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MAXIMIZING THE BENEFITS FROM WATER AND ENVIRONMENTAL SANITATION

Water and sanitation assistance for Kabul: a lot for the happy few?

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Kabul water and environmental sanitation services have been affected by war, which ravaged large portions of the city in the early 1990's. After the fall of the Taliban in 2002, a considerable influx of returnees contributed to put an ever greater stress on already deficient systems. Large-scale water supply projects were initiated. However, they tackle only areas covered by water networks, leaving behind an estimated 60% of the population who live in 'unplanned areas'. In order to address the needs of these 'left-behind' populations, organisations such as 'Action Contre la Faim' have designed programmes specifically for them. They intend to maximize the benefit of water and environmental sanitation by relying on affordable community-maintained systems, until access to centralized services is gained.

Introduction

In December 1979, the Soviet army invaded Afghanistan. Since then, the country has been caught in a spiral of violence from which it has not yet emerged. Between 1992 and 1994, 20,000 people died (Johnson, 2004) and almost half of the southern area of the city was destroyed.

In 1996, the Taliban brought peace to the capital and ended-up dominating most of the country, imposing the strictest form of Islam. Their policy towards women and their position vis-à-vis Islamic terrorism alienated the country from the international community. This situation only ceased with their fall, following the September the 11th attacks. It opened the country to foreign troops but little stability was established

Kabul severely suffered from the conflict. Not only did it experience violence and destruction directed at its population and infrastructure but it received a large number of displaced persons fleeing war raging in the countryside until 1992. Ten years later, the return of refugees, mostly from neighbouring Iran and Pakistan, provoked a sudden increase of the population. This justified that a large share of the assistance, including water and sanitation projects, was directed to the capital. The strategy adopted to deliver this assistance varied according to the political context. It is reviewed in this paper, paying special attention to its impact and cost-effectiveness in terms of benefits to the most in need.

Water and sanitation systems in Kabul

Kabul relies exclusively on groundwater for its water supply. There are four types of water systems:

- Private well
- Public wells
- The water network
- Water trucking

The number of private wells is commonly estimated to be in the range of 100,000 to 120,000 (Nembrini et al, 2002). Most of them are unprotected hand-dug wells while some wealthy households may have boreholes equipped with hand-pumps or submersible pumps. The majority of the private hand-dug wells are not used for drinking or cooking and are particularly vulnerable to drought.

Before war reached Kabul, most of the public wells were hand-dug and usually unprotected. From 1994, given the almost complete interruption of piped-water supply, several organisations started drilling boreholes in public places throughout the city and equipping them with hand-pumps (see photograph 1). From 1994, the main organisations involved were the French NGO 'Solidarités' and UNCHS-Habitat. They were followed by the International Committee of the Red Cross (ICRC) and by the other French NGO 'Action contre la Faim' (ACF). In 2002, the number of hand-pumps was estimated at more than 2,600 (Nembrini et al, 2002). People usually trust water from hand-pumps for drinking and cooking.



Photograph 1. Handpump installed by ACF in Dashti-Barchi area

Kabul water network consists of 11 interconnected and 14 independent schemes. In addition, six apartment-blocks have their own water supply. The network is fed by 81 wells and supplies 43,000 houses (about 20% of the households) and 1,600 public tap-stands (Nembrini et al, 2002).

Water trucking is mostly carried out by the NGO Care in areas where other water sources are not easily available. There are also private sellers, who usually charge one US dollar for 200 litres.

The following sanitation systems are in use in Kabul:

1. Dry vault latrines
2. Septic tanks
3. Pour-flush toilets
4. A sewerage network

Dry vault latrines are, by far, the most common system. The vault opens onto the street, from where it is emptied by farmers who traditionally convert the night soil into fertilizer.

Septic tanks are either collective in apartment-blocks, public buildings and in a few public toilets or individual in the case of some wealthy households.

Pour-flush toilets are the most recent systems in use. They are connected to a pit that can be emptied from the street.

The sewerage network serves the city's main apartment blocks complex. Wastewater is supposed to be treated in a conventional treatment plant. It was no longer operational in 1999 (Jansen et al, 2000) and still does not function today.

Gully suckers are available from Kabul Municipality or from private companies and empty both septic tanks and pour-flush toilets. Sewage is then disposed on drying beds. Once dry, it is reused as fertilizer.

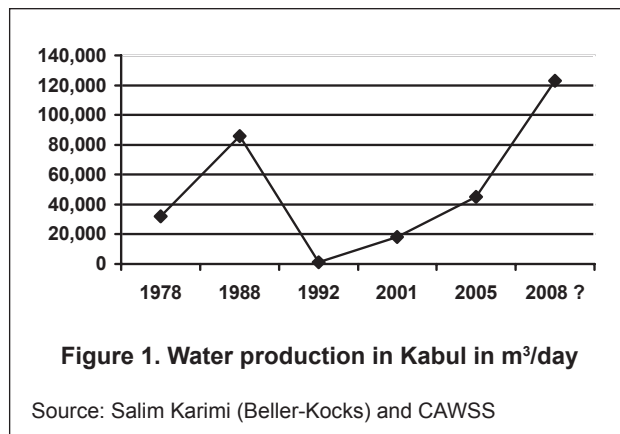
Assistance strategy

Water supply

The purpose of the large number of boreholes constructed between 1994 and 1996 was to provide water to the areas of Kabul most affected by the interruption of piped water. This was due to the looting of pumping stations during the fighting and to the disruption of power supply. Concurrently, 'Solidarités' and Care helped restoring some of the water network capacity by performing essential repairs including the replacement of generators in the pumping stations and the provision of fuel to run them (see figure 1).

'Solidarités' assistance was abruptly interrupted in 1998 when the European Commission Humanitarian Office (ECHO) suspended funding for Kabul following the controversial decision from the Taliban authorities to impose that all the NGOs relocate in a single building. Care could however continue its assistance. The situation deteriorated further, after the United Nations embargo on Afghanistan (end of 1999), which limited UN assistance to 'life-saving' activities.

The fall of the Taliban paved the way to a massive but relatively slow reconstruction process. Major donors returned and, in the field of water supply, the German development bank KfW and the World Bank were the main players. An



'Immediate Assistance' project funded by KfW was carried out between 2002 and 2005 with the aim of performing the most essential repairs allowing the water network to function. From 2005 a project was launched with the aim of expanding the network capacity to 111,000 connections (see figure 1). (Fischaess, 2003).

The water supply network is managed by the public utility 'Central Authority for Water Supply and Sewerage' (CAWSS). It has considerably suffered from the conflict. According to Salim Karimi, who was president of CAWSS in 1992, CAWSS used to employ 34 qualified engineers before the war reached Kabul. This number is today reduced to three, including the current president. Most of the equipment, tools and vehicles were stolen and the archives lost. The situation remained virtually unchanged until 2002 when a number of organisation such as KfW project, Care, the World Bank and others restocked the equipment, trained the personnel and provided vehicles. Given its almost inexistent managerial staff, CAWSS can only carry out routine operation and maintenance and has a limited operational role in the rehabilitation and expansion of the network. The lack of personnel is one of the main problems the institution has to face and, despite external support, no credible policy to tackle the problem has so far been implemented.

Environmental sanitation

One of Kabul's main environmental sanitation issues is excreta management. In 1996, concerns over the possible health consequences of night soil being exposed and sometimes flowing in the streets from vault latrines led the ICRC to initiate a large scale sanitation project. It consisted of rehabilitating or reconstructing private vault latrines, increasing the size of the chamber, separating urine, installing a ventilation pipe and, most importantly, installing doors on the emptying hole (made of cement or metal) in order to confine night soil. Night soil collectors continued the evacuation of excreta with shovels and carts and its reuse as fertilizer after composting. The ICRC targeted the most densely populated areas of Kabul northern districts. Other organisations implemented similar projects and, by the end of 1999, 48,300 latrines had been rehabilitated or



Photograph 2. Improved latrine built by ACF in Aqa Ali Shams area

reconstructed (Jansen et al, 2000). ACF initiated its water and sanitation project in 2001. It targeted areas with high prevalence of malnutrition identified through ACF network of Supplementary Feeding Centres and Mother and Child Clinics. The rationale behind this strategy was that diarrhoea is one of the main cause of malnutrition during the summer months. ACF built almost 3000 latrines between 2001 and 2005 (Pinera, 2005) and remain the only organisation currently considering this type of activity as the ICRC gave up sanitation work in 2003 (see photograph 2).

Addressing the needs: Kabul vulnerable areas

The recent influx of returnees to Kabul, which may have increased the population by one million inhabitants has made difficult the establishment of population statistics. Official figures nonetheless exist (but no reliable census has been carried out since 1999!) and table 1 shows the (estimated) evolution since 1996.

The approximate figure of 2.7 millions is widely assumed as close to reality. Its distribution has evolved since 1979 as several movements of population took place:

- Influx from the provinces ravaged by war between 1979 and 1992.
- Movement within the city between 1992 and 1994 as people escaped fighting in the southern areas of the city and sought refuge in the north.
- Influx from abroad and from a number of provinces in 2002, after the fall of the Taliban.

These movements of population, and more particularly the last one, contributed to augment the population density in existing residential areas. A large number of families also settled outside the planned areas. Informal settlements initially populated the hilly areas of Kabul but progressively expanded outside the city limits

Table 1. Population estimations

Year	Population	Source
1986	1,300,000	Central Statistical Office
1988	1,424,400	The World Gazetteer ¹
1994	800,000	The Independent ²
1996	1,101,889	UNCHS Habitat
1999	1,781,012	UNRCO Kabul ³
2003	2,678,000	Central Statistical Office

This expansion created areas of vulnerability, characterised by a high population density and few or none of the most basic urban services (water, power supply, drainage, road maintenance). A recent study carried out by ACF revealed that as much as 60% of Kabul population may live in these unplanned areas. In the densely populated Central Bazaar, 51% of the families live in a single room of 15.5 m² on average. Over 26% of the population spends more than 30 minutes to fetch water and 33.58% of the main income earners rely on daily work (Grinell and Troc, 2004)

Unbalanced approaches

Whilst urban poverty seems to be a growing problem in Kabul, new assistance projects for the city are increasingly difficult to finance. It appears that 'emergency' donors such as ECHO tend to limit the amount of funds available for Kabul. It is the result of a policy aiming to redirect assistance towards rural areas, where considerable needs exist, in order to avoid discontent. In addition, the launch of large infrastructure projects, and in particular water network rehabilitation/expansion funded by KfW and the World Bank, may give the impression that needs in the cities are addressed in their entirety.

It is a paradox that a policy whose objective is to balance the assistance between urban and rural areas may lead to greater unbalance within the city of Kabul. Most of the current water supply rehabilitation/expansion concentrate on the 'planned areas'. Therefore only a minority of relatively well-off families with access to the water networks benefit from them. Those living in the unplanned areas may end-up feeling abandoned, and discontent may also rise in certain areas of the capital.

ACF is one of the rare organisations which carried out water and sanitation assistance to the unplanned areas (see table 2). The organisation is struggling to continue its activities whilst access to water in these areas remains precarious. Excreta disposal and evacuation is an ever increasing problem as farmers, who used to empty the latrines, tend to sell their lands whose value increase with the expansion of the city. Municipal authorities do nothing to help and tend,

Table 2. : ACF activities in 'unplanned areas'

Activity	Achievements
Drainage	Stone-masonry side-ditches (15.7 km)
Private well rehabilitation	507
Public boreholes and hand-pumps	531
Water scheme	1 (90m ³ reservoir, 41 tapstands)
Private latrines	2954
Solid waste containers	45

on the contrary, to discourage organisations from working in unplanned areas.

ACF relies on hand-pumps and private latrines for its programme because these systems present the advantage of being affordable to the urban poor. Currently, they are the only types of systems potentially sustainable in Kabul. Hand-pumps are easy to repair by local mechanics. Their models are standardized and spare parts are widely available. The main constrain linked to the use of vault latrine is the necessary regular emptying. This can be organised provided that night soil collectors are identified and paid.

Making arrangements to guarantee the sustainable use of hand-pumps and latrines is the role of water committees ACF has put in place. They ensure that regular maintenance of the hand-pumps is carried out and deal with farmer for the collection and evacuation of night-soil. In addition, hygiene promotion activities, benefiting individual families as well as target groups (female, male and children), contribute to raised awareness on environmental health issues.

The cost of ACF's and of other similar programmes targeting unplanned areas is a tiny fraction of the budget allocated to the planned ones. Ironically, and despite the efforts put into rehabilitating the network, piped water supply is sporadic, water being available no more than a few hours a day or a week. Hand-pumps and, in places, water sellers remain a necessary back-up. One of the reason to the lack of progress in the quality of the service is the low capacity of CAWSS, which seems a persistent problem despite the efforts of various organisations. It appears therefore unlikely that a service already poor in its current state will be extended to 'unplanned areas' in the foreseeable future.

Conclusion

Water and sanitation assistance to Kabul requires an approach which is different from what is commonly applied to urban areas of the developing world. After more than twenty five years of conflict and instability, institutions are so weak that strengthening them may take years. As a con-

sequence, the economy of scale that piped water networks represent is compromised by deficiencies in maintenance and considerable difficulties in recovering costs. Pipe sewerage and treatment is an even greater problem and no credible alternative seems to be feasible other than dry sanitation. While conventional urban approaches are failing, the needs of those 'left behind' are ignored by many, and in particular by municipal authorities and the water utility.

It is therefore urgent to allocate more resources to these unplanned areas, where the vast majority of the urban poor are living. Particular attention should be paid to the 'hilly areas' where access to both water and sanitation are often critically difficult. Affordable systems such as hand-pumps and latrines appear to be the answer in most places to maximize the benefits from water and environmental sanitation as they allow community-based management. By increasing the number of projects targeting these areas, living conditions would be eased for a large population until more conventional urban systems can finally reach them.

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Note/s

1. Estimation, www.world-gazetteer.com
2. Estimation
3. United Nations Regional Co-ordination Office. Kabul

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