

Community-managed rural water supply in Ethiopia

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Trade-offs

The following trade-offs are present in the case of community-managed rural water supply in Ethiopia, emphasis being given to issues that affect the overall supply chain design of rural water supply services:

- Short-term costs on training supply chain members versus long-term benefits of utilizing local resources.
- Decentralized versus centralized procurement.
- Operations and maintenance of small-scale simple technologies versus large-scale complicated technologies.

Water and sanitation are considered key elements in fostering development and reducing poverty around the world. The 2015 WHO/UNICEF Joint Monitoring Programme report indicates that 663 million people do not have access to an improved drinking-water source. Adding to the health benefits associated with clean drinking water, improved access to water reduces the time spent collecting and carrying water, improves school attendance, enhances food production and generates positive changes to livelihoods. The sustainability of water and sanitation services, however, remains

a challenge: the Rural Water Supply Network estimated in 2010 that only two out of three hand pumps are working at any given time (RWSN, 2010).

The sustainability of rural water supplies has been well studied but there seems to be no simple solution to the problem. In the 1980s it became widely recognized among sector professionals that many rural water supply programmes in the Global South were performing poorly, regardless of the type of technology used. Communities lacked the sense of ownership in their water supply projects and were not satisfied with the projects implemented by donors and national governments. As a result, water supply systems were not repaired and maintained, and revenues from user tariffs were often insufficient to pay for even operation and maintenance, and much less for capital costs. The concept of community-managed water supplies grew from the first International Drinking Water Supply and Sanitation Decade of the 1980s. During the decade, water points were installed, but governments lacked the human capacity and financial resources to manage and maintain them. The solution was to encourage community ownership of water points, including their long-term maintenance.

In this chapter we focus on the context of Ethiopia, where the implementation and overall management of rural water points has been traditionally carried out by governmental bodies and donors. Such centralized top-down approaches, however, have failed to recognize the under-utilized local resources that could accelerate the implementation of water points. In line with the global trend of community-managed water supplies, Ethiopia has included a community-managed approach into its national water implementation policy. This community-managed project (CMP) approach uses a participatory framework where the community invests labour, cash and in-kind contributions during the implementation process. The philosophy of the CMP approach is to involve the community in the project implementation and financial management, from inception to post-construction, thus facilitating the formation of 'community ownership'.

Shifting responsibilities to communities has implications for the supply chains that are required for the material and financial flows of the initial implementation, and for long-term maintenance of water supply systems. First, material and financial flows need to be coupled with necessary training activities: community-managed water technologies require certain skills that can only be attained through capacity development activities. Here capacity development is defined as the process by which people, organizations and society systematically stimulate and develop their capability over time to achieve social and economic goals, including through improvement of knowledge, skills, systems and institutions. Governmental staffs need to take the role of facilitator instead of technical implementer;

community water committees require a multitude of new skills ranging from financial and contract management, to technical skills on operations and maintenance; local community members must also become trained as professional artisans. They receive an intensive training in masonry and water-pump installation, after which they are qualified for constructing water points throughout the rural districts based on contractual agreements with communities. Furthermore, continuous technical assistance and refresher training are required from local governmental agencies in order to sustain the required skills. All these training activities naturally incur additional costs, but the inherent long-term benefits and decreased workload of overburdened governmental agencies are very much worth considering.

Second, decentralized community-managed procurement of pumps and spare parts calls for functioning local markets and the availability of materials. Communities may require additional support from, for example, governmental actors in terms of receiving information about technical details, and about prices if private actors hold a monopolistic position in the market. Private suppliers may take advantage of communities' lack of knowledge on the prices of various spare parts, or it might happen that professional expertise is required to identify the spare part that needs replacement in the first place.

Third, local small-scale technologies require consideration on where the capacity for operations and maintenance should be located – whether in centralized or decentralized locations. Small-scale translates into multiple, scattered technologies that require manpower and skills for operations and maintenance. Whether these skills should be pooled from centralized sources, or from within decentralized communities, becomes a crucial decision. In the case of simple small-scale technologies, the necessary skills are not too difficult to obtain and sustain, thus making community management a viable option. For large-scale complex technologies the case would become very different. Furthermore, whether such maintenance activities should be undertaken by private or governmental professionals, or by trained community members, has crucial implications for the supply chains of spare parts. In the rest of this chapter, the implications of a community-managed approach are further discussed.

Performance

The CMP approach aims to do things more efficiently by harnessing new and under-utilized capacities. The fund flows are organized through the use of micro-finance institutions that can easily route funds to the communities.

The involvement of communities to plan and construct their own water points, with products and services being procured by communities from the expanded private sector, means that government officials can focus on the vital facilitation, training and technical support activities. Despite the complexity of the supply chains that enable the construction and maintenance of water points, with all these capacities being co-ordinated more can be achieved and faster. In fact, the CMP approach has led to a fivefold increase in the construction rate of new water points in the Amhara region of Ethiopia – from an average of 200 water points per year between 1994 and 2003, increasing steadily to over 1,500 water points per year in 2014 (COWASH, 2014a). Monitoring and evaluation data shows that, over the same period, the implementation costs per water point have been halved.

Sustainability

In Ethiopia it has become evident that project-based, one-off and stand-alone implementation of water points should be replaced with sustainable, large-scale approaches that actualize the philosophy of decentralized service delivery. Moreover, the approach should preferably be embedded in the permanent governmental structures to guarantee long-term support for the communities. Large-scale approaches further contribute to the harmonization of monitoring and evaluation systems, when reporting is conducted in a uniform manner.

Sustainability in the context of rural water supply mainly deals with questions related to the long-term usage of the water point. Accordingly, operations and maintenance, availability of spare parts, as well as community management become crucial factors in determining sustainability of a water point in a rural, remote area. Functionality rates for water points implemented with the CMP approach reach 93 per cent (COWASH, 2014b), which is above the national average of 77 per cent for water points constructed with traditional approaches (according to data obtained from the National Water, Sanitation and Hygiene Inventory for Ethiopia for 2013). This means that at the time of monitoring, 93 per cent of water points were operating and in use. CMP water points have been found to be better maintained, at least partly due to the training of community water committees and pump attendants/caretakers. Furthermore, the roles of governmental authorities need to be clear in order to provide the necessary support to communities.

At present, there is no clear system for supporting communities in the maintenance and operations of water points, and no organized spare parts supply. However, a few solutions are currently being tested, ranging from the training of technical maintenance and operations persons at the village level, to establishing a spare parts supply system where a regional revolving fund office procures spare parts in bulk and delivers them to the district governmental offices. Another issue jeopardizing the sustainability of CMP water points may be technology choice. The CMP approach in Ethiopia is intended mainly for low-level technologies such as hand-dug wells and spring protections, and therefore the hydrogeological conditions need to be taken into account. It can be questioned, though, whether such small-scale technologies are sustainable in the long run, as the design period of hand pumps usually ranges from 10 to 15 years. After the design period, new investments are required from the government and from the donors to implement new water points. Time will show whether more complicated piped supply systems or household self-supply rope pumps will be found more appropriate in the future. To conclude, CMP shows promising results in terms of sustainability, but issues related to spare parts and technology choice still remain unsolved and require careful consideration between the trade-offs involved.

Community

The community is at the centre of the CMP approach. Communities organize themselves through selecting a representative water committee that includes both female and male members. This committee then submits an application to the district governmental office, which demonstrates the need for the water point. Due to this procedure, and the community contributions embedded in the process, CMP is called a demand-driven approach. The major innovation of the CMP approach, however, is to transfer funds for physical construction directly to the community. With support from the governmental agencies, communities are then responsible for the full development process, through planning, implementation (including procurement) and maintenance. The community contracts an artisan to conduct the cement works of the water point, and engages in the supervision of the construction process. In most cases community members also take part in the digging of the well, and contribute a minimum of 15 per cent in cash or in kind for the construction of the water point. Additional cash is posited in the micro-finance

institution's savings account for future operations and maintenance expenses. Other future financial contributions include payments for the spare parts, and salary of the guard of the water point. The role of the guard is in monitoring the proper use of the water point, and making sure that community members collect water only during the 'opening hours' of the water point. In some instances, the community members have to travel a long way to another city to procure spare parts if they are not available locally.

As opposed to traditional top-down approaches, the CMP approach avoids any 'handing over' of water points and thus contributes to community ownership. This in turn builds a strong foundation for future long-term sustainability of the water point. The success of CMP is helping to dispel the myth that communities cannot manage funds for such development processes. In fact, communities make the processes more efficient and thus contribute to accelerating the water supply coverage in Ethiopia.

Collaboration

Community-managed water supplies create new supply chains and novel relationships between the members of the supply chains. In traditional, centralized service delivery, pumps and spare parts are procured in bulk and routed to the districts with relatively simple procedures. In such an approach, the governmental agencies remain in control of the material and financial flows and this adds to the workload of the government. In the CMP approach, pumps and spare parts need to be locally available, and the local private sector has an important role to play. In most cases, the local suppliers procure pumps and spare parts from importers and transport them to the remote areas. Moreover, technical support and training are required at multiple levels. Building relationships for the implementation and usage of a new technology calls for additional information and new practices.

The CMP approach is helping local government to achieve more by drawing on the additional capacity of communities, micro-finance institutions and the private sector. These new supply chains, however, require collaboration between the governmental agencies, communities, local suppliers, micro-finance institutions as well as the importers of the pumps and spare parts. Moreover, governmental agencies are required to change their role and to allow for other actors to step in. Naturally, the communities need to be willing to accept the new responsibilities for the CMP approach in order to be successful. This involves financial contributions and management responsibilities, against which the benefits of communal water supply need to be justified.

Hints for practitioners

- Decentralized procurement may lead to complex supply chains, but it fosters growth of local markets and flexible utilization of local resources.
- Analyse whether the sustainability aspects of the chosen technology (such as durability, easy to operate, spare parts available) have been considered adequately, and whether funds have been reserved for adequate training for the members of the supply chain.
- Alignment with government structures will ensure long-term government support to communities.

References

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