

Community-Based O&M in South Africa: Lessons from the Field

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1. Introduction

The democratic South African government has, since 1994, made considerable progress in redressing the development imbalances inherited from apartheid. The water supply sector is, in many respects, at the forefront of this development drive.

Over 3 million South Africans have gained access to improved water supplies. This achievement has been accomplished through a combination of political will, advocacy, field level implementation capacity and meaningful financial resources. These efforts have, without question, led to tangible benefits on the ground.

Anxiety about the sustainability of newly implemented schemes is however growing. The Mvula Trust, a South African water supply and sanitation NGO, has recently initiated a "Revisiting Schemes Initiative". The "Revisiting Schemes Initiative" has been completed in partnership with the Australian Agency for International Development (AusAID). A similar initiative was started with the Department of Water Affairs and Forestry (DWAFF) in January 1999.

The first phase of this programme included 68 project "sustainability evaluations". Despite some notable successes, the evaluations raise serious doubts about long-term project sustainability (Breslin, 1999).

One of the main problems uncovered by the evaluations relates to poor operation and maintenance (O&M). Field-based O&M problems and possibilities are the subject of this paper.

The paper begins with an overview of the evaluation findings pertaining to O&M. A section on how local communities have responded to these problems follows. The final section of the paper then explores ways in which the Trust is trying to enhance these new systems.

2. Rethinking Community-Based O&M in South Africa

The "sustainability evaluations" suggest that O&M systems developed as part of water projects are weak at project level, and that the training of community members in O&M was generally poor. This has resulted in, among other things, water supply disruptions due to broken engines, damaged pipes, leaking reservoirs and broken taps. The evaluations suggested that system downtime can be quite considerable at project site, forcing residents to return to unprotected sources of water.

Water quality tests also showed high rates of faecal contamination at tap level in the vast majority of evaluated projects. These results highlighted a range of problems related to weak O&M, including poor tap level and reservoir management. Finally, the evaluations suggested that the O&M systems that were developed as part of the project tended to be unresponsive to tap level requirements. Preventative maintenance was limited, and communication channels between households and the O&M operator within the village were poor.

A number of factors contributed to these historical problems at village level. First, the South African water supply sector has taken a somewhat narrow view of O&M. Pump operators have been trained in the management of the scheme's engine, including the actual operation of the engine and basic maintenance. They are also responsible for reservoir maintenance and pipe repair. Theoretically, pump operators are responsible for tap level O&M issues, but this was rarely effective in practice.

This was, in the end, the extent of community-based O&M training provided. Government did try to develop multi-village support systems, but these were, in practice, ad hoc arrangements that have proven unsustainable.

The government-supported multi-village O&M systems took many forms, but often included government payment for pump operators in different communities, free diesel or electricity for each system, and free repairs to engines as required. This support undermined Mvula Trust community-based O&M training efforts, which were designed on the premise that communities would have to manage the scheme once completed. With government involvement, many of the systems designed by local communities and the Trust were never given a chance to operate.

As more projects came on line, government's capacity to provide support has steadily eroded. O&M services provided by government to local communities worsened in the process leading to, among other things, greater system downtime at project level.

Government financial support for O&M has finally reached the breaking point. Subsidies for diesel or electricity, and system repairs, were eliminated in December 1998. Communities have been told that government payment for pump operators will stop "at any time".

It is now clear that the narrowly defined and externally supported O&M systems that have been operating in most of the country have not met the long-term needs of households participating in these water projects.

The "sustainability evaluations" did, however, suggest that rural communities have not stood-by as these problems grew. Many have responded by developing far more sophisticated community-based O&M systems than the schemes designed as part of the original project. It is to these locally initiated O&M systems that we now turn.

3. Reconsidered O&M in Practice

It became clear to many - particularly women responsible for water supply at the household level - that the external O&M systems did not meet their needs. Services were often disrupted, maintenance was poor, and response times to problems were long.

Local O&M systems subsequently emerged that closely resembled the management systems communities had used to keep water flowing from handpumps, windmills, springs and wells prior to the initiation of the new water project.

In most villages, this has taken the form of a dual-tiered O&M system, although the actual systems vary from village to village, and the actual stage of implementation sometimes lags behind the local thinking on these systems.

At the household level, responsibility for tap level O&M has often been delegated to an individual or individuals who utilize the particular water point. In many cases, women who draw water from a tap elected one from their group to take overall responsibility for the water collection point.

For instance, in Hlanganisa (KwaZulu/Natal), a “tap coordinator” system is evolving that shows promise. “Tap coordinators” currently collect tariffs from participating households, but will be responsible for cleaning the area of stagnant water and garbage, replacing broken taps and fixing leaking pipes connected to the tap. This work will be done voluntarily. The “tap coordinator” will report O&M problems that are beyond her capacity to the village O&M operator.

A similar system is operating in Mogukubu (Northern Province). All the households who use a particular tap have elected a “keyholder”. The “keyholder” is always a woman. She is not only responsible for water point management, but also has a key to the water point.

Households can either be fined or denied access to water from the tap if they contravene the “rules” of the tap, and the “keyholder” can be replaced if the participating households believe she is not performing her duties. The “keyholder” is only paid R2.50 per month (US\$0.16/month) from the tariffs collected from their water point. In other cases, a “tap leader” serves a reporting function only. In Seokodibeng (Northern Province), the “tap leader” reports all technical problems at a water collection point to the O&M operator. She will then report back to the affected households when the repairs are expected, and what to do while the problem is being fixed.

Not all communities have developed uniform tap level O&M systems. For instance, in Mohlala (Mpumalanga), multiple tap-level O&M systems have been developed as a result of the collapse of the former centralized O&M system. Some households have banded together and elected one woman to manage their water collection point. This woman has a key to the tap, and only allows those who are part of the “tap group” to access the system. Others in the village have formed small groups where all household members are responsible for water management and hygiene, and all have a key to their respective tap.

Some villages like Tjakastad (Mpumalanga) and Emphangweni (KwaZulu/Natal) have developed multi-tap O&M systems. In Tjakastad, “block committees” were formed to address problems of O&M for all the taps in a given area of the village, and to manage the extension of the water supply network to household level. The block committees are also responsible for water point hygiene and the replacement of broken taps. Block committee members are mostly women, and have reacted timeously to tap level problems according to households reliant upon this system.

And in Umtebe (Eastern Cape), the water committee has found a creative way to decentralize responsibility for the purchase of diesel. A rotating system is in place, where 2 households at a time are responsible for the purchase of diesel. Once diesel is purchased, responsibility shifts to another 2 households. All households participate in this scheme. The system appears to work well, as significant peer pressure is immediately brought to bear on defaulters.

In all of the cases highlighted above, community members have taken responsibility for a varying range of O&M issues at tap level. Response times to problems are notably quicker since the emergence of these systems. Households will often collect money rapidly to resolve a

problem, like a broken tap or pipe, rather than waiting for some distant committee or government agent to rectify the situation.

The effectiveness of these tap-level models is obviously contingent upon a village-level support system. Importantly, in the cases where decentralized tap management has occurred, the role of the village-level O&M operator has become more manageable. Instead of worrying about a broken tap, he can concentrate on larger O&M issues affecting the scheme (most village-level O&M operators in South Africa are men). These include:

- Operating the engine
- Basic maintenance of the engine
- Repairing the engine as required
- Repairing broken pipes from the source to the reservoir and through the reticulation
- Cleaning reservoir(s)
- Maintaining the reservoir(s)

In the end, participants in the evaluations consistently felt that O&M should not be the responsibility of one person, or a handful of people, but rather the responsibility of all participating households. This conviction is in sharp contrast to current sector policy and guidelines.

By broadening responsibility, one may find that the burden on one individual to keep the system running diminishes, preventative maintenance at tap level improves, repairs occur timeously, and the operating cost to the household declines. The “sustainability evaluations” did not have a great deal to say about the multi-village support structure that are clearly required to assist community-based O&M schemes. This is understandable as community experience with external O&M support has been poor.

Nevertheless, a number of useful insights can be gleaned from the decentralised O&M systems described above. First, it is clear that many participants believe that O&M responsibility should be shared. As a result of this, the multi-village support structure should compliment, not stifle these community-based objectives.

Second, the multi-village support system must be responsive and accountable to local needs. Finally, many people suggested that the potential for job creation through O&M could be maximised more effectively in the future. Multi-village O&M support services should, as much as possible, be linked to the issue of local economic development. Community Based Organisations (CBOs), local entrepreneurs, and local NGOs could be mentored into effective support agencies over time. Local jobs can be created, and income can remain in local areas instead of being channelled to corporate headquarters in larger towns or cities. The spin-offs for longer-term local development could be significant.

4. Strengthening Localized O&M in the Future

The Mvula Trust will incorporate the lessons from these “sustainability evaluations” into its future operational work in a number of ways. First, the second phase of the AusAID “Revisiting Schemes Initiative” includes retraining and infrastructure support to evaluated projects. The challenge will be to find creative ways to support local efforts at decentralized O&M without over-bureaucratizing these systems or undermining local initiative.

The best way to do this may be to focus on the development of multi-village support agencies that are effectively linked to local government, compliment emergent localized O&M systems, and are accountable to both parties.

The Trust has also revised its policies and procedures based on staff's field-based experiences over the past 4 years. The Trust will no longer impose uniform management systems onto communities. It will rather facilitate a process that asks local communities how they want to manage their systems, based on local experiences with O&M and cost recovery and their ideas on how existing systems can be strengthened.

Again, the challenge will be to ensure that local government and emergent multi-village O&M support systems compliment, not stifle, these localized systems. In the end, a more decentralized O&M approach that is built on local O&M initiatives and ideas ease the burden of cash strapped and capacity constrained local governments.

References:

Breslin, E.D. (1999). "Lessons from the field: rethinking community management for sustainability". Paper presented at "Rural and Peri-Urban Water Supply and Sanitation in South Africa - Appropriate Practices Conference", 14-17 March 1999, East London, South Africa.