	19.18
Kisumu	157	16.23	24651.44	86371.11	110	1081.4	38.12
Malindi	78	8.3	6690.56	147241.52	94.5	3235.9	8.79
Nyeri	42	3.64	88253.15	232616.76	97.5	4095.2	50.41
Narok	31	21.35	3712.76	18401.02	85.5	7865.7	21.57
Lamu	32	20	11008.33	23778.65	47.1	358.2	47.85
Embe	65	33.23	868	9513.6	129.1	141.2	5.1
Gatamathi	35	14.82	11342.86	6460.31	60.6	200.8	100
Isiolo	50	19.2	11157.5	35204.59	209.6	456.2	31.32
Maragua	55	17.21	11876.11	12548.38	114.3	1985	73.53
Amatsi	62	18.11	1703.33	3266.56	84.5	142	26.81
Nyahururu	78	15.17	10786.74	34225.35	97.7	700.9	43.27
Meru	75	16.63	22042.73	49524.5	137.1	1462.9	46.75
Mathira	58	11.42	2341.73	22617.89	99	175.7	16.59
Muranga	67	13.43	15597.01	27942.2	66.7	573.8	41.13
Eldama Ravine	38	11.26	3028.83	15767.15	109.3		6.53

Collection/staff/month not indicative for 2005/2006 because of collection of arrears by most of the WSPs
Source: WASREB, 2008

The water and sanitation sector has attracted increasing political attention, given its relevance to basic human development needs. The peak of this attention was marked by the launch of the UN Decade for Water and Sanitation of the 1990s, and of the UN Decade of Water for Life (2005-2015). The importance of the sector is further emphasised by its inclusion among the Millennium Development Goals (MDGs). In the face of heterogeneous performance in the water and sanitation sector by different countries in Sub-Saharan Africa (SSA), it is important to understand the factors that determine success or failure in order to improve the targeting of future interventions, including those funded by development aid, and to avoid the repetition of past errors.

The principal objective of this report is to compare countries' performance in the water and sanitation sector and to analyse how effectively they used the associated development aid. Specifically, the paper addresses the following questions in the WSS sector in SSA: What is the current magnitude of WSS ODA, and how did it evolve over the past two decades? How effective were the countries in utilising the disbursed WSS ODA? How did the SSA countries perform in safe drinking water and sanitation service provision to their citizens? What are the factors that explain the performance differences in WSS sector among SSA countries?

The book is organised into five Chapters. The first Chapter presents the general background, objectives and methodology of the book. In the Second Chapter, we analyse the relationship between development aid dedicated to policies and projects in the field of water and sanitation in SSA countries, with progress made in improving access using WIDE and other relevant indicators. Chapter 3 presents the results of four country case studies (Burkina Faso, Kenya, Madagascar and Uganda), and reveal more detailed insights, beyond the general trends analysed in Chapter 2. The fourth chapter presents views of expert and beneficiaries on key success factors or failures of WSS sector and specific projects. The analysis is based on information collected through dedicated field missions, primarily on interviews with the main stakeholders in governments, water management authorities, and communities of beneficiaries. Finally, Chapter 5 synthesises the insights obtained and spells out specific recommendations for enhancing the performance of WSS sector and development aid effectiveness.

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Editors