

A tale of two cities: restoring water services in Kabul and Monrovia

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Kabul and Monrovia, the respective capitals of Afghanistan and Liberia, have recently emerged from long-lasting armed conflicts. In both cities, a large number of organisations took part in emergency water supply provision and later in the rehabilitation of water systems. Based on field research, this paper establishes a parallel between the operations carried out in the two settings, highlighting similarities and analysing the two most common strategies. The first strategy involves international financial institutions, which fund large-scale projects focusing on infrastructural rehabilitation and on the institutional development of the water utility, sometimes envisaging private-sector participation. The second strategy involves humanitarian agencies, which run community-based projects, in most cases independently of the water utilities, and targeting low-income areas. Neither of these approaches manages to combine sustainability and universal service. The paper assesses their respective strengths and weaknesses and suggests ways of improving the quality of assistance provided.

Keywords: armed conflict, humanitarian aid, Kabul, Monrovia, urban services, water supply

Introduction

Kabul and Monrovia are two very different cities with little in common apart from being the capitals of their respective countries, Afghanistan and Liberia. Yet their recent history reveals a tragic similarity: both have suffered, almost simultaneously, from the burden of years of war. With respect to the unfolding of events, the parallels are remarkable:

- The year 1992 saw Mujahideen fighters enter Kabul, after the withdrawal of the Soviet army. Almost immediately, a four-year power struggle between rival factions began that left some 20,000 people dead and large portions of the city destroyed (Johnson, 2004). In the same year, Monrovia came under attack by rebel forces led by Charles Taylor, causing destruction and generating mayhem among the thousand of displaced persons who had fled war in the provinces.
- In 1996, the Taliban (a Sunni Islamist, predominately Pashtun movement of 'students') took Kabul and Taylor's forces attacked Monrovia. In the following months, peace returned to both countries, at least to the capitals. In Liberia, a presidential election was organised and resulted in a landslide victory for Taylor.

- In 2001, Kabul was bombed again, this time by the United States. The city fell in only a few days, and the Taliban regime collapsed. Less than two years later, Taylor's opponents swiftly took over Monrovia, forcing the president to go into exile.

Since then, Afghanistan and Liberia have both experienced a transition towards democracy under the guidance of the United Nations (UN). However, while Liberia seems to be on the pathway to stability, Afghanistan remains at war in its southern provinces.

Long-term wars such as those in Afghanistan and Liberia affect cities in many ways. The damage to urban infrastructure is the most apparent product but communities and institutions also suffer. A common consequence is disruption to essential services such as the water supply. In Kabul and Monrovia, the emergencies led to interventions by a number of humanitarian organisations that contributed to the partial restoration of water supplies. Later came the start of efforts to rehabilitate the water networks in both cities, which were ongoing in September 2007.

This paper draws a parallel between restorations of the water supply in the two cities. Its aim is to show that, in addition to aid agencies and water utilities, communities of consumers have important roles to play in the delivery of water in an environment transformed by war. The discussion suggests answers to questions regarding how their respective involvements influence the outcome of projects. The paper concludes by presenting possible ways of improving strategies to maximise the benefits of interventions by aid agencies.

Research methodology

Kabul and Monrovia were identified as the most significant components of a wider case study research project that also looked at cities and towns in Chechnya, the Democratic Republic of Congo, Haiti, and Sri Lanka. They were selected to take account of a wide range of elements of emergency situations, including type and intensity of armed conflict, geography, and the nature of interventions by aid agencies. The research focused on interventions by different categories of aid agencies, and covered several types of projects, with various levels of involvement by water utilities and communities of consumers. These interventions were chosen as the unit of study—that is, the nature of the 'cases'. The outcome was then evaluated in terms of service sustainability and coverage, in particular for areas sheltering the most vulnerable. The data reported was taken essentially from unpublished reports and from field visits carried out in 2005. During the field visits, water utilities' officials, community leaders, and members of aid agencies were interviewed. Questions posed concentrated on the consequences of war for the water supply and on the kind of interaction among aid agencies, water utilities, and communities in relation to the quality of assistance provided.

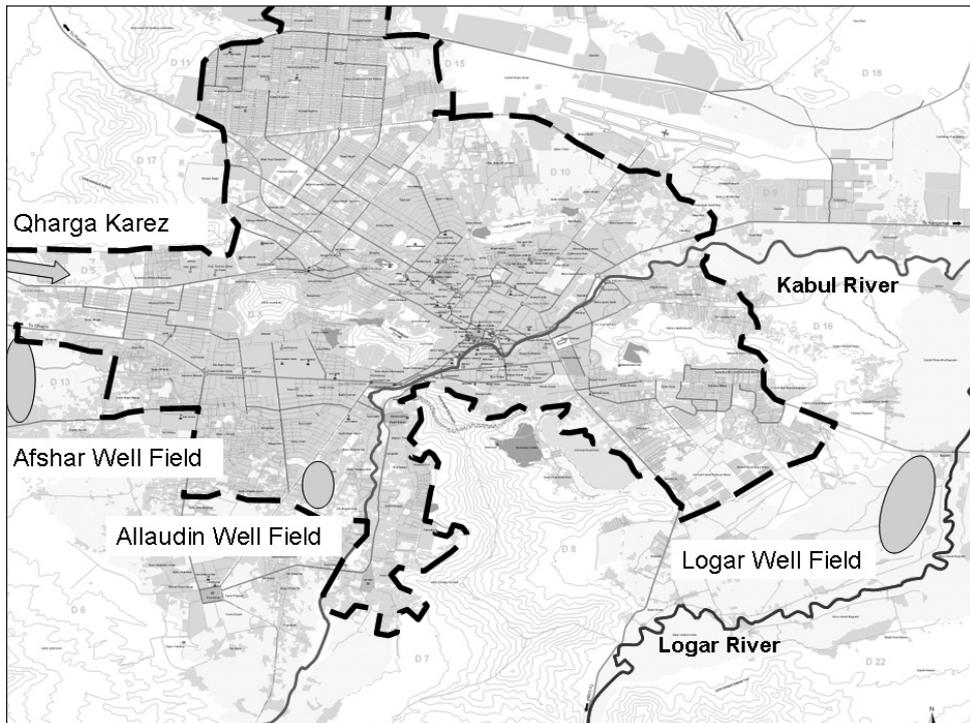
Kabul, Monrovia and their water supplies

Green (2000, p. 343) describes rehabilitation as restoring 'the same level of functionality as before the crisis'. In the case of Kabul and Monrovia, this task seems virtually impossible because war has transformed these cities to such an extent that their appearance, infrastructure, institutions, population, and size post-crisis are very different from what they were before. A more appropriate definition here would be to adapt the 'level of functionality' to the new situation. This section describes the transformation of these cities, concentrating on the water supply and on how aid agencies responded to the resulting emergency situations.

Kabul

Although Afghanistan has been at war since 1978, Kabul was spared until the withdrawal of Soviet troops on 15 February 1989. At that time, its population numbered around 1.3 million.¹ A water network fed mainly from a mixture of boreholes and surface water supplied approximately 60 per cent of these people. The boreholes feeding the network were either part of three main well fields located on the southern fringe of the city (see Figure 1), or individual wells. Certain neighbourhoods, inside the city and on its periphery, were not connected to the main water network

Figure 1 Kabul's main water production sources and extension of the master plan



Note: a 'Karez' is an underground canal.

Source: based on a map by the Afghanistan Information Management Service (AIMS), <http://www.aims.org.af>.

and had independent water schemes. Total water production in 1988 was estimated at 86,000 cubic metres (m^3) per day (Banks and Hamid, 2002). The network had 30,000 individual connections, half of them metered. Water was available for between six and eight hours a day, on a regular schedule. Households not supplied with piped water relied on public and private shallow wells. The development of the water network was according to a master plan designed in the mid-1970s. Figure 1 shows the portion of the city supplied by the central water network, according to this master plan.

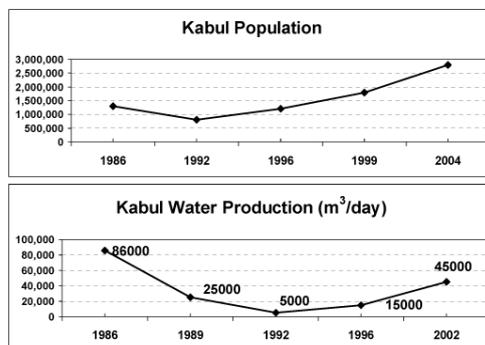
The public utility, Central Authority for Water Supply and Sewerage (CAWSS), was in charge of running the water supply and sewerage system in Kabul. It was also responsible for implementing works to develop the Kabul water network, according to the master plan. The institution was almost self-financing, with only 10 per cent of its budget coming from central government.

When fighting erupted around Kabul soon after the Soviet withdrawal in February 1989, the Afshar and Logar well fields were looted almost immediately. Water production fell sharply to 25–30,000 m^3 /day (Banks and Hamid, 2002). The situation worsened after April 1992, when the Mujahideen took the city. The power supply was then halted totally and the pumping stations plundered. People could only obtain water from shallow wells and from the Qargha ‘Karez’, an underground canal, which was producing less than 5,000 m^3 /day. Heavy fighting continued intermittently until 1994 and some 500,000 people abandoned the city. From 1994, a reduction in the intensity of hostilities allowed aid organisations including Care, Solidarités and the United Nations Centre for Human Settlements (UNCHS)–Habitat to intervene (Solidarités, 1995). Their operations initially consisted of water trucking and the construction of more than 2,000 public shallow wells, most of which were boreholes equipped with handpumps (Pinera, 1999). Essential repairs to the Afshar and Allaudin well fields and to some individual wells supplying the network were later carried out, allowing water production to reach an estimated 15,000 m^3 /day (see Figure 2). This reduced level of production was maintained until the fall of the Taliban at the end of 2001. The CAWSS, which used to employ 400 staff in

Kabul, including 34 engineers, lost most of its qualified personnel and all of its equipment and vehicles.

Kabul’s infrastructure suffered heavy damage during the war, with its south-west quarter being literally flattened. When a large number of people returned home from abroad after the demise of the Taliban regime, many found their houses partially or completely destroyed and initiated their reconstruction. Some settled down in abandoned buildings or in improvised camps in certain neighbourhoods. The

Figure 2 Population movement and water production in Kabul



construction of new houses on the outskirts of the capital also contributed to the city's expansion, while the slopes of the group of hills in the centre were covered with more houses. Most of these families occupied areas not included in Kabul's master plan (see Figure 1). New densely populated neighbourhoods were created where people, among the poorest in the city, lived. In less than two years, the city's population grew from almost 1.8 million under the Taliban² to an estimated 2.8 million in 2004 (Grinnell and Troc, 2004).

Figure 2 shows the evolution of Kabul's water supply and population throughout the crisis.

Monrovia

Liberia became politically unstable from the mid-1970s, when the country suffered a severe recession followed by a bloody coup (in April 1980). In this difficult context, the water utility, Liberia Water and Sewer Corporation (LWSC), still managed to serve 75 per cent of the Monrovia area using 17,900 individual connections, of which 45 per cent were metered (Willson, 2003). Households not connected to the water network were relying on a few public taps and on a large number of private shallow wells. The White Plains treatment plant, located 15 kilometres northeast of the capital, on the Saint Paul River (see Figure 3), ensured water production. Its average daily production was 61,000 m³/day (Willson, 2003).

When a rebellion against the government reached the surroundings of Monrovia in April 1990, the water supply from White Plains was among the first services to suffer and cease production. Organisations including the International Committee of the Red Cross (ICRC), Médecins sans Frontières-Belgium (MSF-Belgium), and the United Nations Children's Fund (UNICEF) intervened to support the LWSC and managed the resumption of water production to 22,500–37,500 m³/day (Ockleford, 1993; Smith et al., 2001). Along with other organisations, they constructed a large number of public wells equipped with handpumps. A new interruption to the water supply occurred during the October 1992 attack and was not corrected until the end of 1993, when Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) installed power generators at White Plains. The same year, MSF-Belgium, supported by GTZ, drilled two boreholes in Paynesville, an area situated east of the city (Smith and Kpakolo, 2004). Damage to the transmission line did not allow the water supply from White Plains to be restored beyond Bushrod Island (see Figure 3), a densely populated area located north of the city, to which between 7,100 and 7,500 m³ of water was delivered daily (Smith et al., 2001; Geoscience, 1998). Since then, water trucks or wheelbarrow vendors have distributed a large portion of drinking water, either from the water network through Bushrod Island outlets or from Paynesville boreholes.

In 2003, production at White Plains dropped further, to slightly more than 3,500 m³/day, due to a lack of fuel (Smith and Kpakolo, 2004). The LWSC, in the same way as the CAWSS, lost most of its qualified personnel and assets. The situation changed in mid-2006 when the newly elected government carried out major repairs to the transmission line, resulting in a substantial increase in water production and allowing water again to reach Central Monrovia after almost 15 years of interruption.

War in Monrovia caused far less destruction than in Kabul because rockets were used only during the short crisis of 2003. However, Monrovia, like Kabul, experienced a sudden population rise: from 400,000 in 1988 (Perry, 1988) to an estimated one

Figure 3 Monrovia main water supply sources

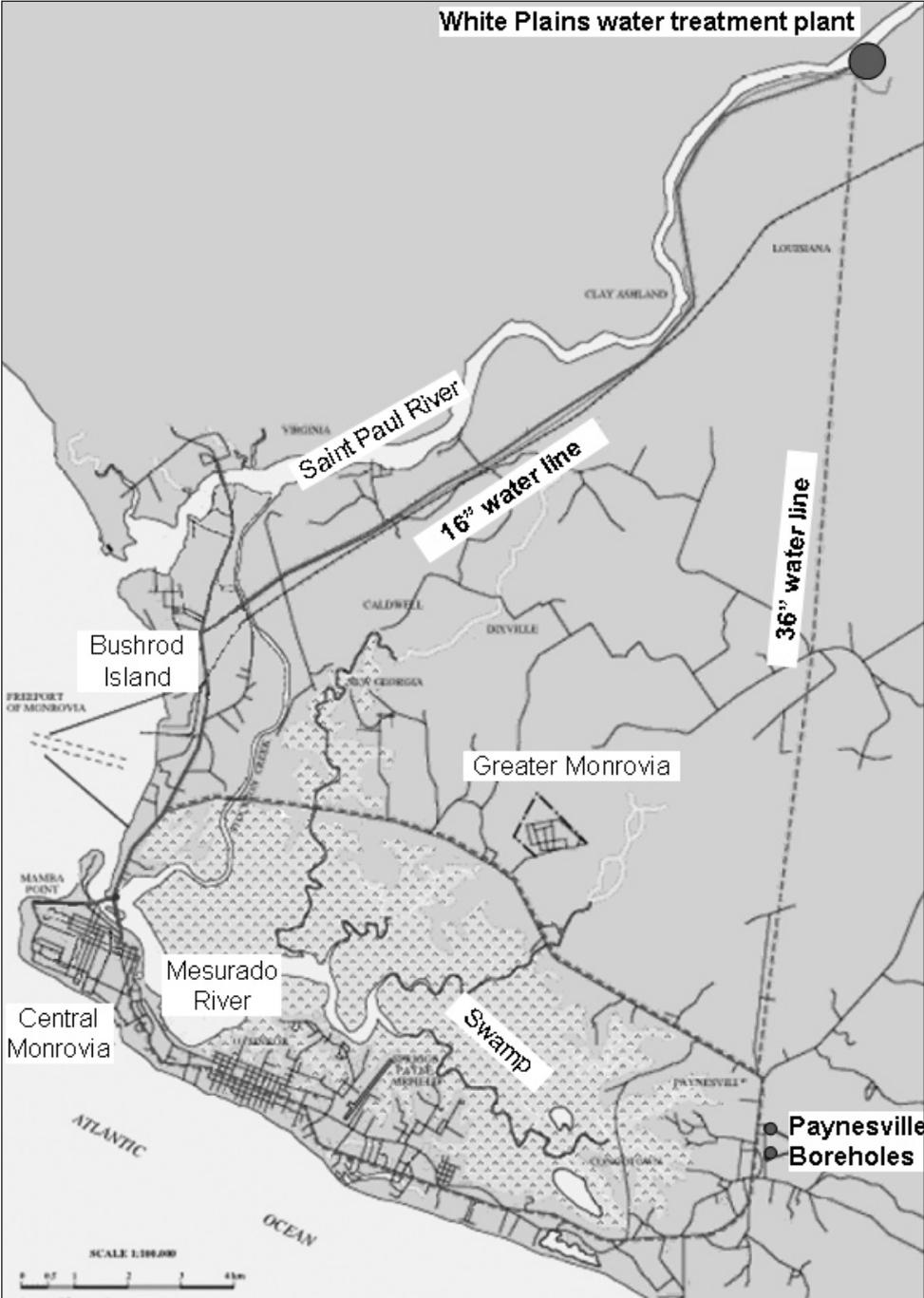
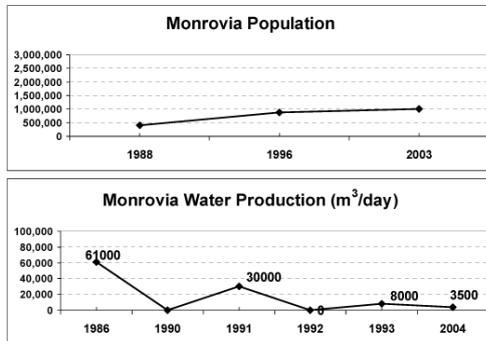


Figure 4 Population movement and water production in Monrovia



million in 2005 (Smith and Kpakolo, 2004). This was due to the influx of tens of thousand of people fleeing the devastation in the countryside after months of conflict. They settled in the capital and in the camps surrounding it. These camps received 200,000 people between 1992 and 1995 (Atkinson and Mulbah, 2000). A large proportion of newcomers to Monrovia went to the shantytowns located along the Mesurado River's swamp (see Figure 3). They also built houses in the peripheral area, thereby contributing to the extension

of the city beyond its original limits. These new settlements are part of what is known as 'Greater Monrovia'.

Figure 4 shows the evolution of Monrovia's water supply and population throughout the crisis.

Different approaches to the rehabilitation of water supply systems

Once the situations in Kabul and Monrovia seemed to have stabilised, a number of organisations initiated the rehabilitation of the water supply systems using similar strategies in both cities. One can distinguish two types of intervention:

- Large-scale rehabilitation projects, supported by bilateral and/or multilateral donor organisations, initiated as soon as the political environment was considered suitable. These actors adopted a more global approach aiming to improve durably the whole system of water production, distribution and management. They also planned institutional reforms.
- Rehabilitation works on a relatively modest scale, mostly carried out by international non-governmental organisations (NGOs) that had also participated in the emergency operations. Their main objective was to avoid outbreaks of communicable diseases due to the deterioration in access to water, sanitation and health services, especially in the most congested areas.

These strategies were expected to contribute to the improved efficiency of the water service.

Kabul

Essential repairs to the water network started from 1995 when the NGOs Care, Oxfam and Solidarités performed repairs to pumping stations, part of the main

Table 1 Major essential rehabilitation projects to the Kabul water network

Organisation	Operation	Period	Result/references
Care	Rehabilitation of pumping stations in Afshar well field	1995 (six months)	Handed over to Solidarités
Solidarités	Operation, repair and maintenance of pumping stations (including Afshar) and independent networks in Kabul and along its periphery	1995–98	Interrupted (Solidarités, 1995)
Care	Rehabilitation of two well fields, including Allaudin	1996–2006	Handed over to the CAWSS (planned)
Oxfam	Logar well field rehabilitation	1997–99	Interrupted (Cosgrave, 1999)
ICRC	Logar well field electrification (with the British Red Cross Society)	2002–03	Completed (Elliott, 2002)
	Works in five areas of Kabul network, including Afshar (with the Spanish Red Cross Society)	2002–03	Completed (Diago and Arnalich, 2004)
KfW/RRI-Beller/Kocks	Urgent repairs on Kabul network (KfW, Phase I)	2002–05	Completed (KfW, 2003)

water network, and some of the independent water schemes. From 2002, the ICRC and German government-owned development bank *Kreditanstalt für Wiederaufbau* (KfW), through the German consulting firm RRI-Beller/Kocks (KfW, Phase I), became involved. By 2005, water production was restored to 45,000 m³/day (see Figure 2) and the number of house connections returned to the pre-war level of 43,000. Table 1 provides more details on these operations.

From 2003, the rehabilitation of the Kabul water network on a large scale could be planned, starting with a feasibility study, funded by KfW, and carried out by RRI-Beller/Kocks. Based on its conclusions, KfW, together with the World Bank, funded a €100 million rehabilitation of the water network (KfW, Phase II), which included drilling and equipping 26 new deep wells with the objective of producing a daily average of 121,000 m³ of water by 2010 (Fischaess, 2003). The project planned to turn the CAWSS into a state corporation, accountable to a board of directors instead of to the Ministry of Urban Development and Housing. Its branches, in 13 cities and towns, were meant to acquire greater autonomy and it was envisaged that ‘independent service providers’, ‘publicly, privately, or cooperatively owned’, would take part in the service (MUDH, 2005).

In parallel with these large-scale rehabilitation and institutional development plans, a number of organisations, primarily NGOs, carried out community-based projects expected to have a swift impact on living conditions in the poorest areas. They targeted neighbourhoods outside the master plan since, in the short and medium

term, it was not expected that the main water network would supply them (Pinera and Rudge, 2006). Some of these neighbourhoods were served by independent water schemes, usually consisting of a borehole and a number of tap stands. While theoretically the responsibility of the CAWSS, they were in practice left to the communities to manage. Only a small proportion of the population living in 'unplanned' areas benefited from water schemes, with the majority relying on public or private shallow wells, sometimes equipped with handpumps.

The projects run by organisations such as the ICRC and the French NGOs Action Contre la Faim (ACF) and Solidarités comprised:

- constructing and rehabilitating water points/systems, usually boreholes equipped with handpumps or existing water schemes;
- training mechanics to repair them;
- building or rehabilitating private latrines;
- organising hygiene promotion (house-to-house visits, sessions in schools and mosques, focus group sessions etc.); and
- encouraging the creation of water committees to manage the operation and maintenance of the systems (handpumps or small-scale water schemes).

Kabul municipality and the CAWSS had little or no interest in these projects.

Monrovia

GTZ, the ICRC, MSF-Belgium and UNICEF were involved initially in making essential repairs to the water supply system. This task was continued from 1996 by the Florence-based consulting firm, Geoscience, funded by the European Development Fund (EDF). Table 2 provides more details.

While these repairs and the support provided to the LWSC contributed to a slow down in the deterioration of Monrovia's water production capacity, they failed to reverse the trend.

After the fall of Taylor's regime in August 2003, a large-scale rehabilitation of the water supply was envisaged. A number of studies, among them a water demand and market study, were carried out in 2004 (Browne and Tsikisayi, 2004) and led to the launch of a €3 million rehabilitation project, funded by the European Union (EU) and awarded to the German consulting firm Hydroplan. One of the main objectives of this project was a complete overhaul of the water treatment plant and of the transmission lines carrying water to the city (see Figure 3). The project also foresaw the drilling of new boreholes in the Paynesville area. The EU's project recommended the delegation of the management of the city's water supply to the private sector through concessions. This option involved making private companies responsible for the operation and maintenance of the utility's assets as well as for necessary investments in the infrastructure (World Bank, 1997). The LWSC would however remain responsible for water production, quality control, and primary distribution through the transmission line. It would also distribute water in areas of Monrovia where

Table 2 Essential major rehabilitation projects to the Monrovia water network

Organisation	Operation	Period	Result/references
MSF-Belgium/UNICEF	Support to the water utility, repairs to power supply	1990–91	Handed over to the ICRC (Ockelford, 1993)
ICRC	Support to the water utility, repairs to power supply. Support for water production (six months)	1991	Completed (Smith et al., 2001)
EDF/GTZ/MSF-Belgium	Drilling of Paynesville boreholes, repairs (including the installation of generators) to White Plains water treatment plant	1993	Completed (Smith et al., 2001)
EDF/Geoscience	Essential repairs on water network and support for the LWSC	1996–2003	Completed (Geoscience, 1998; Smith, 2001; 2004)

concession would not be viable because of low-income levels and/or insufficient population density. The process was initiated in March 2005 but the new government that came to power in February 2006 opted to halt it. It questioned the process of privatisation and decided to test the project in the richest areas—community-based management of public stand-posts was preferred in low-income neighbourhoods. Implementation was ongoing in mid-2007.

Community-based projects aimed at preventing outbreaks of cholera were also carried out in Monrovia by organisations such as the ACF, Concern, the ICRC, Oxfam and UNICEF. In the peri-urban areas of Monrovia (Greater Monrovia; see Figure 3), their activities were similar to those implemented in Kabul, with the difference that in Monrovia, community-based organisations (CBOs) played a prominent role in community mobilisation. The relief agencies active in central areas of Monrovia tended to focus on ensuring fair access to the water sold by trucks and small vendors. For this purpose, Oxfam and UNICEF distributed water reservoirs, ranging from approximately 1,000–11,000 litres in volume, to be managed by communities that purchased water from bulk suppliers and agreed a selling price.

Oxfam's project in Clara Town, a densely populated, low-income area of Bushrod Island, deserves special attention since it dealt with illegal water vendors. In 2004, it was estimated that up to 60 per cent of White Plains' water was unaccounted for (Smith and Kpakolo, 2004). Part of the problem was due to leaks, but the main cause was water sellers illegally connecting to the network. Low pressure in the network obliged them to fill water vessels from the bottom of holes they dug to pierce the pipes. The conditions in which they sold water were very unhygienic. Since the network was not constantly under pressure, it could be contaminated through seepage from surface water accumulating in the holes. Criminal gangs often controlled these vendors, and, for an international NGO, it was difficult to work in such an environment. Oxfam, though, had been able to intervene in Clara Town

since mid-2005, in partnership with a CBO. The agency selected 30 of these illegal vendors and signed an agreement with the LWSC whereby they were recognised and equipped with water meters. Water sellers received from Oxfam appropriate plastic water tanks, allowing them to sell water throughout the day. Moreover, the connections to the network were improved to avoid contamination (Oxfam, 2005).

The project was planned to run in collaboration with the LWSC. This choice was a singular one for the community-based projects (whether in Kabul or Monrovia), promoting autonomous water sources such as community wells, which were independent of the municipal water supply. These projects were beneficial in terms of social cohesion, which is particularly important in societies emerging from armed conflict, but they did not contribute to increasing the coverage or the quality of municipal services.

Discussion: achieving a sustainable service for all consumers

The concept of 'quality' applied to the delivery of humanitarian assistance has gained momentum in the past 15 years or so, along with the related notion of 'humanitarian assistance accountability'. This is mostly due to the increase in the number of emergency operations and relief agencies and in the amount of funds spent during this period (Macrae, 2002). As mentioned in the methodology section, the quality of the assistance obtained by the interventions considered was measured, for this research, in terms of sustainability and coverage. Sustainability refers to the capacity of the activity supported by the project to carry on producing outputs when external assistance is withdrawn. Coverage considers the share of the targeted population that is actually in receipt of the assistance. Analysing these parameters is particularly relevant for the rehabilitation of water systems in urban areas affected by armed conflict because they are reflected in the two types of intervention mentioned above. Large-scale interventions are concerned with services that are sustainable, albeit sometimes for a minority of consumers, while community-based projects prioritise access coverage.

Sustainable services and privatisation

Strengthening the capacity of the water utility is essential for obtaining sustainable results, especially when water utilities are weakened. Through institutional development initiatives, they may acquire the financial, managerial and technical capacity to run the service and to make appropriate strategic choices.

Sohail, Cavill and Cotton (2005) further analyse the nature of urban services' sustainability, dividing it into three components:

- technical sustainability, linked to the capacity of the utility to operate and maintain its assets;

- financial sustainability, which relies on its capacity to recover costs; and
- institutional sustainability, which depends on its credibility as a service provider with regard to both consumers and local administrations.

Institutional development requires close collaboration with governmental agencies, which is only possible when aid agencies and donors consider them as acceptable partners. It can be a difficult task and corruption often adds to the problem. In spite of these challenges, such initiatives have taken place and institutional reforms of water services were launched in Kabul and Monrovia.

In Kabul, where they are most advanced, it took three years for a 'vision' for the institutional development of the water utility to be conceptualised (MUDH, 2005), and it may take even longer for it to be fully implemented. The selected option for improving the efficiency of the service was to rely on 'service providers', a way of limiting the number and diversity of tasks to be conducted by a weak water utility. Policymakers considered different types of possible 'service providers' but, according to the manager of the KfW-funded project, the likely option was a management contract granted to a private company.³

In Monrovia, the choice of going for concessions is an even bolder one, largely questioned by the new management of the LWSC that took over after February 2006. In the short term, it is hard to imagine a Liberian company running the service, let alone investing in the infrastructure. International water companies are hardly an option since they are unlikely to be inclined to invest in a country barely emerging from civil war. Assuming that companies are found to run concessions in Monrovia, there is a risk that they will neglect less profitable low-income areas, which will remain the territory of water vendors where people buy water at prices up to 20 times higher than LWSC private costumers.

Private-sector participation in urban water supply is a common practice in the developed world. It has been tested in Africa with mixed results (Hall, Bayliss and Lobina, 2002; Stren, 2001; Batley, 2001). In countries affected by war or long-lasting political instability, obstacles seem even greater than anywhere else. With increased urban poverty, shattered infrastructure and weak institutions, achieving profitability is certainly a greater challenge for a private company than in countries with 'only' weak economic prospects.

Opponents of privatisation argue that it comes with a substantial rise in water tariffs and, as mentioned in the case of Monrovia, only well-off families, living in determined areas, would be covered and could afford the service (Balanyá et al., 2005). Others, however, contend that well-designed privatisations can also benefit the poor (Alexander, Rosenthal and Brocklehurst, 2002). The debate is open and Kabul is a perfect illustration of what is at stake. A majority of its inhabitants live in areas not covered by the master plan and consequently not supplied by the central network. So far, the public water utility has mostly ignored them and no global solution is envisaged to address the problem. It seems unlikely that the residents of these areas would be able or willing to meet the costs related to their connection to the networks. An increase in water tariffs in 2005 by the public utility—even before

any privatisation was officially envisaged—was received with complaints, in a country where water is considered by most as a ‘gift of God’.

Reaching the most in need

The community-based projects carried out by aid agencies in low-income areas intend to respond to these concerns since they target such areas. However, most of them are not adapted to the urban environment and may have limited benefits in the long term. The organisations running these projects are usually experienced in emergency operations and/or rural water supply but most of them lack experience in dealing with local institutions. Instead, they tend to prefer locally maintained, individual systems. These systems have the advantage of being quick to install and sometimes offer much-needed instant relief. But there is no guarantee of quality and continuity of the service beyond what communities are able to ensure. Furthermore, a community-based approach that works in rural areas and/or in a displaced persons camp is not necessarily applicable in urban neighbourhoods sometimes traumatised by violence. Monrovia and Kabul, in their respective ways, consist of a mixture of groups of different ethnic, religious and political backgrounds in which confrontation, violence and gang culture have sometimes replaced solidarity and mutual trust.

Agencies willing to work in such contexts cannot always expect community participation, but they may assist in extending municipal water services to low-income communities. This may consist of helping establish a working relationship between informal vendors and the water utility. Oxfam’s project in Clara Town is a case in point. Another possibility is helping communities to set up their own management of water distribution in their neighbourhood. This model has been applied in another city affected by armed conflict: Port-au-Prince, the capital of Haiti (Colin and Lockwood, 2002). Its water utility, Centrale Autonome Métropolitaine d’Eau Potable (CAMEP), never considered supplying the 800,000 urban poor living in the city’s many shantytowns, until that is the intervention of the French NGO Groupe de Recherche et d’Echange Technologique (GRET). Between 1995 and 2005, the organisation extended the city water network to these areas, building a number of kiosks from which water was sold to residents. Water management committees were elected in each neighbourhood and were put in charge of running these kiosks, paying the sellers and buying water in bulk quantities from CAMEP, thereby maintaining affordable tariffs (Matthieussent and Carlier, 2004). This operation not only contributed to improving water access but also to restoring a sense of citizenship among shantytown residents as they gained access to the municipal service.

Conclusion

This tale of two cities reveals comparable approaches to the rehabilitation of water supply despite very different cultures, natural environments and historical backgrounds. Many of the characters are similar in both areas: the run-down water utility, the newly in place government, the bilateral or multilateral donors, the commercial

consultancy firm, the ‘emergency’ aid agencies—NGOs, the Red Cross or UN bodies—and of course, the divided communities. The strategies adopted also look alike: large-scale rehabilitation projects, funded by KfW and the World Bank in Kabul and by the EU in Monrovia, alongside community-based projects run by NGOs, the ICRC and UNICEF. Similar accounts could be given of many other cities emerging from war.

Both in Kabul and Monrovia, the outcome of interventions may be called into question vis-à-vis the issues of sustainability and coverage. Large-scale rehabilitation projects may contribute to the institutional development of the water utility, which should ensure the durability of the service, but they are unlikely to cover disenfranchised neighbourhoods in the foreseeable future. In this respect, the prospects are even worse if privatisation projects go ahead. In contrast, community-based schemes target such areas but usually rely on locally maintained systems, with no guarantee of quality and long-term sustainability. These variables appear to be linked more to whether the agencies involved are skilled and/or capable of action than to the actual needs of the community concerned. Private consulting firms such as RRI-Beller/Kocks in Kabul and Hydroplan in Monrovia are more at ease with conventional water distribution with individual connections than with custom-made solutions aimed at serving areas that ACF in Kabul described as ‘left behind’. Water utilities tend to think along the same lines since individual connections are, in principle, more likely to generate income. In contrast, humanitarian agencies prefer to deal with communities, as they do in rural areas or in camps, than with governmental institutions. They also rely on funding schemes designed to support short-term, quick-impact interventions with a limited long-term perspective.

In these conditions, little can be done to reduce the gap in access to water services widened by war. A more holistic approach requires a much needed paradigm shift:

- It is essential that interventions simultaneously target hardware, institutional development and social aspects. Working efficiently at the neighbourhood level requires dealing with all stakeholders. This means not only rehabilitating infrastructure and ensuring that the water utility has the capacity to run it—or even manage a delegated service—but also taking care of the social aspects including community consultation and hygiene promotion.
- One should understand that there is no ‘magic bullet’ able to respond to all situations in the same way. Certain neighbourhoods may benefit from a particular level of ‘private-sector participation’, while in others, a different model, such as community management, may be the answer.
- Finally, an appropriate leadership that would coordinate the inputs of all organisations, whether involved in large-scale or community-based projects, is necessary. Ideally, it is a task for governments and their public utilities. Unfortunately, they are often too weak to play this prominent role unless genuine efforts are made to strengthen them. Donors, which often fund both large-scale and community-based water supply rehabilitation, are in the best position to encourage this co-operation, provided that they are aware of the problem.

This paradigm shift was partly achieved in Port-au-Prince, where CAMEP with the intermediation of GRET has managed to ensure water supply in many of its shantytowns. Could this occur in Kabul and Monrovia? It is hard to answer this question with certainty. Long years of poor service and weak institutional capacity have made the task difficult, but success was just as improbable before GRET started its programme in Port-au-Prince. Moreover, peace prospects, at least in Monrovia, are important assets. It may be time for aid agencies, consulting firms and major donors to establish a dialogue, under the auspices of the water utility, to agree on how to extend the benefits of municipal water services, whether through community-based initiatives or private management. This alone would allow them to address a situation described in Port-au-Prince as one in which 'needs are urgent, but for the long term and not emergency needs' (Brailowsky, Boisgallais and Paquot, 2000, p. 7), a description that could apply to almost any city emerging from armed conflict.

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Endnotes

¹ 1986 figures; source: Central Statistics Office, Afghanistan, <http://www.aims.org.af>.

² 1999 figures; source: UNCHS-Habitat.

³ Personal communication with the author.

References

- Alexander, I., S. Rosenthal and C. Brocklehurst (2002) 'Making the Contract Work for the Poor'. In Water and Sanitation Program (WSP) and Public-Private Infrastructure Advisory Facility (PPIAF) (eds.) *New Designs for Water and Sanitation Transactions: Making Private Sector Participation Work for the Poor*. WSP and PPIAF, Washington, DC. pp. 29-49.

- Atkinson, P. and E. Mulbah (2000) *Peace Building and Complex Political Emergencies: NGOs and Peace Building in Complex Political Emergencies: Agency Surveys from Liberia*. Report No 10. Institute for Development Policy and Management, School of Environment and Development, University of Manchester, Manchester. <http://www.sed.manchester.ac.uk/idpm/research/publications/archive/cpe/index.htm>.
- Balanyá, B., B. Brennan, O. Hoederman, S. Kishimoto and P. Terhorst (eds.) (2005) *Reclaiming public water: achievements, struggles and visions from around the world*. Transnational Institute, Corporate Europe Observatory, Amsterdam.
- Banks, D. and M.H. Hamid (2002) *Water Assessment Mission to Afghanistan; January–February 2002. Part F. Urban Water Supply Systems in Afghanistan*. Norwegian Church Aid, Oslo.
- Batley, R. (2001) 'Public–Private Partnerships for Urban Services'. In M. Freire and R.E. Stren (eds.) *WBI development studies: The challenge of urban government: policies and practices*. World Bank, Washington, DC, and Centre for Urban and Community Studies, University of Toronto, Toronto. pp. 199–214. http://www-wds.worldbank.org/servlet/WDSContentServer/WDSP/IB/2001/02/02/000094946_01011905315240/Rendered/PDF/multi_page.pdf.
- Brăilovsky, A., A. Boisgallais and E. Paquot (2000) *Intermédiation sociale et construction institutionnelle: Démarches du programme d'approvisionnement en eau des quartiers populaires de Port-au-Prince en Haïti. Coopérer Aujourd'hui*. Report No 15. Groupe de Recherche et d'Echange Technologique, Paris. <http://www.gret.org/ressource/pdf/cooperer15.pdf>.
- Browne, D. and S. Tsikisayi (2004) *Water Demand and Market Study in Monrovia, Liberia, Draft Final Report, December 2004*. Quest Consult for Project Management Unit, European Commission Office Liberia, Wamel.
- Colin, J. and H. Lockwood (2002) *Making Innovation Work through Partnerships in Water and Sanitation Projects*. Research and Surveys. Building Partnerships for Development in Water and Sanitation, London. http://www.bpd-waterandsanitation.org/bpd/web/d/doc_34.pdf.
- Cosgrave, J. (1999) *Watering thorns, Version 0.90*. Oxfam, Oxford.
- Diago, J.L. and S. Arnalich (2004) *Intervención para la rehabilitación y mejora de las instalaciones de agua del cuadrante noroeste de Kabul, Afghanistan*. Spanish Red Cross, Madrid.
- Elliott, M.J. (2002) *Feasibility study for the re-electrification of the Logar water supply scheme in Kabul, Afghanistan*. British Red Cross, London, and International Committee of the Red Cross, Geneva.
- Fischaess, B. (2003) *Summary of the feasibility study for the extension of the Kabul water supply system*. RRI Beller/Kocks, Entlingen.
- Geoscience (1998) *Water Supply for Monrovia and Rural Areas, Liberia*. Report No LBR/6ACP/29–20. Geoscience, Florence.
- Green, R.H. (2000) Rehabilitation: Strategic, Proactive, Flexible, Risky? *Disasters*. 24(4). pp. 343–362.
- Grinnell, E. and H. Troc (2004) *Kabul Vulnerability Mapping*. Action Contre la Faim, Paris. [http://www.internal-displacement.org/8025708F004CE90B/\(httpDocuments\)/34F66E27EE6CA19C802570B700587B57/\\$file/ACF_Kabul_vulnerability_mapping_jan04.pdf](http://www.internal-displacement.org/8025708F004CE90B/(httpDocuments)/34F66E27EE6CA19C802570B700587B57/$file/ACF_Kabul_vulnerability_mapping_jan04.pdf).
- Hall, D., K. Bayliss and E. Lobina (2002) 'Water privatization in Africa'. Paper presented at the Municipal Services Project Conference, Witswatersrand University, Johannesburg, South Africa, May. <http://www.psi.ru.org/reports/2002-06-W-Africa.doc>.
- Johnson, C. (2004) *An Oxfam country profile: Afghanistan*. Second edition. Oxfam, Oxford.
- KfW (*Kreditanstalt für Wiederaufbau*) (2003) *Afghanistan: Challenges after 23 years of civil war*. KfW, Frankfurt.
- Macrae, J. (2002) 'The political dimension'. In International Committee of the Red Cross (ICRC) (ed.) *Forum: War and Accountability*. ICRC, Geneva. pp. 52–57.
- Matthieussent, S. and R. Carlier (2004) 'Le cas de l'approvisionnement en eau potable des quartiers défavorisés de Port-au-Prince. Document de travail'. In Groupe de Recherche et d'Echange Technologique (GRET) (ed.) *Séminaires sur les politiques publiques de lutte contre la pauvreté les inégalités*. 17 November. Réseau Impact-Politique Africaine, Paris.

- MUDH (Ministry of Urban Development and Housing) (2005) *Urban Water Supply and Sewerage Sector Institutional Development Plan*. MUDH, Kabul.
- Ockelford, J. (1993) 'How do we work with host government and other NGOs for the good of the refugees (Workshop 3). Discussion Paper: Coordination of emergency relief in Liberia'. In: B. Reed (ed.) *Technical support for refugees. Proceedings of the 1991 international conference*. Loughborough University, Loughborough, UK, 17–18 December. Water Engineering and Development Centre, Loughborough University, Loughborough. pp. 27–39.
- Oxfam (2005) *Public Health Rapid Needs Assessment Report Urban Programme. January & May 2005*. Oxfam, Monrovia.
- Perry, J.A. (1988) 'Networking urban water supplies in West Africa'. *Journal of the American Water Resources Association*. 80(6). pp. 34–42.
- Pinera, J. (1999) *Kabul 99 public health survey: Water and Sanitation situation in Kabul. Final report*. Report No. Kab 99/2182. ICRC, Kabul.
- Pinera, J. and L. Rudge (2006) 'Water and sanitation assistance for Kabul: a lot for the happy few?' In S. Kayaga (ed.) *Maximizing the Benefits from Water and Environmental Sanitation, 31/10–4/11/2005, Kampala*. Water Engineering and Development Centre, Loughborough University, Loughborough. pp. 361–364.
- Smith, C. (2001) *1st and 2nd rehabilitation programmes, Water Supply and Sanitation, inputs/achievements (April 1998 to June 2001 – 39 months)*. Geoscience, Florence.
- Smith, C. (2004) *Reintegration programme for returnees and displaced people in Liberia. Water Supply for Monrovia and Rural Areas, Liberia*. Report No. LBR/8ACP/02/2–3. Geoscience, Florence.
- Smith, C., A. Petters, R. Conti and P. Smets (2001) *Cities in War: Thirsty Cities*, Occasional Paper No.4: Monrovia (Liberia): Water supply for Monrovia during and after the civil war. The Geneva Foundation, Geneva.
- Smith, C.C. and J. Kpakolo (2004) *Water Supply in Monrovia, Liberia*. Geoscience, Florence.
- Sohail, M., S. Cavill and A.P. Cotton (2005) 'Sustainable Operation and Maintenance of Urban Infrastructure: Myth or Reality?' *Journal of Urban Planning and Development*. 131(1). p. 39.
- Solidarités (1995) *Strategies for water supply and sanitation in Kabul city*. Solidarités, Paris.
- Stren, R.E. (2001) 'Private involvement in the provision of public services: Editor's introduction'. M. Freire and R.E. Stren (eds.) *WBI development studies: The challenge of urban government: policies and practices*. World Bank, Washington, DC, and Centre for Urban and Community Studies, University of Toronto, Toronto. pp. 193–197. http://www-wds.worldbank.org/servlet/WDSContentServer/WDSP/IB/2001/02/02/000094946_01011905315240/Rendered/PDF/multi_page.pdf.
- Willson, N. (2003) *Water and Sanitation Priority Sector (Community and Infrastructure). December 2003*. Final full document (further revised January 2004). United Nations and the World Bank, Monrovia.
- World Bank (1997) *Approaches to private participation in water services: a toolkit*. International Bank for Reconstruction and Development/World Bank, Washington, DC. http://rru.worldbank.org/Documents/Toolkits/Water/Water_Full.pdf.