

8 GLoWS PROS

GLOWSPROS presents problems and potential solutions that have been developed in the context of the capacity building programme Guided Learning on Water and Sanitation (GLOWS) in Ethiopia. This programme adopts a problem based approach in which participants together with community members identify key water, sanitation and hygiene (WASH) problems and possible solutions. In this process they receive external support from staffs from Technical and Vocational Training Centres (TVETC), Water and Health Bureaus and staff from core partners in the GLOWS programme. As a result of this process WASHCOs and Kebele leaders initiate actions that help to improve their WASH conditions, sometimes adopting very creative solutions for their problems. To make this wealth of experience available to others short write-ups are developed called GLOWSPROS (GLOWS Problems and Solutions), to help others to learn from this experience.

Managing pumped piped systems

Introduction

Small piped systems are an important type of water supply in Ethiopia and most of them are not working well because they are not well managed and monitored. As a result a lot of resources are wasted and users are faced with unnecessary long waiting lines and may have to resort to other sources when the system breaks down and is left unrepaired for some time. Adequate management and preventive maintenance is crucial to reduce this problem and needs a practical monitoring system to alert management to possible problems.



A WASHCO mapping their system

The main challenges

Some of the main challenges that exist are:

- Pump discharge reduces over time for lack of preventive maintenance and wearing of pump parts but this goes unnoticed for lack of monitoring until the pump breaks down.
- Mismatch between income and expenditures because fuel consumption, for example, goes up (as the engine is not well maintained or the water level in the well is falling) whereas income from sales remains the same.
- Water loss in the system increases due to leakages and this goes unnoticed. If pumping hours remain the same less water will be available for selling and income will drop.
- Unequal water distribution among water outlet points which in fact is a hidden conflict as users at some tap stands have longer waiting times than at other tap stands. So they get a lower service level whereas they pay the same price for the water.
- Development of mistrust between the WASHCO and the consumers often because of lack of (financial) reporting.



Piped system may have distribution problems

Possible solutions

A lot of problems can be avoided by proper action oriented monitoring of system performance and user satisfaction. For starters it is essential to jointly with the WASHCO do a detailed assessment of the layout and the performance of the water supply system(s) and the water pressure at different tap stands.

User contact at this stage is essential as they can inform about possible changes over time in terms of system performance but also number of users taking water and waiting lines.

This first assessment sets the stage for necessary repairs and for the introduction of a proper monitoring schedule. Repairs may include:

- The replacement or repair of pipes, and taps to reduce leakages as a lot of water may be lost.
- Installation of water regulation valves to better distribute water in relation to the average number of consumers per tap stand..
- Overhaul of the pump and the generator.

The survey will also include a review of the available management tasks including operating the system, supervising pump and tap stand operators, accounting, reporting etc. This joint assessment can be used to identify improvement options.

One of the main points for improvement that applies to most systems is the introduction of a good action oriented monitoring and minimal reporting system.

Monitoring is not about reporting, but primarily a tool to encourage that necessary action is taken at the appropriate time. This implies that the monitoring system needs to include the action that is to be taken if performance is not up to standard. In fact if performance is ok then only very few data need to be registered.

In pumped piped systems as available in many locations in Ethiopia monitoring needs to look at least at the following aspects:

- Energy consumption in combination with pumping hours.

- Water production preferably measured directly through a bulk water meter.
- Water consumption based on the discharge at the taps (preferably metered) or income from sales.
- Income in relation to expenses and this needs good documentation as it can be an important point of conflict.
- Preventive maintenance tasks.
- Stock of spare parts.
- Users satisfaction.

For each of these key issues an indicator needs to be established as well as its value for the respective system. This implies that the operator has an indication for example of the expected consumption and production level. When the performance differs from this level it is imperative that action is taken. Hence the operator will need to know what action to take and this is to be part of the monitoring schedule. Hence in case of reduced water production first the pump needs to be checked and the water table. If both seem normal external advice may need to be sought for example from private sector.

When discharge at taps is dropping whilst pumping hours remain the same, it is likely that leakage has increased. Action to be taken includes a physical inspection of the system for possible leakages and as needed seeking external advice.

Examples of monitoring schedules are available in the GLOWS manual and in the support material for the GLOWS course.

Further advice may also be needed on other measures such as improved rainwater catchment for crops and more efficient water use in small plot irrigation to avoid wastage of water and fertilizers.

This note was prepared by Jan Teun Visscher and Abebe Demissie Chukalla from MetaMeta and reviewed by Desta Dimtse from RiPPLE. It was financially supported by UNICEF through SNV Ethiopia.

Further information on GLOWS PROS can be obtained from:
glows@metameta.nl.