

triple-s

Supporting Hand Pump Mechanics to improve operation and maintenance of rural water supply facilities

MAIN MESSAGES

→ Findings

- For HPMA's to have a significant impact on functionality rates, the available funding through district budgets and water user fees would have to increase.
- For HPMA's to be viable, they will need to engage in the broader water and sanitation market.
- Each district will need a budget of UGX 9 million (approximately US\$ 3,500) per year for a period of at least two years to develop basic capacity of the Associations to operate.

→ Recommendations to support HPMA's

- MWE can revise the allocation formula for the District Water and Sanitation Conditional Grant to balance investment in new infrastructure with that of major maintenance and rehabilitation and direct a member of the Technical Support Unit to spend at least 10% time supporting HPMA's.
- District Local Governments can equip Water User Committees with information on cost estimates for maintenance of water facilities and recommended maintenance schedules to guide tariff setting and encourage users to pay fees.

One of the challenges for addressing the break downs and service failures for rural water supply facilities is the availability of technical support for major maintenance and repair. In 2011, the Ministry of Water and Environment (MWE) introduced Hand Pump Mechanics Associations (HPMA's) as a possible solution to that challenge.

IRC and SNV Uganda undertook research to determine the conditions necessary for HPMA's to be viable and for them to contribute to improving functionality rates. The research was done as part of the Triple-S initiative¹ in partnership with the MWE and District Local Governments.



Hand pump mechanics in training, Lira district (Photo: Lydia S. Mirembe/ IRC Uganda).

Poor operation and maintenance of rural water supply facilities is a persistent problem in the Uganda water and sanitation sub-sector. The national average for functionality has stagnated at 80-83% for more than five years despite the continuous annual investments in operation, maintenance and rehabilitation of rural water supply facilities. The main reasons for the slow progress in functionality include: weak institutional support for operation and maintenance, lack of supply chains for spare parts for point water supply facilities, low user willingness and ability to pay for maintenance, and high maintenance charges by technicians.

In an effort to address these challenges, the Ministry of Water and Environment (MWE) in 2011 adopted an undertaking on the formation of Hand Pump Mechanic Associations (HPMAs) in all of Uganda's 111 districts. The idea was to strengthen the institutional support mechanism for operation and maintenance through the introduction of a pool of professional and coordinated mechanics to support Water and Sanitation Committees (WSCs) in conducting major maintenance and repair of point water supply facilities.

Following the roll out of the undertaking, IRC and SNV Uganda initiated an action research process with the District Local Governments (DLGs) of Kasese, Lira, Kabarole and Arua to look at conditions required for the HPMA intervention to work. Initial investigation showed that the associations were concerned about their ability to attract adequate work to keep individual members engaged and motivated, while the MWE was concerned about building a cadre of skilled technicians to provide timely technical support to WSCs on operation and maintenance of water supply facilities. IRC/ Triple-S then conducted a market assessment for HPMA services in Lira and Kabarole districts to explore the development of business models that would balance the interests of the HPMAs and MWE.

MAIN RESULTS

The research shows that the current level of financing for operation and maintenance of water supply facilities is very low. Based on the calculations made by the team, the districts invest less than 10% of the amount needed to ensure major maintenance and rehabilitation of water supply facilities, while water users raise only 30% of the amount required to cover preventive maintenance and minor repair. This level of investment is not adequate to ensure functionality of

water supply facilities or to provide the hand pump mechanics with fulltime work.

The market for HPMA services can be categorised into two complementary market segments: the primary market covers repair, maintenance, rehabilitation and monitoring functionality of water supply facilities while the secondary (broader) market covers services such as construction and maintenance of rain water systems and of household and institutional sanitation facilities.

The current size of the primary market for maintenance of rural water facilities is not adequate to fully engage HPMAs, but it could be. Analysis of the expenditure on maintenance and rehabilitation of rural water supply facilities done, based on figures for Kabarole district for the period 2013/ 14, shows that the current financing from the District Water and Sanitation Conditional Grant (DWSCG) and water users is only 18% of the costs² required to keep all the water supply facilities in the district fully functional for their lifespan. Given the current financing, the resources provided by the district can only support 19 of the 38 mechanics in the Association fulltime. But the available work in the district could engage up to 100 mechanics fulltime. The development of a secondary market would help; in Kabarole it could provide fulltime work for the equivalent of eight mechanics bringing the total number that could be supported to 27. For Kabarole this would mean 11 individual mechanics in the Association would be redundant. For many HPMAs, particularly those with over 30 mechanics,³ these calculations suggest that a number of their members would be redundant unless district budgets for maintenance increase.

Part of the challenge is that willingness of water users to pay for maintenance is low. Only 14-20% of the water users pay according to an IRC assessment of the community based management model for rural water supply in eight districts⁴ (Bey, et al., 2014).

ACTIVITIES AND SUCCESSES

The Associations have been successful in bringing together individual HPMS and putting in place mechanisms to regulate them. Uniform labour charges have been agreed upon for different categories of repairs. Individual HPMS have brought different competencies to their Association: masonry, plumbing, repair and maintenance of water supply systems. This has increased the potential market for HPMA services beyond basic repair and maintenance of water supply facilities.

² Estimated costs include costs for preventive maintenance, minor repair, major maintenance and rehabilitation. The rehabilitation costs were calculated for the lifespan of the water facilities and an annual cost was derived.

³ Northern Uganda districts such as Gulu and Kitgum have up to 90 mechanics registered with the HPMAs.

⁴ The study was conducted in Kabarole, Kasese, Kamwenge, Kyenjojo, Lira, Alebtong, Nwoya and Kitgum.

TABLE 1 COST OF SUPPORTING DISTRICT HPMA

Category	Cost (UGX)
District-level meetings with HPMA	2,000,000
Capacity building (Basic financial management and group dynamics)	5,000,000
Direct support to HPMA (District Water Office and Technical Support Unit)	2,000,000
Total	9,000,000

An assessment was conducted on the costs required to keep all rural point water supply facilities – shallow wells, deep bore holes and protected springs – fully functional for their lifespan. The required costs include: costs for preventive maintenance, minor repair, major maintenance and rehabilitation. The information gathered was used to develop a service charter that shows maintenance costs of different water supply technologies. The charter will ensure transparency and accountability for Associations, service providers and water users.

There has been an observed increase in functionality of rural water supply facilities over the period 2012/ 13 to 2013/ 14. In Kabarole functionality improved by two percentage points from 80% to 82% while in Lira district it improved by one point from 73% to 74%. The increase in functionality is partly attributed to the work of HPMA as well as other related initiatives such as Mobile for Water (M4W) and Sub County Water Supply and Sanitation boards that Triple-S is promoting in the pilot districts.

CHALLENGES

The investment in operation and maintenance of rural water supply facilities remains low. This limits ability of HPMA to provide maintenance support, and for the intervention to have the desired impact on functionality.

The proposed interventions in the secondary market (sanitation and rain water harvesting) are new to HPMA and require promotion, demand creation and appropriate pricing; yet HPMA capacity to manage business enterprises is still weak.

COST OF SUPPORTING HPMA

The costs for supporting HPMA are summarised in Table 1. The costs are based on the experiences of Triple-S in supporting HPMA over a two-year period: 2012/ 13 to 2013/ 14, in Kabarole and Lira districts. Each district will need a budget of UGX 9 million (approximately US\$ 3,500) per year for a period of at least two years to develop basic capacity of the Associations to operate. At regional/ Technical Support Unit (TSU) level MWE will need to second one existing staff member to spend at least 10% time on supporting and following up HPMA.

CONCLUSION

The current level of investment in operation and maintenance of rural water supply facilities is too low to trigger significant improvement in functionality. Developing the capacity of HPMA without addressing the financing gap for operation and maintenance is not likely to solve the functionality challenge.

Recommendations

The MWE should consider reviewing the allocation formula for the District Water and Sanitation Conditional Grant to balance investment in new infrastructure with that of major maintenance and rehabilitation. The allocation for maintenance could vary for different districts depending on the level of access so that districts with a higher level of access (over 85%) invest more in maintenance.

The HPMA will need support from the political leadership of the districts to stimulate payment of water fees for maintenance of water supply facilities and unlock finances for HPMA to perform the required maintenance and repair work.

Districts should support dissemination of service charters for maintenance of different water supply technologies to water user committees to equip them with information on cost estimates for maintenance of water facilities, and the ideal maintenance schedules to guide the setting of tariffs.

REFERENCES AND ADDITIONAL RESOURCES

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Hand pump mechanic at work, Kabarole district (Photo: Lydia S. Mirembe/ Kabarole)

About IRC

IRC is an international think-and-do tank that works with governments, NGOs, businesses and people around the world to find long-term solutions to the global crisis in water, sanitation and hygiene services. At the heart of its mission is the aim to move from short-term interventions to sustainable water, sanitation and hygiene services.

With over 40 years of experience, IRC runs programmes in more than 25 countries and large-scale projects in seven focus countries in Africa, Asia and Latin America. It is supported by a team of over 100 staff across the world.

For more information about IRC, go to www.ircwash.org

About this Brief

The brief is authored by Peter Magara, National Learning Facilitator for IRC/ Triple-S in Uganda. It is based on research conducted under the Triple-S (Sustainable Services at Scale), a learning initiative to improve water supply to the rural poor, carried out in Uganda, Ghana, and Burkina Faso.

In Uganda the initiative is spearheaded by a consortium of partners: the Uganda Ministry of Water and Environment (MWE), the Network for Water and Sanitation (NETWAS), the Uganda Water and Sanitation NGO Network (UWASNET), SNV Netherlands Development Organisation Uganda and IRC Uganda.

For more information see: www.waterservicesthatlast.org

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