

African Studies Centre  
Leiden, The Netherlands

# **Water reforms and interventions in urban Kenya**

Institutional set-up,  
emerging impact and challenges

Samuel O. Owuor & Dick W.J. Foeken

ASC Working Paper 83 / 2009

**Samuel O. Owuor (PhD)**

Department of Geography & Environmental Studies, University of Nairobi, Kenya  
[samowuor@uonbi.ac.ke](mailto:samowuor@uonbi.ac.ke)

**Dick W.J. Foeken (PhD)**

African Studies Centre, Leiden, The Netherlands  
[dfoeken@ascleiden.nl](mailto:dfoeken@ascleiden.nl)

African Studies Centre  
P.O. Box 9555  
2300 RB Leiden  
The Netherlands

Telephone +31-71-5273372  
Fax +31-71-5273344  
E-mail [asc@ascleiden.nl](mailto:asc@ascleiden.nl)  
Website <http://www.ascleiden.nl>

# Contents

List of maps, figures, tables, boxes and photos v

Acknowledgements vi

1. INTRODUCTION 1
  - 1.1 The issue 1
  - 1.2 Private sector involvement in the urban water sector 2
  - 1.3 The urban poor, access to water and livelihoods 6
2. URBAN WATER SUPPLY IN KENYA 10
3. WATER SECTOR REFORMS IN KENYA 15
  - 3.1 Background to the water sector reforms in Kenya 15
  - 3.2 The Water Act 2002 18
  - 3.3 The institutional set-up of water sector reforms in Kenya 20
  - 3.4 Two examples 25
4. WATER SECTOR INTERVENTIONS IN URBAN KENYA 29
  - 4.1 Two examples 29
5. REPORT OF A PRELIMINARY TOUR OF FIVE TOWNS 33
  - 5.1 Eldoret 33**
    - 5.1.1 Eldoret Water and Sanitation Company (ELDOWAS) 33
  - 5.2 Kisumu 38**
    - 5.2.1 Kisumu Water and Sewerage Company (KIWASCO) 38
    - 5.2.2 Sustainable Aid in Africa (SANA) International 42
    - 5.2.3 Wandiege: A community water supply project 43
  - 5.3 Homa Bay 46**
    - 5.3.1 South Nyanza Water and Sanitation Company (SNWASCO) 46
    - 5.3.2 The Lake Victoria Region Water and Sanitation Initiative in Homa Bay (LVWATSAN-Homa Bay) 50
    - 5.3.3 The Multi-Stakeholders Forum in Homa Bay (MSF-Homa Bay) 51
  - 5.4 Kisii 54**
    - 5.4.1 Gusii Water and Sanitation Company (GWASCO) 54
    - 5.4.2 The Lake Victoria Region Water and Sanitation Initiative in Kisii (LVWATSAN-Kisii) 56
    - 5.4.3 The Multi-Stakeholders Forum in Kisii (MSF-Kisii) 57
  - 5.5 Nakuru 59**
    - 5.5.1 Nakuru Water and Sanitation Services Company (NAWASSCO) 60

6. EMERGING IMPACT AND CHALLENGES OF WATER SECTOR REFORMS AND INTERVENTIONS IN URBAN KENYA	64
6.1 Emerging impact	64
6.2 Emerging challenges	69
6.3 Towards a new research agenda	74
References	77

## List of maps, figures, tables, boxes and photos

### Maps

1. Water Services Boards in Kenya 24
2. Location of the five towns 34

### Figures

1. The institutional set-up of water sector reforms under Water Act 2002 21

### Tables

1. Allocation of key responsibilities for private participation options 3
2. Bottlenecks in the water sector under Water Act Cap 372 16
3. Roles and responsibilities of institutions in the sector reforms 22
4. Some characteristics of Water Services Boards in Kenya 23
5. LVWATSAN's successfully completed projects in Homa Bay and Kisii 31
6. Expected outcomes of the water sector reforms 64

### Boxes

1. Disparity in water access in urban areas 11
2. Expectations of a delegated management model 40
3. Lakeside city thirsts for clean water 41
4. 'The politics of water in Homa-Bay' 49
5. GWASCO: Vision and Mission 54
6. Nakuru's long journey to NAWASSCO 61
7. Status of water services in Kisumu in 2003 before the reforms 66
8. The 'reformed' ELDOWAS 68
9. KIWASCO: Strategic plan 2007-2012 70
10. Council rises cost of water 71
11. Outrage as firm increases water tariffs 71
10. Mombasa facing a water crisis 72

### Photos

1. Nyeri Water and Sewerage Company Offices 26
2. Wandiege water kiosk 44
3. The new water in-take point 47
4. A non-operational water kiosk 50
5. Bobaracho Market Self-Help Group water kiosk 59
6. Protected spring in Kisii 67
7. Persistent water problems in a low-income neighbourhood in Kakamega 73

## Acknowledgements

This Working Paper is an initial step towards a proposed research project on “Water reforms and interventions in urban Kenya: The impact on the livelihood of the poor” – (WASRIP). We wish to thank Professor George Krhoda (University of Nairobi) and Dr. Graham Alabaster (United Nations Human Settlements Programme) for their contribution during the initial conceptualisation of the research project and continued enthusiasm in this topic. Section 5 of this Working Paper is based on a preliminary tour of five towns in Kenya – Eldoret, Kisumu, Homa Bay, Kisii and Nakuru – done in October 2008. We wish to acknowledge the following officers for their invaluable information: Mr. Peter Macharia (Service Area Manager, Eldoret Water and Sanitation Company); Mr. Andrew Otom (District Water Officer, Eldoret); Mr. Laban Oyuke (Chief Technical Advisor, Lake Victoria Water and Sanitation Programme – LVWATSAN-Kenya); Mr. Edwin Owiti (Finance Manager, Kisumu Water and Sewerage Company); Mr. Adrian Ouma (Municipal Engineer, Municipal Council of Kisumu); Mr. Alfred Adongo (Team Leader, Sustainable Aid in Africa International – SANA-Kisumu); Ms. Roselyne Okwiri (SANA-Kisumu); Mr. Apollo Midang’ a (Wandiege Community Water Supply Project, Kisumu); Mr. Mboya (Wandiege); Mr. Joseph Ongoro (Managing Director, South Nyanza Water and Sanitation Company); Mr. Cosmas Wambua (Clerk of Works, LVWATSAN-Homa Bay); Mr. Samuel Nyaoke (Secretary, Multi-Stakeholder Forum – MSF-Homa Bay); Mr. Thomas Kondo (Managing Director, Gusii Water and Sanitation Company); Mr. Joseph Gikonyo (Clerk of Works, LVWATSAN-Kisii); Mr. Reuben Masese (Chairman, MSF-Kisii); Mr. Ramadhan Alhaji (Member, MSF-Kisii); Mr. John Cheruiyot (Managing Director, Nakuru Water and Sanitation Services Company – NAWASSCO); and Mr. Ezekiel Andati (NAWASSCO). Finally, we are grateful to Ms. Terry Mutune, a post-graduate student in the Department of Geography, University of Nairobi, for her participation and assistance during the inventory tour. However, all the individuals and institutions acknowledged here are not responsible for the mistakes, omissions or errors which remain in this Working Paper.

# 1 Introduction

## 1.1 The issue

Water is a basic human right as it is fundamental to life and death. It is a key asset for socio-economic growth and development at all levels, ranging from the national level to the individual. Access to water and sanitation<sup>1</sup> is a key factor in improving health, economic productivity and social well being of the human populace as both social and economic activities rely heavily on the quantity and quality of water. Access to water is therefore an essential component of any effort to alleviate poverty. In fact, all the eight Millennium Development Goals (MDGs) are directly or indirectly related to (access to) water. For example, Goal 7, target 10 – to halve the proportion of world population without sustainable access to safe drinking water<sup>2</sup> between 1990 and 2015 – is a key target in its own right but achieving that target is critical to the attainment of other goals (UNDP 2006).

Yet, in achieving this target, “sub-Saharan Africa remains the area of greatest concern. It is a region of the world where, over the period 1990-2004, the number of people without access to drinking water increased by 23%” (WHO/UNICEF 2006: 3). Moreover, the region experienced an 85% increase of its urban population between 1990 and 2004, but the number of urban dwellers unserved with safe drinking water doubled during the same period (ibid). According to the Human Development Report 2006, some 1.1 billion people in the developing world do not have access to a minimal amount of clean water. While the minimum threshold is about 20 litres a day, these 1.1 billion people use about 5 litres a day (UNDP 2006).

A major cause of poor access to water services in sub-Saharan Africa is the inefficiencies of water utilities, especially those that serve the urban areas. Many systems are characterised by high water losses, insufficient revenues to cover operating costs, dilapidated and poor functioning infrastructure, lack of investments, low billing and collection efficiency, chronic water shortages and failure to meet the existing demand, low coverage, especially for the urban poor, and corruption, among others (see e.g. World Bank 2004). In addition, the quality of water services is often low. For instance, it is estimated that over one-third of the urban water supplies in Africa operate intermittently and with quality concerns (WHO/UNICEF 2000).

Like other countries in sub-Saharan Africa, Kenya’s socio-economic development goals are highly dependent on the availability of water in good quantity and quality. The government’s long-term objective is to ensure that all Kenyans have access to clean

---

<sup>1</sup> As much as this paper concerns water, sanitation cannot be completely detached from water issues.

<sup>2</sup> Safe drinking water is defined as “water that is safe to drink and available in sufficient quantities for hygienic purposes” (WHO/UNICEF 2006: 22).

potable water, and that water is available for key economic activities such as agriculture, fisheries, livestock production (and therefore food security), manufacturing, hydropower generation, and tourism (MWI 2005; Kenya 2006b).

The water sector reforms currently being implemented in Kenya under the Water Act 2002 of the Laws of Kenya are designed to contribute to the realization of this long-term objective as well as to addressing the policy, regulation and service provision weaknesses in the previous set-up under Water Act Cap 372. Furthermore, reforms in the water sector are also considered an essential pillar in the government's poverty reduction strategies, the *Economic Recovery Strategy for Wealth and Employment Creation* (Kenya 2003), and the ambitious *Vision 2030*. In other words, the government recognises that for the country to achieve the MDGs there is need to make water available, accessible and affordable, especially to the poor. This, directly or indirectly, calls for increased coverage; reduction of the high water losses; rehabilitation and expansion of existing schemes; sustainable demand management; construction of new water supply schemes; transparency, accountability and good water governance; efficiency; clear institutional framework; and encouraging pro-poor focus, strategies and programmes, among others.

Based on a preliminary tour of five towns in Kenya, this Working Paper discusses the water sector reforms and interventions in Kenya and their emerging impact and challenges. This is a first step towards a broader research agenda on the "Impact of water reforms and interventions on the livelihood of the urban poor in Kenya". The Working Paper is divided into six sections. Section 1 lays the foundation which includes an overview of the private sector involvement in the urban water sector as well as the link between the urban poor, access to water and their livelihood. Based on available literature so far, Section 2 presents the water supply situation in Kenya while Sections 3 and 4 presents an overview of the water sector reforms in Kenya and water interventions in urban Kenya, respectively. Section 5 gives a report of the preliminary tour of the five towns, followed by (in Section 6) an analysis of the emerging impact and challenges of water sector reforms and interventions in urban Kenya.

## 1.2 Private sector involvement in the urban water sector

Already in the 1980s, as part of the structural adjustment ideology advanced by the World Bank and International Monetary Fund (IMF), privatisation was seen by these institutions as the best way to get the water sector in developing countries on its feet again.<sup>3</sup> The most radical form is full privatisation (divestiture), i.e. a private company becomes the owner of the infrastructure and takes full responsibility for operation, maintenance and investment. The government's role is reduced to one of regulation. This model is uncommon and has only been adopted in England and Wales (Budds & McGranahan 2003). Nowadays, full

---

<sup>3</sup> See e.g. Prasad (2006) and Wambua (2004) for an overview of "debates" on privatization, generally and in Kenya, respectively.



privatisation as a way to reform the water sector is seen by many as undesirable and unnecessary (Hukka & Katko 2003).

Much more common are various forms of public-private partnerships. Usually, a distinction is made between ‘service contract’, ‘management contract’, ‘lease contract’, ‘concession contract’ and the so-called ‘BOT-type contract’<sup>4</sup> (Budds & McGranahan 2003; World Bank 2004; K’Akumu 2006; Kirkpatrick *et al.* 2006). Responsibility for service provision is shared between the public and the private sector, with differing levels of responsibility being delegated to the private partner depending on the contract type (see Table 1).

Table 1: Allocation of key responsibilities for private participation options

	Service contract	Management contract	Lease	Concession	BOT-type	Divesture
Asset ownership	public	public	public	public	public/private	private
Capital investment	public	public	public	private	private	private
Commercial risk	public	public	shared	private	private	private
Operations/maintenance	public/private	private	private	private	private	private
Contract duration	1-2 years	3-5 years	8-15 years	25-30 years	20-30 years	indefinite

Source: Budds & McGranahan (2003: 89).

Two other options of private sector participation include joint ventures and cooperatives (Budds & McGranahan 2003). A joint venture is an arrangement whereby a private company forms a company with the public sector. The co-operative model is a type of government-owned public limited company, subject to the rules and regulations of other public limited companies and of which the majority of shares are publicly owned (either by the government or citizens/users). This model combines public ownership with business principles. Such arrangements are in place in countries including the Netherlands, Germany, Poland, Chile, Bolivia and the Philippines (Budds & McGranahan 2003; Meijer 2005).

By the beginning of the 21<sup>st</sup> century, 14 countries in sub-Saharan Africa<sup>5</sup> had adopted some form of private sector involvement, while some others were proposing it (Bayliss 2003).

<sup>4</sup> Build-Own-Transfer contract.

<sup>5</sup> Burkina Faso, Cape Verde, Central African Republic, Chad, Côte d’Ivoire, Gabon, Guinea, Mali, Mozambique, Niger, Republic of Congo (Brazzaville), Senegal, South Africa and Uganda (Budds & McGranahan 2003: 106).

Contracts are dominated by French multinational corporations, especially Saur.<sup>6</sup> In some cases, company and government were unable to reach an agreement, which has to do with the dilapidated state of the water utilities and the inability of many (poor) customers to pay the commercial prices; examples being Nairobi<sup>7</sup> and Gweru (Zimbabwe). According to Budds & McGranahan (2003: 106), “sub-Saharan African countries have in general been unable to attract companies that are willing to invest in the region, as it is regarded as too risky”. This is reflected by the fact that (a) most contracts are short-term, non-investment management and lease contracts; (b) contracts are being drawn up in US dollars to protect companies from local currency devaluation; and (c) water utilities are commonly bundled with electricity in order to create more attractive commercial opportunities (ibid).

Two alternative types of private sector participation in the water sector concern water kiosks and private water vendors. Water kiosks are a form of public-private partnership whereby the government provides water to the kiosk where it is re-sold to the local customers. The ‘private’ component can be a private company but also a group of citizens united in a community-based organisation (CBO) and either or not supported by one or more non-governmental organisations (NGOs).

Private water vendors – also known as the “other” private sector (Solo 1999) – are “informal” and/or small-scale operators who provide water (and sanitation) services in mostly low- and middle-income neighbourhoods. They operate apart from the government and may even be illegal. They have a generally negative image, usually cast as “the ‘bad guys’ who charge usurious rates” (ibid: 119). However, there are many other types of small-scale entrepreneurs in the water and sanitation sector than the young men transporting two or more 20-litre jerry-cans of water on their bicycles and selling it at (very) high prices during the dry season. Based on a literature review, Solo (1999: 121-122) lists the following examples:

- Individual families with water and/or sanitation connections who provide services to their neighbours (e.g. 25% of the Bamako water supply).
- Water points and/or latrines managed or owned by individuals or community groups (30% of the Addis Ababa water supply) or NGOs.
- Bulk water supply systems like tank trucks which distribute to cisterns or to individual families (various Latin American examples).
- Privately owned and managed public toilets and bath houses (e.g. in India, Bangladesh, Peru and China).
- Private competitive water networks which provide house connections to water and sanitation (e.g. in Paraguay and Indonesia).

---

<sup>6</sup> The international private water sector is dominated by five large multinational corporations. Three of these are from France (Suez, Veolia and Saur), one from Germany (Thames Water) and one from Spain (Aguas de Barcelona). See e.g. Budds & McGranahan (2003: 105) and Bayliss (2003).

<sup>7</sup> In 2002, the French company Générale des Eaux proposed to take charge of Nairobi’s chaotic water billing system, but the offer was rejected because there was little interest in rehabilitating the dilapidated infrastructure through which the city council continued to incur massive losses (Wambua 2004: 7).

- Closed water systems with treatment plants and piping networks owned by residents (e.g. in Argentina).
- Truckers with private wells (e.g. in Bangladesh, Kazakhstan and other former GOS republics).
- Sewage removal services, septic tank emptiers and night soil carriers (e.g. in Abidjan and Dar es Salaam and most other sub-Sahara African cities).
- Private waste water treatment plants (e.g. SIBEAU in Cotonou<sup>8</sup>).

Despite enormous variations in terms of prices and quality of services offered, the overall conclusion of the review was that these small-scale water supply and sanitation enterprises were generally highly successful, witness for instance these common characteristics: “they recover their costs fully and are financially sustainable; they have virtually no unaccounted-for-water; they require no public subsidy, borrowing or debt” (Solo 1999: 122). Key factors appeared to be, amongst others: the legal recognition of the small-scale water sector by the local authorities; a sound competitive system; some form of regulation by the government; and the creation of customer loyalty (implying that businesses should not become too large).

In terms of reaching the poorer segments of the urban populations, Solo (ibid: 130) concludes that “the best way to help the poor doesn’t seem to be to expand the water company’s coverage (...) but, rather, to encourage more small-time entrepreneurs to enter the market and to compete”. This is to some extent confirmed by several statements from the side of the large private water companies, such as by Biwater’s General Manager, referring to Zimbabwe, who claimed that “from a social point of view these kinds of projects [public sector subsidies for the poor] are viable but, unfortunately, from a private sector point of view they are not.”<sup>9</sup>

Despite Solo’s plea for small-scale water enterprises in an open, legal, competitive market to serve the low-income groups, it remains to be seen how viable it can be in the short-term in a country like Kenya. This can be illustrated by an example from one of the large slums in Nairobi – Mathare.<sup>10</sup> Most people in Mathare rely for their water on private vendors who are a menace in two ways: for the public water company because they illegally tap the water from the main water supply and for the consumers because by forming water cartels they charge high prices. These water cartels also exist in the neighbouring largest slum in Nairobi – Kibera. The reaction has been that the public company and local residents have come together to form community water groups or associations to manage the resource. More and more NGOs and CBOs are working in the sector, the result being that meanwhile four such

---

<sup>8</sup> SIBEAU is one of the very few waste water treatment plants in the whole of Africa. Despite the positive remarks by Solo (1999: 124, Box 2), the system is not without its problems (see Brock & Foeken 2006: 563-564).

<sup>9</sup> *Zimbabwe Independent*, 10 December 1999, quoted in Budds & McGranahan 2003, p. 109.

<sup>10</sup> “Kenya: The fight for water – a valuable slum commodity” (<http://www.irinnews.org>, accessed on 15 August 2007).

associations have been launched in Kibera, eight in Korogocho and eight in Mukuru (two other large slum areas in Nairobi).

However, Kjellén & McGranahan (2006: 19) argue that:

“In theory, there is nothing particularly contradictory about the fact that vendors provide an important service, and most vendor users are not getting sufficient water. Nor is there anything particularly contradictory about a water strategy that aims to get vendors to provide improved water (and sanitation) services to the urban poor in the short run, and to drive vendors out of business by way of providing better utility services in the long run.”

### 1.3 The urban poor, access to water and livelihoods

Millennium Development Goal 1 calls for a reduction of 50% between 1990 and 2015 in the number of people who suffer from hunger and whose income is less than US\$1 a day. However, during the 1990s, the percentage of people in sub-Saharan Africa living below the poverty line of US\$1 a day rose, as did the number of undernourished people.<sup>11</sup> Instead of declining, poverty is actually on the rise in this part of the world and by 2015 about half of its population will be living in urban centres. Poverty will have increasingly moved from rural to urban areas. According to Satterthwaite (1997: 5), urban poverty in sub-Saharan Africa was “steadily and frighteningly on the increase during the 1980s and 1990s”. Even though, in absolute terms, the rural poor still outnumber the urban poor, the latter group has been increasing at an alarming rate over the past few decades, a phenomenon commonly described as the ‘urbanization of poverty’ (Ravallion 2001).

Furthermore, urban areas were particularly hard hit by declining economies and the resulting structural adjustment policies, the cost of which were disproportionately felt by the urban poor (Rakodi 2002b). Life in urban areas has become more expensive, while employment in the formal sector has decreased and real wages have not kept up with price increases or have even declined in absolute terms (see e.g. UNCHS/HABITAT 1996; Simon 1997). In other words, many urban households have been faced with a serious decline in purchasing power. People have responded to this in a number of ways, with the diversification of income sources undoubtedly being the most notable (Bigsten & Kayizzi-Mugerwa 1992; Ellis 2000; de Haan & Zoomers 2003; Kaag *et al.* 2004). A wide range of activities are being employed, all in the informal sector (see e.g. Lee Smith & Memon 1994; Rogerson 1997; Hansen & Vaa 2004).

Kenya is a good example of this scenario. It is a rapidly urbanizing country. By 2000, one third of the total population of 30 million was classified as urban. In 2015, the urban population is expected to have almost doubled (to 17 million), comprising 45% of the total population (UN-HABITAT 2005). This means that between 2000 and 2015, the total Kenyan population will have grown by 25%, but the urban population by 68%. The rapid

---

<sup>11</sup> See <http://ddp-ext.worldbank.org/ext/MDG/gdmis.do>

growth of the urban population is partly caused by the influx of people from the rural areas looking for work in town. These people mostly end up in one of the many slums or informal settlements.

Their perspectives to find a job in the formal sector are bleak: since 1990, employment growth in the formal sector has been virtually zero, so it is the informal sector that absorbs most new job seekers (Kenya 2003), i.e. if they manage to find (or create) work at all. No wonder then that poverty – and urban poverty in particular – has been increasing. Between 1992 and 1997, the percentage of Kenya’s population living in absolute poverty rose from 42% to 53%, while urban poverty increased from 29% to 49% (Odhiambo & Manda 2003). In order to survive, people engage in all kinds of income-generating activities, such as some kind of small business, petty trade, farming (both in town and in the ‘rural home’), merry-go-round groups, etc. (see e.g. Owuor & Foeken 2006). However, livelihood is not only about (access to) income-generating activities but is also about access to all kinds of provisions and services that determine the quality of life, water included.<sup>12</sup>

Rapid urbanization and unplanned growth have placed enormous pressure on the capacity of towns to provide adequate basic services for their growing populations. Local authorities, overwhelmed by the rapid and unplanned development of towns, lack the capacity or resources to address the widening demand-supply gap (UN-HABITAT 2008). It is a well-known fact that most slums – i.e. those parts of cities and towns where the urban poor live – lack such basic facilities as roads, water supply, sanitation, solid and liquid waste disposal, electricity, schools and hospitals, among others. Yet access to such facilities has a direct impact on people’s well-being (health, nutritional condition, education, etc.) and an indirect impact on their income generation. For instance, a person with good education and in good health is likely to perform better than a person lacking these qualities. Also, the production capacity of a small business can improve considerably when electricity and or water are available throughout the year.

Among the challenges facing sub-Saharan Africa, provision of safe water supply and adequate sanitation are of the highest priority. Even where there is water, the quality is often poor, leading to exposure to waterborne diseases. The Human Development Report 2006 stresses that the crisis in water and sanitation is above all a crisis for the poor. It further states that almost two in three people lacking access to clean water survive on less than US\$2 a day, with one in three living on less than US\$1 a day (UNDP 2006). Moreover, “the poorest people not only get access to less water, and to less clean water, but they also pay some of the world’s highest prices” (ibid: 7). The latter applies particularly to the urban poor, mainly because they are often forced to buy water from private water vendors (see e.g. Kjellén & McGranahan 2006).

---

<sup>12</sup> For a more detailed description of the concept of livelihood, see e.g. Kaag *et al.* (2004) and de Haan & Zoomers (2003). On urban livelihoods in developing countries, and sub-Saharan Africa in particular, see e.g. Rakodi & Lloyd (2002).

According to UN-HABITAT (2007), the urban poor get their water by queuing for hours to collect water from standpipes or illegal connections. Others buy their water from vendors who can charge up to twenty times more for water than the price paid by their wealthier neighbours. As such, not only do the poor suffer financially; they also suffer poor health from using unsafe water and poor sanitation facilities. It is estimated that “at any one time, close to half the population in Africa, Asia and Latin America suffer from one or more of the main diseases associated with inadequate water and sanitation” (ibid: 6). A survey conducted in Nairobi’s informal settlements revealed that the prevalence of diarrhoea among children is 32%, while the infant and child mortality is 35%. The prevalence of diarrhoea was found to be double the rate for Nairobi and the national average (APHRC 2002).

As indicated earlier, water is a key asset for socio-economic growth and development at all levels, ranging from the national level to the individual. In Kenya, a stage has reached where availability of water is the limiting factor for any development activities (Kenya 2006b). Improved access to safe and affordable water, especially to the urban poor, is likely to have an impact on their livelihood, directly or indirectly, in at least three ways (UN-HABITAT 2006: 28-29):

- It has a positive impact on health (and, as a consequence, nutrition), which increases time and energy to invest in productive activities.
- Closer proximity of water sources and increased quantity available reduces the time necessary to fetch water.
- Improvements are especially relevant for women, who are traditionally responsible for looking after ill relatives, and for fetching water for the whole household.

In other words, improved access to safe and affordable water at the household and individual level is likely:

- To *reduce* the time spent on fetching or queuing for water, waterborne diseases<sup>13</sup>, child morbidity, expenditure on water, and water related conflicts.
- To *increase* the girl-child’s school attendance. This is because girls are sometimes forced to be late or miss school to help their mothers fetch water.
- To *improve* household’s health conditions.

In terms of economic production at the level of the business and/or household, at least two more benefits can be mentioned:

- Depending on the nature and size of the business, micro and small enterprises may benefit. This was for instance shown by a comparative study in two small towns in Uganda (Davis *et al.* 2001).

---

<sup>13</sup> The most common waterborne diseases in Kenya include malaria, typhoid, cholera, diarrhoea, dysentery, bilharzias and worms (Kenya 2006b).

- Urban farming, which is a very common and important livelihood activity for many of the urban poor, becomes much less dependent on the often unreliable rain. A study in Nakuru town (Kenya) showed that mean crop harvests from urban plots were substantially higher when irrigation was practiced (Foeken 2006: 60).

Moreover, the time, energy and resources spent on some of the activities linked to poor access to water can be used on such and other productive economic activities, especially for the girl-child and women who bear the primary responsibility for water at the household level (UN-HABITAT 2008). Women devote a good deal of their time and their physical effort to supplying the family with water, and express a genuine demand for improvements in the water supply and sanitation of their home.

However, women and the poor, including other vulnerable and disadvantaged groups, are often excluded from decision-making yet they are the most affected by lack of water and sanitation services (UN-HABITAT 2008). Poor urban dwellers, like everyone else, are entitled to reliable, affordable, well managed and sustainable water supply and related services (UN-HABITAT 2007). On a more positive note, UN-HABITAT's 2006 *Global Report on Water and Sanitation in the World's Cities – Local Action for Global Goals*, notes that “inadequate water supply is not mainly due to a lack of government funds. Indeed, in many cities and smaller urban centres, it is possible to improve provision of water in low-income settlements while charging their inhabitants less than they currently pay for inadequate provision” (ibid: 6).

## 2 Urban water supply in Kenya

Generally, provision of water has remained one of challenges for the government for a long time. With the increasing growth in population and the subsequent socio-economic pursuits, including urbanization, industrial production, tourism and agricultural activities, demand for water has increased rapidly. If not checked, the demand for water may soon surpass the supply not only due to the growing needs of the increasing population, but also limited natural endowment of fresh water as well as serious degradation of water resources (Kenya 2006b). Kenya, which is considered as a water scarce country with only 647 m<sup>3</sup> of renewable fresh water per capita<sup>14</sup>, therefore, faces serious challenges with regard to water services (MWI 2005; Krhoda 2008).

The situation is not any better in the urban areas: meeting the rapidly growing urban demand for safe and affordable water is already a daunting challenge for many local authorities. Not only are the numbers of people who need better water supplies very large, water itself is becoming scarcer (UN-HABITAT 2007). Dilapidated infrastructure, low levels of revenue collection, poor management, and lack of accountability in governance are further obstacles to the sustainable improvement of access to water in the urban areas, and particularly in low-income settlements (UN-HABITAT 2008).

Furthermore, Kenya is one of the few countries in the world where urban drinking water coverage from improved sources has actually declined during the 1990-2004 period (WHO/-UNICEF 2006: 15). The urban water supply situation in Kenya can be summarised as follows (UN-HABITAT 2005: 5):

“Water supply in Kenyan cities is highly inequitable. Over 50% of the urban poor, living in slums, have no access to safe drinking water and end up paying vastly more for municipal piped water. Local governments provide water in towns, but their water supply capacity is insufficient to cover the urban needs. Some water providers have recently been privatised to increase resource mobilisation and investments.”

The Water Services Regulatory Board provides a gloomier picture (WASREB 2008: 1):

“According to Kenya’s National Water Services Strategy for 2007-2015, only 60 per cent of households in urban areas have access to safe water. In the low-income settlements where a majority of the urban poor live, only 20 per cent of the population have access to safe water, exposing them to relatively high tariffs charged by water vendors. These settlements are also bedevilled by poor hygienic conditions owing to low coverage and the dilapidated state of

---

<sup>14</sup> This is below the recommended minimum of 1000 m<sup>3</sup> per person per year (Krhoda 2008).



sanitation facilities. The poor state of sanitation poses risk of pollution to water sources from which most of the informal settlements draw water.”

This gloomy picture is confirmed by some recent articles in national newspapers<sup>15</sup> picturing Nairobi slum inhabitants who face increasing problems in getting clean water in terms of both time (long queues for water points) and money (costs have gone up). As one resident explained, “water is the most sought-after item in Dagoretti<sup>16</sup> owing to lack of piped water. Residents have to buy it from private water vendors who have turned the problem to their advantage”<sup>17</sup> (see also Box 1).

*Box 1: Disparity in water access in urban areas*

The poor are paying much higher for water than the rich. Slum dwellers in Nairobi do not have water connections from the municipality. They depend on private water vendors for their day-to-day water needs. This is also true to so many other urban dwellers in all parts of Kenya. With no regulated prices for water, the poor are being charged as much as ten times more for water, whose quality is not assured, compared to what the residents with piped water are paying.

*Source:* Kenya (2006b: 127).

How ‘inequitable’ the provision of safe water in urban Kenya is, is not very clear. According to the same article in *The Standard*, “out of three million Nairobi residents, only 200,000 have access to adequate clean water”. That would be in line with Alder’s (1995) finding that 12% of the Nairobi slum households have water directly available on plot, while 86% obtain water from kiosks. However, a study carried out in 2000 (Gulyani *et al.* 2005) in Nairobi, Mombasa and Kakamega revealed that 71% of the sampled households in Nairobi had access to piped water (either a private in-house piped connection or a yard tap).<sup>18</sup> In Mombasa and Kakamega, these percentages were 50% and 56%, respectively. The remaining households had to rely on water kiosks (19%), ground and natural sources (10%, but almost only in Kakamega) and water vendors (5%), while a few households had their ‘own source’ (a well or borehole) or relied on neighbours. The major findings of the study can be summarised as follows:

- Although half of the sampled households are connected to the public utility, they have to supplement irregular water supply with purchases from small-scale private service providers such as kiosks, tankers, vendors.
- Only 5% of those connected to the public utility are poor, hence poor people have no option but to rely on small-scale private providers.

<sup>15</sup> See for instance *The Daily Nation* of 21 February 2006 and *The Standard* of 19 June 2006.

<sup>16</sup> Dagoretti is a peri-urban slum area in Nairobi.

<sup>17</sup> *The Standard*, 19 June 2006.

<sup>18</sup> The difference between these two observations may be due to way of sampling in the study by Gulyani *et al.* (2005). In Nairobi, eight sites were selected, but it is not clear how many of these concerned slum areas. Based on their Table 4 (p. 9), it seems that slightly over 40% of the Nairobi study population could be classified as ‘poor’. This would suggest that the poor are under-represented in the Nairobi sample, because it is generally assumed that at least 60% of the Nairobi population is living in slums.

- Given their (forced) reliance on private providers, both poor and non-poor households pay very high prices – the median price is US\$ 2.1 per cubic meter.
- All households consume little water – median water use is 30 litres per capita per day (lcd) and the average is 40 lcd.
- Kiosks receive water from the public utility at a subsidised price of US\$ 0.15 per cubic meter but charge their customers, on average, 18 times that price. This subsidy mechanism has therefore not had the desired result of reducing prices for [low-income] customers.
- Overall, neither public utilities nor private providers deliver a desirable water service and the majority of households rate ‘improvement in water supply’ as their top development priority.

In short, the study by Gulyani *et al.* (2005) shows that “the current water supply situation [in the three urban centres] is dismal” (ibid: 27). As far as the urban poor are concerned, the study’s findings are in line with other literature, which shows that “the urban poor are not likely to have a private water connection, are likely to be paying high unit prices for water that they purchase, and are spending a significant amount of time in collecting water” (ibid).

A “citizens’ report card” on urban water, sanitation and solid waste services undertaken in Kenya’s three largest cities – Nairobi, Mombasa and Kisumu – five years later (in 2006) showed similar results. A comparison of the ‘poor’ and the ‘non-poor’ revealed that there are distinct inequities in access to ‘mains connections’ between the poor and non-poor, with the poor reporting lower access. The difference is particularly dramatic in Kisumu, where only 7% of the poor reported having access to mains connections compared to 81% of the non-poor. As such, poor households are much more likely to be using water kiosks as their primary source of water than the non-poor and therefore paying higher prices for lower levels of service. Furthermore, many households are experiencing periods of water scarcity, and the poor are more likely to face scarcity than the non-poor. During such periods, consumers are forced to rely on unsafe and expensive sources of water (Citizen’s Report Card 2007).

The situation presented above is typical of other towns. Until 1985, Nakuru was adequately served with water. In recent years, however, the supply of water has been characterized by chronic shortages, high unaccounted-for-water<sup>19</sup> and poor demand management. The level of unaccounted-for-water is estimated at 19,000 m<sup>3</sup> per day and this is mainly attributed to illegal water consumption and connections, the high number of non-metered connections, shortage of meters, defective meters, leakage of long service lines, and wastage at the council housing estates (communal water closets) (Mwangi 2000; Onjala 2002; Meijer 2005).

---

<sup>19</sup> Unaccounted-for-water is the difference between the quantity of water supplied to the network and the metered quantity of water used by the customers.

Based on fieldwork carried out in 1999-2000, Onjala (2002) compared five Kenyan urban centres – Nairobi, Eldoret, Kisumu, Nakuru and Thika – regarding the performance of their water authorities, measured in terms of service ratio, unaccounted-for-water, metering, and collection efficiency. The service ratio is the percentage of the urban population served by the public water utility and ranged from 52% (Kisumu) to 88% (Nairobi<sup>20</sup>). The percentages of unaccounted-for water were high: 45% (Nakuru) to 82% (Kisumu) of the water produced was ‘lost’ due to the dilapidated state of the pipeline infrastructure and/or illegal connections. As for water metering, only an estimated 25% of the consumers in Nairobi were properly metered. In the other four urban centres, percentages of metered connections were much higher (76-90%). However, the example of Kisumu shows that such figures can be very misleading, because only 32% of all the meters in this town were thought to be working. Moreover, the working meters were not read at a regular basis (despite a meter-reading workforce of no less than 61). Finally, the collection efficiency (percentage of consumers being billed) was low, ranging from 39% (Nairobi, Kisumu) to 76% (Thika). Given that many consumers are not metered, this implies that only a small percentage of the water supplied to consumers is actually paid for. Onjala (2002) also provides these performance indicators for a group of 89 urban centres in Kenya,<sup>21</sup> i.e. including many smaller urban centres. The average service ratio for these 89 towns was 39%, the percentage of unaccounted-for-water stood at 74%, the metering at 28% and the collection efficiency at 41%. Compared with the figures of the five larger towns, this suggests that in smaller urban centres the water situation is even worse (see also UN-HABITAT 2006).

What are the implications of such malfunctioning public urban water systems for the people who live there, and for the poor in particular? Meijer (2005) carried out a survey among households in Nakuru town. Water for individual households came from three sources: the public utility (Nakuru Water and Sanitation Services Company - NAWASSCO) with its piped system, private water vendors and water kiosks. Piped water was provided to many neighbourhoods, but the supply was quite unreliable due to rationing and low pressure in the pipes. Only in the high-income areas and in the municipal council estates, NAWASSCO water was available throughout. The price the consumers were charged was very low and far below ‘recovery costs’; in other words, NAWASSCO water was highly subsidised.

Although the piped water system also reached several low-income areas, many (if not most) poor households could not afford the costs for a connection and/or the landlord was not willing to pay. As a result, many middle- and low-income households had to rely on alternative sources, mainly private water vendors and water kiosks. Water vending by private individuals was quite common in Nakuru, even though it was an illegal activity. However, many poor households could not afford the high prices charged by the private

---

<sup>20</sup> As indicated above, this seems to be an unrealistically high percentage.

<sup>21</sup> As obtained from the Water Development Department of the Ministry of Environment and Natural Resources.

water vendors, which was 10 to 20 times higher (depending on the season) than the tariffs of the NAWASSCO. The recently constructed water kiosks (five, of which three were operational when the study was carried out, and charging a price that was seven times higher than the public utility) were a solution for the poor households.

However, these kiosks received their water from the public system, so the water quality was below standard and they were also subject to rationing (water being available two or three times per week only). Rainwater harvesting was another, fairly common alternative, but only during the rainy season. Especially during the dry season, the (very) poor faced serious problems. They had either to economize on their water consumption or look for alternatives such as “getting water from friends or neighbours, fetching water from leakages or illegal connections from the reticular system, or walk for miles searching for water from (dirty) streams” (Meijer 2005: 61).

A study in Eldoret revealed that most of the sources of domestic water in Langas – an informal settlement – are contaminated with faecal matter and do not meet the WHO guidelines for drinking water quality. This is largely because most people (91%) in Langas use wells as their main source of water, many of which are located near pit latrines (Kimani-Murage & Ngindu 2007).

In short, water supply in urban Kenya is still characterised by low coverage, unreliable service, poor financial management, and neglected operation and maintenance. This has translated into generally inadequate services which are particularly lacking for the urban poor (WASP 2005).

# 3 Water sector reforms in Kenya

## 3.1 Background to the water sector reforms in Kenya

Water governance has been identified as a key issue in water resources management as well as water services delivery, especially in sub-Saharan Africa (Krhoda 2008). The first attempt to ‘reform’ the water sector came as early as 1974 when the first *National Water Master Plan* was launched (Kisima 2007). The primary aim of the Plan was to ensure availability of potable water, at a reasonable distance, to all households by the year 2000 – under the legal framework of Water Act Cap 372. In line with the Plan, the government upgraded the Department of Water Development of the Ministry of Agriculture into a fully fledged Ministry of Water to coordinate actors involved in the provision of water and sanitation services (Mumma 2005; Kisima 2007; Gakuria 2008). However, the Ministry lacked financial resources and the Plan was not sustained. As the needs of the country changed over time, there were various government policy pronouncements. Among them was the *Sessional Paper No. 1 of 1986 on Economic Management for Renewed Growth* from which the government spelt out strategies for provision of basic services and reforms necessary to accelerate economic growth (see Kenya 1986).

In 1998 the government established the National Water Conservation and Pipeline Corporation (NWCPC) to take over the management of government operated water supply systems that could be run on a commercial basis. In addition, large municipalities were allowed to supply water within their areas. Also allowed to operate were a number of donor-funded or supported community self-help water supply projects (Mumma 2005; Ngigi & Macharia 2006). Although nominally autonomous with the opportunity for commercial orientation, NWCPC failed to attain financial viability or to improve provision of water supply as originally envisaged. Neither could the local authorities do any better.

The idea of water sector reforms in Kenya gained momentum (again) in 1999 following the publishing of the *Sessional Paper No 1 of 1999 on National Policy on Water Resources Management and Development*. The paper identified and analyzed the shortcomings in water resources management, water and sewerage development, institutional framework and financing of the water sector (Kenya 1999; Gakuria 2008; Krhoda 2008).<sup>22</sup> In other words, the weaknesses in policy, regulation and service provision in the previous set-up are the main drivers towards water sector reforms. These weaknesses, which the sector reforms intend to address, are summarised in Table 2.

---

<sup>22</sup> Before the reforms, water supply services were under the Ministry of Water, the local authorities, National Water Conservation and Pipeline Corporation (NWCPC), NGOs, self-help groups and CBOs – with no policy and very little coordination (Krhoda 2008).

Table 2: Bottlenecks in the water sector under Water Act Cap 372

Policy formulation	<ul style="list-style-type: none"> <li>• Poor co-ordination in the sector</li> <li>• Poor policy accountability</li> <li>• Poor attention to water resources management</li> </ul>
Regulation	<ul style="list-style-type: none"> <li>• Lack of a clear regulatory framework</li> <li>• Lack of monitoring and evaluation</li> <li>• Poor performance of water-undertakers</li> </ul>
Service provision	<ul style="list-style-type: none"> <li>• Poor management of water resources (quality and quantity)</li> <li>• Failure to attract and retain skilled manpower</li> <li>• Inadequate allocation of resources</li> <li>• Poor, inefficient and unreliable service delivery</li> <li>• Low coverage of water supply and sewerage services</li> <li>• Inability to attract investments</li> <li>• Dilapidated water supply and sewerage infrastructure</li> <li>• High levels of unaccounted-for-water</li> <li>• Low revenue collection, including corruption</li> </ul>

Source: Kenya (2006b)

KIWASCO (2007)<sup>23</sup> acknowledges that in the past years prior to reforms, the water sector has experienced numerous challenges which include:

- Lack of a comprehensive sector policy or strategy to guide sector organization in the performance of their tasks.
- Unclear roles and responsibilities for the sector leading either to duplication of efforts or gaps in some areas.
- Deteriorating infrastructure as a result of poor maintenance and lack of new investments.
- Erratic and insufficient funding by the government and local authorities.
- Increasing pollution of water resources.
- Non-existence of comprehensive legislative framework for managing water.
- Lack of sector policy on water resources management and water supply and sanitation.
- Lack of stakeholder involvement and ownership by consumers and users.

Even then, reforming the water supply and sanitation services in towns may not necessarily be as new as the Water Act 2002. The first efforts started in 1987 with the creation of Urban Water and Sanitation Management Project (UWASAM), supported by the German Development Organisation GTZ. Three municipalities – Kitale, Kericho and Nyahururu – were targeted during the pilot phase (1987-1993) that consisted largely of the establishment of Water and Sanitation Departments (WSDs) in these towns. During the

<sup>23</sup> Kisumu Water and Sewerage Company that is in charge of providing water and sewerage services in Kisumu municipality.

subsequent phase (1994-1996), the project was extended to five more municipalities<sup>24</sup> and aimed at staff training and technology transfer, adopting cost covering tariffs, and attending to the maintenance requirements of the water systems (Onjala 2002).

However, the project was not very successful, as “the WSDs remained unsatisfactory in terms of service quality, water loss targets, revenue collection efficiency, and flexibility in responding to consumer needs for increased demand and expansion of the distribution network” (ibid: 163). Moreover, the WSDs were not permitted to control their own financial affairs; hence the option advanced by the German donor to create water companies, wholly owned by the municipalities but fully responsible for their own (financial) affairs.<sup>25</sup>

Onjala (2002) continues to elaborate that during a workshop in 1995 between the pilot towns, the Ministry of Water and GTZ, it was decided to create Water and Sewerage Companies (WSCs) as a step towards commercialisation. These WSCs were set up along the normal lines of a private company, with shareholders, a Board of Directors and a corporate management team (the latter consisting of a Managing Director, a Commercial Manager and a Technical Manager). The municipal council is the sole owner of the company because it owns all shares,<sup>26</sup> thus exercising control over the company (officially through the annual general meeting). The ultimate authority, however, lies with the Board of Directors, as it “reviews the overall strategy, monitors and controls, considers significant issues and fulfils statutory duties” (ibid: 164). It also appoints the Managing Director. The Board brings together representatives from the municipality, the state and stakeholders,<sup>27</sup> thus giving it a ‘democratic’ outlook. Three municipalities were selected to start with: Eldoret, Nyeri and Nakuru.

Owuor *et al.* (2006) attribute these efforts to the persistent failure and inability of most local authorities in the provision of water supply and sanitation services. Most local authorities faced, and continued to face, a number of persistent problems in water supply and management: frequent water shortages and wastage, high unaccounted-for-water, illegal connections, mismanagement of funds from water bills, non-reading of meters, and non-payment of water, among others.

---

<sup>24</sup> Kisumu, Eldoret, Nakuru, Nanyuki and Thika.

<sup>25</sup> The example being the Chipata Water and Sewerage Company Limited in Zambia.

<sup>26</sup> In practice, the Municipal Council owns all *but three* of the 5,000 shares (99.94%), as the Mayor, the Town Clerk and the Municipal Treasurer all have one share. This was done to satisfy the requirements of Section 4 of the Companies Act (Onjala 2002: 163).

<sup>27</sup> These are: the Mayor, the Town Clerk, the Municipal Treasurer, the Managing Director of the company, representatives from the Ministry of Water and Irrigation and the Ministry of Local Government, and representatives from the business community, women’s organisations and water consumers (Onjala 2002: 164).

### 3.2 The Water Act 2002

With the adoption of the Water Act 2002, all Kenyan municipalities are obliged to reform their water services along ‘business’ lines. The key word is ‘commercialisation’: water is not only a social good but also an economic good and water services have to be managed “in accordance with sound business principles” (Section 57(5)(d) of the Water Act – Kenya 2002). Sections 11(1) and 11(2) of the Act laid the foundation for the *National Water Resources Management Strategy (NWRMS – 2006-2008)* (Kenya 2006a).<sup>28</sup> The overall goal of the Strategy is “to eradicate poverty through the provision of potable water for human consumption and water for productive use” (ibid: 4).

The document specifies ten “specific objectives” (ibid: 4-6, 9-17). Among these are the following:

1. *Equal access to water for all Kenyans.* This shall be recognised as one of the most immediate issues to be addressed. There is need to develop mechanisms that will involve all stakeholders in the planning and development of water resources so as to ensure that every sector, including the poor, has appropriate access to water.
2. *Enhance and strengthen the role of gender.* A gender approach in water resources management is based on the rationale that (...) men and women do not have the same access and control over resources. Gender sensitisation is important at all levels but above all at the decision-making levels. To remove the stereotyping and the regressive notions on women’s involvement in the water sector, it is important that people are sensitised on the different needs, opportunities and constraints of men and women in the water sector.
3. *Manage the demand of water in a sustainable way.* This includes market-based and technology-based strategies. The two major market-based strategies are water pricing (“the user pays” principle, with special treatment of low-income users) and effluent charges (“the polluter pays” principle). One of the technology-based strategies concerns the reduction of unaccounted-for-water.
4. *Private sector financing and self-financing.* This opens the way to participation of the private sector, civil society and communities in the management and development of water resources. Private sector involvement will be largely in the form of public-private partnerships. The companies bring in management expertise, technical skills and credit standing to finance investments. The partnership can be fulfilled in different forms, such as service, management, and lease contracts, concessions and joint ownership.<sup>29</sup> Self-financing includes financing through the money market; a source of funding that has not been extensively used for the water sector development by the government. Government

---

<sup>28</sup> The NWRMS (2006-2008) is also based on three other policy papers: (a) *Sessional Paper No 1 of 1999 on National Policy on Water Resources Management and Development*; (b) the *Economic Recovery for Wealth and Employment Creation Strategy (2003-2007)*; and (c) the *Poverty Reduction Strategy Paper* (see Kenya 2006a: 3).

<sup>29</sup> With this strategy, the government moves a step further than the ‘co-operative model’ and opens the door to real participation of the private sector.



financing should focus on those areas of the water sector that can not be operated on a commercial basis and should support the targeted subsidies of the sector.

5. *Water pricing that recognises water as an economic good.* Social and political considerations outweighed the economic considerations in the setting of tariffs such that water is largely considered a social good. The need to have a different view on the pricing of water becomes urgent, so increasingly, water is now (also) viewed as an economic good. This necessitates the development of appropriate tariff structures and cost recovery measures. In order to gain acceptance, the water pricing system should be developed with the full consultation of water users.

In short, water is considered by the Kenyan government as both a social and an economic good, to be available for all Kenyans and at a price reflecting its market value (cost recovery). The government also recognises that the poor cannot afford to pay such prices, a problem that has to be solved by subsidised rates. Conspicuously missing in the Strategy is any remark on legalisation (and regulation) of small-scale water vendors (individual water sellers, water kiosks, etc.). In as far as water kiosks exist, it concerns partnerships between the municipal authorities and CBOs (and possibly also NGOs). Further, the government stresses the importance of involvement of all stakeholders – including consumers, and women in particular – in the management of the country’s water resources.

In the Strategy, the government accepts the possibility of increased private sector participation, in terms of various types of contracts with private companies. However, up to now reforms in the Kenyan water sector have taken the form of the co-operative model. Therefore, according to Professor George Krhoda,<sup>30</sup> “the right word is not privatisation but commercialisation of the water sector; i.e. the municipal water boards are to behave like companies: increase rates, collect revenues, get loans on the capital market, and have professional managers from the private sector. Nairobi is an example: after a well-paid manager was installed, revenues rose with 100% due to better collection.”

Importantly, “through commercialisation, the Water Act 2002 requires local authorities to form autonomous water and sewerage companies with independent Boards of Directors to provide water services and re-invest (ring-fence) water revenues in service delivery improvement” (Wambua 2004: 7). Thus, Kenya’s water reforms have so far been in line with K’Akumu’s (2004: 217) notion that “in terms of economic theory, privatisation would not necessarily present an advantage over public enterprise, and privatisation is not a pre-condition for efficient management”. Especially with regard to expanding provision for lower-income groups, experiences in water privatisation in low- and middle-income countries have proved disappointing (ibid). Carpenter (2003) suggests that the future of privatisation of water in low-income countries lies with the small-scale providers.

---

<sup>30</sup> Professor George Krhoda, personal communication, 18 June 2007. Professor Krhoda was Permanent Secretary at the Ministry of Water Resources Management and Development during 2003-2005 and in this function he was in charge of the Kenyan water sector reforms.

### 3.3 The institutional set-up of water sector reforms in Kenya

The Water Act 2002, which became effective on 18 March 2003, provides the legal framework for the implementation of the water sector reforms based on the following guiding principles:

- The separation of water resources management from water supply and sewerage services.
- The institutional separation of policy formulation, regulation and service provision functions.<sup>31</sup>
- Decentralisation, participation, autonomy, accountability, efficiency, affordability and sustainability. For example, (-) *decentralisation* of services to the regional and local levels, i.e. to the Water Services Boards, Water Service Providers, Catchment Areas Advisory Committees, and Water Resources Users Associations; (-) *participation* of all the stakeholders; (-) financial and operational *autonomy* of the Water Service Providers; and (-) financial and ecological *sustainability* in the management of water resources.
- Institutionalising support to the financing of water services for under served areas, i.e. the Water Services Trust Fund.
- Establishing mechanism for handling disputes in the water sector, i.e. the Water Appeal Board.

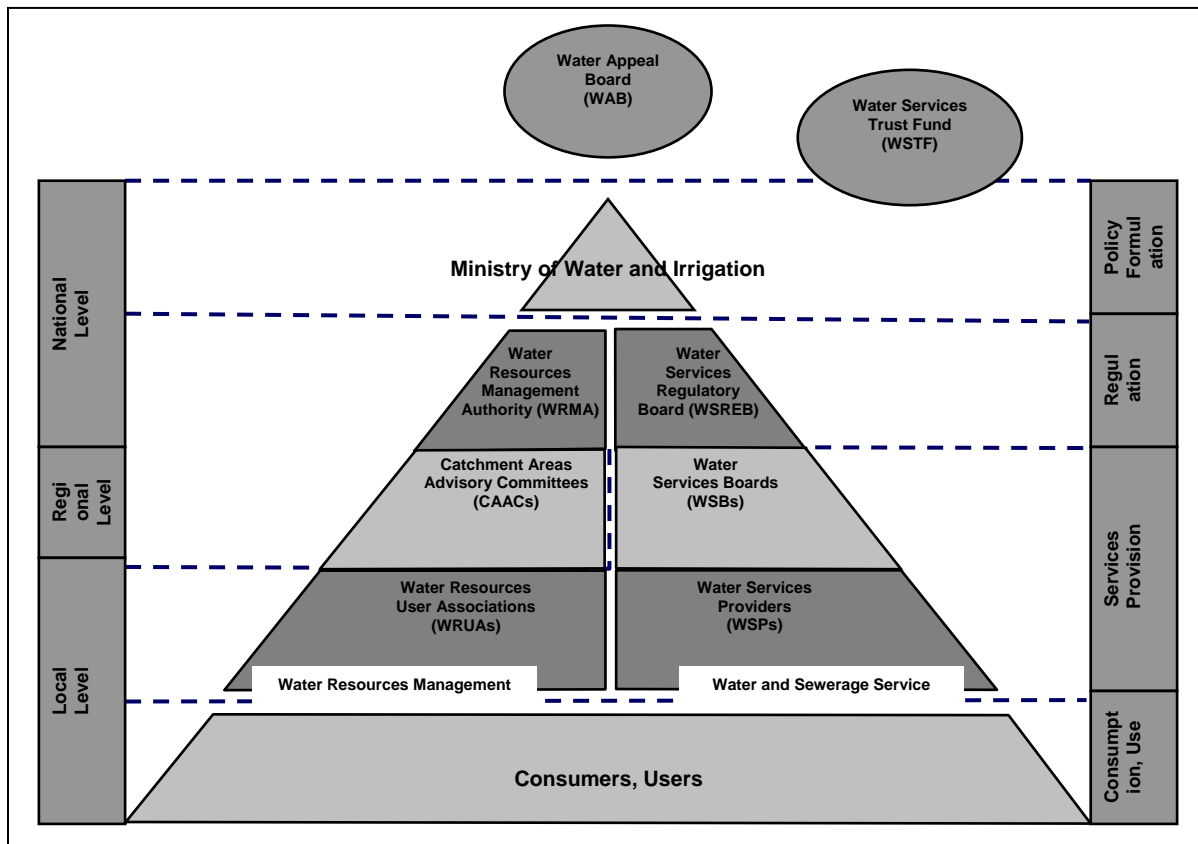
Figure 1 presents the ‘famous triangle’ summarising the institutional set-up of water sector reforms under the Water Act 2002 while Table 3 is a summary of the roles and responsibilities of institutions in the sector reforms. As said before, the reforms aim at addressing the weaknesses that face(d) the water sector by separating policy functions from regulation and services delivery. It further separates service delivery functions into asset holding (ownership) and investment and direct water and sewerage services provision.

The Act provides for the establishment of 3 levels of institutions for the provision of water supply and sewerage services: Water Services Regulatory Board, Water Services Boards, and Water Service Providers. On the other hand, the management of water resources is under Water Resources Management Authority and Water Resources User Associations. Water Resources Management Authority executes its mandate through the Catchment Areas Advisory Committees whose membership consists of government officials, stakeholders and the community. Two of these institutions – Water Services Boards and Water Service Providers – are further discussed below as they are directly concerned with the provision of water supply in towns.

---

<sup>31</sup> The Ministry of Water and Irrigation transferred functions, responsibilities, assets and equipments to these new institutions with effect from 1 July 2005.

Figure 1: The institutional set-up of water sector reforms under Water Act 2002



Source: MWI (2005); Kenya (2006b).

#### *Expected outcomes of water sector reforms*

It is expected that the clear roles and responsibilities defined to sector actors will result in improved water sector performance. At the *policy formulation level* the sector reforms are expected to improve coordination in the water sector, enhance clear policy accountability, and give more attention to water resources management. At the *regulation level* the sector reforms are expected to set in place a clear regulatory framework, enhance monitoring and evaluation, and improve performance of water undertakers. Lastly, the expected outcomes at the *service provision level* include improved management of water resources (quantity and quality), ability to attract and retain skilled manpower, improved and efficient service delivery, increased coverage, ability to attract investments, and improved infrastructure.<sup>32</sup>

<sup>32</sup> See Mumma (2005) for a legal interpretation and critical analysis of the Water Act 2002.

Table 3: Roles and responsibilities of institutions in the sector reforms

<b>Institution</b>	<b>Roles and responsibilities</b>
Ministry of Water and Irrigation	Policy formulation, sector coordination, monitoring, financing and supervision.
Water Resources Management Authority	Regulation of water resources management through (-) developing principles, guidelines and procedures for the allocation of water resources; (-) assessing water resources potential; (-) determining and monitoring permits for water use; (-) regulating and protecting water resources; (-) determining water user charges and fees from source; and (-) maintaining a database on water resources.
Water Services Regulatory Board	Regulation of water and sewerage services through (-) issuance and monitoring of licenses for the provision of water; (-) determining and monitoring standards for the provision of water services to consumers; (-) providing procedures for handling and dealing with complaints from consumers; and (-) developing tariff guidelines for the provision of water services.
Catchment Areas Advisory Committees	Advise the Water Resources Management Authority on issues concerning management of water resources at the catchment level.
Water Services Boards	Responsible for the efficient and economical provision of water services within their area of jurisdiction through signing of service provision agreements with Water Service Providers.
Water Resources Users Associations	Provides a forum for conflict resolution and cooperative management of water resources in designated catchment areas. In other words, it enables the public and communities to participate in managing water resources within their catchment areas.
Water Service Providers	Direct provision of water and sewerage services as agents of Water Services Boards.
Water Appeal Board	Handle disputes in the water sector.
Water Services Trust	Support financing of pro-poor water services in unserved areas.
National Water Conservation and Pipeline Corporation	Bulk water supply, dam construction, flood control, land drainage, ground water development and Ministry of Water and Irrigation reserve Water Service Provider.
Kenya Water Institute	Training and research

Source: MWI (2005).

#### *Water Services Boards (WSBs)*

There are seven WSBs in Kenya: Athi Water Services Board, Tana Water Services Board, Northern Water Services Board, Coast Water Services Board, Rift Valley Water Services Board, Lake Victoria North Water Services Board, and Lake Victoria South Water Services Board (see Table 4 and Map 1).<sup>33</sup> WSBs were created to take full responsibility for the provision of water services through signing of Service Provision

<sup>33</sup> There are unconfirmed reports that another WSB was formed in the last quarter of 2008.

Agreements with Water Service Providers. According to the Act, they are the legal owners of water and sewerage assets in their areas of jurisdiction. As such, they are responsible for the planning, development and expansion of water and sewerage services. They contract water and sewerage services provision to Water Service Providers and monitor service delivery as well as having powers to lease assets, from their owners, for water service provision (WASREB 2008: 2). According to Krhoda (2008), the WSBs have the following functions:

- Capacity building of communities to start water provision as a business.
- Carrying out competitive selection of service providers.
- Drawing up of service provision agreements.
- Clustering of the spaghetti lines<sup>34</sup> to known off-take and metered points to eliminate water losses through illegal connections.
- Elimination of cartels by setting tariffs – regulation.
- Ensuring equitable distribution of water through zoning of community service providers and enforcing service standards as stipulated in the service provision agreements.

*Table 4: Some characteristics of Water Services Boards in Kenya*

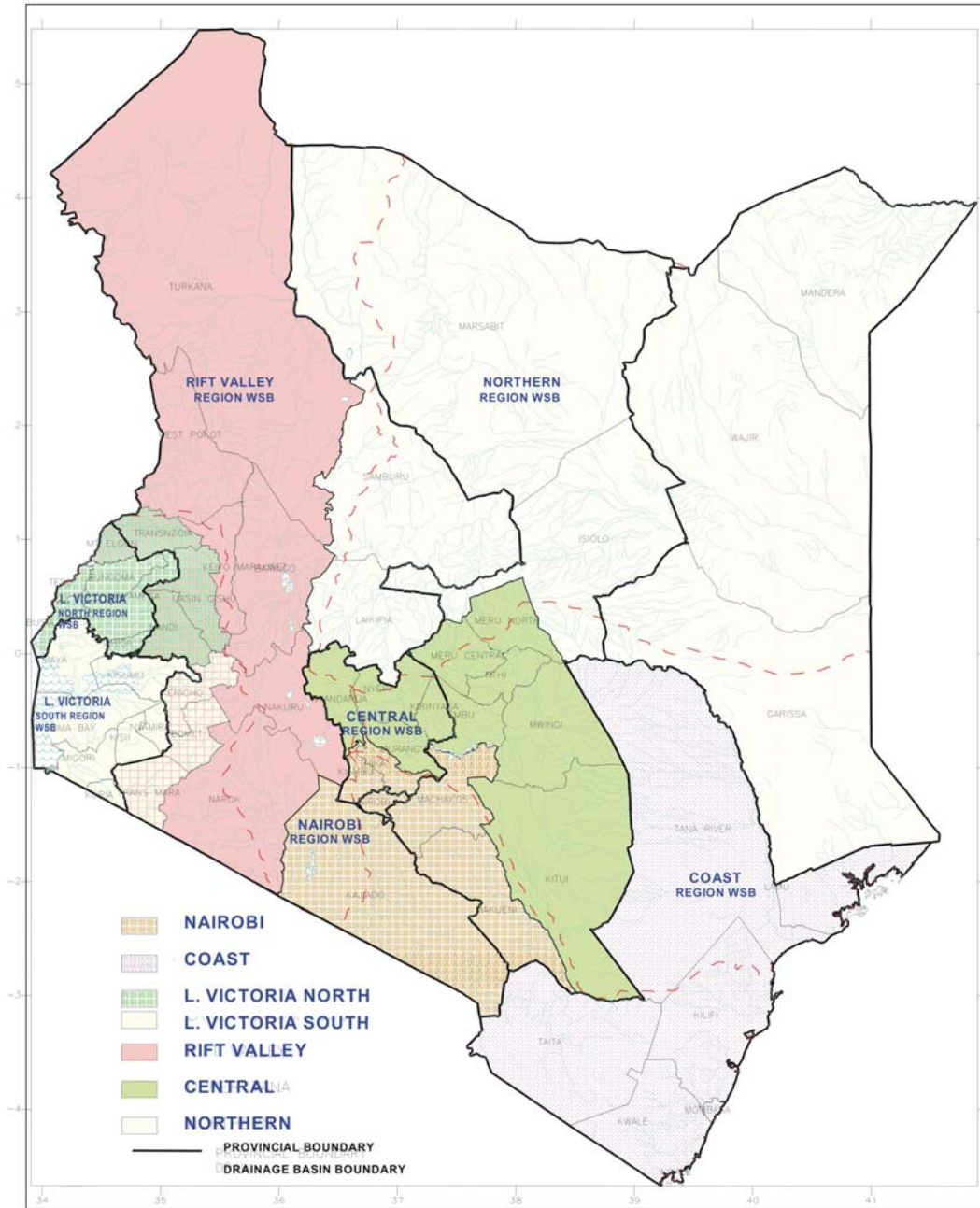
<b>Service board</b>	<b>Area (in km<sup>2</sup>)</b>	<b>Population (2006)</b>	<b>Districts covered</b>
Athi Water Services Board	40,130	6,804,386	Nairobi, Kiambu, Thika, Machakos, Kajjado and Makeni
Tana Water Services Board	52,777	5,161,225	Nyeri, Muranga, Maragua, Kirinyaga, Embu, Meru Central, Meru South, Meru North, Mbeere, Tharaka, Mwingi and Kitui
Northern Water Services Board	232,737	2,059,283	Isiolo, Moyale, Laikipia, Samburu, Marsabit, Garissa, Ijara, Wajir and Mandera
Coast Water Services Board	82,816	2,975,387	Kwale, Taita Taveta, Kilifi, Malindi, Mombasa, Lamu and Tana River
Rift Valley Water Services Board	113,771	4,309,551	Narok, Koibatek, Keiyo, West Pokot, Turkana, Nakuru, Nyandarua, Baringo and Marakwet
Lake Victoria North Water Services Board	16,977	6,556,763	Vihiga, Kakamega, Lugari, Butere, Mumias, Busia, Teso, Bungoma, Mt. Elgon, Trans Nzoia, Uasin Gishu and Samburu
Lake Victoria South Water Services Board	20,340	6,868,876	Nyando, Siaya, Bondo, Homa Bay, Migori, Suba, Kuria, Kisii, Nyamira, Gucha, Kericho, Kisumu, Bomet, Transmara, Bureti, North Nandi, and South Nandi

*Source: WASREB (2008: 2, Table 1.1).*

<sup>34</sup> Multiple consumer connections not connected to the existing master operator line.

Map 1: Water Services Boards in Kenya

### WATER SERVICES BOARDS



### *Water Service Providers (WSPs)*

The actual water service delivery to the consumers is done by the WSPs. The Act requires that a Water Services Board enters into a contract with a WSP through signing the Service Provision Agreement. In other words, the direct service providers are WSPs and not Water Services Boards. There are three categories of WSPs; (1) urban water service providers, which are incorporated as limited liability companies owned by one or more local authorities; (2) community water supplies which are managed by WSPs but registered as Water Resources User Associations by the Registrar of Societies; and (3) private WSPs which include NGOs and private organizations (Kisima 2008).

Under the Act, autonomous water and sanitation (or sewerage) companies – WASCOs – are given the responsibility to provide water and sanitation services within urban areas. The lead partners in this venture are the local authorities. The WASCOs operate within the jurisdiction and oversight of the Water Services Boards, instrumental in their registration and incorporation. The WASCOs are expected to be managed on commercial principles, including signing performance contracts, cost-recovery, and sustainability within a context of efficiency, operational and financial autonomy, accountability and strategic, but minor, investments. They are supposed to improve access to water and sanitation services for poverty reduction and sustainable development. In fact the core mandate of the WASCOs is to provide effective, efficient, adequate and safe water to customers and to collect, treat and dispose sewage in a safe and environmentally friendly manner.

### 3.4 Two examples

#### *NYEWASCO: An example of a 'success' story<sup>35</sup>*

Nyeri Water and Sewerage Company (NYEWASCO) is a shining example of how successful privatisation of water and sanitation services can be in Kenya's local authorities. In 1982, the Municipal Council of Nyeri took over the provision of water services from the central government. Because of its inadequacy, a Water and Sewerage Department was created in 1995. This did not make things better, however, mainly because water revenues went to the municipal council treasury and were often diverted to non-water areas. As a result, burst pipes could not be repaired and water services could not be extended to match population growth. With support from GTZ, the Nyeri Water and Sewerage Company was created as an independent company in 1997. With GTZ's technical inputs and the willingness of the Municipal Council of Nyeri to free its grip on the water department,<sup>36</sup> NYEWASCO started its operations the following year.

---

<sup>35</sup> This section is based on Wambua (2004: 12-13); UN-HABITAT (2006: 80) and Owuor *et al.* (2006: 33-35).

<sup>36</sup> Under the agreement between the municipal council and NYEWASCO, relations between the two parties were regulated, the whole water infrastructure valued at more than 500 million Kenyan shillings was passed on to NYEWASCO, and it absorbed all staff from the municipal council's water department.



Photo 1: Nyeri Water and Sewerage Company Offices



Photo: Sam Owuor

By 2003, even before the enforcement of the Water Act 2002, some of NYEWASCO's accomplishments were:

- Being run on strict corporate lines with revenue from water ploughed back into improving water and sewerage provision.
- Increasing the number of registered connections with 26% between December 1999 and March 2003 as well as increasing the number of metered connections.
- Substantially improving the billing and revenue collection, i.e. the efficiency of revenue collection has risen to 98% (in 2006) from the previous 60% when the company took over the management of water services in the municipality.
- Customer satisfaction with the quality of the water and with the company's customer care.
- Increasing the Kamakwa water treatment works production capacity by 50%.
- Reduced complaints about water turbidity.
- Prompt action to and repair of reported water pipe bursts and other breakages.
- Establishment of water kiosks in the low-income settlements of the municipality.
- Reducing water losses from 55% to about 40%.

However, according to Wambua (2004: 13), the company still “needs to develop an elaborate conservation plan for sustainable management of water resources”. That does not



mean that the company is not pursuing environmentally-conscious undertaking. For instance, it changed its main service of water from Nairobi River – which was drying up because of farming activities upstream – to Itooni River, hence saving the river that flows all the way to the Kenyan capital.

NYEWASCO is a success story because of four main reasons:

1. The company has received a lot of support from the municipal council.
2. The company functions professionally and autonomously, without political interference.
3. The company recognises the need to equip its staff with the necessary skills to perform well. As such, the company has trained all the staff they inherited from the council.
4. The company recognises the needs of the population. They involve the community in their activities to provide them with a sense of ownership.

NYEWASCO has effectively demonstrated among others that:

- Team work and cooperation among civic leaders, chief officers, the private sector and the general public are cornerstones to sustainable service delivery with a human face.
- Good governance (i.e. transparency and accountability) is a key component to pro-poor service delivery.
- Improved water and sanitation services and predictable delivery system can be achieved in Kenyan local authorities.
- Social responsibility is important in any organisation.
- Pro-poor programmes are compatible with commercialisation of basic services.
- Improved communication does lead to sustained support from customers, suppliers and others.

*NYAWASCO: A case of 'exemplary' performance of a small Water Service Provider*<sup>37</sup>

Nyahururu Water and Sewerage Company (NYAWASCO) has not only emerged (in 2008) as the best performing Water Service Provider in the category of small Water Service Providers but has also emerged as the best overall company nationally.<sup>38</sup> The company's exemplary performance is summarised in the following quote:

“Nyahururu district hospital used to witness at least thirty cases of water borne cholera every week. Commuters passing through Nyahururu were always being reminded not to take tap water while in the town. That is now a thing of the past thanks to Nyahururu Water and Sewerage Company which has revolutionized the quality of services being received by the customers” (WASREB 2008: 39).

---

<sup>37</sup> This section is quoted from WASREB (2008: 39-40).

<sup>38</sup> See WASREB (2008) for details of rankings and analysis.

According to the analysis, WASREB (ibid) attributes this exemplary performance to a number of factors, among them:

- Improvement in the quality of services being rendered to the customers.
- Hard work, discipline, full commitment, and proactive approach in achieving the objectives set by the company.
- Good corporate governance and principle of inclusivity.
- Increased coverage, pro-poor focus, longer hours of supply, and guaranteed quality of water through scheduled quality checks.
- Customer satisfaction through improved billing, communication and swift action to reported problems and complaints.
- Maintaining optimal staff ratios.
- Good will from the customers, the Board and other stakeholders due to their growing confidence on the company.
- High revenue collection efficiency.

## 4 Water sector interventions in urban Kenya

Besides the water sector reforms laid down by the government in the Water Act 2002 and the *National Water Resources Management Strategy 2006-2008*, sector interventions by NGOs and international donors are also taking place in both rural and urban Kenya. Perhaps the most far-fetching intervention project in urban Kenya is the Lake Victoria Region Water and Sanitation Initiative being implemented by UN-HABITAT. Generally, water sector interventions can take the form of local (intra-urban) initiatives, for instance to establish a water kiosk in a low-income neighbourhood with the (financial) assistance of an NGO. But interventions can also target a whole municipality or even a whole region, for instance the rehabilitation and/or improvement of the water (and sanitation) infrastructure.

Kenya has a long record of cooperation with development partners in the water sector including Swedish International Development Agency (SIDA), Danish International Development Agency (DANIDA), World Bank, German Development Agency (KfW/GTZ), French Agency for Development (AFD), United Nations Children's Fund (UNICEF), Japan International Cooperation Agency (JICA), Department for International Development (DFID), African Development Bank (ADB), Finnish Development Agency (FINNIDA), and the European Union (EU), among others. Currently, International Development agency (IDA) and French Agency for Development (AFD) are interested in supporting commercialisation of water utilities serving main urban centres (Nairobi and Mombasa) while the German cooperation (KfW) is focusing on commercialisation of water utilities in medium-sized urban centres. Japan is interested in supporting smaller urban centres and rural areas, Denmark, Finland and Belgium aim to cooperate on rural water supply, and the African Development Bank (ADB) is financing projects in urban areas (Kenya 2006b: 193).

### 4.1 Two examples

#### *Rift Valley Water Supply and Sanitation Project*

The Rift Valley Water Supply and Sanitation Project is largely funded by the African Development Fund. The objective of the project is “to improve water supply and sanitation services in urban, peri-urban and rural communities within the service area of the Rift Valley Water Services Board” (Meijer 2005: 73). The project has two main components. The first one concerns the improvement of the water and sanitation infrastructure. For instance, water availability in Nakuru municipality will be improved from 6 to 24 hours a day, while sanitation services will be improved in Naivasha, Gilgil, Molo, Njoro and Elburgon. The second component concerns institutional support for the Rift Valley Water Services Board and the Nakuru Water and Sanitation Services Company, leading, amongst others, to regular billing, more efficient revenue collection (from about 60% to 90%), a reduction of the level of unaccounted-for-water from the current 70% to 25%, and cost recovery charges in place by project completion in 2008.

*Lake Victoria Region Water and Sanitation (LVWATSAN) Initiative*

UN-HABITAT, in association with the governments of Kenya, Tanzania and Uganda and with financial support from the government of the Netherlands, is currently implementing a major initiative (herein referred to as programme) to address the water and sanitation needs of the people, particularly the poor, in the secondary towns around Lake Victoria.<sup>39</sup> The programme, which involves a mix of investments in the rehabilitation of existing infrastructure and capacity building at local level, is designed to assist the people in the Lake Victoria towns to meet the water and sanitation related MDGs (UN-HABITAT 2007; 2008). In addition, the programme was designed to contribute to equitable and sustainable economic, social and environmental development of the Lake Victoria region, to the benefit of the inhabitants. The specific objectives of the programme (UN-HABITAT 2008) are:

1. Promote pro-poor water and sanitation investments in the secondary urban centres in the Lake Victoria region.
2. Support development of institutional and human resource capacities at local and regional levels for the sustainable delivery of improved water and sanitation services.
3. Facilitate realisation of upstream water sector reforms at the local level in the participating urban centres.
4. Reduce the environmental impact of urbanisation in the Lake Victoria basin.

The programme is being implemented in two phases. The first phase concerns short-term interventions for immediate impact, including capacity building and training, while the second phase emphasizes long-term interventions.<sup>40</sup> Seven towns have been selected for the first phase of the project: Homa-Bay and Kisii in Kenya, Masaka and Kyotera in Uganda, Bukoba and Muleba in Tanzania, and the border town of Mutukula (ibid).<sup>41</sup> The first phase, which focused on rehabilitation of water supply sources, extending water supplies to the poor areas and constructing sanitation facilities, was designed to have an immediate impact in improving water and sanitation services (UN-HABITAT 2007). It also includes supporting the programme towns to enhance efficiency in the collection and disposal of solid waste.

In Kisii and Homa Bay, four contracts totalling US\$ 617,000 have been signed for the supply, delivery and installation of pipelines and meters and solid waste handling equipments. The contract also includes rehabilitation of treatment works, construction of public water kiosks and construction of integrated sanitation facilities in schools and public institutions (ibid). Table 5 presents the successfully completed projects in Homa Bay and Kisii.

---

<sup>39</sup> Some of the information presented in this section is from one of the (undated) LVWATSAN Initiative (information) pamphlet.

<sup>40</sup> The first phase of these interventions was scheduled to be completed in December 2008.

<sup>41</sup> Long-term activities in phase 2 shall be extended to include Bondo in Kenya, Bunda in Tanzania and Bugembe in Uganda (UN-HABITAT 2008).

Table 5: The LVWATSAN's successfully completed projects in Homa Bay and Kisii

Homa Bay	Kisii
<ul style="list-style-type: none"> <li>• Rehabilitation of both old and new intakes and installation of new pumps.</li> <li>• Rehabilitation of the treatment works at Makongeni.</li> <li>• Laying of approximately 1 km of PVC pipeline.</li> <li>• Installation of 10 tipping bins and 4 waste transfer stations.</li> <li>• Construction of 10 VIP latrines<sup>42</sup> in selected schools and public area.</li> <li>• Construction of a number of water kiosks in low-income settlements.</li> </ul>	<ul style="list-style-type: none"> <li>• Rehabilitation of the intake works at Kegati.</li> <li>• Laying of 10 km distribution pipeline.</li> <li>• Construction of 10 public water kiosks.</li> <li>• Construction of 10 VIP latrines.</li> </ul>

Source: UN-HABITAT (2008)

With a clear pro-poor focus, the LVWATSAN programme is intended to generate desirable outcomes with a lasting impact on the lives of the poor. These outcomes include improved access to water, sanitation, solid waste management and drainage services in the project areas; functional and gender focused strategies for sustainable management and monitoring of rehabilitated systems; institutionalised capacity building; and a contribution to the reduction in pollutant loads entering Lake Victoria (UN-HABITAT 2007; 2008). It is also hoped that the programme towns will provide a model for national authorities and donors, including international financing institutions, to replicate in other towns in the region (UN-HABITAT 2008).<sup>43</sup>

To encourage ownership at the local level, the LVWATSAN programme is working closely with the so-called multi-stakeholder forums. These forums bring together all possible stakeholders, such as representatives of local authorities; water and sanitation service providers; NGOs, CBOs and Faith Based Organisation (FBOs); private sector; water vendor associations; media; and poor women and men, the elderly, youth, orphans and other vulnerable groups, among others. The multi-stakeholder forums facilitate the active participation of a broad range of stakeholders at town level, in the design and implementation of the programme interventions. The specific objectives of the multi-stakeholder forums include:

- To incorporate the voices of the poor communities with regard to their priorities and preferences into decision-making process.

<sup>42</sup> Ventilated, improved pit latrines.

<sup>43</sup> The programme will be replicated in 15 additional towns in 5 countries with Rwanda and Burundi being included as new countries (UN-HABITAT 2008).

- To promote partnerships between the stakeholders and to ensure accountability and transparency.
- To discuss and determine local capacity building requirements, technological options and service levels that the poor can afford and are willing to pay for.
- To develop an income-generation strategy for poor communities through the provision of services developed by the programme.
- To build consensus on locational and service priorities requiring programme intervention.
- To develop local working plans, and establish modalities for stakeholder involvement in monitoring and evaluation.

The rationale for setting up these forums is to ensure that the interventions under the LVWATSAN programme are developed and implemented in a manner that is informed by and responds to the needs of the local stakeholders. Through regular communication and feedback, the forums also ensure that stakeholders understand and support the achievement of the goals and objectives of the programme.

# 5 Report of a preliminary tour of five towns

The information presented in this section is based on a preliminary tour of five towns in Kenya, namely Eldoret, Kisumu, Homa Bay, Kisii and Nakuru (see Map 2). These towns were selected on the basis of their different stages in water reforms and the water sector interventions being implemented by the UN-HABITAT's Lake Victoria Region Water and Sanitation Initiative, particularly in Homa Bay and Kisii. The objective was to get an impression of the state of affairs regarding water sector reforms and interventions in urban Kenya and its impact on the low-income parts of the local population. The preliminary tour involved interviews with *only a few officials* from the water and sanitation companies and other stakeholders in each town.<sup>44</sup> As such, we were not able to always cross-check some of the data. The interviews, conducted during the month of October 2008, covered six broad issues: (1) organization and management; (2) network coverage; (3) unaccounted-for-water; (4) metering, billing and revenue; (5) pro-poor programmes; and (6) water sector interventions. The interviews were complemented with a guided tour of selected sections and projects in the municipalities.

## 5.1 Eldoret

Eldoret is located in the Rift Valley Province, about 330 km north-west of Nairobi. Eldoret, the administrative headquarters of Uasin Gishu District, is one of the fastest growing towns in Kenya with a population of about 200,000 people (1999 census). The notable low-income neighbourhoods in the municipality are Langas, Huruma, and some parts of Kamukunji. Eldoret Water and Sanitation Company (ELDOWAS) is mandated to supply water and sanitation services in the municipality. The residents also depend on other alternative sources of water, namely shallow wells and roof catchment. The municipality does not have any NGO, CBO or agency actively involved in water interventions at the local level. However, ELDOWAS may once-in-a-while depend on a Dutch NGO, SNV, for informed research. In 2007, for example, SNV conducted a survey of water vendors in the town and the results shared with ELDOWAS.

### 5.1.1 Eldoret Water and Sanitation Company (ELDOWAS)

#### *Organization and management*

ELDOWAS was incorporated as a company in 1997 and started operations in 1999. Before that, water supply services in Eldoret were undertaken by Eldoret Municipal Council's Department of Water and Sewerage. In line with the Water Act 2002, ELDOWAS was mandated to operate commercially, with more focus on customers. The revenue from the sale of water was supposed to be ploughed back to maintain and expand the existing water supply system.

---

<sup>44</sup> See acknowledgement.

Map 2: Location of the five towns



Whereas ELDOWAS is on paper a private company, it is 100% publicly owned by the Eldoret Municipal Council – but with its operations wholly independent. The company is run by a Board of Directors in which various stakeholders are represented, such as the Kenya Association of Manufacturers, women’s groups, Moi University<sup>45</sup>, the Chamber of Commerce and Industry, the Law Society of Kenya as well as three council representatives, i.e. the Mayor, the Town Clerk and the Treasurer.

Despite the ownership and strong representation from the municipal council, ELDOWAS is answerable to Lake Victoria North Water Services Board (LVNWSB)<sup>46</sup> and not to the municipal council as it were before the establishment of Water Services Boards under the Water Act 2002. According to the District Water Officer, Eldoret<sup>47</sup>, the influence of Eldoret municipality in the day-to-day operations of ELDOWAS “is quite minimal nowadays”. For any new investment, approval from the LVNWSB is required, implying more bureaucracy that it was intended to reduce. Projects are done on a consultancy basis through competitive bidding. Furthermore, ELDOWAS cannot negotiate for a bank loan on its own.

#### *Coverage of water supply network*

While the company’s operations are strictly supposed to be within Eldoret municipality, ELDOWAS was allowed to extend its services 10 km beyond the municipality boundaries. As much as about 60% of Eldoret municipality is covered by the water supply network, the coverage decreases away from the central business district, which is fairly well connected. In the low-income settlements, it is a mixed scenario: some parts are (partially or well) covered, while others are not covered at all. For example in Langas, one of the largest informal settlements in Eldoret, the need for household connections has increased to the extent that the existing water kiosks have been rendered functionally redundant.<sup>48</sup>

Before extending piped water supply connection to this area, the residents were largely served by 10 water kiosks provided by ELDOWAS but given to interest groups or individuals to operate. Only one of them, largely surviving from car washing activities, was operational at the time of this interview<sup>49</sup>. The gentleman who operates this kiosk charged Ksh 50 for every car washed and Ksh 3 for a 20-litre container of water for individuals. He explained that he was able to survive and make his livelihood through this business. He was billed on a monthly basis according to the amount of water consumed. However, since these water kiosks were constructed on permanent structures they are impossible to relocate to other needy areas. ELDOWAS is now planning to (in

---

<sup>45</sup> Moi University is currently the institutional representative in the Board.

<sup>46</sup> ELDOWAS is one of the water service providers that falls under LVNWSB.

<sup>47</sup> Interview, 9 October 2008.

<sup>48</sup> This does not imply that every plot or household has an individual connection.

<sup>49</sup> 10 October 2008.

future) construct portable prefabricated water kiosks, which are easier to move to another location when the situation of piped water connections improves in an area of operation.

Despite being relatively well connected with water – except for the recently settled Kasarani area – Langas suffers from lack of sewer facilities. As such, the focus in this settlement and in other parts of Eldoret is the provision of on-site sanitation facilities and extending sewer connections to areas that do not have one. Unlike water supply, many parts of the municipality are not connected to the main sewer line. According to the District Water Officer, Eldoret<sup>50</sup>, piped water supply in Eldoret is generally reliable.<sup>51</sup> The tariff is relatively low, water pressure is high and water is supplied through gravity flow.<sup>52</sup> Although roof catchment is not common at household level, it is encouraged for institutions. Whereas some residents may be using shallow wells, the quality of water is questionable during the rainy season when overflow from nearby pit latrines may contaminate water in the shallow wells.

#### *Unaccounted-for-water*

The daily water supply is about 30,000 m<sup>3</sup>. The level of unaccounted-for-water varies monthly and is currently estimated to be 30-40%. This is slightly higher than the tolerated set guidelines of up to 25%. The unaccounted-for-water is a result of both technical and commercial losses. Technical losses occur through leakages and pipe bursts while commercial losses occur through inefficient, incorrect and false meter readings and billing. As a result, unaccounted-for-water is not only prevalent in low-income settlements where the likelihood of commercial losses is high, but also in the central business district where ageing pipes are common. Some of the pipes date back to the 1920s.

#### *Metering, billing and revenue*

Although revenue collected from water is still low, about 70% of the total connections pay their bills. The rates depend on the amount of water consumed by a customer. For domestic consumption, consumers are charged Ksh 110 for up to 10 m<sup>3</sup> of water consumed. The tariff structure is progressive – the more water one consumes, the more one pays. Even then, ELDOWAS water kiosks have subsidized tariffs. ELDOWAS water kiosks charge Ksh 0.50 (fifty cents) for a 20-litre container of water while individually run water kiosks charge Ksh 5 for the same amount of water.

---

<sup>50</sup> Interview, 9 October 2008.

<sup>51</sup> ELDOWAS is the first and so far the only Water Service Provider to get an ISO 9001:2000 certification for being in the right path of achieving its aim of providing quality drinking water and sewer disposal services (LVNWSB 2008).

<sup>52</sup> ELDOWAS is a “gravity scheme” as opposed to a “pumping scheme” which is relatively expensive.

### *Pro-poor programmes*

According to the Service Area Manager of ELDOWAS<sup>53</sup>, pro-poor programme in water and sanitation is a ministerial directive in favour of the poor. There is no policy document detailing what it is all about. It is therefore not clear how to jump-start a pro-poor project. The mandate is left to the individual water company to decide on the most appropriate pro-poor actions they may wish to undertake. In Eldoret, the pro-poor programme in water and sanitation is geared towards improving the water and sanitation situation in the low-income settlements. Through the sector investment planning, ELDOWAS is carrying out an inventory of the status of water and sanitation situation and toilet facilities in the low-income settlements.

The pro-poor programme is set to have both short- and long-term interventions. Short-term interventions are targeted at sensitisation campaigns<sup>54</sup> to encourage the utilisation of existing main sewer connection lines. Two schools (Huruma Primary and Seminary Secondary) have been identified in the short-term intervention, namely to be connected to the main sewer line. Part of the campaign involves a door-to-door sensitisation through Area Development Committees and two youth groups, namely Planet Care and Creative Arts for Change. Long-term interventions, which require heavy financial outlay, are geared towards extension of water supply facilities and services. Part of the long-term intervention is to extend water supply to Kijiji, upper parts of Kamukunji, lower parts of Huruma (which already have shallow wells) and to install prefabricated water kiosks in Kampi Somali.

As part of the pro-poor programme, sanitation services were, in 2004, extended to Huruma and Kamukunji. However, despite the fact that every plot has a provision for a sewer connection, its utilization is still quite low. This is largely because the provision for a sewer connection needs to be accompanied by an appropriate sanitation system, but majority of the landlords in these two neighbourhoods are not keen on upgrading, converting or changing their existing sanitation systems (pit latrines) to water borne toilets. While this may have cost implications, the Service Area Manager of ELDOWAS<sup>55</sup> explained that “increased sewer utilisation would require an attitude change among the residents and landlords. Specifically, landlords have not been keen on sewer provision because they stay away from their rental estates”.

---

<sup>53</sup> Interview, 10 October 2008.

<sup>54</sup> A sensitization campaign was done in Huruma Primary School grounds a day after this interview (10 October 2008). The campaign, whose theme was “sustainable utilisation of water and sewerage services”, was aimed at sensitising the residents on commercialisation of water services, how to handle water related complaints and the location of water supply facilities.

<sup>55</sup> Interview, 10 October 2008.

## 5.2 Kisumu

Kisumu covers an area of 297 km<sup>2</sup> with a population of about 500,000 people. It is the third largest urban centre in Kenya after Nairobi and Mombasa. It is located in the western part of Kenya near Lake Victoria. A large proportion of the municipality's population is concentrated in the low-income settlements of Manyatta, Obunga, Nyalenda, Nyawita, Migosi, Bandani, Otonglo and Nyamasaria. Kisumu Water and Sewerage Company (KIWASCO) is mandated to provide water and sewerage services to the municipality. However, in one of the low-income estates (Manyatta B), a community project running in the same principles as KIWASCO but on a much smaller scale is supplying water to the people living around its water supply – a borehole. This Wandiege Community Water Supply Project is wholly owned, operated and managed by the community.<sup>56</sup> Even with the existence of KIWASCO and Wandiege, Kisumu residents rely on alternative sources of water such as boreholes, river water, lake water, shallow wells and handcarts (water vendors). In terms of interventions, it important to note that there are a number of NGOs in Kisumu municipality working in various sectors. The active NGOs in water and sanitation include Sustainable Aid in Africa International (SANA)<sup>57</sup>, Africa Now, World Vision and CARE Kenya.

### 5.2.1 Kisumu Water and Sewerage Company (KIWASCO)

#### *Organization and management*

KIWASCO was set up in 2001, prior to the Water Act 2002, and became operational in July 2003 as a limited company after the transformation of the Water and Sewerage Department of the Kisumu Municipal Council.<sup>58</sup> KIWASCO's mandate is to effectively and efficiently provide adequate water to customers and to collect, treat and dispose sewerage in a safe and environment-friendly manner. The company is fully owned by the Kisumu Municipal Council. It has a Board of Directors representing council interest, the private sector and the government (Ministries of finance, water and local government). The company is headed by a Managing Director and four 'supporting directors' in charge of finance, commercial, human resources and technical departments, respectively – all of whom were recruited competitively. The Board discharges its duties through audit, human resources and legal affairs, technical and finance committees. According to the Municipal Engineer of Kisumu Municipal Council<sup>59</sup>, KIWASCO is 100% owned by the municipal council, who nominates the company's directors and sets the policy agenda. In addition to that, the company's operations are checked by a community water chair appointed by the councillors. S/he is supposed to represent the people's voice and the political interests of the council.

---

<sup>56</sup> Wandiege Community Water Supply Project is discussed below.

<sup>57</sup> SANA is discussed below.

<sup>58</sup> During this transformation, KIWASCO inherited the staff of Kisumu Municipal Council's Water and Sewerage Department.

<sup>59</sup> Interview, 13 October 2008.

### *Coverage of water supply network*

KIWASCO is mandated to provide water and sewerage services to Kisumu municipality but only 32-35% of the total population is served by the water network (i.e. 162,000 people). There are about 9,000 active water connections and 5,400 sewerage connections covering about 40% of the municipality. Most of these connections are concentrated in the central business district and Milimani (the high-income part of the municipality). These two areas also get water throughout the week unlike in other parts of the municipality where water rationing takes place.

KIWASCO produces about 18,000 m<sup>3</sup> of water per day, but the demand is estimated to be about 45,000 m<sup>3</sup> per day. The result has been a severe water shortage. The company gets its water from Kibos River (a gravity scheme) and Lake Victoria (a pumping scheme). Almost all the water supply (95%) in Kisumu comes from the Lake and has to be pumped to the treatment plant in Dunga. Only 5% comes by gravity from Kibos River. KIWASCO aims to stabilise this ratio to 55% of the water supply to come from the Lake with the remaining (45%) coming from Kibos River. According to the Chief Technical Advisor, LVWATSAN-Kenya<sup>60</sup>, the challenge KIWASCO faces is the receding lake level, water treatment and quality issues.

In a move to increase the production of water and the extent of coverage of water and sewerage services, KIWASCO is collaborating with the French government in rehabilitating the water pumping stations, the water distribution mains as well as improving the sewerage system. The first phase of the Ksh 1.6 million project involved improving the existing (old) water and sewerage infrastructure while the second phase, which is yet to start, targets the expansion of coverage area, especially in water supply.

### *Unaccounted-for-water*

When KIWASCO started its operations, the unaccounted-for-water was 75%. This has reduced to about 62%. The high unaccounted-for-water is attributed to non-functional (static) meters, illegal connections as well as burst pipes and leakages. KIWASCO is addressing the persistent high percentage of unaccounted-for-water through the newly created Department of Supervision and Investigation. It also engages 'private' investigators and gives 'incentives' to whistle blowers. In addition, the company has instituted measures to respond, as-quick-as-possible, to repairs of burst pipes and leakages. For example, it is recommended that a burst pipe be repaired within 24 hours of reporting while a leakage should take 12 hours. Despite these measures, the legal penalty for illegal connections and other tampering of the water supply system by residents is not sufficiently punitive.

---

<sup>60</sup> Interview, 13 October 2008.

### *Metering, billing and revenue*

The metering ratio is at 100% and revenue collection efficiency has increased from the initial 50% to the current 90%. KIWASCO's annual turnover is about Ksh 180 million. Of this, 10% goes to the municipality as a fee for lease of the assets and 5% is paid to the Water services Board<sup>61</sup>. Even with the high electricity bill and these expenditures, the Finance Manager<sup>62</sup> explained that the company is making a profit – implying that KIWASCO is operating on commercial principles. However, according to the Municipal Engineer, Kisumu Municipal Council<sup>63</sup>, KIWASCO was exempted from paying dividends and rates to the council until they start making profit. For that reason, the company owe the municipal council some money. On tariffs, the Finance Manager<sup>64</sup> explained that every water service provider has a unique tariff structure, depending largely on the operating costs and specifically on whether the service provider is using gravity or a pumping scheme. A pumping scheme is much more expensive to run. The water tariff structure in Kisumu is progressive but with a minimum flat rate of Ksh 180 for up to 6 m<sup>3</sup> of water.

### *Pro-poor programmes*

As part of its pro-poor programme, KIWASCO is implementing a pioneer 'delegated management model' in Nyalenda – a densely populated slum area in Kisumu. This is a model where KIWASCO sells water in bulk and at a subsidized tariff to a private operator in the community, who in turn manages its distribution and other aspects. The selected operator acts as an agent of KIWASCO in terms of connecting customers, operating the sub-network, collecting revenue and fixing leaks. It is not only a performance-based contract but also a profit-making enterprise towards access to clean and affordable water. The model is intended to make water affordable to the poor, bring a sense of 'ownership' and thereby reduce some of the problems related to human interference, i.e. illegal connections and leakages (see also Box 2).

#### *Box 2: Expectations of a delegated management model*

- Increased access to safe and affordable water.
- Reduced unaccounted-for-water through less illegal connections, less vandalism and less leakages.
- Increased revenue collection for the company.

*Source:* Morel (2006); Ombogo (2006).

In this project, KIWASCO sells water to the operator at Ksh 25 per m<sup>3</sup>. Through water kiosks and the distribution system set up by KIWASCO, the operator sells the water to

<sup>61</sup> KIWASCO is a water service provider that falls under the Lake Victoria South Water Services Board (LVSWSB).

<sup>62</sup> Interview, 14 October 2008.

<sup>63</sup> Interview, 13 October 2008.

<sup>64</sup> Interview, 14 October 2008.

consumers at Ksh 50 per m<sup>3</sup>, i.e. Ksh 1 per 20-litre container, cheaper than what the company charges other customers. According to the Finance Manager<sup>65</sup>, “this is a small KIWASCO in the community”. It is the intention of KIWASCO to extend this model to other low-income neighbourhoods.

Even then, the Finance Manager<sup>66</sup> is of the opinion that the informal settlements, with a population of about 83,000 people, can also be best served by standpipes. This view is shared by the Chief Technical Advisor of LVWATSAN-Kenya<sup>67</sup>, who advocates for expansion of infrastructure to the informal settlements. But according to the Team Leader of SANA<sup>68</sup>, taps are normally dry in most of the low-income neighbourhoods. For example, in Manyatta A residents obtain water largely from water vendors at a very high (unaffordable) price. The price of a 20-litre container of water ranges between Ksh 3 and Ksh 5, compared to water from the wells which costs Ksh 1. The wells are more often than not unprotected and therefore risk being contaminated with discharge from the pit latrines. The Chief Technical Advisor, LVWATSAN-Kenya concurs that Manyatta A has a number of unprotected shallow wells sharing the same water table with pit latrines, resulting in frequent cholera outbreaks in the area (see also Box 3).

*Box 3: Lakeside city thirsts for clean water*

In an open letter to Minister Charity Ngilu<sup>69</sup>, [a Kisumu resident] claims Kisumu is in the “intensive care unit” when it comes to access to water. “I stay in the town (...) and it is a mystery why there is no water yet we live next to Lake Victoria. The situation is so pathetic that I think only two per cent of residents have access to clean water. The rest make do with contaminated water,” he says, adding that only the wealthy seem to have an uninterrupted supply. [He] claims some residents have not had water flowing from their taps for the last three years, despite the commissioning of some donor-sponsored projects in the past. Is the minister aware, he asks, that Nyamasaria, Bandani, Kibos, Otonglo, Nyalenda, Nyawita, Migosi, Kondele, Tom Mboya, Jua Kali, Okore, Nubian, Arina, Ondiek and Argwings among other estates have not had water for a long time? “*Waziri*<sup>70</sup>, you have so many admirers in Kisumu, but you have to crack the whip so that the officers responsible for providing water do their job. These complaints have been going on for a long time and action needs to be taken now,” he says.

*Source:* The East African Standard Online Edition, Tuesday 27 January 2007.

<sup>65</sup> Interview, 14 October 2008.

<sup>66</sup> Interview, 14 October 2008.

<sup>67</sup> Interview, 13 October 2008.

<sup>68</sup> Interview, 14 October 2008.

<sup>69</sup> Hon. Charity Ngilu is the Minister for Water and Irrigation.

<sup>70</sup> Swahili word for Minister.

### 5.2.2 Sustainable Aid in Africa (SANA) International

SANA started its operations as an NGO in 2001. It was previously a Dutch-Kenya bilateral programme (1982-2000) in rural water and sanitation in the then South Nyanza District of Nyanza Province. SANA deals with issues related to domestic water supply and targets the un-served urban and peri-urban informal settlements and the poor in general, besides dealing with environmental sanitation. Specifically, the focus of SANA is on:

- Provision of water for domestic use.
- Provision of sanitation facilities and environmental sanitation.
- Water for agricultural production, i.e. drip irrigation and efficient use of water.
- Credit for water through a revolving fund, i.e. providing loans to develop water infrastructure.<sup>71</sup>
- Water and sanitation for schools.
- Networking and collaboration.

SANA is currently running a ‘school-plus-community’ water intervention programme. SANA is particularly concerned with lack of water and sanitation facilities in many schools. According to the Team Leader<sup>72</sup>, “girls are the most affected without adequate sanitation facilities in schools – they may miss school for a couple of days during their menstrual periods simply because of fear. Furthermore, children spend most of their time during the week in school and should be provided with adequate water supply and sanitation facilities”.<sup>73</sup> SANA provides water points in schools which can also be used by the community living around the school. In addition to improving the school’s sanitation facilities, SANA promotes environmental sanitation and hygiene through encouraging students to start health clubs. The first phase of the ‘school-plus-community’ programme targets 20 schools in the rural areas and 20 schools in the urban areas.<sup>74</sup> Already, there are two related projects (funded by CORDAID) in Nawa and Wandiege Primary Schools.

Within Kisumu municipality, SANA has three on-going water projects, namely:

- Paga water supply (in a peri-urban area southwest of Kisumu) serving two sub-locations. Water is pumped from Lake Victoria (4 km away) to raised tanks for distribution to the water supply kiosks. However, the challenge has been the receding lake levels and the quality of water.
- The Obunga (slum) water project in collaboration with KIWASCO but which is not functional at present because of disconnection resulting from non-payment.
- Manyatta B (slum) community water supply project.

---

<sup>71</sup> Seven projects have so far benefited from this loan scheme.

<sup>72</sup> Interview, 14 October 2008.

<sup>73</sup> World Health Organization recommends one door (of a latrine) for every 25 girls and one door for every 35 boys as adequate.

<sup>74</sup> The “school-plus-community” programme in urban schools will be supported by the Dutch NGO, CORDAID.



SANA's completed programmes include (1) the water-for-schools – a Coca Cola project together with CARE Kenya; (2) the water-for-school-plus-community programme in Nawa and Wandiege; (3) Asengo water and Gita water springs project, despite the spring drying up and the problem of water quality; and (4) the protection of shallow wells in Bandani. Other NGOs – Africa Now, World Vision and CARE Kenya – are focusing on roof catchment tanks, provision of water, and provision of safe water storage, respectively.

It is worth noting that SANA has led to the creation of a consortium bringing together three NGOs working towards integrated development. However, the Municipal Engineer of the municipality of Kisumu<sup>75</sup> was very negative about the role of the about 200 NGOs active in Kisumu. He said that “their practical impact is negligible”. This opinion was later shared by the Human Resources and Administration Manager of KIWASCO<sup>76</sup> that NGOs in Kisumu have “no sustainable effects”.

### 5.2.3 Wandiege: A community water supply project

The Wandiege Community Water Supply Project (Wandiege) started in 2002. The project, located in Manyatta B estate<sup>77</sup>, is wholly owned, operated and managed by the community. From a total budget of Ksh 3 million to start the project, CORDAID provided Ksh 2 million while the community was expected to raise the remaining Ksh 1 million. Although it was a tall order for the poor community, they achieved to raise the amount through the ‘sale of shares’. To become a member, one had to ‘buy shares’ of Ksh 1,000. Those who could not afford to raise this amount of money ‘bought their shares’ through providing labour (i.e. digging trenches and laying the pipes). In addition, the community received Ksh 300,000 from the Local Authorities Transfer Fund (LATF) and additional Ksh 500,000 from Constituency Development Fund (CDF).

Wandiege is in fact a water service provider registered by LVSWB just like KIWASCO. They have their own independent management, network, operations and tariffs. Although aware of their existence, the Financial Manager of KIWASCO was categorical that “we are supposed to do business and we do not see them as a competitive company”. The project's source of water is a 110 metres deep borehole which serves a radius of 5 km<sup>2</sup>. The water from the borehole is pumped into two tanks of 10,000 litres each before being distributed to the ‘consumers’. The project's office, borehole and storage tanks are located on a primary school compound, for which the project does not have to pay. In return, the project has let the school use the water and their electricity connection without pay.

---

<sup>75</sup> Interview, 13 October 2008.

<sup>76</sup> Interview, 14 October 2008.

<sup>77</sup> Manyatta B is a peri-urban low-income neighbourhood in Kisumu municipality.

Although it initially started with volunteer workers from the community, the project is now able to pay its revenue clerk and caretakers a ‘small’ monthly salary. This is because the project, first and foremost, operates on a non-profit basis. The revenue they get from selling water is largely used for operations and maintenance. The ‘profit’ they make at the end of the year is pumped back into community development.

*Photo 2: Wandiege water kiosk*



Photo: Dick Foeken

The present water supply network serves 69 homes and 7 water kiosks in the area. The water kiosks are given to women and self-help groups to manage. At the kiosk, water is sold at Ksh 1 for a 20-litre jerrycan. The revenue clerk and caretakers are expected to collect the daily revenue from the kiosks and bring it to the project’s office in the school for recording and safe keeping. On the other hand, the connected homes have individual meters, which the line patrollers check and record the meter readings on a monthly basis. Those connected are expected to check their ‘bills’ at the project’s office and pay according to the amount of water they have consumed. The water meters for individual connections are installed immediately after the main pipe to reduce incidences of ‘unaccounted-for-water’ through leaks and burst pipes. In that way, consumers take care of, and immediately report, any burst pipe and leak beyond the meter rather than incur the cost (of unused water) in their bill.

Besides providing water to the community, another important aspect in this project is capacity building, training and empowerment. The training and capacity building is done by SANA. Through SANA, some of the members and volunteers have been trained on the technical and management issues of the project. For example, caretakers have been trained in laying pipes, pump operations and detecting bursts from the mains. The management team have been trained on general and financial management issues while the community has been trained in health and hygiene.

In relation to health and sanitation, CORDAID has funded 14 ECOSAN latrines in the area. Sand-platform (sand-plat) latrines are being encouraged and promoted because of the loose soil structure. Already 91 sand-plats have been constructed. According to SANA's officer in charge of this sanitation project<sup>78</sup>, occurrence of waterborne diseases has drastically reduced since the implementation of this project (Wandiego and ECOSAN). Before the water supply project, people relied on River Nyamasaria without bothering to treat the water. In addition SANA has sensitised the community on good hygiene and sanitation practices and because of the introduction of ECOSAN and sand-plat latrines, there is less open defecation.

Though Wandiego is a success story as an independent community water supply project, it is not short of challenges. Some of the challenges the project is facing include:

- Bursting of the water storage tanks, seemingly due to a manufacturer's default. So far, two water tanks have been subjected to bursting. At the time of this interview<sup>79</sup>, the second burst water tank had not yet been replaced by the supplier.
- Frequent interruptions of electricity supply interfere with the pumping schedule and steady flow of water to the consumers. Furthermore, the electricity bill has increased in the recent past. The project hopes to complement the use of electricity with solar energy, if the option is viable.
- The school compound is relatively small for the project's expansion. In addition, the project occasionally 'interferes' with the school activities, for example, when visitors come to the project site. It is also dangerous for the school children, for example, when a storage tank bursts, as has happened twice.
- Lack of trust and goodwill from some members of the community who think that the officials are benefiting from the project. Also, some members in the community expect 'free' services and 'quick' benefits from the project – making it difficult for expansion and laying of pipes.
- Acquiring land to expand the project. There is already a proposal to add two more water points (boreholes).
- Lack of 'enough' storage tanks for a constant flow of water.
- Occasional illegal connections and bursting of pipes.
- The water is 'a little bit saline'.

---

<sup>78</sup> Interview, 14 October 2008.

<sup>79</sup> 14 October 2008.

## 5.3 Homa Bay

Homa Bay is the district headquarters of Homa Bay District located in the western part of Kenya on the shores of Lake Victoria, 105 km from Kisumu and 405 km from Nairobi. The town covers an area of 23 km<sup>2</sup> of which 3 km<sup>2</sup> falls within the central business district.<sup>80</sup> With a population of about 90,000 people, Homa Bay is primarily an administrative centre with small-scale trading as the dominant economic activity. Notably is the trade in fish, especially near the fish processing factory. Fish is brought to the town by fishing boats from elsewhere. The three low-income settlements in the municipality are Shauri Yako, Makongeni and Sophia. Water and sanitation services in the municipality are provided by the South Nyanza Water and Sanitation Company (SNWASCO), while sewerage services are still under the Municipal Council of Homa Bay. Other alternative sources of water for the municipality residents include lake water, boreholes (where people pay for water), shallow wells and roof catchment. The UN-HABITAT's LVWATSAN programme is actively involved in both short-term and long-term interventions in water and sanitation in the municipality. This is being done in collaboration with the Municipal Council of Homa Bay, SNWASCO and the Multi-Stakeholder Forum (MSF-Homa Bay).

### 5.3.1 South Nyanza Water and Sanitation Company (SNWASCO)

#### *Organization and management*

SNWASCO started its operations in July 2006. Initially, water services in Homa Bay were under the Ministry of Water and Irrigation. All the staff in the company was inherited from the Ministry of Water and Irrigation but SNWASCO has hired the Managing Director, Commercial Director, Technical Manager, Administration and Personnel Manager and the Internal Auditor. Surprisingly, all the employees of the company are still being paid by the ministry and therefore answerable to their 'employer' rather than the company.<sup>81</sup> This makes the work of the Managing Director quite difficult because he has to manage a workforce not directly answerable to him. SNWASCO operates in a cluster system comprising Homa Bay Water Supply (which serves the municipality), Mbita Water Supply, West Rachuonyo Water Supply, Oyugis Water Supply and Kendu Bay Water Supply. The company has 6 Board of Directors, i.e. The Managing Director, The Mayor of Homa Bay town and representatives of other shareholding county councils. All assets of the company belong to the Lake Victoria South Water Services Board (LVSWSB).<sup>82</sup> The Managing Director cannot make any decisions regarding the assets, such as replacing defective equipment, without consulting with LVSWSB. The Secretary to MSF-Homa Bay<sup>83</sup> attributes some of these challenges to the fact that "water reforms seem to have been implemented hurriedly to impress the donors".

---

<sup>80</sup> There are conflicting figures about the exact area of Homa Bay municipality.

<sup>81</sup> One gets the impression that SNWASCO may be operating at a loss or not making enough profit to be able to hire and pay its staff.

<sup>82</sup> SNWASCO is a water service provider that falls under LVSWSB.

<sup>83</sup> Interview, 16 October 2008. The MSF-Homa Bay is discussed below.

### *Coverage of water supply network*

SNWASCO provides only water services to Homa Bay municipality. Sewerage services are still under the Municipal Council of Homa Bay, although the company collects the sewerage charges on their behalf at a 5% fee. This is largely because SNWASCO and the municipal council are yet to sign the service provision agreement. There are about 3,000 connections in the municipality, mainly concentrated in the town centre, hospital and prisons areas. SNWASCO produces about 3,000 m<sup>3</sup> of water per day against an estimated demand of about 18,000 m<sup>3</sup> per day. Through the LVWATSAN programme, another water intake point has been constructed and four new water pumps installed to increase SNWASCO's production capacity and the town's water supply. The company gets its water solely from Lake Victoria.

*Photo 3: The new water in-take point*



Photo: Dick Foeken

Pumping of water from the intake point (near Shauri Yako) to the two treatment plants is done everyday at night for 8 hours. This is intended to cut down on the high electricity bill currently incurred by the company and also to counter the problem of low voltage of power from the main grid. MSF-Homa Bay is lobbying for a 12-hour pumping system. The 'old' treatment works constructed in 1956 has a capacity of about 900 m<sup>3</sup> of water per day, while the 'new' treatment works constructed in 1987 has a capacity of about 2,000 m<sup>3</sup> per day. This is far below the municipality's demand of water.

The Clerk of Works, LVWATSAN-Homa Bay<sup>84</sup>, describes the municipality's water situation as "very acute" because only about 30% of the households have connections to the distribution network. Furthermore, water supply is very unreliable due to the frequent water rationing necessitated by the high cost of electricity needed to pump enough water from the intake point. While the town centre, the hospital and prisons receive water on a daily basis, other parts of town are subjected to water rationing based a schedule determined by SNWASCO.

#### *Unaccounted-for-water*

The proportion of unaccounted-for-water is still high (50-54%) despite dropping from 65% since the company started its operations.<sup>85</sup> The lack of leak detectors is a major contributing factor to the high level of unaccounted-for-water, besides the rampant illegal connections. The company has now started door-to-door impromptu checks for illegal connections in the municipality.

#### *Metering, billing and revenue*

A large number of consumers in the municipality are still paying for water on a flat rate basis because of lack of meters or non-functioning meters.<sup>86</sup> For example, out of the 918 connections on a flat rate tariff, 752 of them are because their meters "stopped working long ago". Furthermore, according to the Secretary, MSF-Homa Bay<sup>87</sup>, the billing is very inefficient as most consumers do not receive their bills on time. To improve metering and billing, the LVWATSAN programme provided the company with 500 new meters to replace the ones that are not working.<sup>88</sup> The priority areas for replacement of non-functional meters are water kiosks, hotels, government departments and standpipes. Although the revenue is still very low, it is gradually improving following the interventions from the LVWATSAN programme.

#### *Pro-poor programmes*

Although the piped water distribution network covers some parts of the low-income estates – Sophia, Shauri Yako and Makongeni – only a few individuals and water kiosks are connected. A large majority of the population rely on water kiosks. Even then, because of the on-going water rationing, these estates receive water only for one, two or three days in a week – a situation experienced even before the reforms. Already, the LVWATSAN programme has constructed two water kiosks in Shauri Yako estate to increase access to clean water in low-income areas. These two water kiosks have been

---

<sup>84</sup> Interview, 15 October 2008.

<sup>85</sup> There were discrepancies in the figure given for unaccounted-for-water. In one of the interviews, the figure was as high as 85%.

<sup>86</sup> A flat rate tariff is where the consumer is charged a fixed monthly rate irrespective of the amount of water consumed – normally for non-metered customers.

<sup>87</sup> Interview, 16 October 2008.

<sup>88</sup> At the time of this interview (16 October 2008), not all the meters had been installed.

left to MSF-Homa Bay to determine which of their group members to run them. A 20-litre container of water costs Ksh 2 at the LVWATSAN programme water kiosks after buying it from SNWASCO at Ksh 25 per m<sup>3</sup>. However, a tour of Shauri Yako revealed that the two water kiosks have not been operational since they were ‘officially opened’ (see Box 4). Also not operational yet completed, is the improved toilet in the same estate.

*Box 4: ‘The politics of water in Homa-Bay’<sup>89</sup>*

A water kiosk, a water point or a standpipe with running water is a lucrative business in this town. There are six water points (i.e. standpipes) licensed by the water company but privately-run by well-connected individuals, including former and current councillors. Some corrupt officials of the water company collude with these individuals to create an artificial water shortage in the municipality by frequently closing the piped water distribution lines serving areas where the privately-run water points are located. On the other hand, the same water company officials conveniently leave the separated distribution lines to these water points open. Apparently, the separation of the distribution lines was not by default but by design from the period the municipal council was still in charge of water services. With the only source of water being the water points, these individuals are able to charge Ksh 10 for a 20-litre container – far much higher than what is recommended by the water company. With the construction of the LVWATSAN programme water kiosks, the individuals operating the privately-run water points thought that they would soon run out of business. This is because a 20-litre container of water would cost Ksh 2 at the LVWATSAN programme water kiosks – far much cheaper than what they charge. On the day of the official opening of the LVWATSAN programme water kiosks, there was plenty of water. The next day, however, the (separate) distribution line supplying water to the LVWATSAN programme water kiosks was closed, while the one to the privately-run water points remained opened. Again, the separation of the distribution line was conveniently done during connection. In other words, the same (corrupt) officials from the water company protected the interests of the individuals running the water points. Since then, the LVWATSAN programme water kiosks have remained dry. However, the LVWATSAN programme (or UN-HABITAT) is not willing to be dragged into the local water politics. MSF-Homa Bay has taken over the matter and a solution is being sought through the Project Implementation Unit<sup>90</sup> meetings and other channels. In short, the poor are yet to benefit from these water kiosks. In addition, the idea of pumping water for only 8 hours is also a scheme to create an artificial water shortage so that the individuals running the private water points would continue having a thriving business.

<sup>89</sup> As described by the Secretary, MSF-Homa Bay (Interview, 16 October 2008).

<sup>90</sup> This is the implementing arm of all the LVWATSAN Initiative projects.



Photo 4: A non-operational water kiosk



Photo: Dick Foeken

### 5.3.2 The Lake Victoria Region Water and Sanitation Initiative in Homa Bay (LVWATSAN-Homa Bay)

Working closely with the Municipal Council of Homa-Bay, SNWASCO and the Homa Bay Multi-Stakeholder Forum (MSF-Homa Bay), the LVWATSAN programme has initiated a number of short- and long-term water and sanitation interventions in the municipality.<sup>91</sup> The short-term interventions intended for immediate impact include:

- Installation of four new pumps at the water intake points and treatment plants to increase the volume of water supply in the municipality.
- Rehabilitation of the water treatment works to increase efficiency and reduce wastage.
- Construction of two water kiosks in Shauri Yako estate to increase access to clean water in low-income areas.
- Supply of bulk and individual consumer meters to SNWASCO to improve their metering, billing and efficiency. Already the project has supplied 500 individual meters to SNWASCO.

---

<sup>91</sup> Phase 1 of the programme, which is complete, focused on the short-term interventions while phase 2, which is yet to start, will focus on the long-term interventions.



- Supply of tools and equipments, including 10 small tractors to the municipal council to improve efficiency in sanitation services, especially in solid waste management and refuse collection.<sup>92</sup> This is complemented by the construction of strategic refuse collection and transfer points, promoting sorting of wastes and capacity building in all aspects related to the tools, equipments and tractors.
- Construction of the so-called VIP (ventilated improved pit) latrines in selected schools, churches and individual plots within Makongeni, Sophia and Shauri Yako for demonstration purposes. There is one of such latrines in Makongeni, 8 in Shauri Yako and one in Sophia.
- Capacity building in management, operation and maintenance.

The long-term interventions include:

- Expansion of the water treatment plants to handle an additional capacity of 2,000 m<sup>3</sup> of water per day.
- Extending the piped water distribution network by another 20 to 30 km, especially in the low-income areas.
- Extending the sewer system by another 5 km.

The programme is also thinking of a biogas installation in Shauri Yako estate not only as an alternative source of energy, but also a way of reducing the reliance on electricity for pumping water from the intake point located near Shauri Yako.

### 5.3.3 The Multi-Stakeholder Forum in Homa Bay (MSF-Homa Bay)

The MSF-Homa Bay was started in 2004 when the UN-HABITAT started building its activities in the municipality. It is a pro-poor governance mechanism intended to include and involve the poor people and all stakeholders in decision making on matters concerning them. It is a vehicle for a collective participatory approach to problem solving. When MSF-Homa Bay started, the first step was to identify 'key stakeholders'. The key stakeholders were identified as (1) government ministries in charge of water and sanitation, public health, local government, physical planning, lands, survey and provincial administration; (2) civil society, i.e. Environmental Watch Programme, ECOVIC (East African Community Organisation for the Management of Lake Victoria), other NGOs, CBOs and churches; and (3) women and youth groups.

Whereas membership of the key stakeholders was initially restricted to 27 members, it is now open to any interested organisation and group as long as they meet the forum's membership requirements. As much as the composition of the key stakeholders is supposed to be broad based, participation in the forum is left solely to the stakeholder's interest as nobody is forced to become a member. The key stakeholders are divided into three committees to run the 'technical' affairs of the forum. These are the infrastructure

---

<sup>92</sup> The 10 small tractors for refuse collection had not been delivered at the time of this interview (15 October 2008).

committee, the communication and awareness committee and the capacity building committee. During the time of this interview<sup>93</sup> each committee had 6 or 7 members who meet as need in their technical area arises. However, councillors<sup>94</sup> do not sit in these technical committees.

All deliberations at the committee level are brought to the ‘general assembly’ for further deliberation. The general assembly which is called when need arises brings together all ‘members’ of the forum. All residents in Homa Bay municipality, including the councillors, are, by default, members of the forum and are welcome to attend the ‘informal open air’ general assembly to “freely and openly deliberate on matters affecting their lives and the municipality”. In the general assembly, anybody wishing to contribute is given a chance to do so regardless of status, gender and age. The ‘views’ expressed in the general assembly are incorporated in the concerned committee’s report before being forwarded to either the Project Implementation Unit or a full council meeting. To be focused in their deliberations, all meetings (key stakeholders meetings, technical committee meetings and the general assembly) have an agenda drawn by the forum’s Chairperson and Secretary in close consultation with the concerned technical committee. Even then, the Chairperson has the ultimate say in the agenda for the day. The current Chairperson of MSF-Homa Bay is the Mayor of Homa Bay while the Secretary is a member of the key stakeholders.<sup>95</sup>

MSF-Homa Bay was initially viewed with suspicion, especially by the councillors who thought that the forum is an emerging force to usurp their power and responsibility in running municipality affairs. In fact the councillors strongly resisted the idea, terming it a parallel authority. After some lobbying and consensus building, it was decided that all the councillors become members of the forum and that the Mayor be the Chairperson. This has served to reduce political friction and opposition to the forum’s operations. The municipal council has even provided an office space in the town hall for the forum’s operations, including space for meetings. In addition, the council occasionally provides refreshments during the forum’s key stakeholders and technical committee meetings.

To constantly engage its members, MSF-Homa Bay undertakes voluntary clean-up activities in the municipality every Tuesday. So far, at least one or more councillors have joined and participated in these clean-up activities. The Secretary to the forum noted that the turn-out to these activities is normally very good, reflecting the enthusiasm, active involvement and approval of Homa Bay residents in the forum’s activities. In fact, the residents are gradually identifying themselves with the forum’s decisions and projects.

---

<sup>93</sup> 16 October 2008.

<sup>94</sup> Councillors represent the electoral wards within the municipality and are elected through voting every five years.

<sup>95</sup> The Secretary is a practicing lawyer by profession and also the CEO of Environmental Watch Programme – an NGO based in Homa Bay.

While most of the forum's proposals are normally approved at the full council meeting and implemented, some are modified or rejected. On the other hand, MSF-Homa Bay has in a few instances lobbied against some unpopular council decisions. For example, a proposal to locate 10 latrines in Shauri Yako, with one of them in a councillor's compound, was rejected by the people (through the forum) because "they had not been consulted by the council to determine where to locate the toilets". In another example, a misunderstanding arose on the "ownership, management and use" of the 10 small tractors to be supplied for refuse collection by the LVWATSAN programme. However, a compromise was reached to have the municipal council own and maintain the tractors but allow members of the forum to fuel and use them whenever they needed one for their community clean-up and refuse collection activities.

MSF-Homa Bay is now working towards integrating its 'vision' with that of the Municipal Council of Homa Bay. This is mainly because the forum is "increasingly playing an advisory role" to the municipal council. In addition, the provincial administration is using the forum's network for a door-to-door campaign on environmental sanitation. However, despite the seemingly good working relationship between the forum and the municipal council, a proposal to (legally) institutionalize MSF-Homa Bay (through a council by-law) has been strongly opposed by the councillors. Instead, the council in one of its council resolutions recognises the existence, operations and activities of the forum within the municipality and as a "partner in development". This implies that MSF-Homa Bay has some quasi legal status at the municipality level. It is now almost impossible to start a project in the municipality without involving the forum at all stages. In fact the forum is categorical that it shall oppose the funding and implementation of projects by any organisation or agency if the project has no positive impact to the residents. This is also a way to avoid duplication of interventions in the municipality.

MSF-Homa Bay plans to sustain its operations and activities through a revolving fund. Members are currently contributing Ksh 1,000 per month to this fund. Whenever a member needs a loan, they can obtain it at a 5% interest within a loan repayment period of six months. In addition, the LVWATSAN programme is set to inject about US\$ 10,000 into the forum's projects. According to the Technical Advisor of the LVWATSAN programme in Kenya<sup>96</sup>, the Project Implementation Unit (PIU) is the technical implementing arm of all its activities. The PIU comprises a representative from the water company, a representative from the municipal council and central government representatives from line ministries. The Chairperson, Secretary and Treasurer of MSF-Homa-Bay are members of the PIU.

---

<sup>96</sup> Interview, 13 October 2008.

## 5.4 Kisii

Kisii town, located in the south-western part of Kenya, is the main urban and commercial centre in the larger Kisii highlands and the district headquarters of Kisii Central District. The municipality covers an area of 29 km<sup>2</sup> with a population of about 83,000 people. However, the population that the town serves is much higher because many people work in town but live in the areas surrounding the municipality. Kisii is mainly an agricultural town reflecting the livelihood of its inhabitants. It has abundant rainfall that recharges the numerous springs in the region. The main low-income estates in the municipality are Nubia, some parts of Nyanchwa, Mwembe Tayari, Jogoo and Nyamataro. Gusii Water and Sanitation Company (GWASCO) is the provider of water and sanitation services in municipality while the Municipal Council of Kisii is in charge of solid waste disposal and drainage. Other alternative sources of water for Kisii residents are springs<sup>97</sup>, shallow wells, streams, boreholes, roof catchment and water vendors. The UN-HABITAT's LVWATSAN programme is actively involved in short- and long-term interventions in water and sanitation in the municipality. This is being done in collaboration with the Municipal Council of Kisii, GWASCO and the Multi-Stakeholder Forum (MSF-Kisii).

### 5.4.1 Gusii Water and Sanitation Company (GWASCO)

#### *Organization and management*

GWASCO started its operations in July 2006 after signing the service provision agreement with the Lake Victoria South Water Services Board (LVSWSB).<sup>98</sup> It operates in a cluster system covering eight water supplies in the administrative districts of Gusii. It is a limited company owned by 11 local authorities drawn from the area of jurisdiction. Each local authority is a shareholder and the proportion of shares depends on the number of consumers connected to the piped water supply system. Kisii municipality with over half of the total number of consumers (or water connections) is the largest shareholder as well as being the largest local authority (see Box 5 for GWASCO's vision and mission).

#### *Box 5: GWASCO: Vision and Mission*

*Vision:* "To be the global leader in water and sanitation provision." *Mission:* "To efficiently provide safe, adequate, reliable, affordable and sustainable water, sanitation and allied services to our customers."

The company has a Board of Directors comprising 4 directors representing the local authorities, 5 who represent stakeholders, and the Managing Director. The stakeholders include professional bodies, institutions, the business community, and women representatives. While GWASCO is responsible for water and sanitation services, solid waste and

<sup>97</sup> One of the springs we visited – Riosongo – is a protected spring and has a continuous flow of water which is sometimes treated.

<sup>98</sup> GWASCO is a water service provider that falls under LVSWSB.

drainage is managed by the Municipal Council of Kisii. The municipality has a modern sewerage treatment plant which is currently underutilized because of the low sewer connections. The municipality has only about 1,200 sewer connections as most of the residents use on-site sewerage disposal systems, usually pit latrines.

#### *Coverage of water supply network*

Kisii municipality is served by Kisii water supply with over 6,000 registered connections. About 4,000 of these connections are concentrated in the town centre, Jogoo, Mwembe Tayari and Nyanchwa areas and have a reliable daily water supply. However, the high electricity bills and fluctuations in electricity supply have occasioned water rationing in the municipality. The main source of water is River Gucha. The new water supply and treatment works at Kegati was designed to produce 6,000 m<sup>3</sup> of water per day but currently doing an average of 2,000 m<sup>3</sup> per day. This is about five times lower than the estimated daily demand of about 9,500 m<sup>3</sup>. The old water supply and treatment works that also serves the municipality is a gravity system at Nyakomisaro drawing its water from the river with the same name. The area has been fenced to avoid encroachment on the river banks. To increase water supply, the LVWATSAN programme donated new water pumps to be used in Kegati. By the time of this interview<sup>99</sup>, these pumps were not fully operational due to the low voltage of power from the main grid. In other words, the new pumps need more voltage to run than the existing main grid is able to supply. Despite that, pumping of water is done on a continuous basis during the day and at night.

#### *Unaccounted-for-water*

When GWASCO started its operations, unaccounted-for-water was 70%. This has now reduced to the current average of 54% but still higher than the recommended range of 25% to 30%. Unaccounted-for-water is attributed to illegal connections, (old) pipe bursts, and leaking pipes and storage tanks. The company has initiated block mapping to reduce incidences of illegal connections. Each block is assigned to a senior officer to monitor and create awareness to the consumers. In addition, the company is working closely with MSF-Kisii<sup>100</sup> to identify illegal connections for the benefit of the residents.

#### *Metering, billing and revenue*

Kisii water supply is the main source of revenue to GWASCO. Even then, only half of the registered connections in the municipality are active, the majority of them metered and a few billed on a flat rate basis. Revenue collection is between Ksh 1.2 and 1.3 million per month. The LVWATSAN programme has donated 500 meters to improve metering, billing and revenue. At the time of this interview<sup>101</sup>, only 200 meters had been installed.

---

<sup>99</sup> 17 October 2008.

<sup>100</sup> The MSF-Kisii is discussed below.

<sup>101</sup> 17 October 2008.

### *Pro-poor programmes*

Through the intervention of the LVWATSAN programme, GWASCO has extended its provision of water to the low-income estates of the municipality. This has been achieved through the construction of (more) water kiosks in these areas. The programme has rehabilitated the main water supply line from Bobaracho storage tank to Jogoo estate which has facilitated increased individual connections and operation of the old water kiosk<sup>102</sup>. These kiosks sell water at Ksh 2 for a 20-litre container compared to water vendors who charge Ksh 10 for the same amount of water. 25% of the revenue from the water kiosks goes to the water company, while the rest remains with the operator. Nubia, the poor parts of Nyanchwa, Mwembe Tayari and Jogoo used to be covered by the main water supply network but they were all vandalised.

#### 5.4.2 The Lake Victoria Region Water and Sanitation Initiative in Kisii (LVWATSAN-Kisii)

Like in Homa Bay, the LVWATSAN programme in Kisii has initiated a number of short- and long-term interventions in the municipality. The programme started in 2004 and has been going on in collaboration with the Municipal Council of Kisii, GWASCO and MSF-Kisii. The short-term interventions intended for immediate impact include:

- Installation of new pumps at the Kegati treatment works to increase water production.
- Rehabilitation and reviving of the main water supply line from Bobaracho storage tank to Jogoo estate. This line was not functioning for about 15 years but since its revival many people have been attracted to Jogoo.
- Replacing old and leaking asbestos pipes (on the gravity system) with better ones.
- Improving sanitation facilities in schools. 10 schools have already benefited from the construction of improved latrines and 5 of them facilitated (through an NGO) to start a roof catchment water harvesting project.
- Capacity building for GWASCO staff and quarterly evaluation. This is being done by a successful water company from Uganda – National Water and Sewerage Corporation.
- Construction of 10 water kiosks in Jogoo, Bobaracho, Gekomu, Milimani<sup>103</sup>, Mwembe Tayari, Daraja Mbili, Nubia, Nyamataro and Menyinkwa to increase access to clean water in low-income areas. However, only four water kiosks in Jogoo, Bobaracho, Mwembe Tayari and Milimani are operational. The main pipelines to the other water kiosks are yet to be repaired or replaced. These water kiosks are being operated by youth groups (Mwembe Tayari and Jogoo) and a women group (Bobaracho) who are members of MSF-Kisii. Whereas Bobaracho<sup>104</sup> and Jogoo kiosks sell water at Ksh 2 for a 20-litre jerrycan, the same amount of water goes for

---

<sup>102</sup> This water kiosk was working before the pipeline was vandalized.

<sup>103</sup> Milimani water kiosk was initially a standpipe.

<sup>104</sup> Bobaracho has invested in a water storage tank which is used during water shortages.

Ksh 3 in Mwembe Tayari. It is unfortunate that almost all these water kiosks were located on road reserves – making them vulnerable to demolitions.<sup>105</sup>

- Supply of 500 meters to GWASCO to improve their metering, billing and efficiency.

The long-term interventions include:

- Replacing the old pipes in the network.
- Extending the water supply pipeline network to cover a wider area.

All these projects are implemented through the LVWATSAN's Project Implementation Unit comprising a representative from GWASCO (for water and sanitation), a representative from the municipal council (for solid waste and drainage) and central government representatives in charge of public health, physical planning and environment.

#### 5.4.3 The Multi-Stakeholder Forum in Kisii (MSF-Kisii)

The MSF-Kisii was started to encourage proactive solutions to problems facing Kisii residents. According to its Chairman<sup>106</sup> “the forum is a new concept that is crucial because it brings all the stakeholders together”. It is a voice for all stakeholders as well as linking the water service provider, the local authority and the consumers. The stakeholders include representatives from the business community, CBOs, youth groups, women groups and 2 councillors from the Municipal Council of Kisii. Unlike in Homa Bay where all the councillors are members, only two councillors have been co-opted as members in MSF-Kisii, including the Mayor as an ex-officio member. The forum's office is located at the municipal council's town hall.

To 'legalize' their activities, MSF-Kisii was registered as a CBO with the Department of Social Services. It has become an entry point for addressing issues that affect the municipality and at the same time advocating for transparency and accountability in donor funded projects. The forum has an executive committee headed by an executive chairman. The executive committee works with three thematic working groups on: (1) building and infrastructure; (2) capacity building and mobilization; and (3) public awareness and education. The forum reports to the LVWATSAN's Project Implementation Unit. The forum drafted a six-month action plan (September 2007 to March 2008), including all kinds of activities<sup>107</sup> and a budget but unfortunately little had been realized by the end of the year. Although funds were available to implement some of the activities, they were channelled through the municipal council. Worth mentioning here was the

---

<sup>105</sup> There is a problem of land in Kisii. Two water kiosks located along the Kisii-Kilgoris Road have already been demolished to pave way for road expansion. As such, the LVWATSAN programme will, in future, provide only a standpipe with no permanent structure.

<sup>106</sup> The current Chairman is a practicing lawyer by profession. According to him, he is a “volunteer Chairman”, i.e. volunteering his services for Kisii residents (Interview, 17 October 2008).

<sup>107</sup> Some of these activities include: collaboration and networking; capacity building; income-generating activities; public awareness campaigns; and civic education.

plan for a series of public awareness campaigns on the activities of the forum before officially launching it.

For ease of operations, the forum has divided the municipality into six blocks. Each block has a committee and a representative, who sits in the forum's meetings. These representatives are normally chairpersons of one of the CBOs in their blocks.<sup>108</sup> At the block level, there are smaller working committees, each with a specific task. It is the duty of the block representative to represent the interest of his/her block members and also to be the forum's 'eyes and ears' on the ground. They are in fact allowed to attend the PIU meetings. MSF-Kisii meetings are held on a monthly basis before the PIU meeting but if need arises, a meeting is convened at any time. The Chairman and Treasurer decide on the agenda based on issues raised by the members. Through these representatives, the forum makes sure that the municipal council has treated its water, the water is being pumped according to schedule and that the entire water supply system is working well.<sup>109</sup>

The forum is creating awareness to residents not to vandalise the piped water distribution network and also not to engage in illegal connections. As a result, vandalism of water infrastructure has reduced and no one interferes with the LVWATSAN programme water kiosks. It encourages the members to participate in all stages of the projects that are implemented through them. For example, it involved the community in digging trenches for water pipes to be laid by the LVWATSAN programme. As indicated above, the water kiosks are run by women and youth groups who are members of the forum as an income-generating activity.

As a way of diversifying their activities, the forum has also mobilised CBOs to participate in solid waste management by collecting waste from the households to designated transfer points.<sup>110</sup> This is besides the membership's regular participation in clean-up campaigns at the municipal market. In addition, some of the public toilets in the municipality which have been rehabilitated by MSF-Kisii are being run by members of the forum.<sup>111</sup> As part of capacity building, MSF-Kisii members were recently taken through (simple and low-cost) water risk assessment procedures to determine the quality of water at the source. Other plans towards capacity building include training (of members) in zero grazing techniques and harnessing of biogas energy for cooking and lighting. Like in Homa Bay, the forum has started a trust fund as a way of sustaining itself "after UN-HABITAT".

---

<sup>108</sup> So far, 12 women groups and 8 youth groups are members of MSF-Kisii.

<sup>109</sup> During this interview (17 October 2008) with the Chairman of the forum, the Bobaracho Self-Help Group Chairperson came to report that one of the distribution tanks in Bobaracho was full and overflowing.

<sup>110</sup> The NGO, SANA, has been contracted by the UN-HABITAT to work with MSF-Kisii and micro-finance the CBOs participating in solid waste management in the municipality.

<sup>111</sup> The forum also intends to rehabilitate public toilets which were constructed by the European Union in Nubia estate but have since been vandalised to a disgraceful state.



Photo 5: Bobaracho Market Self-Help Group water kiosk



Photo: Dick Foeken

Like in Homa Bay, the idea of forming a multi-stakeholder forum in Kisii was met with hostility from the councillors (politicians) who viewed it as a new centre of power. As such, the first few months of its inception were “not easy”. There was mistrust and sabotage from the councillors “in all possible ways”. For example, when officials of the forum wanted to visit the project sites, no vehicle was availed to them. Sometimes, they were deliberately not invited to Project Implementation Unit meetings. Even getting the office in the town hall came as a result of a long struggle. However, things have changed for the better as the council and the forum are working together and complementing each others’ efforts for the benefit of Kisii residents. It is not unusual, therefore, that the council provides space and refreshments to the members during meetings. Furthermore, the forum is currently negotiating with the municipal council to reduce the cost of connecting to the main sewer line from the current Ksh 50,000 for institutions and Ksh 10,000 for individuals to “a reasonable and affordable figure”.

## 5.5 Nakuru

Nakuru town is located in the heart of the Great East African Rift Valley, 160 km northwest of Nairobi. The total area of the municipality is about 300 km<sup>2</sup>, some 60% of which is covered by the world-famous Lake Nakuru National Park. It is the fourth largest town in Kenya (after Nairobi, Mombasa and Kisumu) with a 1999 population of 239,000

people. It is the district headquarters of Nakuru District and the provincial headquarter of Rift Valley Province. A large proportion of the population is concentrated in the low-income settlements of Kwa Rhonda, Kaptembwa, Mwariki, Lake View, Bondeni, Kivumbini and Free Area. Nakuru Water and Sanitation Services Company (NAWASSCO) is the provider of water and sanitation services in the municipality while the Municipal Council of Nakuru is in charge of sewerage and drainage. Other alternative sources of water for Nakuru residents are private boreholes such as Nakuwell, rain water and water vendors. Nakuwell sells water to private tankers.

### 5.5.1 Nakuru Water and Sanitation Services Company (NAWASSCO)

#### *Organization and management*

NAWASSCO was formed as a limited company in 2003 but started its operations in July 2004. The Municipal Council of Nakuru is the sole shareholder. NAWASSCO is mandated to manage water services in Nakuru municipality after signing a quality service provision agreement with the Rift Valley Water Services Board (RVWSB)<sup>112</sup>. The five-year agreement (2004-2009) is renewable. RVWSB is in charge of all the assets and infrastructure. Although the company inherited staff from the municipal council, they are now fully under NAWASSCO (see Box 6 for Nakuru's long journey to NAWASSCO).

The main source of water in Nakuru municipality is boreholes. The African Development Bank (ADB) has funded the drilling of 17 boreholes: 5 in Baharini, 3 at Nairobi Road and 8 in Kabatini. A visit of Kabatini revealed that two of the boreholes were not operational and that rehabilitation of the place was visibly taking place. Under the ADB funded programme, staff houses are being rehabilitated and meters have been replaced to reduce unaccounted-for-water. However, for all the boreholes to operate at the same time there is need to increase the power voltage on the transformer serving the station. NAWASSCO is confident that by April 2009 a production capacity of 22,000 m<sup>3</sup> of water per day is set to be achieved from this source. In addition, NAWASSCO will continue monitoring the aquifer on a monthly basis.

Other sources of water are River Mereroni and the Turasha water supply in Gilgil.<sup>113</sup> Water from the boreholes is normally mixed with the water from Turasha to reduce the fluoride content.<sup>114</sup> This is because some boreholes may have a higher fluoride content (of up to 19 mg/l) than the World Health Organization recommended level of 1.5 to 3 mg/l. Water from River Mereroni is treated at the Mereroni treatment works before flowing on gravity to the main distribution lines. This source of water is categorized as for domestic and is charged on a flat rate basis for the consumers it serves. These sources of water produce about 35,000 m<sup>3</sup> per day, slightly increasing from the initial 30,000 m<sup>3</sup>

---

<sup>112</sup> NAWASSCO is a water service provider that falls under RVWSB.

<sup>113</sup> Turasha water supply is a gravity system.

<sup>114</sup> This is done at the Milimani treatment works, which during our visit was under rehabilitation and expansion.

per day. NAWASSCO is yet to achieve its targeted daily production capacity of 40,000 m<sup>3</sup>, even though the demand is 70,000 m<sup>3</sup> per day. The production is below optimal, partly because the voltages in the nearby transformer are yet to be increased.

*Box 6: Nakuru's long journey to NAWASSCO*

Until the year 2000, the provision of water was under the Municipal Council of Nakuru. In the same year, the Nakuru Quality Water and Sanitation Services (NAQWASS) was formed as an autonomous company in an attempt to privatise water services in the municipality. It operated for five months before it was dissolved after personal intervention from the former President Moi and its operations handed over to the then Ministry of Water. When NAQWASS took over full responsibility for the Nakuru water services, it was confronted with a high rate of unaccounted-for-water on the one hand and huge liabilities on the other.<sup>115</sup> Moreover, because of drought at that time the company had to buy additional water from the National Water Conservation and Pipeline Corporation (NWCPC), for which it was charged Ksh 15 per m<sup>3</sup> by the Ministry while it sold the water to consumers for Ksh 10 – a highly unsustainable situation. Another reason for NAQWASS's failure was political. Sitting councillors had tried to get as much influence in the company as possible but could not accomplish what they were aiming for. Soon afterwards, a local newspaper reported that unknown people had been inserting blocks of wood into the main pipelines to bring the new company to its knees. But NAQWASS also moved quickly by disconnecting illegal and non-paying consumers, including local politicians and sitting as well as former councillors (most of whom were known to have illegal connections). A powerful group of opponents of commercialisation gathered and called upon the Kenya Power and Lighting Company to disconnect the council's boreholes (officially because of the huge amount of unpaid electricity bills), which happened the same day (a Friday). The next day (Saturday), both power and water were reconnected again because President Moi was about to visit the town on Sunday. The people complained to the president about the water shortages, which induced him to call his Ministers for Local Government and for Water Resources. The result was that the Minister for Water Resources discontinued NAQWASS's license, after which the ministry took over. The Ministry of Water turned out to be no better than NAQWASS as it could not even meet its operational costs. In June 2004, (donor) pressure to comply with the Water Act (2002) saw the formation of NAWASSCO. Under NAWASSCO, a new Managing Director, a Technical Manager and a Commercial Manager were included in the organizational structure.

*Source:* Based on Mwangi (2002: 192-199) and Meijer (2005: 41-42).

---

<sup>115</sup> Ksh 105 million to the National Water Conservation and Pipeline Corporation and Ksh 60 million to the Kenya Power and Lighting Company.

### *Coverage of water supply network*

NAWASSCO's water supply network covers about 65% of the municipality (i.e. an area of about 110 km<sup>2</sup>).<sup>116</sup> The areas yet to be covered include the eastern part of the municipality (i.e. Pipeline area and the area behind Stem Hotel) – previously not inhabited. Most of the low-income neighbourhoods are not connected to the water supply system. The worst affected areas are Kiti, Kiratina, Free Area, Mwariki, Kaptembwo and Kwa Rhonda estates, which have no water connection systems (*Sunday Standard*, October 19, 2008). The existing sewerage system covers only the central business district and some parts of the industrial area. The municipality will continue to largely utilize septic tanks and pit latrines (in low-income areas) because interventions in this sector are not foreseen in the near future.

### *Unaccounted-for-water*

Unaccounted-for-water has reduced from 80% to the current average of 43%. NAWASSCO has been able to achieve this reduction by making use of the new meters and a leak detector donated by the ADB programme. The unaccounted-for-water is attributed to illegal water consumption and connections, non-metered connections, shortage of meters, defective meters, leakage of long service lines, and wastage at the council houses with communal water points.

### *Metering, billing and revenue*

With a total of 20,000 active metered connections, metering has improved to 88%. In 2008 alone, 12,000 meters were connected. However, areas with a higher likelihood of the meters being stolen are still billed on a flat rate basis of Ksh 200 per month. Whereas NAWASSCO is yet to start making profit, it is able to meet its operation and maintenance costs. And although the revenue may be low, it has improved from a monthly average of Ksh 5 million in the 1980s to the present Ksh 27 million with the same tariffs. This is despite the fact that electricity and other operation and maintenance costs have gone high.

### *Pro-poor programmes*

NAWASSCO has constructed 7 water kiosks to serve the low-income estates of the municipality. Four of these kiosks are located in Rhonda and Kaptembwa but only 3 are operational. These water kiosks are managed by a CBO known as NAROKA. The kiosks are seemingly busy on the days of water rationing in the area. Until very recently the area received water only on Tuesdays and Fridays and only for half an hour per day. With the increasing production capacity of NAWASSCO, the situation has improved, such that water is now available 3 days a week (also on Wednesdays) and for 4 hours per day. During the rationing days and when residents with individual connections run out of water in their houses, they normally turn to these water kiosks. This is because the kiosks

---

<sup>116</sup> It is estimated that only 18,000 households have piped water in Nakuru (*Sunday Standard*, October 19, 2008). Nakuru has about 68,000 households.

are connected to a separate pipe that has a continuous flow of water. This implies that with a further increase in production capacity to its projected level of 45,000 m<sup>3</sup> per day there will not be much business left for the water kiosks. NAWASSCO sells water to these kiosks at Ksh 5 per 1,000 litres of water and they retail the water at between Ksh 2 and Ksh 5 for a 20-litre container. Residents with individual connections pay a monthly flat rate tariff of Ksh 200. One of the water kiosks is located in a market place with a public toilet constructed through public-private partnership efforts. The toilet is operated by the Nakuru Environmental Consortium (NEC). One needs Ksh 3 to use the toilet and Ksh 10 for a shower (bathroom facilities are also available).

## 6 Emerging impact and challenges of water reforms and interventions in urban Kenya

This section is a synthesis of the emerging impact and challenges of water reforms and interventions in urban Kenya based on the preliminary tour of the five towns (Eldoret, Kisumu, Homa Bay, Kisii and Nakuru) presented in the previous section. Examples from other sources and towns are illustrated in Box 7 to 12. As indicated before, most of the information comes from only a few respondents in each town, hence we were not able to always cross-check some of the data. It is no doubt that the water sector reform has reported tremendous improvements. As indicated in Section 3, water sector reforms in Kenya are intended to address the weaknesses in policy, regulation and service provision characteristic in the previous Water Act Cap 327. The expected outcomes of the water sector reforms are summarized in Table 6. However, it is not the intention of this section to analyse in how far these expected outcomes have been achieved.

*Table 6: Expected outcomes of the water sector reforms*

Policy formulation	<ul style="list-style-type: none"> <li>• Improved co-ordination in the water sector</li> <li>• Clear policy accountability</li> <li>• Focused attention to water resources management</li> </ul>
Regulation	<ul style="list-style-type: none"> <li>• Clear regulatory framework</li> <li>• Performance in monitoring and evaluation</li> <li>• Improved performance of water-undertakers</li> </ul>
Service provision	<ul style="list-style-type: none"> <li>• Improved management of water resources (quality and quantity)</li> <li>• Ability to attract and retain skilled manpower</li> <li>• Efficient provision of services leading to self sustainability</li> <li>• Increased coverage</li> <li>• Ability to attract investments</li> <li>• Improved infrastructure</li> </ul>

*Source: Kenya (2006b)*

### 6.1 Emerging impact

#### *Minimal network extension with efforts towards rehabilitation and water kiosks*

All the five water companies operate within their municipality boundaries, which are of different sizes. The intensity of coverage in the municipality is still based on the existing water supply network inherited from the local authorities, the National Water Conservation and Pipeline Corporation and/or the Ministry of Water and Irrigation. As such, it is common to find that the central business districts and the high-income neighbourhoods (popularly known as *milimani's*) are better connected than, for example, other parts of the city. Generally, none of the towns is yet to achieve maximum coverage. While Eldoret

and Nakuru boasts of 60% of the municipality being covered, less than half of Kisumu (40%) and Homa Bay (30%) municipality have access to piped water. However, the low-income estates are more-often-than-not poorly connected or not connected at all. In short, service coverage is generally below target and expansion of the existing infrastructure is still minimal. Whereas there is insignificant network extension, i.e. in terms of new pipelines, efforts are being targeted to rehabilitating the existing network by replacing the old pipes. Although it is not clear to what extent, Eldoret Water and Sanitation Company, Kisumu Water and Sewerage Company and Nakuru Water and Sanitation Services Company, indicated that they have increased their network coverage by adding new pipelines. In Langas, one of the largest informal settlements in Eldoret, the need for household connections has increased to the extent that some of the existing water kiosks have been rendered functionally redundant. This is because the situation of water supply in the low-income estates is largely addressed through the provision of water kiosks. This is what is happening in Homa Bay and Kisii where water kiosks are being constructed to supply water to the poor neighbourhoods as a short-term intervention.

#### *Significant reduction in unaccounted-for-water*

Unaccounted-for-water is the difference between the quantity of water supplied to the network and the metered quantity of water used (and paid for) by the customers. To a large extent, the level of unaccounted-for-water is an indicator of how well a utility is managed. A reduction in unaccounted-for-water means improved revenue and saving the scarce water resources. Reduction of unaccounted-for-water within the distribution system, efficient irrigation methods, recycling and re-use of water, and rainwater harvesting, including roof catchment for domestic purposes are some of the water conservation and demand management strategies that can be used in urban areas. It is no doubt that the water companies inherited high unaccounted-for-water at their inception, all above 70%.<sup>117</sup> In an effort to meet their performance targets, the water companies in the five towns have reduced their unaccounted-for-water to 62% in Kisumu, 54% in Kisii, 52% in Homa Bay, 43% in Nakuru, and 35% in Eldoret. Except for Eldoret and Nakuru, the other towns are still far from the recommended proportion of 25%. However, given the enormous challenges the water companies are facing as they implement the sector reforms, this reduction is indeed significant. Nakuru and Eldoret are doing comparatively better because they started water sector reforms much earlier. Specifically, they were among the three towns selected (together with Nyeri) to pioneer commercialisation of water supply through water and sanitation companies in Kenya.

The high unaccounted-for-water and its continued persistence are attributed to physical (or technical) losses and administrative (or commercial) losses. Physical losses occur largely through leakage brought about by the ageing pipes and storage tanks. Administrative losses result from illegal connections; lack of leak detectors; defective and non-

---

<sup>117</sup> Nakuru (80%), Kisumu and Homa Bay (75%) and Kisii (70%). For Homa Bay, we have used the average of the two conflicting figures which were given.

functional meters; flat rate tariff due to lack of meters; inefficient, incorrect and false meter readings and billings; and wastage of water at communal water points as is the case in Nakuru's municipal council housing estates. The water companies have been able to address the high unaccounted-for-water in various ways. For example, creation of a department in charge of supervision; engaging private investigators and giving incentives to whistle blowers; quick response and repair to reported cases of leakages (in Kisumu); door-to-door impromptu checks for illegal connection (in Homa Bay); block mapping and awareness campaigns (in Kisii); and making use of new meters and leak detectors (in Nakuru).

*Box 7: Status of water services in Kisumu in 2003 before the reforms*

- Water production was 15,000 m<sup>3</sup> a day against a water demand of 48,000 m<sup>3</sup> (In 2006 the production had increased to about 20,000 m<sup>3</sup> per day).
- High levels of unaccounted-for-water averaging 70% (In 2006 the unaccounted-for-water had reduced to 60%).
- Low levels of revenue – Ksh 10 million to 13 million per month – and low collection efficiency of about 60% (In 2006 the revenue had increased to 15 million per month).
- Old infrastructure prone to frequent breakdowns, unplanned maintenance and broken sewer treatment plants.
- Unreliable water supply and lack of customer focus.
- No attention to the informal settlements thereby creating room for small scale independent service providers.
- Unskilled and low remunerated staff with low morale.

*Source: Ombogo (2006).*

*Towards improved metering, billing and revenue*

Although all the water companies alluded to the fact that metering, billing and revenue had improved, it is not possible at this stage to analyse by what proportion. However, there are indications that the companies are in the process of improving their metering, billing and revenue – albeit gradually. In Eldoret, 70% of the total connections pay their bills while in Kisii, half of the registered connections in the municipality are active. Kisumu's metering ratio is 100% with a high revenue collection efficiency of 90% (increasing from 50%). In Nakuru, metering has improved to 88% and in 2008 alone 12,000 meters were installed and connected to consumers. To improve metering, billing and revenue, the Lake Victoria Region Water and Sanitation (LWATSAN) Initiative in Homa Bay and Kisii has provided the water companies with new meters. However, the installation of these meters is still in progress.

*Addressing the plight of low-income neighbourhoods through pro-poor programmes*

Despite the lack of a clear policy on pro-poor programmes, the water companies in the five towns recognise the need and importance of supplying water and sanitation services to the low-income neighbourhoods – where the large majority of the residents in these



towns live. While Eldoret Water and Sanitation Company may be ahead in their pro-poor focus, other towns have also initiated a number of pro-poor programmes. Notable among them is the continued provision of water kiosks or standpipes in the low-income settlements. These water kiosks are supposed to serve a number of people in the neighbourhood as well as supplying safe and affordable water. The ‘delegated management model’ being pioneered in Nyalenda – a densely populated slum area in Kisumu – is another example. The project is intended to increase access to safe and affordable water to the urban poor. A similar project in Kisumu’s peri-urban low-income area but owned, operated and managed by the community is the Wandiege Community Water Supply Project. Eldoret has long-term plans to extend piped water supply to some of its low-income neighbourhoods while at the same time continuing to supply water through water kiosk. Despite the water kiosks, residents are still relying on other highly priced and poor quality sources of water, i.e. water vendors, wells, springs, etc.

*Photo 6: Protected spring in Kisii*

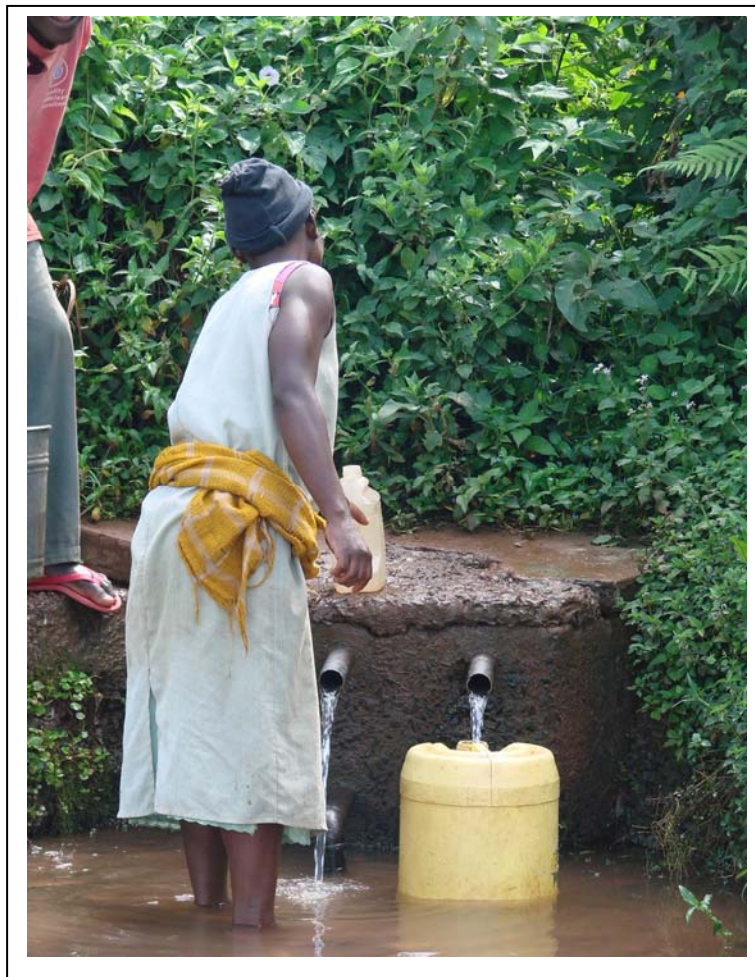


Photo: Dick Foeken

### *Attraction of donor funding and interventions*

Water Services Boards are now able to attract and secure funding for rehabilitation and expansion of water and sanitation services. For example, the French government is active in Kisumu, UN-HABITAT in Homa Bay and Kisii, and African Development Bank in Nakuru. Some of these interventions, for example the LVWATSAN programme, have also brought new concepts in water governance. The multi-stakeholder forums in Homa Bay and Kisii are good examples of how various stakeholders, including the urban poor and women, are involved in water governance. However, it is not clear whether “water reforms seem to have been implemented hurriedly to impress the donors” as one of the respondents said or whether it was meant to attract donor funding and interventions.

### *Providing an opportunity for other water service providers*

The Water Act 2002 allows for other Water Service Providers as long as they have been registered and given permit to operate by the Water Services Board. An example in these towns is Wandiege Community Water Supply Project in Kisumu. As said before, this water supply project, running along the same principles as Kisumu Water and Sewerage Company but on a much smaller scale, is wholly owned, operated and managed by the community. It supplies safe and affordable water to the people living around its water supply – a borehole.

#### *Box 8: The ‘reformed’ ELDOWAS*

Wambua (2004) revealed that under Eldoret Water and Sanitation Company (ELDOWAS), water performance has increased considerably. For instance, water losses have been reduced substantially through repairs and maintenance, illegal connectors are being prosecuted, and there has been no more water rationing since the company came into being. He lists the following as the key successes of ELDOWAS (ibid: 14):

- There are fewer consumer complaints compared to the past when the municipal council was in charge of service provision.
- Efficiency in revenue collection has gone up from 60% to 85%, against a target of collecting 90% of total revenue due.
- There is greater recognition of consumers as stakeholders evident from the establishment of complaints and customer service offices under its commercial and finance division.
- Its tariff structure has differentiated between the poor and the rich. The poor pay Ksh 10 per m<sup>3</sup> of water. Water kiosks have also been opened in the low-income areas of Langas, Kipkaren, Kamukunji and Huruma. In these high-density, low-income areas 20 litres of water goes for 50 cents. On the other hand, rich clients like the Rift Valley Bottlers (Coca-Cola subsidiary) pay Ksh 54 per cubic meter of water.

According to Wambua (2004: 14), since its creation, ELDOWAS has substantial control over its finances “meaning that less of it can be diverted to non-water uses but instead be re-invested in improving service provision” Moreover, dividends to the shareholders – i.e. the Municipal Council – “strictly conform to the financial regulations of the company” (ibid).

*Source:* Wambua (2004).

## 6.2 Emerging challenges

### *Public or private companies?*

It is not clear whether the water companies are private or public limited companies. Whereas under the Companies Act, water and sanitation companies are registered as private, limited liability companies, they are 100% publicly owned by the local authorities and are managing public assets to give an essential public service. Moreover, the companies are run by Boards of Directors representing the various stakeholders involved. However, it is difficult for stakeholders in the Water Services Boards and Water Service Providers to hold their Directors and top managers accountable as they are not shareholders strictly speaking.

### *Managing with old and dilapidated infrastructure*

The water and sanitation companies have inherited old, dilapidated and in some cases obsolete infrastructure from the local authorities, the National Water Conservation and Pipeline Corporation and/or the Ministry of Water and Irrigation. The existing water supply networks (i.e. piping) have long passed their economic life which increases the unaccounted-for-water through frequent bursts and leakages. For example, some of the pipes in Eldoret date back to the 1920s. Furthermore, the water supply networks are serving more people than they were initially designed for. So far, rehabilitation of the existing infrastructure is yet to be fully achieved.

### *Old staff in a new outfit*

All the water companies have inherited employees previously employed in the Department of Water and Sewerage of their respective local authorities or like in Homa Bay from the Ministry of Water and Irrigation. Only the directors and managers have so far been hired competitively. Besides having a cost implication this action brings into question the kind of employees the company has been forced to inherit. These employees, although in a new outfit, are likely to be slow or not ready to adapt to the reforms. For example, some employees have carried to the companies their previous corrupt practices and inefficiencies – denting the corporate image of the companies. The situation in Homa Bay is even more complicated. All the employees of South Nyanza Water and Sanitation Company are still being paid by the Ministry of Water and Irrigation and therefore answerable to their ‘employer’ rather than to the company. This makes the work of the Managing Director quite difficult because he has to manage a workforce not directly answerable to him.

### *Inadequate capacity to manage the increasing demand for water*

The populations in these municipalities have increased and will continue to do so. A major challenge to the water companies will be to provide enough water, in quantity and quality, to the increasing population. Presently, none of the companies is yet to meet the daily water demand of their respective municipalities. Apart from Nakuru Water and Sanitation Services Company which has so far met at least half of the residents’ estimated

demand for water (i.e. a supply of 35,000 m<sup>3</sup> per day versus a daily demand of 70,000 m<sup>3</sup>), the situation in other towns is not very promising. That is, 18,000 m<sup>3</sup> versus 45,000 m<sup>3</sup> for Kisumu Water and Sewerage Company (Kisumu); 3,000 m<sup>3</sup> versus 18,000 m<sup>3</sup> for South Nyanza Water and Sanitation Company (Homa Bay); and 2,000 m<sup>3</sup> versus 9,500 m<sup>3</sup> for Gusii Water and Sanitation Company (Kisii). This supply-demand shortfall has resulted in frequent water shortages and the now familiar water rationing. In an effort to increase the production of water, the water companies have embarked on rehabilitating their water pumping stations and (old) distribution networks; constructing new intake pumping stations; installing new water pumps; and increasing the pumping hours. Most of these are being accomplished through donor support or donor-funded projects, i.e. the French government for Kisumu Water and Sewerage Company, the LVWATSAN programme for Homa Bay and Kisii, and the African Development Bank (ADB) in Nakuru. Through the ADB project, Nakuru Water and Sanitation Services Company is now able to supply water for 10 hours a day unlike the 6 hours it used to do. With the completion of the ADB-funded project, supply is projected to increase to 16 to 18 hours a day.

*Limited resources and high costs of operation and maintenance*

As much as the water companies are supposed to run as commercial enterprises, they are incurring very high operation and maintenance costs, compared to the revenue they are collecting. This brings into question the economic viability of the companies. In addition, limited resources affect the achievement of the well-written and ambitious strategic plans, business plans, performance contracts and benchmarks, which have come to be synonymous with the water companies. Sometimes the companies are not able to achieve them at all.

*Box 9: KIWASCO: Strategic plan 2007-2012*

In its strategic plan of 2007-2012, Kisumu Water and Sewerage Company intends to:

- Increase the water supply coverage to 50% (in terms of connections).
- Increase the quantity and quality of potable water delivered to the distribution system to 60,000 m<sup>3</sup> per day at an annual growth rate of 6%.
- Increase the served population to over 250,000 people.
- Reduce the unaccounted-for-water to 35%.
- Increase the household coverage on sewerage services to about 11,000.
- Mitigate risk and ensure environmental protection.

*Source: KIWASCO (2007).*

The recent increase in electricity tariffs in the country are a further burden to the water companies who rely largely and sometimes wholly on electricity to pump water not only from the treatment plants to the consumers but also from the water intake points to the treatment plants. A pumping scheme is much more expensive to run than a gravity scheme. In Kisumu, for example, the electricity cost of pumping water from the lake to

the treatment plant is “very high”. The implication has been a reduction in the hours of pumping water to consumers, unreliability of supply, and rationing.

*Box 10: Council raises cost of water*

Residents of Eldoret will from this month [January 2009] start paying more for water (...). The new charges will be reflected in the January water bills (...) according to the managing director of the Eldoret Water and Sanitation Company, Mr. Reuben Tuwei. Mr. Tuwei told the *Nation* (...) that they were implementing the gazette notice of December 15, last year, from Lake Victoria North Services Board, which ordered the increment. In the notice the chief executive officer, Mr. Diru Magomere, ordered that the increment should take effect this year. Other water services affected are Nzoia, Amatsi of Kakamega and Kapsabet. According to the notice, individual consumers, who don't have a meter installed, will pay a standing fee of Sh500. Reconnection fee has been increased from Sh300 to Sh500. The consumers have been paying Sh150 for up to 10 cubic meters of water consumed, but this has gone up to Sh250. The board cited rising costs of chemicals, electricity, fuel, lubricants and maintenance materials for the rise in the tariffs.

*Source:* The Nation Online 13 January 2009.

*Box 11: Outrage as firm increases water tariffs*

Outrage has greeted an increase in water tariffs by the Eldoret Water and Sewerage [sic] Company (Eldowas). Residents protested the move, which is aimed at harmonising tariffs under the Lake Victoria North Water Services Board (...) But Eldoret residents complained that the move was unrealistic. “Water flows by gravity from the Chebara Dam in Marakwet to Eldoret. The company does not spend much on pumping,” said [a] former councillor (...). “If other companies are incurring costs in terms of fuel and electricity to draw water from their sources, that is not the case in Eldoret,” said (...) a resident. Addressing the Press in Eldoret, consumer representatives announced they would hold protests (...) over the matter.

*Source:* The Standard Online 13 January 2009.

*Local political interference*

In its strategic plan (2007-2012), Kisumu Water and Sewerage Company points “local political interference” as one of the risks towards good governance, financial resource mobilization, promotion of efficient utilization of resources and effective communication to stakeholders and customers (KIWASCO 2007). It can be argued that political interference is bound to occur given the fact that the water companies are wholly owned by the local authorities which are by their very nature political. Politicians will always have a tendency of interfering with proposed water projects and appointment of Board of Directors.

*Box 12: Mombasa facing a water crisis*

Mombasa residents are now calling on the government to take over the management of water supply services to save the town from perennial water shortages. The residents said the Mombasa Water and Sewerage Company (Mowasco) should be disbanded for incompetence and mismanagement. "The situation is no longer bearable and the government should act immediately to avert a major outbreak of water-borne diseases", said businessman (...). Although water shortage in Mombasa is a common problem, the town and its environs have for the last one week experienced one of its worse water shortages forcing the residents to resort to untreated water from boreholes. "We thought the reforms in the water sector will bring positive changes in the water management but the situation has become a nightmare," said a restaurant owner (...). While the residents are crying over dry taps, water vendors are having a booming business where a jerrican of 20 litres is being sold at Sh40 and those staying in flats are paying more. A senior official at the Coast Water Services Board who talked to KNA on condition of anonymity blamed Mowasco for failing in its duties. The official said while the current water shortage was as a result of the breakdown of the only water pump at Baricho and the busting of the main pipe at Jomvu, the company stands accused of incompetence. The company has also been accused of failing to curb numerous illegal water connections in the town. "We at the board are very concerned and we have initiated measures aimed at improving water supply in Mombasa and other parts of Coast Province," he said. A reliable source at the Coast Water Services Board told KNA that the Managing Director of Mowasco (...) will soon be replaced as part of the process to put in place a new management team. The problems at the water company have been aggravated by the absence of a board of directors over the last three years owing to political differences between the Ministry of Water and Irrigation and councilors at the Mombasa Municipal Council. Plans to launch the board two months ago aborted when [Minister for Water and Irrigation] called off the ceremony after a group of councilors and members of civil society complained over its composition.

*Source:* The Kenya Weekly Post Posted on Wednesday October 29, 2008

(See [www.kenyaweklypost.com/modules.php?name=News&file=article&sid=7](http://www.kenyaweklypost.com/modules.php?name=News&file=article&sid=7), accessed on 16 February 2009).

*Inherited debts, liabilities and too many fees to be paid*

The water companies are paying too many fees – putting more pressure to their already constrained operation and maintenance costs. 10% of their total revenue goes to the municipality as a fee for lease of assets, 5% is paid to the Water Services Board, and another 1% is paid to the Water Services Regulatory Board. In addition, the water company is expected to pay 5 cents per every m<sup>3</sup> of water to the Water Resources Management Authority. For a period of time the Municipal Council of Kisumu exempted Kisumu Water and Sewerage Company from paying “dividends and rates” to the council until “they start making profit”. Furthermore, the companies claim to have inherited debts and other liabilities from the previous service providers, which they continue to repay or shoulder to-date.



### *Extension of water services to the low-income neighbourhoods*

Poor planning has made it difficult for municipalities to put up a water infrastructure, especially in the mushrooming informal settlements. Their illegal status – at least according to the municipal authorities – has hindered the expansion of municipal services to serve them. The LVWATSAN programme in Homa Bay is tackling this problem by combining its water and sanitation interventions with town planning. Increasing access of water to the urban poor has also been hampered by the perception that the poor do not have the capacity to pay, yet they are paying far much more to get water from water vendors and other sources.

*Photo 7: Persistent water problems in a low-income neighbourhood in Kakamega*



Photo: Sam Owuor

### *Lack of autonomy to do major investments*

Since the companies do not own the assets, they are only allowed to do minor investments. Water Services Boards who own and manage the assets are the ones responsible for investment. For any new investment, the Water Service Providers have to get approval (through a sector investment plan) from the Water Services Boards, implying more bureaucracies that it was intended to reduce.

### *Inevitable flat rate tariffs*

Flat rate tariffs, especially in Homa Bay and Kisii, will continue to persist as long as the problem of lack of meters and malfunctioning meters is not addressed. For example, over three-quarters of the connections are on a flat rate tariff because most of the meters

“stopped working long time ago”, according to one of the respondents. In Kisii, flat rate tariff is being used in areas where the likelihood of the meters being stolen is high as meters are very expensive to replace now and then.

#### *Persistent illegal connections*

Despite the efforts towards controlling, reducing and stopping this unsustainable habit from the consumers, all the water companies were concerned about the persistence of illegal connections, not only in low income areas as one would expect, but also in other parts of the city. In Kisumu, for example, there are cases of illegal connections even in schools.

#### *Other challenges*

Other challenges include:

- The receding lake levels, especially for Kisumu and Homa Bay which rely on Lake Victoria as their main source of water.
- Water treatment and quality issues in Kisumu and Homa Bay.
- Regular and sometimes very long power black-outs which interfere with pumping of water.
- Heavy reliance on donor funding.
- Pro-poor focus is yet to be fully achieved.
- Legal challenges, i.e. the legal penalty for illegal connections and other tampering of the water supply system by residents are not sufficiently punitive.

### 6.3 Towards a new research agenda

This Working Paper has outlined some of the emerging impact and challenges of water sector reforms and interventions in Kenya. Whereas the emerging impact and challenges are in line with the results of other studies and findings in Kenya<sup>118</sup>, there is need for a detailed research on some of these issues. One area that has so far received little attention is the impact of the water sector reforms and interventions on the livelihoods of the urban poor households. It has been observed that improved access to safe, reliable and affordable water, especially to the urban poor, can be beneficial in a number of ways, for example:

- It can improve the household’s health and nutritional condition by reducing water-borne diseases and morbidity.
- It reduces the amount of time and energy spent on looking for or fetching water, which can be used on other productive economic activities.
- It reduces the high cost of buying water from other sources and the cost incurred in treating waterborne diseases, which can otherwise be put to other uses.
- It increases participation of women in income-generating activities and the girl-child’s school attendance.

---

<sup>118</sup> See for example Wambua (2004); Ombogo (2006); Otiogo (2006); Citizen’s Report Card (2007); Kisima (2008) and WASREB (2008).



- It can enhance the household's economic activities that depend on water (i.e. small-scale businesses, urban farming, etc).

The proposed research project (by the authors) not only aims to provide a detailed description and analysis of the nature and extent of water sector reforms and interventions in urban Kenya, but more importantly, to assess the impact of the reforms and interventions on the livelihood of the urban poor households.



## References

- Alder, G. (1995), Tackling poverty in Nairobi's informal settlements: Developing an institutional strategy. *Environment & Urbanization* 7(2): 85-108.
- APHRC (2002), *Population and health dynamics in Nairobi informal settlements*. Nairobi: African Population and Health Research Centre.
- Bayliss K. (2003), Utility privatisation in sub-Saharan Africa: A case study of water. *Journal of Modern African Studies* 41(4): 507-531.
- Bigsten, A. & S. Kayizzi-Mugerwa (1992), Adaption and distress in the urban economy: A study of Kampala households. *World Development* 20(10): 1423-1441.
- Brock, B. & D. Foeken (2006), Urban horticulture for a better environment: A case study of Cotonou, Benin. *Habitat International* 30: 558-578.
- Brown, A. & T. Lloyd-Jones (2002), Spatial planning, access and infrastructure. In C. Rakodi & T. Lloyd-Jones, eds, *Urban livelihoods: A people-centred approach to reducing poverty*, pp. 188-204. London: Earthscan.
- Budds, J. & G. McGranahan (2003), Are the debates on water privatization missing the point? Experiences from Africa, Asia and Latin America. *Environment & Urbanization* 15(2): 87-113.
- Carney, D. (1998), Implementing the sustainable rural livelihood approach. In D. Carney, ed., *Sustainable rural livelihoods: What contribution can we make?*, pp. 3-23. London: Department of International Development (DfID).
- Carpenter, G. (2003), *Making markets work for clean water in balancing competing water uses – present status and new prospects*. Paper presented at the “Twelfth Stockholm water symposium”, August 12-15, 2003. London: IWA Publication.
- Citizen's Report Card (2007), *Citizens report card on urban water, sanitation and solid waste services in Kenya: Summary of results from Nairobi, Kisumu and Mombasa*. Nairobi: CRC Initiative.
- Davis, J., A. Kang, J. Vincent & D. Whittington (2001), How important is improved water infrastructure to micro enterprises? Evidence from Uganda. *World Development* 29(10): 1753-1768.
- de Haan, L. & A. Zoomers (2003), Development geography at the crossroads of livelihood and globalisation. *Tijdschrift voor Economische en Sociale Geografie* 94(3): 350-362.
- Dinar, A. (2000), *The political economy of water pricing reforms*. Washington D.C.: World Bank.
- Ellis, F. (2000), *Rural livelihoods and diversity in developing countries*. Oxford: Oxford University Press.
- Fine, B. (2002), It ain't social, it ain't capital and it ain't Africa. *Studia Africana* 13: 18-33.
- Foeken, D. (2006), *“To subsidise my income”: Urban farming in an East African town*. Leiden: Brill.
- Gakuria, F. (2008), *Water sector reforms*. Guest lecture presented to the University of Nairobi, Department of Geography and Environmental Studies students, Mombasa, December 9, 2008.
- Gulyani, S., D. Talukdar & R.M. Kariuki (2005), *Water for the urban poor: Water markets, household demand, and service preferences in Kenya*. Washington, DC: The World Bank, Water Supply & Sanitation Sector Board, Discussion Paper No. 5.
- Hansen, K.T. & M. Vaa (2004), *Reconsidering informality. Perspectives from urban Africa*. Uppsala: Nordiska Afrikainstitutet.
- Hukka, J.J. & T.S. Katko (2003), *Water privatisation revisited. Panacea or pancake?* Delft: IRC International Water and Sanitation Centre.
- Kaag, M., R. van Berkel, J. Brons, M. de Bruijn, H. van Dijk, L. de Haan, G. Nooteboom & A. Zoomers (2004), Ways forward in livelihood research. In: D. Kalb, W. Pansters & H. Siebers,

- eds, *Globalization and development: Themes and concepts in current research*, pp. 49-74. Dordrecht: Kluwer.
- K' Akumu, O. (2004), Privatization of the urban water supply in Kenya: Policy options for the poor. *Environment & Urbanization* 16 (2): 213-222.
- K' Akumu, O.A. (2006), Privatization model for water enterprise in Kenya. *Water Policy* 8 (2006): 539-557.
- Kenya, Government of (1986), *Sessional Paper No. 1 of 1986 on Economic Management for Renewed Growth*. Nairobi: Government Printer.
- Kenya, Government of (1999), *Sessional Paper No. 1 of 1999 on National Policy on Water Resources Management and Development*. Nairobi: Government Printer.
- Kenya, Government of (2002), *The Water Act 2002*. Nairobi: Government Printer.
- Kenya, Government of (2003), *Economic Recovery Strategy for Wealth and Employment Creation*. Nairobi: Government Printer.
- Kenya, Government of (2006a), *The National Water Resources Management Strategy (NWRMS) (2006-2008)*. Nairobi: Ministry of Water and Irrigation.
- Kenya, Government of (2006b), *Kenya National Water Development Report: A Report Prepared for the UN World Water Development Report II*. Nairobi: Ministry of Water and Irrigation.
- Kimani-Murage, E.W. & A.M. Ngindu (2007), Quality of water the slum dwellers use: The case of a Kenyan slum. *Journal of Urban Health* 84 (6): 829-838.
- Kirkpatrick, C., D. Parker & Y. Zhang (2006), An empirical analysis of state and private-sector provision of water services in Africa. *The World Bank Economic Review* 20 (1): 143-163.
- Kisima (2007), *Will SWAps fix the water sector?*. Kisima Issue 4 January 2007.
- Kisima (2008), *Water sector reforms: Five years on*. Kisima Issue 4 May 2008.
- KIWASCO (2008), *Kisumu Water and Sewerage Company Limited Strategic Plan 2007-2012*. Kisumu: KIWASCO.
- Kjellén, M. & G. McGranahan (2006), *Informal water vendors and the urban poor*. London: International Institute for Environment and Development (IIED), Human Settlements Discussion Paper Series, Theme: Water-3.
- Krhoda, G.O. (2008), *Building broad coalitions around decentralized institutions in water sector reforms in Kenya*. Paper presented at the "NCCR North-South programme – JACS East Africa – CETRAD/DOGES scientific workshop", Naivasha, December 15-16, 2008.
- Lee-Smith, D. & P.A. Memon (1994), Urban agriculture in Kenya. In A.G. Egziabher *et al.*, eds, *Cities feeding people: An examination of urban agriculture in East Africa*, pp. 67-84. Ottawa/Nairobi: IDRC.
- LVNWSB (2008), *"Water and Beyond"*. Lake Victoria North Water Services Board Newsletter, Issue 2, January-March 2008.
- Meijer, K. (2005), *Private sector participation in the water sector of Nakuru, Kenya. A sustainable livelihoods approach*. Amsterdam: University of Amsterdam, Faculty of Social and Behavioural Sciences (Unpublished Masters Thesis).
- Ministry of Water and Irrigation (MWI) (2005), *Strategic Plan of the Ministry (2005-2009)*. Nairobi: Ministry of Water and Irrigation.
- Morel, A. (2006), *A delegated management model to improve water supply delivery within informal settlements: Lessons learnt from Nyalenda, Kisumu*. Paper presented at the "Africities Conference", Nairobi, Kenya, September 18-22, 2006.
- Mumma, A. (2005), *Kenya's new water law: An analysis of the implications for the rural poor*. Paper presented at the international workshop on "African water laws: Plural legislative frameworks for rural water management in Africa", Johannesburg, January 26-28, 2005.
- Mwangi, S.W. (2000), Partnerships in urban environmental management: An approach to solving environmental problems in Nakuru, Kenya. *Environment & Urbanization* 12(2): 77-92.

- Mwangi, S.W. (2002), *Challenges of urban environmental governance: Participation and partnership in Nakuru Municipality, Kenya*. Amsterdam: University of Amsterdam (PhD thesis).
- Ngigi, A. & D. Macharia (2006), *Kenya: Water sector policy overview paper*. Paper presented to Intelligent Energy, European Commission.
- Odhiambo, W. & D.K. Manda (2003), *Urban poverty and labour force participation in Kenya*. Paper presented at the “World Bank urban research symposium”, Washington D.C., December 15-17, 2003.
- Ombogo, P.L. (2006), *Strategy for access to water and sanitation services in informal settlements: The Kisumu experience*. Paper presented at the “Africities Conference”, Nairobi, Kenya, September 18-22, 2006.
- Onjala, J.O. (2002), *Managing water scarcity in Kenya: Industrial response to tariffs and regulatory enforcement*. Roskilde: Roskilde University, Department of Environment, Technology and Social Studies (PhD thesis).
- Otiogo, L.A. (2006), *Commercialization of water services in informal settlements: Case study of Manyatta in Kisumu municipality, Kenya*. Nairobi: University of Nairobi, Department of Urban and Regional Planning (MA thesis).
- Owuor, S.O. & D. Foeken (2006), Surviving in the neighbourhoods of Nakuru, Kenya. In P. Konings & D. Foeken, eds, *Crisis and creativity: Exploring the wealth of the African neighbourhood*, pp. 22-45. Leiden: Brill.
- Owuor, S.O., B. Charlery, M. Chretien & B. Schaffner (2006), Urban planning and management in small and medium-size towns. *Les Cahiers d’Afrique de l’Est (Supplementary Issue)*, September, 2006: 23-48.
- Prasad, N. (2006), Privatisation results: Private sector participation in water services after 15 years. *Development Policy Review* 24 (6): 669-692.
- Rakodi, C. (2002a), A livelihood approach – Conceptual issues and definitions. In C. Rakodi & T. Lloyd-Jones, eds, *Urban livelihoods: A people-centred approach to reducing poverty*, pp. 3-22. London: Earthscan.
- Rakodi, C. (2002b), Economic development, urbanization and poverty. In C. Rakodi & T. Lloyd-Jones, eds, *Urban livelihoods: A people-centred approach to reducing poverty*, pp. 23-34. London: Earthscan.
- Rakodi, C. & T. Lloyd-Jones, eds (2002), *Urban livelihoods: A people-centred approach to reducing poverty*. London: Earthscan.
- Ravallion, M. (2001), *On the urbanization of poverty*. Washington DC: World Bank.
- Rogerson, C.M. (1997), Globalization of informalization: African urban economies in the 1990s. In C. Rakodi, ed., *The urban challenge in Africa: Growth and management of its cities*. Tokyo: United Nations University Press.
- Satterthwaite, D. (1997), *Urban poverty: Reconsidering its scale and nature*. Background paper for the “International Institute for Environment and Development (IIED) series of workshops on poverty reduction in urban areas”.
- Simon, D. (1997), Urbanization, globalization and economic crisis in Africa. In C. Rakodi, ed., *The urban challenge in Africa: Growth and management of its large cities*, pp. 74-108. Tokyo: United Nations University Press.
- Solo, T.M. (1999), Small-scale entrepreneurs in the urban water and sanitation market. *Environment & Urbanization* 11(1): 117-131.
- UNCHS/Habitat (1996), *An urbanizing world: Global report on human settlements*. London: Oxford University Press.
- UNDP (2006), *Human Development Report 2006 – Beyond scarcity: Power, poverty and the global water crisis*. New York: United Nations Development Programme.
- UN-HABITAT (2003), *Slums of the world: The face of urban poverty in the new millennium?* Nairobi: UN-HABITAT Global Urban Observatory.

- UN-HABITAT (2005), *Kenya urban sector profile*. Nairobi: United Nations Human Settlements Programme (UN-HABITAT).
- UN-HABITAT (2006), *Meeting development goals in small urban centres. Water and sanitation in the world's cities 2006*. Nairobi & London: United Nations Human Settlements Programme (UN-HABITAT) & Earthscan.
- UN-HABITAT (2007), "Water for Cities". UN-HABITAT quarterly newsletter, Issue 29, January-March 2007.
- UN-HABITAT (2008), *Lake victoria water and sanitation initiative*. Nairobi: UN-HABITAT.
- Wambua, S. (2004), *Water privatization in Kenya*. Berlin: Heinrich Böll Foundation, Global Issue Paper No. 8.
- WASREB (2008), *Impact: A performance report of Kenya's water services sub-sector – Issue No. 1*. Nairobi: Water Services Regulatory Board.
- WASP (2005), *Rogues no more? Water kiosk operators achieve credibility in Kibera - Fieldnote*. Nairobi: World Bank Water and Sanitation Programme.
- WHO/UNICEF (2000), *Global water supply and sanitation assessment 2000 report*. Geneva: World Health Organization.
- WHO/UNICEF (2006), *Meeting the MDG drinking water and sanitation target. The urban and rural challenge of the decade*. Geneva: World Health Organization.
- World Bank (2004), *Reforming infrastructure: Privatization, regulation, and competition*. World Bank Policy Research Report. Washington D.C.: World Bank.