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Great expectations: self-supply as a formal service delivery model for rural water in Ethiopia

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This paper gives an overview of the uptake of Self-supply in Ethiopia as a formal service delivery model in rural water. The approach is expected to fill gaps left by other service delivery models including community water supply, and provides one means to help achieve universal access to safe water. Major Self-supply acceleration programmes are underway in two regions, and other regions and programmes are picking up the approach now that it is included in national policies. The expectations placed on Self-supply in these programmes are huge, and some of the targets might prove too ambitious since the implementation approach is not yet proven or tested at scale. The paper identifies key issues for further investigation, particularly the potential for cross-sectoral collaboration in the promotion of household-led investments.

Background: from policy change to implementing self-supply acceleration

Self-supply is the ‘improvement to water supplies developed largely or wholly through user investment usually at household level’ (Workneh & Sutton, 2008). Where possible – with accessible shallow groundwater or plentiful rainfall being a prerequisite – it can be an attractive complementary approach to other water supply service delivery models given its (relatively) low costs, potential to mobilise finance from households, and the convenience of its supplies for domestic and productive uses. It can fill gaps left by other approaches: these may be in remote and scattered populations in rural areas where conventional water supplies are too costly to replicate, rural areas with existing improved water services where the water is too limited or distant for family requirements including the bulk water needed for washing, garden irrigation or household livestock, or urban areas where piped water supplies are unreliable and water simply doesn’t come out of the tap often enough.

Self-supply, in Ethiopia as well as other countries, has been regularly presented and discussed at previous WEDC conferences (see for example Workneh *et al.*, 2009; Sutton, 2009; Sutton *et al.*, 2011). Sutton *et al.* (2012) and Butterworth *et al.* (2013) provide further detailed reviews of existing, largely unsupported, Self-supply in the country. This paper presents an update of recent developments in Ethiopia, specifically the initiation of new programmes by government and NGOs that aim to create the conditions for household-led investment in water supply development. The approach is termed ‘Self-supply acceleration’. The focus is on rural water.

In 2011, a key document which is now widely informing the sector – the draft WASH implementation framework or WIF (MoWE, 2011) – identified Self-supply as a service delivery model alongside woreda-managed projects (to be handed over for management by communities), community managed projects (community projects that feature community-managed grants for contracts to develop sources) and NGO projects. The ‘WIF’ also set out some key principles on how this should be done including the reliance on household investment (in hardware) and the facilitating and advisory role of government.

In 2012, the Ministry of Water & Energy (FDRE, 2012) then endorsed national policy guidelines for Self-supply in Ethiopia. Last year, in August 2013, Self-supply was further recognised and included in the Sector-Wide Approach (or SWAp) that is known as the One WASH National Programme (OWNP) as a ‘strategic intervention area’ with a substantial (but not yet fully funded) US\$8 million budget line for Self-

supply acceleration activities (FDRE, 2013). In January, 2014 the renamed Ministry of Water, Irrigation and Energy circulated its draft Manual for Accelerating Self Supply Programme (MoWIE, 2014).

At the latest Multi-Stakeholder Forum – the main national gathering of WASH sector stakeholders - held in January 2014 in Addis Ababa, Self-supply was given considerable attention in a dedicated session with presentations including reports on new Self-supply programmes launched at national levels as well as in Oromia and SNNP regions. These programmes, and the activities of NGOs are discussed in the next section.

Box 1: The Ethiopian context for self-supply

Key aspects of the Ethiopian context, relevant to developing Self-supply as a means of water supply, include:

- Relatively low levels of access to improved water sources in rural areas (42% according to the WHO/UNICEF 2014 update)
- Predominantly a rural country (more than 80% population in rural areas) but with rapid growth in small towns and cities
- Food security a national concern, agriculture the main source of income and jobs, and household irrigation an important strategy
- One of the world's fastest growing economies with high levels of sustained economic growth, but from a low base and remaining one of the poorest countries (GDP PPP per capita USD1366 in 2013, ranked 169 out of 187 countries by the IMF)

New self-supply acceleration programmes in the water sector

Both the agricultural and domestic water supply sectors have made strategic policy shifts to promote household-led investments in water. The domestic water supply sector has added 'Self-supply' to its service delivery models and is seeking to reach at low cost some of the people unserved or inadequately served through communal water supplies with this model (Butterworth et al., 2013). Through its Self-supply acceleration initiative the MoWIE seeks to supply 7 million people with water in just two regions alone (counting sharing of some sources).

To implement its plan the MoWIE needs to transform some of its capacity from the engineering process focused development of communal water supplies to supporting demand creation, private sector development and access to micro-finance. These are areas where it has little track record, and water does not have frontline staff at the local level as do agriculture and health, so developing new capacities and/or stronger cross-sectoral collaboration will be important.

Oromia

Oromia started in the Ethiopian year 2006 (starting September 2013) to implement ambitious plans to accelerate the development of water supplies over the next two years to meet 2015 targets. Led by the Bureau of Water, Minerals & Energy this relies equally on 1) conventional rural water supplies and 2) alternative low-cost approaches including Self-supply, small-group projects and household water treatment. The implementation package that has been developed includes two Self-supply focused packages: one on improving and upgrading existing Hand Dug Wells (HDWs), and one on promoting new HDWs. This part of the programme is popularly known as 'Ofiin Ofiif'. The activities relate to source development, lifting mechanisms, and water treating technologies, with supply chain development and private sector enterprise support being an important component of capacity development. The targets are overall to reach 6.3 million people at a cost of 168 million Birr (8.8 m USD) through this package of low-cost approaches including targeting for Self-supply (that don't consider sharing) of 11000 upgraded and 35000 new hand-dug wells respectively. *Woreda*'s and the regional government committed money in their budgets to the programme. A critical question that remains is whether and how Self-supply's contribution to coverage will be officially counted. There is a risk that unless the programme contributes to agreed overall targets that the benefits of the programme, however successful it is, will not be recognised. This happened to an earlier family wells campaign, although this time the region has given more attention to household water treatment and the quality of well construction to improve water quality to levels deemed sufficient for counting as safe supplies.



Photograph 1. An unprotected family well in SNNPR

Source: Petterik Wiggers



Photograph 2. Rope pumps are being promoted to upgrade family wells

Source: Petterik Wiggers

Southern Nations, Nationalities, and Peoples' Region (SNNPR)

The Bureau of Water Resources in SNNPR has similar plans to add Self-supply to its more conventional community water supply interventions. Starting in July 2014, an awareness raising campaign on Self-supply in the 'south' was cascaded down from the region to zones, woredas, kebeles and ultimately, families. This campaign was intended to trigger actions that will lead to development of new water supplies (mainly hand dug wells) by 40,000 households and 16,000 small-groups in the region in the current Ethiopian year through the Self-supply approach. A tender for the supply of 10,000 rope pumps intended for distribution to small groups was also outsourced. The need and potential for scaling-up Self-supply are high: some 29% people take their drinking water from surface sources (a river, lake or pond) and a further 31% people drink from unprotected community sources (springs or wells). Self-supply is one potential way to improve the water supplies being consumed by these groups of households, which together total some 2.5 million families.

If it achieves its targets this programme will deliver a significant increase in coverage through household level supplies. Undertaken in 2010/11 the National WASH Inventory (NWI) established a partial baseline for such efforts. The household survey of the NWI included a question 'from where does the household take most of its drinking water?'. Two possible responses (out of 10) were: 9) Self-supply in or near compound (i.e. own source) or 10) Neighbours Self-supply (i.e. sharing a source). In SNNPR, about 1% households reported getting their main drinking water supply from their own source, with another 1% using a neighbour's supply. In total this amounts to some 85000 households (out of 4.1 million) in the region. There are also exceptions where Self-supply provides around 20% drinking water supplies in some woreda's (districts) and as much as 50% in certain kebeles (sub-districts). However, since they focus on the main drinking water source, these figures do not indicate how many people use Self-supply as a secondary source for water for sanitation or for productive uses while such use is common. Often only a small amount of drinking water (much less than the 15 lpcd norm) is collected from a protected communal source.

NGO programmes

Responding to its inclusion in the policy framework, NGOs are also increasingly programming to work on Self-supply. Notable is the Millennium Water Alliance— pooling some of the largest and especially American INGOs – which has included Self-supply as a theme within the next phase of its Ethiopia programme (with funding from the Conrad N. Hilton Foundation and the Dutch foundation Aqua for All). Aiming to support the development of enabling environments in multiple regions (starting in Amhara and Oromia) the programme focuses on piloting a comprehensive approach including testing over 3 years (2014-17) ways to create demand, identify and support entrepreneurs and adapt micro-finance products to support Self-supply investments. Some of the implementing partners involved include CARE, World Vision and Catholic Relief Services. Some 1.5 million USD is committed to investments in coordination, capacity building, piloting and learning activities. The targets are modest, given the intention to mainly focus on building the enabling environments, with the intention to trigger investment in 7500 new wells and the upgrading by families of a further 3500 existing wells within 3 years, but laying the basis for more sustained uptake in the longer-term.



Photograph 3. Local government staff in SNNPR planning activities to promote Self-supply

Source: Petterik Wiggers



Photograph 4. Fields around Ziway (Oromia) irrigated using water from shallow wells

Source: Petterik Wiggers

Parallel developments in the agricultural sector: the Household Irrigation Programme

Self-supply is now a term that is widely recognised in the domestic water supply sector in Ethiopia. Around the same time as its adoption in policy and programming in this sector, the agricultural sector has also been modifying its own strategies but with a focus on growth and food security. The household-irrigation strategy set out a programme based on private investment in shallow groundwater development (MoA/ATA, 2014). The initiative promotes ‘1 family, 1 well’ and targets 10% Ethiopian households, in total some 9 million households. There are also some equally ambitious eye-watering short-term targets with, for example 300,000 hand-dug wells planned in the current year in SNNP region alone. Tenders for the supply of 20,000 rope pumps were launched by the Bureau of Agriculture in the same region (although this tender was later suspended for administrative reasons). Some 900 private enterprises were to be trained in well drilling and construction.

The two sectors (domestic water supply and agriculture) have, as it turns out, independently designed rather similar implementation strategies with common elements in both approaches – which target the same shallow groundwater resources - being household-led investment with no subsidies for hardware, a major role for the private sector to get supplies and services to households, a promoting and enabling role for the public sector, access to new technology, and promoting access to loans through Micro-Finance Institutions[1].

As is the case with Self-supply acceleration, the implementation of the Household Irrigation Programme is at the initial stage but already some strengths, possible weaknesses, and opportunities, can be identified.

The household irrigation strategy strikingly makes no mention at all of drinking or domestic water consumption. The multiple use of such wells appears not to be (officially) recognised by the agricultural sector. In contrast, MoWIE do identify productive uses as a driving force for investment in Self-supply. Research has shown however that conveniently situated ‘irrigation’ wells are widely used for drinking, other domestic and livestock uses (Sutton et al., 2012). This actual practice is ignored or neglected so few efforts are consequently made to improve the quality of water drawn from irrigation wells, although these could potentially be low cost and user-financed. There are some indications of what might be achieved. While generally the water quality of poorly protected private wells leaves much to be desired, in one study area (Sutton et al., 2012) the water quality of diesel and electrically-pumped irrigation wells (a sample of 50 wells which tend to be somewhat better protected than other traditional hand-dug wells) was even found to actually exceed the quality of protected communal water supplies (wells with handpumps).

The obvious opportunity is for domestic water supply agencies to seek to add value to, rather than attempt to replicate the better financed Household Irrigation Programme. For example, more might be achieved through promotion of a ‘water safety package’ that aims to promote better protection and a safe way of using ‘irrigation’ wells for drinking water supply. This could be done at much lower cost than seeking to develop a full Self-supply acceleration programme with all the activities to introduce new technologies, build up

private sector capacity and supply chains, promote micro-finance lending for wells and pumps etc. As well as recommending better well protection, pump installation, and safe behaviours such a package might also consider promoting household water treatment and safe storage including filters and other low-cost treatments or the installation of header tanks to provide an in-house supply where possible. According to discussions between the Bureaux of water and agriculture the potential for this type of cross-sectoral collaboration has been identified. What remains is to ensure that appropriate monitoring and incentives are in place to support such activity e.g. with well protected irrigation wells counting towards the achievements of both agricultural and water supply agencies.

Rope pumps

The rope pump is widely promoted in Ethiopia as a suitable technology for Self-supply. A low cost and simple hand pump, it is produced with local materials at a cost of USD 80-140. If installed properly with a well cover and seal, this technology counts as an improved water source. In 2004, the rope pump was introduced by JICA (Japan International Cooperation Agency) with others following up to provide training programmes and other support. There are now estimated to be some 10,000 rope pumps with most gifted to households and communities through woredas, especially in Amhara and Oromia. However, half of the pumps are thought not to be functioning. Major reasons are:

- Problems with hardware. Errors in production, cheap materials, bad installation etc.
- Problems with 'software'. Limited training of users in maintenance, families unaware they had to pay for repairs, lack of local capacity for repairs, lack of standardisation and quality control of pump producers.
- Market distortion. Government and NGOs took the major role in distribution. They purchased pumps, often from large companies, and did the installation so there was a gap between users and pump producers, and no build-up of supply chains of spare parts or development of after-sales services.

The high prices some NGOs paid also stimulated some metal workshops, without training, to start producing pumps, usually bad quality copies. Currently, JICA, supported by Meta Meta and Connect International, are working with the MoWIE to evaluate the past 10 years of rope pump introduction experience, and seeking to improve quality of rope pumps through standardisation of models and better dissemination of lessons learned.

Key issues

Self-supply is apparently taking off in Ethiopia and may help push the country towards universal access to water in rural areas. It looks promising and perhaps the country will follow others like Uganda, Mali, Zambia and Zimbabwe in getting Self-supply acceleration to work at scale. At the same, there are such great expectations, and such great haste, that there must be a danger of a supply-driven approach emerging that we call Self-supply acceleration, but neglects to build up from household demands and local capacities to supply. This might in the longer term prove unsatisfactory and unsustainable. The bulk procurement of rope pumps by government and their distribution is a warning sign, a well-meaning effort that fits with procurement rules but does little to build up sustainable supply chains. Others are distributing such technologies as free gifts.

Current priorities might be: firstly, to learn quickly from the new Self-supply acceleration efforts and pilots about what works and what doesn't, and what it costs to enable Self-supply. The MWA-EP is budgeting around 3USD per person year for the enabling activities but there is much variation across efforts in planned expenditure. Costs of Self-supply acceleration in other countries have been estimated to average 8 USD per capita, and to leverage about double the public investment in acceleration in private investments (Sally Sutton, pers. comm.). Secondly, Self-supply must be counted in monitoring efforts with incentives aligned to encourage more and better Self-supply. This is a key lessons learned from stalled efforts to promote family wells in an earlier campaign (Butterworth et al., 2013). Thirdly, resources will go much further if cross-sectoral coordination and collaboration (particularly between water and agriculture) is enhanced linking the Household Irrigation and Self-supply Acceleration Programmes.

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Note/s

^[1] Self-supply acceleration also has many similarities with CLTS (known as CLTSH in Ethiopia), sanitation marketing and Household Water Treatment and safe Storage.

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