
MEMORANDUM

DATE: 3/3/05
TO: Mr. H. Tewoh, Minister of Natural Resources
FROM: Sarah Banas, Consultant
RE: Recommendations for Water Supply and Sanitation Improvements in Mityana

Introduction

While Mityana is targeted as an area for population expansion, its lack of water supply and sanitation infrastructure is impeding development. Further complicating the situation, any proposal for improvement must be self-sustaining. In assessing the current situation and the community's willingness and ability to pay, I have formulated a comprehensive plan to meet this challenge. Through the direction of a central water utility and local water boards, I propose implementing community-driven water projects, with the suggested application being public water taps that are financed on an ability-to-pay, per jerrican basis. The water utility would also provide a loan scheme for individuals that wish to build a VIP latrine for private use. All of the revenues from these two projects would then be used to fund semi-private latrines throughout the community, targeting areas where sanitation is the poorest.

Background

Preliminary reports indicate that the water supply and sanitation situation in Mityana is plagued with poor facilities that officially count the community as unserved by United Nations' standards. Approximately two-thirds of the community's water comes from unprotected springs, and virtually all households (99%) use rudimentary latrines. What is perhaps more disturbing, however, is that it also appears that the residents of Mityana are not currently receiving enough water to meet their basic needs.¹ While it is unclear whether this shortage is do to expense or inconvenience, an improved water supply and sanitation scheme in Mityana should include not only improvements to the infrastructure to protect the quality and promote health, but also to make services more readily available.

Organizational Recommendations

Despite similar trends for the community at large, resident expectations for the level of water and sanitation service and their ability to pay differ greatly along neighborhood lines. For this reason, it seems appropriate to have a neighborhood-level decision making process to ensure that the needs and expectations of each community are being met, and any improvements that are made will be fully supported by its users. However, the presence of abandoned pumps and boreholes scattered throughout the community (despite reportedly sufficient water tables) indicates that there may have been problems in the past managing projects at the community level. Further,

¹ Daily per capita consumption is reported to be approximately 14 liters, less than 1/3 of the recommended consumption for meeting basic needs.

economic variances between neighborhoods may create a situation where some neighborhoods will be unable to finance their own schemes, while others may have ample resources and willingness to pay more than what the scheme will actually cost. For these reasons, it also seems appropriate to have a centralized organizational structure that would ensure consistency, maintain all infrastructure, and combine the surplus budget of some neighborhoods with the deficit in others to allow for a self-sustaining system. Combining this neighborhood-level planning with a centralized operation, I recommend an organizational structure that operates as follows:

- Neighborhood-level water boards comprised of volunteers responsible for organizing town meetings and collecting feedback from residents, working with the water utility to devise a water scheme and problem-solve, and managing the labor (construction and maintenance) and billing at any facility within its jurisdiction;
- A centralized water utility responsible for coordinating and advising neighborhood water boards, approving decisions made at the neighborhood level, collecting and investing all money collected at each facility, financing new construction, and initiating educational programs.

In addition to providing a more community-driven solution, the use of volunteers at the local level will significantly reduce the operational expenses of the water program. While there may be concern that there is a great amount of responsibility placed on the board—perhaps too much to ask of a group of volunteers—the greatest amount of work will be required in the initial planning of an improvement, and the workload will significantly subside once in the operational stage. Because so many important functions have been delegated to the water boards, it will be essential that the central water utility maintain a close relationship with each to make sure that facilities and concerns are being managed properly.

The low prioritization that residents of Mityana place on sanitation in comparison to water supply indicates the unlikelihood that sufficient community interest or funding would be able to properly finance an overall sanitation scheme if it were an agency of its own. However, understanding the necessity of improved sanitation and the high price residents are willing to pay for water supply (see economics section below), I believe that by coupling the two within the same agency and enforcing strict requirements to ensure sanitation projects are carried out, it will be financially possible to simultaneously finance both.

Water Supply Recommendations

While I advocate decisions being made at the local level to encourage community support, I feel that, based on the initial consultant's report, certain trends seem to arise uniformly throughout Mityana that allow me to suggest a scheme that communities can tailor to meet their specific needs. I recommend that, in working with their neighborhood to develop an appropriate water supply plan, the water boards first suggest the following:

- Improving water sources through a combination of protected springs and new boreholes located throughout the community (mix and borehole location to be selected by the water board);
- Leaving at least one (perhaps more) spring in each neighborhood (selected by its undesirability as a pay-for-use spring) as it is, still accessible for collecting water (free of charge) but not improved;
- Banning water vendors from sourcing their water from unprotected springs;

- Charging customers by the jerrican, setting the price based on a willingness to pay survey at the maximum price that at least 80% of the residents within that neighborhood would pay or 50 shillings per jerrican, whichever is higher;
- Issuing discounts (similar to US-based food stamps) based on ability to pay, to the remaining 20% of community members who show they are unable to pay the price set (they will be charged the maximum that they are able to pay).

The basis of this plan is that every community member would still have the option to access their current water source at no charge, but will also have the option of paying their maximum price for the improved source. This provides maximum options for even the poorest in the community, who can choose to take advantage of the free water, or apply for discounts to use the improved source. The vendor ban on unimproved sources will ensure that those paying for water are receiving only the highest quality water. Further, while consumers have indicated that they prefer a flat rate to a per jerrican price, their willingness to pay preferences indicate that it is difficult for them to value a month's worth of water and that they experience "sticker shock" when given a monthly bill, as opposed to paying as they use the water.²

The initial consultant's report indicates that the level of service and pricing would be acceptable to the vast majority of communities in Mityana and it appears that they would choose the improved source (near their home) over the current system. If a community rejected the plan, it would be free to propose its own, but it would be up to the central utility to accept the revised scheme. While my hope is that one day Mityana might be able to upgrade to private connections and would not be completely opposed for some communities choosing to do so now, reports indicate that the vast majority of residents are not interested or willing to pay for private connections, largely from the low homeownership rate. Because such systems are only economical, due to the high capital costs and risk, if nearly everyone pays for the service, I would recommend that the central utility not approve private water schemes in communities where less than 90% agree to pay a price 10% greater than the lifetime cost of the system (the 10% will be used for sanitation).

Sanitation Recommendations

Whereas there was universal importance placed upon an improved water supply, that universality does not carry over into the sanitation sector. Only about a third of the community is looking to improve their current facilities and about half of those would be interested in financing so they could build a VIP latrine. Many Mityanans, especially those with the worst services currently, are much more reluctant to invest in sanitation improvements. It seems that they don't like having shared facilities and generally aren't willing to pay for them, but they do not have enough money or the will to build an improved facility of their own. Because of these varying levels of interest in sanitation projects, my recommendation is twofold.

First, I recommend that the central water utility provide loans to all of those that are willing to build their own VIP latrine through the financing option (10000 shillings per month for 5 years) to do so. By supporting only VIP latrine projects, those residents that were already considering making improvements might be enticed to consider this option. There is also the hope that, as there are more VIP latrines in Mityana and people begin to understand their benefits, more and more people will want one themselves. While local water boards would be involved in educating

² 78% were willing to pay 50 shillings/jerrican, aggregated to 6000 shillings/month (based on 4 jerricans/day). Only 63% were willing to pay 4000 shillings/month and 24% were willing to pay 7000 shillings/month for unlimited use.

their communities about the scheme, answering any questions, and following up with people who have installed the latrines to make sure they are maintained, their influence would be limited.

Knowing that this scheme will only reach a small proportion of the population, I would suggest that profits from water supply sales are used to build semi-private (shared, but not public) VIP latrines throughout Mityana. The central water utility would be responsible for allocating these funds on a per capita basis (rather than only to those neighborhoods making the most profit from water sales) to each community. The local water board would then decide, as funds become available, where the new latrine should be built (with a preference given to replace the most unsanitary or traditional latrines first) and determine a plan for maintenance. While it would be unlikely that any fees would be demanded of users, the water board would need to come up with a suggested usage charge and take donations. This money would then be used to supplement maintenance costs. Again, in time it is hoped that by enjoying the benefits of the public latrines, people will be enticed to build one of their own.

The Economic Case for the Recommendations

Understanding the financial limitations of the government of Kenya, this scheme has been proposed such that, as long as residents behave as they indicated in the initial consultant's report, it will pay for itself.

Assuming that each community agrees to pay 50 shillings per jerrican, that each household uses 4 jerricans per day (the current consumption for those that buy from a vendor), and that only those that can afford the full price (78%) pay anything, the annual income generated will be ~265 million shillings. The cost to supply an improved source to everyone in that same time is also ~265 million shillings. There would be staffing costs that would need to be paid to the people in the central utility. However, according to the survey, at least 10% of the population would be able and willing to pay 25 shillings per jerrican, contributing 17 million shillings to the total. This represents enough to pay for 22 employees—far more than necessary—at the same wage as current water vendors. Further, I expect that, among those that currently get water from a vendor, their water consumption will substantially increase as they see the price drop (they currently pay 100 shillings per jerrican). Any such increases would provide a surplus in the budget that would be available to fund sanitation projects.

One of the major benefits of the private VIP lending scheme is that, because interest is built into the financing, if the utility needs to take out loans to provide the funding, the project should be cost-neutral to the utility. If, however, enough money is in the utility's bank account from water revenues, it might end up making money from the operation.

Depending on the amount of people that use each semi-private VIP latrine and their paying behavior, there is the possibility that it would not be an entirely money losing venture. Unfortunately, there is not enough information in the consultant's report to determine the expected usage. Based on my own experience, if a facility is shared by 5 families and 54% pay 10 shillings each use (the others pay non), assuming 2 uses per day and 3 adults per family they would be able to recover their costs (4860 shillings, ~\$5.10) each month. Again, the major cost to the utility would be the initial investment that would need to be financed, but by using any surplus from the water budget, there would be no net cost.

Impact on Stakeholders

The community, in general, should benefit from this scheme, especially in terms of health. Those that currently pay for vended water will now have the option to pay half the price and collect the

water from a public tap nearer their home, while a high quality vended water would still be available, should they choose to continue receiving the service. Everyone will be offered water at a price they can afford (made available to the poorest via water discounts) and will still have the option of supplementing their need with some of the old sources. I expect that this policy will benefit the poor more than the wealthy, as the poor are least likely to have vended water so the addition of sources nearer their home will have a greater impact on their daily routine. The sanitation policy provided is best for either the wealthy or the poor. While the wealthy will benefit from subsidized private latrines, the new semi-private latrines will be targeted at the worst facilities (likely owned by the poor).

Because they have similar priorities and willingness to pay regarding water supply and sanitation, it is unlikely that there will be a differential impact along gender lines. For those families that currently fetch their own water, improved sources could provide the water bearer (usually child or woman) with more time. If a house currently uses a vendor, I expect that the task of water fetching would be shared.

The final group that will be greatly impacted will be the water vendors. It is highly likely that, as improved sources are constructed, more people will carry their own water and stop using the vendor. I expect that this change will not happen immediately and so will provide the vendors time to transition into other jobs. Some may wish to work for the central utility. Others may become contractors, working on the construction of improved sources. Those that remain in the vending business will also face changes, as they will be required to pay for the water. However, improved sources should mean that their waiting time decreases and they can make more deliveries in the same amount of time—not significantly raising the price of delivered water.

Extending these Recommendations

While the general organizational structure of this water and sanitation plan might be transferable to other regions in Kenya, Mityana has a few unique elements that require the plan as outlined, and that might not transfer well to other settings.

First, the sufficient ground water and availability of springs make the construction of taps throughout the area a practical option. Second, because of the high level of vended water service, Mityanans are accustomed to paying quite substantially for their water, and so it is possible to charge more than it might actually cost to maintain the system. Third, while there are wealth differences within the community, they are not so great as to necessitate vastly different levels of service being sought out by users, greatly simplifying the scheme. Finally, the receptivity of some community members towards sanitation makes the promise of a growing number of improved latrines possible.