

Establishing a baseline for Self-supply Acceleration in seven Ethiopian woredas

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Abstract/Summary

This paper discusses research to establish a baseline for a Millennium Water Alliance-supported pilot to test approaches to Self-supply Acceleration in rural Ethiopia. Key findings from the baseline study which covered seven targeted woredas (districts) in Amhara and Oromia regions are summarised, and recommendations for implementation and follow-up monitoring are discussed. A key recommendation is to focus on promoting the upgrading of existing family wells. These are typically unprotected and provide poor water quality for drinking. The first assessment of an alternative group-led model to Self-supply raises important questions with respect to utilisation and cost-effectiveness of this approach, which is being widely implemented by government.

Introduction

Self-supply Acceleration involves public (and NGO) investment in a set of activities that are intended to trigger private household investments in new and improved water supply facilities. These facilities are typically privately-owned but often shared with neighbours. Hand-dug wells that provide access to shallow groundwater are the most common type of facility, but Self-supply technologies can also include the development and construction of other water supply sources such as springs and rainwater harvesting as well as household water treatment and storage.

Self-supply facilities may be used for drinking but are also commonly used for a range of other uses including bulk water supply for washing and sanitary purposes, watering of livestock and irrigation. They may be used by some households as the sole water supply, or in conjunction with other water sources such as community water supplies. Characteristics of existing Self-supply facilities in rural Ethiopia are described in more detail by Sutton *et al.* (2012) and Butterworth *et al.* (2013).

The Ethiopian government set out its policy to support Self-supply in 2012 (MoWIE, 2012) and the One WASH National Programme (OWNP) includes Self-supply projects as one of its four service delivery models for rural water supply (MoWE, 2011). Two kinds of Self-supply are recognized. Group-led Self-supply involves small groups of households coming together to develop a joint facility, and these may be subsidized up to 50% of the capital investment costs. Household-led Self-supply involves individual private investment in water supply facilities and the capital investment costs are not to be subsidized.

The Millennium Water Alliance (MWA) is supporting the development of improved water supplies through both the group-led and household-led investment models. While the original intention was to give more emphasis to piloting and providing a proof of concept of a Self-supply Acceleration approach to help drive household investment, the early focus of MWA implementing partners was put on the group-led Self-supply model. This is rather similar to existing forms of community water supply so is easier for NGOs and government to implement within their existing capacities. However, supporting household-led investment requires market-orientated interventions to build supply and demand that are more similar to aspects of sanitation marketing or household water treatment. Such approaches are novel within the rural water sector which lacks a tradition of working directly with individual households.

The Self-supply Acceleration approach being tested by the MWA is set out in a series of guidelines developed with the participation of MoWIEs Self-supply task force and consistent with MoWIEs Self-supply manual (IRC, 2013; MoWIE, 2014). The aims of the MWA pilot are:

- 1) To provide proof-of-concept of a Self-supply Acceleration approach to trigger and support house-

- hold-led investments in improved water supplies
- 2) Active water credit programs in each of the seven woredas, with at least 1100 loans extended to support Self-supply investments
 - 3) A strengthened local private sector servicing Self-supply, with at least 2 businesses in each woreda providing new or improved products or services
 - 4) To reach 35000 people with improved water supplies¹ through household-led Self-supply (investments in 1400 new or upgraded wells).

Context, aims and activities undertaken

This paper discusses research to establish a baseline for the MWA pilot in the seven targeted woredas in Amhara and Oromia regions (see Figure 1). The objectives were:

- 1) To provide a baseline of existing Self-supply facilities and their performance against which the achievements of the Self-supply Acceleration pilot can be assessed.
- 2) To provide information for the planning of Self-supply Acceleration activities in the pilot woredas.
- 3) To encourage engagement of critical stakeholders in Self-supply Acceleration and to strengthen their skills and knowledge.

Initially the focus was on household-led investments, although the baseline was extended to address the group-led model as it emerged that this was becoming an important area of programming for the partners. The objective here was:

- 4) to document how the group-led approach was being implemented by MWA partners and to assess its cost effectiveness and service levels.

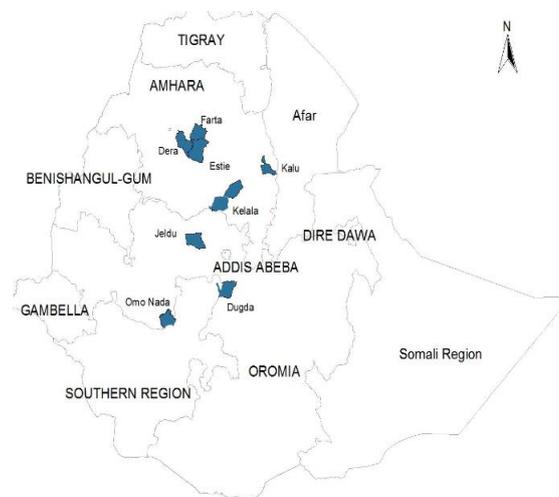


Figure 1: Location of woredas for MWA-EP pilot Self-supply acceleration activities

The baseline survey was intended to provide a basis to be able to answer the following questions at the end of the Self-supply Acceleration pilot i.e. in mid-2017.

- How many privately owned Self-supply facilities were constructed or improved during the project timeframe, and how many people benefited? To what degree (level of technology, level of protection) were facilities built or improved? *The revised target is to trigger improvement of 1400 sources serving 35,000 people (i.e. assumption that wells are shared by on average by 25 people).*
- How has microbial water quality (E coli) changed during the project timeframe and can this be related to project interventions? *The target is ultimately zero or low risk water supplies, but the interest is to show whether Self-supply Acceleration can achieve progressive improvements and narrow the gap in water quality performance*

¹ Through the group-led model it is also expected that 20000 additional people will be provided with access to improved water supplies.

with communal supplies.

- How much public/NGO investment has been made in Self-supply Acceleration, and how much household investment has been leveraged by this investment? *Anticipated investment might be in the range USD10-20 per capita within the targeted kebeles, and be expected to leverage double that investment by households.*
- How many households have taken MFI loans or used other sources of finance to make these investments? *The target is uptake of 1100 loans.*
- What is the degree of engagement of private sector businesses in providing products and services for Self-supply? *The pilot aims to increase the number of businesses offering goods and services of different types related to Self-supply (well digging/drilling, protection, pumps, HWTS etc.), and support the growth of these businesses and the markets served. The target is at least 2 strengthened businesses operating in each woreda.*

Five data collection instruments were developed: 1) a household survey for households with existing Self-supply facilities with questions on well characteristics, lifting devices, hygiene & sanitation, well performance/reliability, use, satisfaction, sharing and interest to improve, with water quality assessments using the compartment bag test for E.coli contamination for a sub-sample of facilities, 2) an enterprise survey for businesses providing WASH products and services, 3) a financial institution survey for MFIs, 4) key informant interviews guided by a checklist with questions on water supply, local businesses and finance, and a wealth ranking assessment to identify locally relevant categories for relative wealth ranking of households responding to the household survey, and 5) a group-led Self-supply survey.

Data was collected using smartphones and the Akvo Flow data collection app, using the monitoring functions available to design the surveys to facilitate easy repeat survey of the same facilities. The surveys used are available at www.ircwash.org.

In each woreda (district), priority kebeles (a sub-district unit) for Self-supply Acceleration had already been identified by partners on the basis of their potential (including availability of shallow groundwater resources). The numbers of prioritised kebeles was in the range 1- 6 for the different woredas. Where the number of existing household level facilities in these kebeles was considered manageable e.g. up to 50-100 per kebele, all facilities were then visited, mapped and the household survey administered. Where the number of existing sources was too high in a prioritised kebele (this was only the case in Dera), village(s) with the most potential for Self-supply were selected and all facilities in those villages were surveyed. However, this sampling procedure was not followed in the case of Kalu woreda where all the Self-supply facilities were household rainwater harvesting ponds. In the selected kebeles, the survey was stopped when 500 ponds had been surveyed.

Water quality tests were taken for every 10th Self-supply facility surveyed, using the next facility as a replacement in cases where water could not be obtained from the source.

The total number of household self-supply facilities surveyed was 2161, with 209 samples taken for water quality tests.

Key informant interviews with local officials and professionals were used to collect information on the estimated number of Self-supply facilities as well as the presence of relevant business types and financial institutions active in the woreda. A snowballing approach was then used to extend the list of businesses and financial institutions with the simple survey administered to each.

The survey of group-led facilities included 25 facilities constructed in Dera, Este and Dugda woredas by CARE and MCS/CRS. Follow-up assessment on costs of construction and sharing of investments however used data from 58 group-led Self-supply facilities implemented by MWA partners, including those not included in the survey, from Farta, Dera, Este and Dugda woredas.

As far as possible, data collection was undertaken by 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 encourage further involvement in Self-supply planning. In each woreda,

the lead NGO partner set up the survey with local government officials with the support of IRC and the MWA. There was some variation between woredas in the way the survey was implemented and recruited enumerators were used instead of government staff in two woredas.

The next sections of the paper present some of the key findings of the baseline survey, and discusses lessons learned and experiences in monitoring Self-supply that are potentially relevant to other countries and efforts, as well as monitoring Self-supply nationally.

Main results and lessons learnt

Investors in Self-supply

The survey assessed the profile of households owing Self-supply facilities with respect to wealth, education and gender. This is a major concern of government and agencies supporting Self-supply as an approach. Households in all wealth categories have wells or other facilities, although the majority of the households (80%) in the survey categorized themselves as belonging to the middle wealth group. Education levels amongst facility owners are generally low. Well ownership amongst female-headed households is very low. Only 9% of the facilities (194) are owned by women or female-headed households, which is 2.5 times less than would be expected extrapolating from statistics on expected numbers of female-headed households. Compared to male-headed households, more female-headed households also fall in the poorer wealth category and less belong to the richer households.

Investment in Self-supply facilities is influenced by wealth. Taking the level of well protection as a proxy indicator for total investment and excluding those households who have received subsidy, ownership of a better protected well (semi-protected) is more common among the better off households (Figure 2). Compared to poorer households, better off households have also made more investments in construction materials, simple lifting devices and lining for ponds, while poor households invested more in local materials and labour. Ongoing improvement of wells is also slightly more common among the richer households.

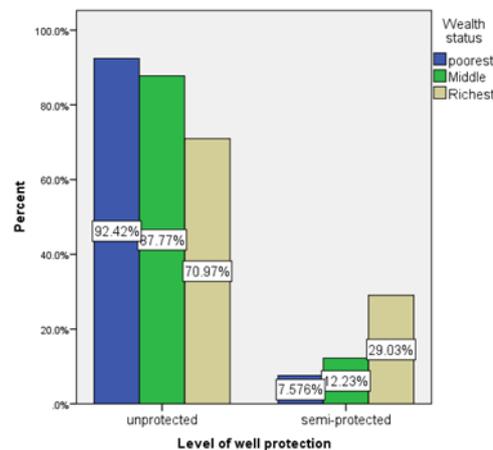


Figure 2: Level of well protection by wealth category

Only 23% of the wells owned by female-headed households fell into the semi-protected category, while the corresponding figure was 36% for wells owned by male headed households, indicating a bigger gap in investment and improved management of wells among female headed households.

Levels of mobile phone ownership amongst well owners are high and phone numbers were collected during the survey so there is potential to contact owners by phone or messaging e.g. to send promotional messages or ask follow-up questions.

Investments in Self-supply

Although households have all made some investment in construction of their wells or other facilities, these are generally low-cost facilities requiring limited capital. Most of the facilities (70%) were

constructed by households using their own labor or the support of friends and neighbors without payment. Less than one fifth (18%) hired skilled local artisans. Where households purchased products during construction of the facilities, which was true for 82% of the cases, half of the products purchased are locally available materials like a rope and bucket or simple lifting devices, such as pulley or windlass. Very few, purchased construction materials like cement, or low-cost pumps like rope pumps. Kalu is the only exception where households commonly paid for the lining (a specialised material) of ponds used for irrigation.

Ongoing improvement and maintenance and of Self-supply facilities also involve low capital investments. The most common ongoing maintenance across the woredas was the cleaning of wells and ponds (44%), while very few cases of maintenance of lifting devices and pond linings are reported. About a third (36%) of the households have not made any maintenance at all. Some 30% of well owners made improvements to their Self-supply facilities, mostly in Dera and Omonda. The most common type of improvement is deepening of wells in Dera driven by expanding irrigation for chat production and increasing demand for water, and upgrading of lifting devices in Omonada.

The survey indicates a significant proportion of the households 76% have aspirations for future improvement of wells, which might also indicate willingness to invest. Most want to improve the head work of their wells including well mouth cover and slab; upgrade lifting devices to higher levels of technology and some want to improve well lining.

Use

Self-supply facilities are used for multiple purposes by households. Domestic sanitation and hygiene uses (cleaning, washing and bathing) and livestock watering appear are the most common uses. Many wells (but not the ponds) are also used for drinking water supply. 37% of hand dug wells (i.e. excluding ponds) are used for drinking and family wells are the main source of drinking water supply for about 36% of the households surveyed (other households rely on community water supplies). About 45% out of the total hand dug wells are used for irrigation. Irrigation use is more prominent in woredas like Dera and Kalu (where ponds are the main Self-supply facilities) and is less common in other woredas like Omonada and Dugda. In the former, most households grow cash crops like khat, coffee or fruits and vegetables using water from household wells or ponds to bolster their household income. The highest annual cash benefits from irrigation are obtained by households in Dugda, Kalu and Dera woredas.

Although Self-supply facilities are privately owned, the benefits are often spread wider. Out of the sample, 58% of well owners share their Self-supply facilities with other households. Most share with less than 5 households while about 35% may share with up to 10 other households. Sharing is more common in Omonada, Kelela and Dugda, while it is less practiced in Dera where individual well ownership is very high and many households have more than one well. Sharing households mostly use the water for drinking water supply or sanitation and hygiene uses.

Overall, the majority of Self-supply facility owners (88%) are satisfied with their facilities. Satisfaction levels are highest in Dera, Kelela and Kalu woredas. Satisfaction with Self-supply facilities appears to be highest in cases where households are able to use the water for irrigation.

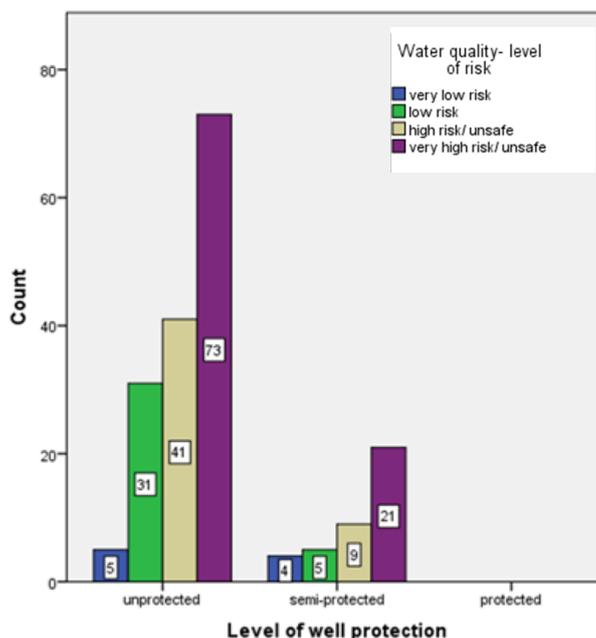
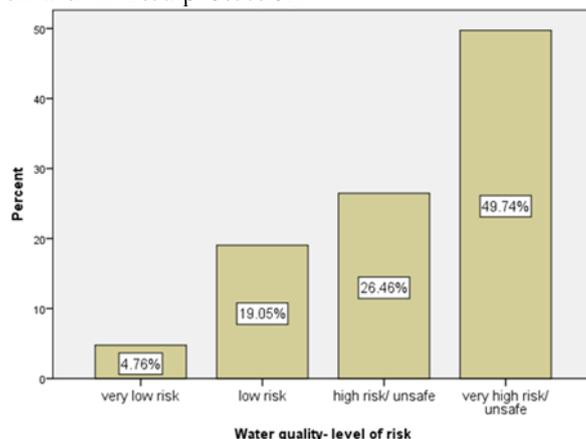
Safety

Latrines are relevant since they help families maintain good hygiene and they are constructed through similar promotion and household investment mechanisms as Self-supply. They may also present risks if located too close to wells. Amongst Self-supply facility owners, ownership of latrines is high overall, with about 84% of households in the survey having access to latrines. However, there are differences across woredas and relatively a higher proportion of households are without access in Dera and Dugda woredas. Most (74%) of the latrines owned by households are basic being pits without a cleanable slab. Open defecation is used by households without latrines. Given large distances between households, sharing is not common.

Household water treatment is practiced by very few households. From households that use their Self-supply facility for drinking water, only 12% use a filter, chemical treatment or boiling before drinking.

This is consistent with other studies such as for the National Hygiene and Sanitation Strategic Action Plan (2011- 2015) where 8% is the estimated level of HWTS practice in the country.

Water quality tests (for E.Coli contamination) showed the majority (76%) to be contaminated with unsafe levels of E.coli, more than 10MPN/100ml [Figure 3]. This is consistent with other water quality surveys of traditional wells. Sutton et al. (2012) reported 80% of unprotected wells to exceed 10 TTC/ 100 ml (a slightly different indicator) and 69% of semi-protected wells with a drum (a common form of wellhead protection). The highest water quality risks are observed in Dera and Dugda woredas followed by Este and Farta. Lower levels of contamination are observed in Kelela. Here, all of the wells sampled were semi-protected (rope pumps), having been built by NGOs. However, overall the risk profile of semi-protected and unprotected wells is similar. Other studies (Sutton et al., 2012) have shown noticeably improvements in quality even with limited protection.



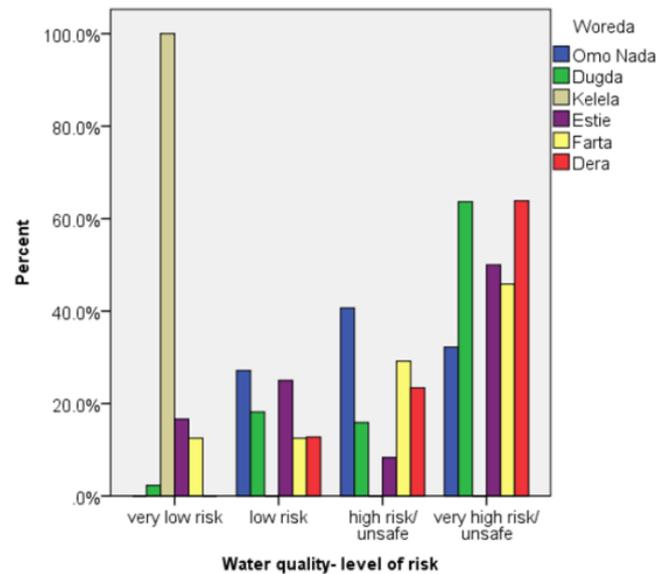


Figure 3: Microbial contamination (*E. coli*) levels for hand-dug wells a) all wells by risk group (very low risk = 0 MPN/100ml, low risk 0-10, high risk 10-100, very high risk >100), b) numbers of wells by category of protection and risk group, and c) risk group by woreda.

Local markets

As discussed above, there is an existing market for the products and services needed by households to develop their Self-supply facilities. However, use of own labour is preferred and investments are typically in low-cost and locally-available items. There is clearly potential to grow the size of the market for improved services and products from its current level if these can be made available and marketed. The survey also examined the presence and status of local enterprises that currently service this market or are engaged in related business sectors.

The number of enterprises identified in the targeted areas was fairly limited and most are informal enterprises. In most of the woredas there were a few businesses (1-3) engaged in relevant business sectors such as local fabrication of steel products (so they could make pumps, or windlasses) but generally they are not making Self-supply related products. This was the case in Kelela for example. In other woredas there are enterprises servicing pumps (treadle pumps in Kalu, engine pumps in Estie and Dera). In Dugda, 19 business enterprises were identified that provide services and or products related to WASH, most of them informal or unregistered. These include businesses supplying well construction materials and latrine slabs, some selling water treatment products, some supplying storage tanks and other manufactured lifting devices such as pulleys and rope pumps. The pharmacies (selling point of use treatment products) and metal works are registered businesses but all others are informal. In Omo Nada, eight enterprises were identified. Most of these are servicing community water supplies such as providing spring development and hand pump installation services.

According to the baseline survey, lack of investment capital, working space, equipment, locally available spare parts, communication about their products and /or services and administrative issues such as licensing are among the major challenges of the private sector and its development.

Financing

External financing for household Self-supply investments is virtually absent in the seven woredas. The majority of households (93%) have used their own resources for investment in construction and upgrading of facilities. Very few (3%) have received subsidies from government or NGOs (the rope pumps in Kelala was one exception) working in the woreda, and almost no households (0.4%) report they have received loans from either Micro Finance Institutions (MFIs) or rural saving and credit cooperatives for Self-supply investments. The share of informal saving and credit groups in financing household Self-supply is equally very low. The results are similar across different wealth groups and female and male headed households. Comparing results across the seven woredas, subsidies appear to be higher in Kelela,

reaching up to 55% and in Este 13% of households. Subsidies may be higher in Dugda, where the households partial contribution for rope pumps provided by an NGO was not well captured in the survey.

Despite the currently low level of financing to household Self-supply, there are opportunities that can be tapped. In all the woredas, micro-finance institutions are present and providing loans to households. One MFI, Amhara Credit and Saving institution (ACSI) has opened several offices in four of the woredas: Dera, Farta, Este, Kalu and Kelela. In Dugda there are 4 privately owned MFIs and one government MFI, while in Omonada there are 1 government and 1 private MFI. While the majority of MFIs lack experience in provision of water loans, ACSI has been providing water loans, mainly for motor pumps and pipes used for irrigation. The conditions of loan provision by ACSI have slight differences across woredas. The maximum loan size provided for rural households is up to Birr 50,000 depending on the applicants loan history. The conditions required for loans are usually either group guarantee or guarantee by woreda government and the profitability of the venture. Farmland is sometimes also taken as collateral. Loans are provided on annual interest rates ranging from 13-18%, with a total loan repayment period with in 2 or 3 years.

Overall there is interest by the MFIs to engage in loan provision for Self-supply, though some caution is also observed. In Dugda and Omonada, the MFIs have not entered into water loan provision because they consider it as a risky investment, though they have shown interest in the survey. In Amhara region, ACSI, while it has experience in water loans is cautious about loan provision to Self-supply which doesn't include engagement in productive use of water.

Group-led 'Self-supply'

According to national policy guidelines, the group-led Self-supply model is expected to be driven by households with at least 10 or more households coming together in a group to qualify for a subsidy. However, in the case of the three woredas concerned (Dera, Estie and Dugda), the initiative for the group investment has commonly come from the woreda government or NGOs operating in the woreda some of the time, while only in a few cases have the group members made a request. The groups' involvement in managing the finance and construction is weak 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: Afridev hand pumps in Dugda, rope pumps in Este and pulleys in Dera. A managing committee is set up for Afridev hand pumps, while one person is assigned to manage rope pumps. No management arrangement is made for upgraded facilities with pulley. Flat household tariffs are set for facilities with Afridev hand pumps, while there is no regular fee collection system for facilities where a rope pump or a pulley is used. The size of the group varies from 21 households on average for Afridev hand pumps in Dugda to less than 5 households for rope pumps and pulleys.

Most of the group-led facilities have been constructed in the past two years by NGOs with contributions of group members in the form of labor, local construction materials such as sand and stone, and in some cases money for purchase of construction materials or a deposit for future maintenance (amounting to up to 500 birr per group). NGO contributions included construction materials such as cement, purchase of pumps and skilled labor for construction and installation. In the case of Dugda, Afridev hand pumps are freely distributed by the woreda water office for the group-led facilities.

For the dug-wells fitted with rope pump or pulley, group members are estimated to cover more than 62 and 53% of the total cost of construction, respectively, through in-kind contributions, such as gravel, sand, stone, wood and well digging. For dug-wells fitted with hand pump, the group members' in-kind contribution amount to only 40% of the total construction cost.

A comparison of the unit costs of group-led facilities constructed by MWA partners and the regional Self-Supply standards within OOWNP, shows a disparity. The figures suggest that group-led Self-supply facilities constructed by MWA partners in South Gonder are much more expensive than national standards, raising questions about cost effectiveness and equity. On the other hand, group-led Self-supply

facilities in Dugda are below national cost standards, raising questions potentially on standards of the construction. The unit and per capita costs of hand dug wells fitted with rope pumps for groups in the MWA woredas are almost double the OOWNP standard set for Amhara region, while the hand dug-well with pulleys cost 40% more. On the other hand, the unit prices for Afridev hand pumps in Dugda are much lower (about half) than the standard set in OOWNP for Oromia region.

Figure 4. Costs of group Self-supply facilities (in birr) and proportion covered by members and NGOs/government

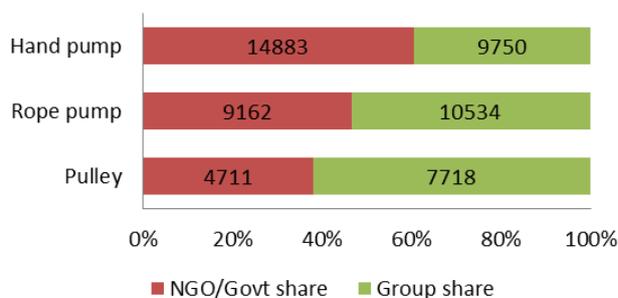
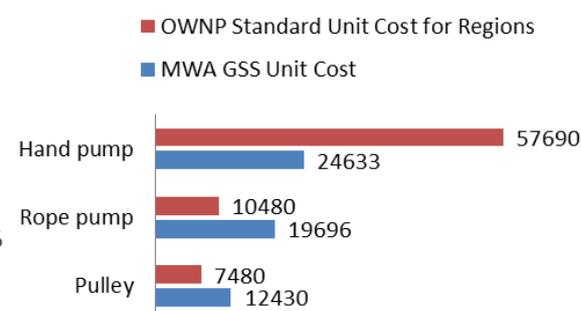


Figure 5: Unit costs of group-led Self-supply facilities constructed by MWA partners and OOWNP standard costs



Similarly, the average per capita cost of group-led facilities shows major differences with the per capita cost standards used for OOWNP planning. The per capita cost of dug-wells with rope pumps is more than double the standard per capita cost in the OOWNP 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 was relatively low, the numbers of beneficiaries is also reduced so the actual per capita costs of these schemes is close to the proposed standard.

Figure 6: Per capita costs of Group-led Self-supply facilities constructed by MWA and OOWNP standards

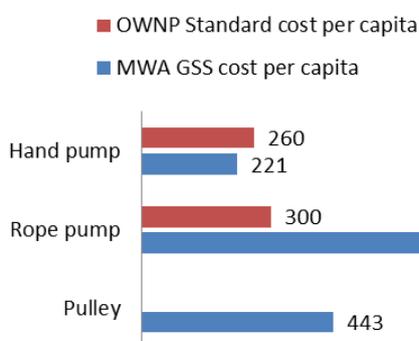
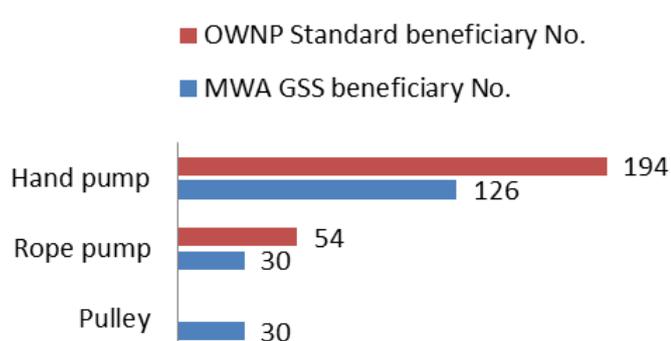


Figure 7: Beneficiary numbers for MWA group-led facilities and OOWNP standards



All the 25 group-led Self-supply wells surveyed were semi-protected wells with some protection intended to prevent external contamination of the well. However, unhygienic handling of rope and bucket in some cases and contamination of the immediate area around the well with solid and faecal waste are observed problems. Most of the wells are 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.

The main use of water from the group-led facilities is for drinking (100%) and sanitation and hygiene purposes (96%). For more than half of the group members, the facility is their main source of drinking water. However, others favour alternative community water supplies, perhaps due to their better levels of protection. The water from group-led wells is also used for livestock (64%) and 24% of the users also use some for irrigation. Irrigation users are mostly households on whose land the facility is constructed. 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 majority of the households are very satisfied with their group 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, while 25% collect more than 15 litres but less than 25 litres per head per day. Only 12% were able to collect 25 or above litres per head per day. Waiting times at the source to collect water is very low being less than 5 minutes for 76% of the households. Very few families had to wait for above 10 minutes. 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.

Conclusions and Recommendations

- The numbers of facilities identified in the survey generally surprised local officials. Given large numbers of existing facilities, which are generally poorly protected and could be relatively simply improved, it is recommended that the MWA pilot specifically prioritises upgrading of facilities. Given the limited period available for interventions within a project approach, this offers more potential for quick wins than longer-term but still necessary interventions to introduce new technologies or build local manufacturing capacity etc. Upgrading and promoting improved management of facilities (ensuring cleanliness and safe use of lifting devices etc.) has strong potential to demonstrate improvements in water quality and reduced risk to households.
- Based on knowledge of the existing owners (investors) in household-led Self-supply facilities, it is recommended that supporting Self-supply Acceleration interventions should pay specific attention to targeting the needs of women and female-headed and poorer households to help them upgrade their Self-supply facilities.
- Most wells are used for multiple purposes including productive and domestic uses. The most common uses of water are related to hygiene and sanitation (washing). These benefits should be considered when promoting investment in wells, and strategies developed with participation of agriculture, health and other sectors.
- Levels of mobile phone ownership are high amongst well owners which could be used support promotion of upgrading.
- Although it was originally intended, the survey did not embed the capacity within the wordas to add new facilities to the database of Self-supply facilities that were mapped during the survey, or to update the status of facilities (e.g. where they were upgraded or new water quality tests undertaken). This will now be done through the end line survey in MWA wordas. It might be possible to encourage Self-supply facility owners to register their facilities with the worda if this was related to some sort of incentive such as access to information or advisory support. This could support monitoring in the longer-term if linked to implementation activities by the wordas.
- Private sector development in all the wordas is an early stage. Supply chains for products and services related to Self-supply are not well developed but they do exist. Interventions should build on what already exists in these wordas. These service providers receive little attention or support from professionals and agencies, so there is a gap in business development services to fill. One practical step is to engage business representatives in the planning of Self-supply Acceleration interventions. Most businesses are informal and with limited capacity. Formal registration could bring advantages but also presents risks for such enterprises and individuals. Carefully designed business development strategies are needed that focus on both informal and formal businesses and try to create an improved enabling environment for the informal ones (e.g. towards registration and licensing)
- Availability of finance is not the most critical constraint to getting on the Self-supply ladder, but more finance could help owners to upgrade and improve their facilities, or construct to a higher standard. Finance might also be used to extend access by poorer households, women and women-headed households but only if interventions are designed to this objective. There is potential - if convinced about the potential viability of the market - for MFIs to support household-led investments through loans which they currently only do for ‘productive’ irrigation wells. This needs engagement with MFIs to encourage, and support to design loans and follow-up. There is also potential for MFIs to lend to businesses servicing the Self-supply market.
- Implementation of the group-led Self-supply approach among MWA partners is found to be variable. In some cases it is not in line with national standards that require 10 or more households to be in a

group to qualify for a subsidy. In other cases, the partial subsidy provided by NGO and Government has exceeded the mandated limit. The type of technology promoted seems to be a critical factor in influencing the number of households in a group or the proportion of households’ contribution to the total cost. Looking at how services are initiated and implemented, Group-led Self-supply has more characteristics of community Self-supply than what is known elsewhere as Self-supply. The initiative is not strongly bottom-up and there are low financial contributions from the group members compared to household-led Self-supply. To avoid confusion, the name might be changed to something like ‘Group-led subsidised schemes’.

- Of concern, slightly more than half of the users of the group-led schemes use the the water as their main drinking source.
- 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 survey raises questions on the costs of the MWA Group-led model which could be further investigated. The study did not examine government implemented group-led Self-supply schemes. A study is recommended of the government-led schemes utilising the experience that MWA now development in the assessment of the group-led approach i.e. using the same survey questions etc.
- Critically we have not yet identified any strategy on how both group-led and household-led approaches are (or can be) implemented together as part of a strategy towards universal coverage together with community water supply. This is an area where MWA also has a comparable advantage and could lead the development of practical approaches.

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