

Policy Memorandum

TO: Minister of Natural Resources
Government of Kenya

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RE: Recommendation for water supply and sanitation improvements in Mityana

Introduction

The Government of Kenya is interested in undertaking infrastructure development in secondary towns to stimulate economic activities and growth. The Minister of Natural Resources has invited W&S Planning DC to recommend strategies for water and sanitation infrastructure development in Mityana, which might also be duplicated in similar communities throughout the country. This proposal is primarily based on a consultant's report produced for the ministry in 1997¹.

Recommendations

W&S Planning DC recommends that the best strategies, for water and sanitation infrastructure development in secondary towns in general and Mityana in specific, are as follows:

Institutional

- 1) Institute a central water and sanitation authority to initiate, regulate, oversee, and support infrastructure development in this sector;
- 2) Initiate a participatory project in which water user groups in different parts of towns are organized in order to mobilize households in their neighborhoods to contribute money and labor for commencement of the project; and
- 3) Develop a town based cooperative company to manage the services including staffing, maintenance, and billing responsibilities for any facilities that are installed. Profit of the cooperative, if any, shall be used for community development;

Technology

- 1) Develop groundwater sources. The community can source for loans or grants for the development from local philanthropists and businessmen, regional development banks, international communities, and international NGOs;
- 2) Install public tap water distribution system with an option for private connection;
- 3) Encourage and install rainwater collection system; and
- 4) Construct public Ventilated Improved Pit (VIP) with an option for private VIPs.

¹ Ministry of Natural Resources, 1997. An Assessment of Water Supply and Sanitation Conditions and Demand for Improved Services in Mityana, Kenya. Government of Kenya.

The above recommendations exhibit a number of strengths and benefits, which increase efficiency of the services and the chances of success of the infrastructure development. The distinguishing characteristics are as follows:

- 1) Community involvement and ownership of water supply and sanitation services;
- 2) Flexibility in water supply and sanitation, which provides improved water supply and improved sanitation to the masses, but gives the options of private connection to those who are willing to pay additional capital and operation costs;
- 3) Improved water supply and sanitation will enhance health and productivity of the communities and thus better quality of life;
- 4) Improvements in basic infrastructure will encourage new economic activities and industrial development, thus creating employment opportunities;

Water Supply

Households in Mityana are currently buying water from vendors and/or fetching water by themselves. Vendors, women and children fetch water from nearby springs and transport it back by various modes such as bicycle (74%), cart (11%), head (10%), and pole (95%). As the springs are unprotected and a distance downhill from a majority of the settlements, development of groundwater sources, which are abundant, is a feasible option to provide a good source of higher quality water² within a shorter distance from users.

Extraction of groundwater can be done manually using motor power by electricity, or by petroleum fuel. Many communities in the developing world have installed an electricity-powered community groundwater pump, such as in the Inle Lake of Myanmar. However, W&S Planning DC suggests that the Minister investigate the possibility of renewable power sources such as wind and solar. Renewable sources have low operating costs and are more environmental friendly.

In the consultant's report, the communities in Mityana expressed the desire to improve the water supply system. A majority prefers public taps and is willing to pay a reasonable price for water usage (89% and 78% of the residents are respectively willing to pay 25 Sh. and 50 Sh. per jerrican³). The variation of acceptance level among various RC1s is not substantial. The results are similar even in the poorer communities such as Geregere, Kinyoro B and Kinyoro C/D. At the price of 50 Sh. per jerrican for water at public taps, 54% and 15% of renters and homeowners respectively are willing to pay for a private metered connection at an estimated monthly bill of 10,000 Sh.

Currently, residents pay about 100 Sh. per jerrican to water vendor. Thus, if a public tap or private connection is provided, the new system will make the vending activities cease to be competitive and decline subsequently. Thus, it is not necessary to prohibit vending activities or water collection at springs.

² W&S Planning assumes that the groundwater quality has been fully tested and it is compliance with WHO portable water quality standard.

³ Sh. = Shillings; 950 Sh. = USD1. The size of a standard jerrican is 20 liter.

The distribution system proposed includes both public taps and private connection. A schematic diagram illustrating the proposed water supply distribution system in Mityana is shown in **Figure 1**. Water price per jerrican at a public tap can be set at 50 Sh. A household monthly water bill will then amount to around 5,000 Sh based on average consumption, which is within the range of the residents revealed willingness to pay (WTP). However, the very poor household might not be able to afford the price of 50 Sh. per jerrican. A special provision shall be considered such as giving a special discount for minimum use upon application and approval by the parish council/chief or the authority.

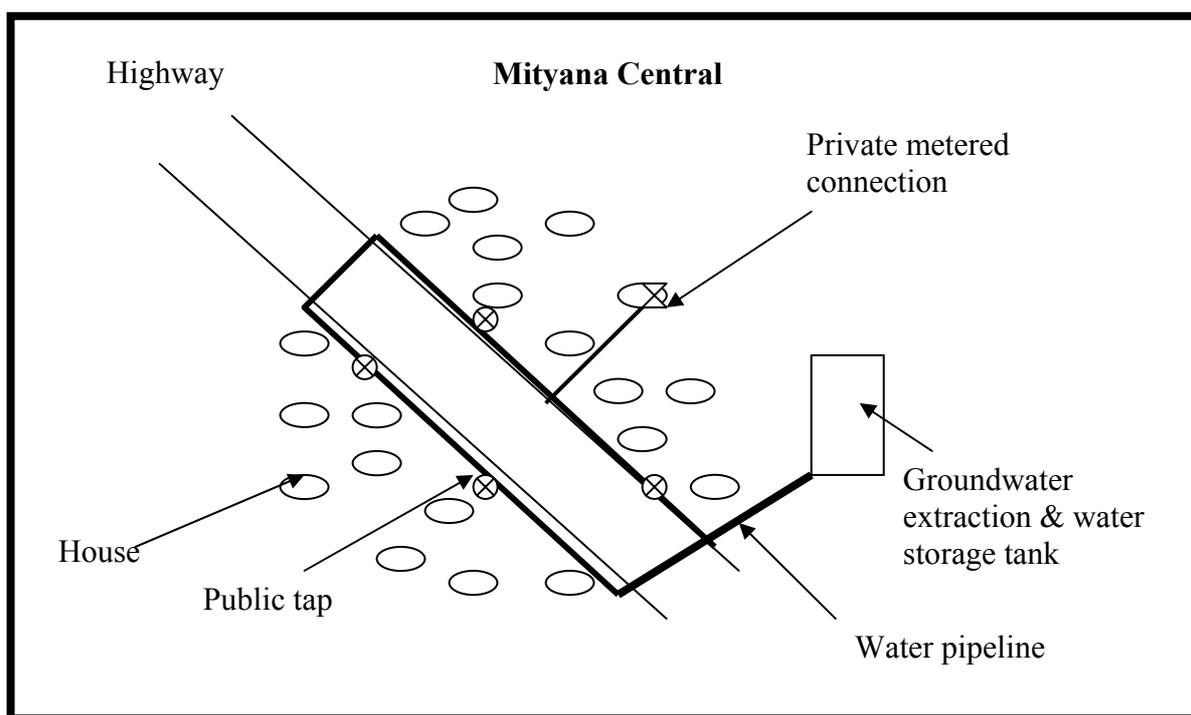


Figure 1: Schematic diagram illustrates the proposed water supply distribution system

For private connection, the household has to pay for the connection and monthly service charges. For a rented house, the owner shall pay for the connection fee and the renter shall pay the service charges. In addition, the tariff rate shall be increased if the consumption quantity increases as a way to control excessive usage and as a subsidy for the low volume users who are mainly poorer households. An additional 20% tariff surcharge is proposed for consumption of more than 3,000 liter per month per household.

The current practice of harvesting rainwater should be encouraged even though water is more readily availability with the distribution system. This will reduce unnecessary escalation of household water expenditure as well as maintain a focus on resource conservation. An improved collection system shall be explored in the future.

In order to cover the capital expenditure and operation & maintenance cost for the proposed water supply system, monthly charges per household must be in the range of 5,000 to 10,000

Sh. per household. However, capital and O&M costs can be reduced if the community can supply most of the labor, voluntarily during construction, but paid if working for long term employment. In addition, capital expenditure can be raised from local businessmen and philanthropists. There are also possibilities of collaboration with the neighbouring sugar estate in extraction of groundwater in order to bring the cost down. The Government must attempt to convince the rich and wealthy to contribute to community development. In addition, external loans can also be sourced from NGOs and regional banks.

However, the changes from use of distant spring sources to adjacent groundwater sources and from the existing vendor or self-fetching systems to a tap system will have both positive and negative implications. These improvements will provide the communities with a higher quality of water and will reduce the time needed for obtaining water. The reduction in the burden of fetching water on women and children will reduce their daily stress and free their time for other more productive activities. The new system can also provide a lower water rate than the existing vendor system.

However, the water vendors will be the losers in this transition. About 100 water vendors will lose their job and the project might face political challenges from the two vendor associations. However, under new institutional arrangements, vendors can opt for alternative employment opportunities with training provided, such as in the construction, maintenance and billing services in the sector. Currently, water vendors are making subsistence income and thus the new employment opportunities could be attractive.

Sanitation

The most common sanitation facilities in Mityana are some form of pit latrines. A majority of the residents (70%) uses a shared pit latrine. In general, residents in Mityana are satisfied with most of the existing sanitation systems. The traditional pit latrine, including both private and public, receives most of the complaints for being unsatisfactory with 22% and 42% respectively.

However, most of the residents (95%) express strong preference and willingness to pay for constructing a private, exclusive Ventilated Improved Pit (VIP) latrine. The revealed preference is rather consistent throughout the geographical distribution of the settlements, beside a rather lower preference (50%) in Mityana Central. The revealed WTP to have a private VIP is 10,000 Sh. per month in a 5 years payment period. The equivalent present value payment is about 400,000 Sh., which is compatible with the cost of constructing a new VIP in Mityana. The percentage of households willing to pay this price does not depend on the wealth of the households.

Therefore, providing opportunities for the household to improve the sanitation facilities shall be taken positively. The VIP latrine is a kind of latrine that, when kept clean, will not smell. It has a vent pipe and a fly screen. The two pits of the VIP, used alternately about every two years, are lined and the dried excrete can be easily removed and used as manure. A VIP latrine will improve the health conditions and quality of life of the residents, and general

image of the town. In addition, training to build VIPs will benefit the local or water vendors who are willing to change job.

Institutional Development and Capacity Building

W&S Planning DC recommends a local-based ownership of the water and sanitation infrastructure. In view of insufficient funding, community participation and ownership of the services can help to reduce the financial and administrative burden of center government. If the community owns and operates the services, it has higher chances of success. The success and experiences can then be rapidly replicated in other parts of the country with no other major constraints.

The best option for Mityana and similar towns is to establish a community-based cooperative. The cooperative should recruit as many members as possible to encourage participation and fundraising. This cooperative shall manage the entire local water and sanitation services from the very early stages of conceptualization, design, construction, operation and maintenance. The cooperative shall begin by mobilizing residents to become involved in fundraising for at least a portion of the capital cost and to contribute labor for the construction of the facilities. Later, the cooperative shall also be responsible for operation, billing and maintenance of the facilities. Any profits from the operation shall be used for community development.

In order to be successful in this kind of water and sanitation development, sufficient institutional support is essential. The central government shall institutionalize a water and sanitation authority to be responsible for initiating the water and sanitation improvement program in secondary towns. The authority can help to regulate, oversee and harmonize practices of various local water and sanitation cooperatives. However, this authority shall also support the local cooperatives in terms of capacity building, technical, administrative, financial, managerial, and human resources planning.

Nationwide Implementation

If the Water and Sanitation Cooperative in Mityana is successfully implemented, which indeed has a high chance of trumping, the model can be replicated in other secondary towns nationwide. The willingness to accept and change will be higher if other communities witness the positive development in Mityana. However, as physical and social conditions differ from town to town, some investigations shall be performed especially on the following aspects:

- 1) Groundwater availability and quality;
- 2) Existing water supply and sanitation facilities;
- 3) Social-economic status. A hand pump stand pipe system can be considered for a poorer, smaller or more dispersed community where a distribution network is not feasible.