Field Note

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UNDP-
World Bank
Water and Sanitation Program

Water and Environmental Sanitation Needs of Kibera

A needs assessment in a spawling informal settlement in Nairobi, Kenya reveals that water and sanitation services are a priority for the urban poor.

East and Southern Africa Region

Introduction

This *Field Note* highlights findings of a Rapid Needs Assessment carried out in Kibera, an Informal settlement in Nairobi, Kenya.

The study was commissioned by the UNDP-World Bank Regional Water and Sanitation Group for East and Southern Africa (RWSG-ESA), as part of technical assistance to the Nairobi City Council's (NCC) Water and Sewerage Department. This assistance supported the preparation and implementation of the Kibera Water Distribution Infilling Component (KWDIC).

The KWDIC is a component of the Third Nairobi Water Supply Project (TNWSP) aimed at developing and testing community-based options for improving water supply in Kibera.

The TNWSP is being implemented by the Nairobi City Council with funding from the World Bank, African Development Bank and other donors. Among other activities, it includes the development of a dam, treatment and storage works, expansion of the water distribution network, desludging of sewerage treatment ponds and rehabilitation of sewer lines.

The Rapid Needs Assessment provides a situation analysis of water and urban environmental sanitation as perceived by the Kibera community. It complements information gathered through a Water Kiosk Study (see separate *Field Note*) conducted by RWSG-ESA.

The Assessment generated information on issues, priorities and key actors in the settlement.

A typical street in Kibera - open drainage

Background

With an estimated population of 500,000, the Kibera informal settlement is home to a quarter of the population of the City of Nairobi. The settlement covers an area of about 250 hectares, which works out to a density of 2,000 people per hectare. This makes Kibera one of the most densely populated informal settlements in sub-Saharan Africa.

One of the key problems facing the Kibera community is inadequate infrastructure compounded by lack of a clear policy framework and effective programs for meeting the needs of the residents of informal settlements. Poor water supply and sanitation are among the most serious infrastructural problems.

Regional Water and Sanitation Group for East and Southern Africa
P.O. Box 30577 Nairobi - Kenya
Tel: (253-2) 260300/400

Rank by Number of V illages				
Environmental Problems	Rank 1	Rank 2	Rank 3	Rank 4
Water	4	1	3	1
Excreta Disposal	5	2	2	-
Drainage	-	3	2	4
Solid Waste Management	-	3	2	4

Community Priorities

Residents in the various villages ranked the priority urban environmental sanitation (UES) problems differently. Excreta disposal was ranked first in 5; and water supply in 4, of the 9 villages. Drainage and solid waste management were each ranked second in 3 of the 9 villages. Other community priorities included roads, hospitals, schools, security/ street lighting and electricity.

Excreta Disposal

Excreta disposal was the highest priority in 5 of the 9 villages. There are no sewered toilets in Kibera and most of the households have traditional pit latrines. These are inadequate and fill up quickly. Limited access to exhauster services has rendered about 30 percent of the latrines unusable.

- The shortage of pit latrines is brought about by lack of space for new construction and landlords who are unwilling to incur the extra expense. Most of the groups indicated that upto 150 people share a pit latrine.

- Lack of adequate latrines forces residents to use alternative means of excreta disposal, such as polythene bags referred to as "flying toilets" (wrap and throw method). These are commonly used at night when residents consider it insecure to use latrines outside. Majority of the groups (69 percent) use flying toilets.

- Lack of exhauster facilities. Efforts to exhaust latrines are complicated by lack of access roads. An experimental exhauster service (vacu-tug) by KWAHO[1] currently serves a small portion of the community .

- 80 percent of the latrines are emptied manually by directing waste water into the drainage channels. Others are simply covered and abandoned.

- There are few communal latrines in Kibera and availability has been made worse by influential landlords who seized communal latrines built by NGOs for exclusive use by their tenants

Community suggestions on actions to improve excr eta disposal and management

- Improve access to make pit latrines accessible for exhauster services

Pit latrine exhauster (vacu-tug) at work

- Landlords should be required to provide adequate latrines for their tenants.

- Payment for the use of communal latrines should be introduced.

Water Supply

Water supply was the highest priority in the remaining 4 villages. Issues associated with water include, its source, cost, availability and distribution. Access and availability of water is limited, and frequent shortages contribute to an increase in prices, distance walked and time spent.

- Shortages result from rationing by the NCC and burst pipes. Most burst pipes are low quality PVC laid above the ground surface.

- The majority of kiosks are owned by individuals. Most of the water kiosks owned by groups were established with the support of KWAHO.

[1] KWAHO stands for kenya Water for Health Organization, a national NGO operating in Kibera.

Causes of Water Shortages in Kibera Ranked by frequency of reporting	
Cause of shortage	No. of groups reporting
Burst pipes	36
Rationing	31
Low pressure	9
NCC maintenance	8
Drought	7
Vandalism	6
Small pipes	5
High demand	4
General diversion	7
Do not know	2
NCC disconnections	2
Storage	1

- 90 percent of the residents are willing to pay for the establishment of additional water kiosks.
- The unit price per m^3 that Kibera residents pay for water is ten times more than what is paid by residents of middle and high income areas in Nairobi. When supply is reliable water retails at Kshs. 2-3 per 18 litre jerrican. This increases to Kshs. 5-20 during shortages.
- Residents, particularly women and children spend valuable time queuing for water. During acute shortages, queuing time may go up to 4 hours. Although availability of water increases at night, the risk of being mugged is also higher.
- Most pipes supplying water to kiosks are of small diameter. This limits the volume of water available through these outlets.

Community suggestions on actions to improve water supply

- Distribution pipes with a larger diameter should be laid to increase the volume of water available.
- Establish group water kiosks to increase stability of water prices.
- Establish more water user groups to manage the distribution of water within the community.

Solid Waste Management

Solid waste management was rated the second highest priority in 3 of the 9 villages. There is no regular solid waste collection within the settlement. Most residents dispose off solid waste by dumping it in open drains, along the railway line and in pit latrines. The closest collection point is on the main road outside the settlement.

- Lack of facilities for garbage disposal leads to haphazard disposal of refuse.
- Most households burn their garbage.
- Burning of garbage during dry seasons is risky especially due to congestion of houses. This also contributes to respiratory ailment. Children also contract other diseases by playing in the dumps.
- During the wet season, solid waste is washed into compounds in low lying areas and blocks the drains.
- Recycling and composting activities are limited due to mixing of organic and inorganic solid waste.

Overflowing dumpster on the outskirts of settlement

Community suggestions on actions to improve solid waste management

- Collection points should be sited in all villages.
- Residents are willing to pay for private sector garbage collection.
- NCC or the private garbage collectors should transfer waste to the main NCC dump site on a regular basis.

Liquid Waste and Drainage

Lack of facilities for disposal of waste and storm water was rated second highest priority in 3 of the 9 villages. Most streams running through the settlement carry polluted water from a combination of sources, including sullage, pit latrine waste and drainage. Much of this is received by the Nairobi Dam, which lies at the foot of the settlement.

- The drainage system in the settlement is comprised of shallow open natural drains (50 percent), man-made drains (11 percent) and a combination of both (39 percent).

- Residents do not like open drains which are easily blocked by solid waste and are a safety and health hazard. Blocked drains were a source of conflict between neighbours.

- 75 percent of the residents bathe inside their living rooms. Sullage from bathing, washing clothes and utensils is also emptied into the drains.

- Drinking water is contaminated by infiltration of liquid waste and overflowing latrines into burst pipes.

- Community members in the lower sections of Kibera are the most seriously affected by flooding. This is caused by a combination of runoff and storm water flowing from the upper villages, and construction of houses in the flood plain.

Health and Hygiene

Most health problems cited by residents are directly or indirectly associated with the quality of water and environmental sanitation. The top four illnesses indicated by the community are malaria, diarrhoea, intestinal worms and vomiting.

There are no public sector health services available in the settlement. Private health service providers are expensive and beyond the reach of most of the residents.

Community Based Organizations (CBOs)

There are over 250 CBOs in Kibera, established as self-help groups and registered with the Department of Social Services. In the environmental sanitation sector, these organizations, mainly the village health groups, are involved in weekly clean-up activities. They are involved in clearing solid waste from drains, community managed water kiosks and solid waste recycling. Most CBOs receive funding, training and technical support from NGOs.

Institutions

A total of 57 institutions were identified during the assessment. Out of them, 31 were interviewed. They included 13 churches, 7 schools, 6 medical centres, 3 CBOs and 2 NGOs. A majority of the institutions were church-based. Many of the institutions undertook development activities at the request of the community. The survey of institutions revealed almost 100 percent overlap in the needs identified by the 99 self-help groups.

Study Methodology

Information on the needs of the residents was obtained through individual interviews, and focus group discussions (FGDs) with 99 groups. The FGDs were held with 11 groups in each village consisting of 2 women groups, 2 youth groups, 2 CBOs and 4 individual residents and landlords randomly selected.

The study assessed community priorities in general and collected more specific information on water, excreta disposal, solid waste, wastewater, drainage, health and hygiene issues in the settlement. The full report of the findings is available from RWSG-ESA

This *Field Note* was prepared by Mukami Kariuki and Japheth Mbuvi, and edited by Brazille Musumba. It is based on the findings of the Rapid Needs Assessment conducted by Joyce Malombe and Dominic Kimata for UNDP - World Bank Water and Sanitation Program, May 1997.