IRC Ethiopia

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Group Self-supply: a case study of implementation by Millennium Water Alliance partners in Oromia and Amhara

By Bethel Terefe and John Butterworth

FINDINGS

Who leads?

- Implementation of Group-led Self-supply is not strongly driven by groups or households with respect to initiating the development and managing the construction and financing of the schemes.

Costs

- Almost all capital costs for the group-led facilities are borne by the NGOs involved, often exceeding the 50 percent maximum subsidy limit.
- The contribution of households and group members is mostly in-kind.
- Unit and per capita costs of the group-led self-supply facilities are high at the moment when compared to community water supply schemes.

Service levels and use

- The service levels provided by the group-led schemes is better than household self-supply and community supply systems, in some respects.
- Hand dug wells built through group-led Self-supply are better protected and provide relatively better quality of water than household-led self-supply facilities
- The majority of households 'getting their water supply from the group schemes access more litres of water per capita per day and travel less than users of community schemes.
- Potential for productive use is limited in the group-led schemes.

In Ethiopia, government adopted Self-supply as a service delivery model for rural water supply. The policy proposed two approaches. The Group-led Self-supply approach and the household-led Self-supply. This briefing note presents the findings of an assessment on group-led Self-supply implementation by MWA partners in Amhara (CARE) and Oromia (CRS) regions and to evaluate cost effectiveness and service levels, i.e., distance travelled to get water, water accessed per person per day and multiple use of water.

Self-supply involves water supply financed by households own investment in the form of labour, know-how and finance. Self-supply facilities are usually privately-owned but often shared with neighbours. They include hand-dug wells that provide access to shallow groundwater, springs, rainwater harvesting and household water treatment and storage mecha-nisms. The facilities may be used for drinking but are also commonly used for a range of other uses including washing and other sanitary purposes,

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watering of livestock and irrigation. They are the sole source of water supply for some households, while for others they are used in conjunction with other water supply sources, such as community water supplies.

While Self-supply facilities are traditionally developed by households on their own initiative, replicating and improving this form of water supply is increasingly recognised as one potential service delivery model for the unserved and hardest to reach citizens. One rationale for accelerating Self-supply (The term 'accelerating' Self-supply is commonly used to refer to both replicating and improving Self-supply facilities) is its potential to mobilize additional resources from users themselves towards achieving universal access and higher service levels in the face of public and donor/ NGO financing gaps. The model is also flexible, allowing users to upgrade their facility incrementally and starting from a relatively low investment. User investment and management of Self-supply facilities and the resulting sense of ownership is expected to contribute to sustainability of the facilities. Another potential advantage of Self-supply is convenience with more water available closer to homes, which makes it possible to use the water for multiple purposes including productive uses that boost the income of households.

In Ethiopia, the government adopted self-supply as a service delivery model for rural water supply in 2011 (in the WASH Implementation Framework), publishing subsequently policy guidelines in 2012 and a manual in 2013. The policy proposed two approaches. The Group-led Self-supply approach involves 10 or more households coming together to develop a facility jointly, with up to 50% subsidy towards the capital costs provided by government or NGOs. The other approach is household-led Self-supply, which involves individual households developing their own water supply facilities and fully bearing the capital investment costs.

The group-led model has been quickly taken up by some regional water bureaus and NGOs with Oromia and SNNPR for example reporting development of large numbers of facilities. A national meeting held in Butajira on September 2015 (Mekonta, L., 2015) to share experiences across regions on Self-supply revealed diverse levels of understanding and implementation approaches by different regional water bureaus. The group-led Self-supply facilities that have been developed include a wide range of systems including protection of springs and development of pondsin addition to construction of hand dug-wells. Capital costs for the hand pumps and rope pumps needed to lift water from wells are fully subsidized by government.

Understanding the implementation in practice of the group-led Self-supply model and its cost efficiency and service levels may help to inform decisions in the sector about the future development of Self-supply within the One WASH National Programme. This rapid assessment asked questions on the per capita costs of the group-led Self-supply systems as compared to other service delivery models, and compared service levels.

OBJECTIVE AND METHODOLOGY

The objective of the assessment was to document group-led Self-supply implementation by MWA partners in Amhara (CARE) and Oromia (CRS) regions and to evaluate cost effectiveness and service levels, i.e., distance travelled to get water, water accessed per person per day and multiple use of water.

The assessment included a survey of 25 group-led facilities in Dera and Este woredas in Amhara (in South Gondor zone) and Dugda woreda in Oromia. All the surveyed facilities were hand dug wells. A desk review examined costs of construction and the sharing of investments for a total of 58 group-led Self-supply facilities, including those covered by the field survey. This additionally included Farta woreda in Amhara.

As far as possible, data collection was undertaken with woreda officials with relevant roles in water supply. The intention was to promote ownership and understanding of the data collected, support development of their skills and knowledge and to encourage further involvement in Self-supply planning.


Photo: Petterik Wiggers / Panos Pictures UK

FINDINGS

Who leads?

The assessment reveals that implementation of Group-led Self-supply is not strongly driven by groups or households with respect to initiating the development and managing the construction and financing of the schemes.

The national self-supply policy guideline indicates that the group-led Self-supply model should be driven by households. Households are expected to request support by submitting their plan for either new construction or upgrading of an existing facility as a group, and to jointly develop rules for operation and management including management of funds. In the implementation of the group-led model in the three woredas visited (Dera, Estie and Dugda), the initiative to invest has sometimes come from the woreda government or NGOs operating in the area, while in other cases the group members have made a request. The groups' involvement in managing the finance and construction is not strong in almost all cases.

The system of management, tariff setting and fee collection, as well as size of the group members varies according to the type of technology used. The types of lifting technologies used for the group-led facilities in these woredas are Afridev hand pumps in Dugda, rope pumps in Este and pulleys in Dera. A managing committee (smaller in size than a WaSH Cos set up to manage community schemes) is set up for the Afridev hand pumps, while one person is assigned to manage rope pumps. For the upgraded facilities with pulley, no management arrangement is made. Flat tariffs per household are paid to use the Afridev hand pumps, while there is no regular fee collection system for facilities where a rope pump is installed or a pulley is used. The size of the groups varies from 21 households on average for the hand pump schemes in Dugda to 5 households on average for wells fitted with rope pumps and pulleys.

Costs

A review of unit costs and cost sharing shows that almost all capital costs for the group-led facilities were borne by the NGOs involved, often exceeding the 50 percent maximum subsidy limit. The contribution of households and group members is mostly in-kind. Unit and per capita costs of the group-led self-supply facilities are high at the moment when compared to community water supply schemes.

Most of the group-led facilities assessed were constructed in the past two years by NGOs with contributions from group members in the form of labor, local construction materials such as sand and stone, and in few cases, money for purchase of construction materials or a deposit for future maintenance (amounting to up to 500 birr per group). NGO contributions covered payment for construction materials such as cement, purchase of pumps and payment for skilled labor of local artisans for construction and installation. In the case of Dugda, the hand pumps were distributed for free by the woreda water office.

During the field survey, it was not possible to obtain details on the exact amount of money contributed by NGOs to the construction of the facilities. It was also difficult to estimate the financial value of the in-kind contribution made by group members. Therefore, estimations of the total cost of construction, contribution of group members and NGOs/government have relied on a desk review of figures provided by the implementing partners. Better record keeping on costs would help to facilitate future assessments.

For the dug-wells fitted with a rope pump or pulley, it was estimated that group members cover, respectively, more than 62 and 53 percent of the total cost of construction. This is done through in-kind contributions, such as gravel, sand, stone, wood and well digging. For dug-wells fitted with a hand pump, the group members' in-kind contribution amounts to only 40 percent of the total cost of construction.

FIGURE 1 COST OF GROUP SELF-SUPPLY FACILITIES (IN BIRR) & PROPORTION COVERED BY MEMBERS & NGOS/GOVERNMENT

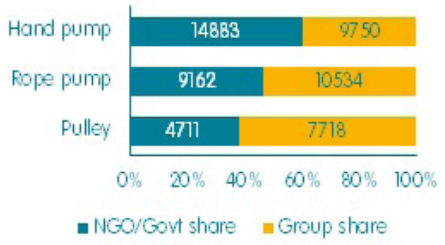
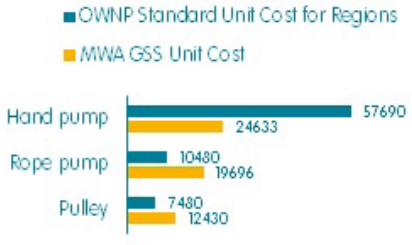


FIGURE 2 UNIT COST OF GROUP-LED SELF-SUPPLY FACILITIES CONSTRUCTED BY MWA PARTNERS AND OWNP STANDARD COSTS



Comparison between the estimated unit costs of the group-led facilities constructed by MWA partners and the standards (the standard was set in 2013 when the OWNP document was prepared). The figures used for comparison were multiplied by annual 2.5% inflation rate set for regions in the OWNP, shows huge differences. The figures suggest that group-led facilities with rope pump or pulley as constructed by Care in South Gondar are much more expensive than national standards, raising questions about cost effectiveness. On the other hand, costs of group-led facilities in Dugda are very low, potentially raising questions on standards of the construction. The unit and per capita costs of hand dug wells fitted with rope pumps were almost double the OWNP standard set for Amhara region, while the dug-wells with pulleys cost 40 percent more than standard. On the other hand, the unit prices for hand pumps in Dugda are much lower (about half) than the standard set in OWNP for Oromia region. Similarly, the average per capita costs for group-led facilities show major differences when compared with the per capita cost standards used for OWNP planning. The per capita cost of dug-wells with rope pumps were found to be more than double the standard per capita cost in the OWNP as set for Amhara region. The difference in unit cost coupled with the difference in number of beneficiaries, which is lower for group Self-supply facilities constructed by MWA partners, has resulted in higher per capita costs. Although the costs of the hand pump schemes in Dugda is relatively low, the numbers of beneficiaries are also low so it turns out that the actual per capita costs of these schemes is close to the proposed OWNP standard.

FIGURE 3 PER CAPITA COSTS OF GROUP-LED SELF-SUPPLY FACILITIES CONSTRUCTED BY MWA AND OWNP STANDARDS (IN BIRR)

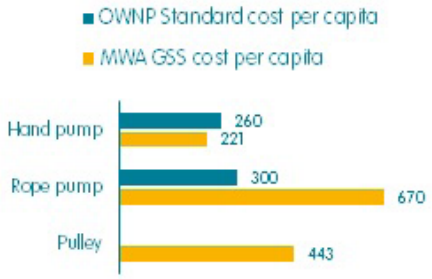
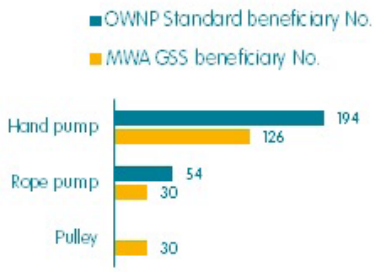


FIGURE 4 BENEFICIARY NUMBERS FOR MWA GROUP-LED FACILITIES AND OWNP STANDARDS



Service levels and use

The service levels provided by the group-led schemes is better than household self-supply and community supply systems, in some respects. Hand dug wells built through group-led Self-supply are better protected and provide relatively better quality of water than household-led self-supply facilities. The majority of households 'getting their water supply from the group schemes access more litres of water per capita per day and travel less than users of community schemes. However, compared to household self-supply systems the potential for productive use is limited in the group-led schemes.

All the 25 group-led Self-supply wells surveyed were semi-protected wells with some protection intended to prevent external contamination of the well. Most (76%) of the wells had a sealed mouth with impermeable protective wall, and all had an impermeable apron. Most of the wells had a drainage system, an earthen channel or a concrete impermeable channel. Most of the wells were lined with mortar or concrete rings. However, unhygienic handling of the rope and bucket in some cases and contamination of the immediate area around the well with solid and fecal waste were observed. Most of the wells are reported to be functional all year round, providing adequate water for group members and those outside of the group sharing the facility. The depth of the majority of the wells is between 10-15 meters. Collapsing is not a problem in most areas.

The results show huge differences with household led self-supply facilities. A parallel survey of household led facilities in the same districts has shown that out of 1,662 surveyed wells only 16% are semi-protected wells. The majority of the household self-supply wells have no well mouth cover or have a loose cover with no protective well mouth wall or a permeable one, while almost all have no drainage system and well lining (Mekonta et al. 2016).

The main uses of water from the group-led facilities are drinking (100%) and sanitation and hygiene (96%). For more than half of group members, the facility is their main source of drinking water. The water is also used for livestock (64%) and irrigation (24%). Irrigation users are mostly households on whose land the facility is constructed so this is limited. Half of the group-led facilities are shared with other households outside the group who mainly use it for drinking and cleaning and sometimes for livestock. The potential for productive use of Group-led Self supply facilities is much less than individual household-led Self-supply facilities. A parallel

survey of household facilities showed that nearly half (46%) of self-supply wells are also used for irrigation (Mekonta et al., 2016, Op. cit.).

The majority of the households are very satisfied with their group-led facility. In more than half of the cases, there is no limit to the amount of water households can collect. However, 62% on average collect less than 15 litres of water per head per day, which is under GTP I target for rural households, while 25% collect between 15 litres and 25 litres per head per day. Only 12% were able to collect 25 or more litres per head per day. Overall, the average per capita per day water collected by households in the survey was 16 litters. This is much higher than community schemes where the average is 9 litres per capita per day (Tincani, Lucrezia et. al, 2015).

Waiting time at the source to collect water is very low. It was less than five minutes for most (76%) of the households. Very few families had to wait for above 10 minutes. Overall, the average waiting time to collect water from group self-supply schemes was around 5 minutes, which is a great improvement from the 60 minutes average water collection time recorded for community schemes (Tincani, Lucrezia et. al, 2015).

Most of the respondents rated the quality of water as good for human consumption and the majority don't have any concerns about the water quality. Water quality tests on 8 of the 25 group facilities showed half to be of low health risk (E.coli contamination) and half fell under high or very high risk category. However, this sample size is too small to draw any conclusions. Water quality of the group-led facilities needs further investigation across a larger sample of facilities.

Conclusions

The implementation of the group-led Self-supply approach by MWA partners has been diverse but some similarities can be identified. In all cases, the initiation of the service and style of implementation has more characteristics of community water supply than what is generally known elsewhere as Self-supply. The initiative is not strongly bottom-up and there are no financial contributions from group members. The group-led approach seems to try to replicate some of the features of the 'community managed projects' approach which also seeks to drive down costs (through community contracting) and ensure high levels of community contribution.

The national standards set for defining group self-supply facilities appear to be ill-fitted with the reality on the ground. The type of technology used seems to be an important determining factor for the size of the group and also the proportion of households' contribution to the total cost of construction. In cases where low cost technologies like rope pumps are used, the national standards that require 10 or more households to be in a group to qualify for a subsidy couldn't be easily met. In cases where relatively higher level technology like an Afridev hand pump is used, the partial subsidy provided by NGOs has often exceeded the limit set. The results indicate the need for modifying group sizes or putting technology types as a criterion for identifying group self-supply facilities that can qualify for a partial subsidy.

With respect to cost effectiveness, the unit and per capita costs of construction of the group facilities are much higher for hand-dug wells with rope pumps and pulleys compared to national standards set for conventional community water supply. The assessment raises questions on the costs of the group-led model, which could be further investigated by widening the survey to include government implemented group-led Self-supply schemes. On service levels, the group Self-supply wells are mostly better protected than household Self-supply wells covered by the survey, though water quality needs to be further verified with a larger sample size than achieved in this study. Generally it is observed that more needs to be done to improve sanitary conditions of the wells and lifting devices.

The assessment concludes that the group-led 'Self-supply' model offers an alternative model for safe drinking water supply that maximizes community contributions and leverages NGO/government investment to provide high service levels, although these are new systems and longer-term sustainability is not investigated. Further research is needed to understand how the group-led approach it can be better targeted identifying which type of technologies and socio-economic groups as well as geographic locations are best addressed through the subsidized group-led model.

FURTHER READING AND REFERENCES

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About IRC Ethiopia
IRC Ethiopia is a subsidiary of the international think-and-do-tank IRC that is headquartered in The Hague, the Netherlands.

Our vision is the same as the national government and shared by the wider WASH sector: a successful One WASH National Programme that delivers on the objective of universal access to improved water, sanitation and hygiene services.

IRC has worked with key stakeholders in Ethiopia since the 1990s to improve delivery of water and sanitation services. Equipped with extensive, in-depth knowledge of the country and a growing portfolio of activities, IRC established a legally registered office in Addis Ababa in 2015. The team in Ethiopia now numbers seven staff and associates, supported by a team of international experts.

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About this brief
This brief is based on rapid assessment carried out to document group-led Self-supply implementation by MWA partners in Amhara (CARE) and Oromia (CRS) regions and to evaluate cost effectiveness and service levels. It is authored by Bethel Terefe, Country Program Coordinator, IRC Ethiopia.

Golagul Towers Building
Bole sub city, Woreda 4
House no. 275/276
Addis Ababa, Ethiopia

ethiopia@ircwash.org
www.ircwash.org/ethiopia