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Innovative mechanisms for improving self-supply services

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In the near future Self-supply will continue to be relevant as complementary supply and as a step to achieve universal access to water as conventional water delivery services will struggle to maintain and extend their coverage and level of service. The service delivery model provided through WASH Self-supply should be improved and better managed through comprehensive approaches which include stimulation of demand, linkages to productive uses, strengthening of the supply side to provide quality services and support to government and service support organisations to take on their roles. To further develop understanding of impacts and effectiveness of approaches for improving Self-supply reliable technical and financial support is needed for implementation, monitoring and evaluation, as well as for sharing of experiences and learning.

Background

Self-supply can be defined as incremental improvements to supply of WASH products e.g. water supply and sanitation structures by a household or a small group of households, which are financed by their own investments. In Self-supply a wide range of technical options may be applied, such as improving traditional wells by putting cover or additional lining, fixing pumps on wells, installing rainwater harvesting systems and small storage tanks, implementing self-funded extensions of piped systems or using household water treatment. However in many areas, Self–supply is also used for improving productive use and for improving sanitation, e.g. as part of the community total led sanitation approach (CLTS).

Up to now Self-supply water sources are hardly documented in national data bases or water quality regularly monitored. However there is growing evidence that Self-supply water sources play a significant role in the provision of millions of people with water. According to the latest Global Analysis and Assessment of Sanitation and Drinking-Water (GLAAS 2014) (UN-Water 2014) there is a substantial share of domestic investments in water and sanitation infrastructure compared to the overall investments. The country specific data sets on access to water and sanitation provided by WHO and UNICEF in the Joint Monitoring Program (JMP) clearly highlight the relevance of household- owned wells for rural water supply in particular. Case studies from various countries such as Nicaragua, Mali, Sierra Leone, Uganda and Zambia show that Self-supply plays a vital role for providing reliable rural water supply, and particularly in remote rural areas where community managed systems are poor or non-existent.

In future millions of households in rural and peri-urban areas will be driven to invest in their own supplies for their domestic and productive needs as the community supply is far away, not sufficient, not functioning or not affordable. In Zimbabwe in the 1990's a successful government led programme for improving 150'000 household wells was introduced, however there was little learning due to poor sharing. Recently initiatives of governments and NGOs for improving WASH Self-supply use a larger range of technologies and follow a more comprehensive approach including training of local artisans, sanitation marketing, quality control and certification for artisans and affordable financing schemes.

Accelerating Self-Supply

Accelerating Self-supply is the active management of activities undertaken by various actors in the WASH sector to improve Self-supply services and provide follow up. In particular these activities strive to stimulate the demand side, support the supply side and strengthen NGOs and government to take on their roles in Self-

supply. For the successful implementation of Self-supply through comprehensive approaches and its follow-up actors involved need to be clear on their roles.

Stimulation of **demand side** is necessary as many households are just not aware of the technical and financial options available. Many rural households will be challenged to invest in their own WASH supplies including for irrigation as most of them heavily depend on incomes from agricultural activities which are seasonal and for different reasons often unreliable. As rural households are very prone to risks they need to be sure that they get real value for money when investing in WASH Self-supply. Therefore they need access to reliable information on technical options which are applicable in their context and in particular reliable information on investment costs and recurrent costs for operation and maintenance (O&M).

The **supply side** in Self-supply needs to be strengthened as often capacities in the local private sector are extremely weak to provide and market quality products and services on a viable basis. Market principles alone will not be sufficient to establishing a viable WASH Self-supply market providing quality products in a short time.

Evidently, there is need for established trusted organisations and mechanisms to assure independent information on technologies to allow choices and providing financing mechanisms that help poorer households to purchase Self-supply technologies. Also mechanisms are lacking to assure supervision to ensure that producers or suppliers of technologies follow some agreed quality standards e.g. jointly through government, service support organisations (SSO) and artisans. As Self-supply sources are also often used for multiple water uses (MUS) including productive uses, such as home gardening and animal watering Self-supply has a big potential for improving livelihoods in a holistic way and strengthen resilience of rural households to external shocks such as droughts or food shortages and might generate some cash income. Self initiated activities strengthen self-esteem and reduce dependency from external funding (RWSN 2015). Accelerating Self-supply offers a comprehensive approach to improve access to water and strengthening livelihood (see Figure 1):

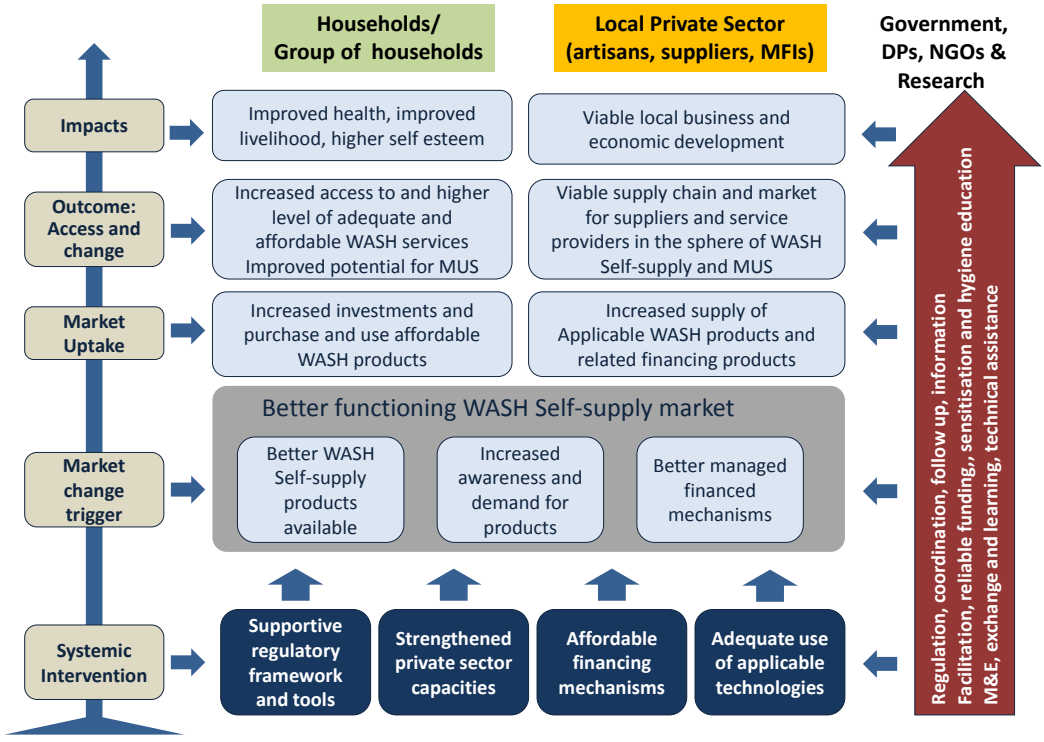

Figure 1. Intervention concept for accelerating Self-supply and linkages to SDGs

Roles of actors in accelerating Self-supply

As Self-supply activities are based on a market-based approach, acceleration puts focus on strengthening the demand side and supply side. Market development activities need to address the demand side of the clients, the households, group of households or communities, their needs, priorities, capacities and resources. Efforts

to further develop capacities of the local private sector, to improve the quality of their products and services or even to trigger the establishment of associations of producers or service providers need to consider the principles and dynamics of local private sector development, of their capacities and resources and their market environment (Sutton 2011). Although Self-supply works through a market-based approach the process of accelerating Self-supply also needs active support and facilitation for longer time by other actors such as NGOs, development partners, research networks and government (see Figure 2).

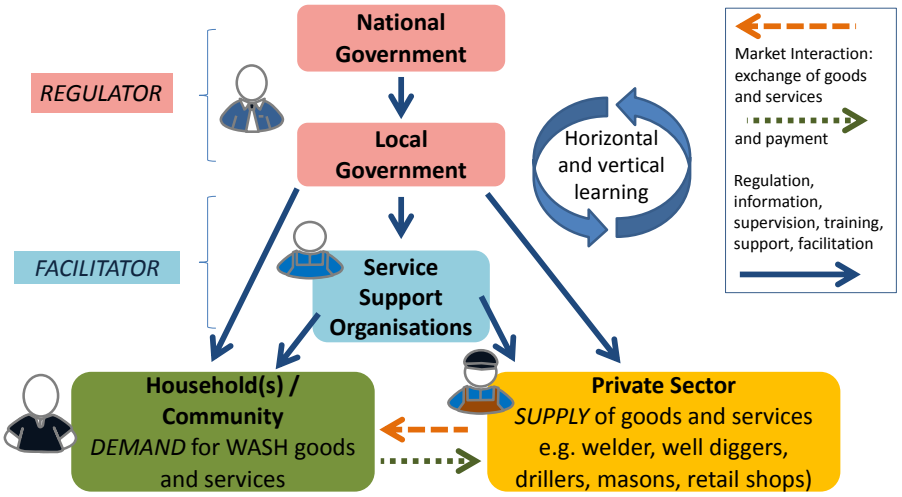

Figure 2. Roles of actors in accelerating Self-supply

Compared to conventional communal supply systems where water infrastructure is often planned, provided and funded fully by government or donors, the planning process and funding flows and roles in Self Supply are different as the improvements are demand driven and based on a market interaction between owners and the demand responsive local private sector. Service support organisations (SSO) play an important role as facilitators in the initial stages of this acceleration process as they provide e.g. capacity development of the local private sector and offer financing services for rural households to invest in WASH. The role of government in accelerating Self-supply focuses mainly on regulation, policy and advocacy such as setting standards and monitoring and follow up, on technical support and on administrative support such as setting up associations and providing capacity development (MWE 2010).

Examples of professionalising Self-financed supplies

Recently proper programmes and service support organisations (SSO) have been set up which follow a comprehensive approach for accelerating and professionalising Self-supply. (see Table 1). So far only very little information has been documented on these efforts and their impacts. The data presented in Table 1 and discussed in the following sections reflects information and findings which are reported mostly in internal project documents which are not easily accessible to the public. Therefore the selection of examples presented in Table 1 cannot be exhaustive and there might be more projects and initiatives which try to accelerate WASH Self-supply through other approaches. Further efforts are needed to document these experiences and trigger sharing and learning.

As indicated in Table 1, the level of embedding of government activities in improving Self-supply differs between countries and approaches followed. In Ethiopia the rolling out of Self-supply for water supplies is actively driven by the government as it is part of the national strategy. To guide actors in the proper implementation of Self-supply a detailed manual has been developed (MoWE 2013). In Sierra Leone Self-supply is promoted as a complementary approach for providing water and sanitation services in particular to remote rural areas where conventional supplies will not be established in the near future.

Table 1. Examples of approaches for professionalization and promoting of Self-supply in Malawi, Tanzania, Sierra Leone and Ethiopia

Country	Organisation	Scope of support and activities	Scale and impact so far
Tanzania	SHIPO SMART Centre	- Training of welders, well diggers involving also national institutions for vocational training - Certification programme of rope pump producers involving existing government bodies and based on a number of quality assurance parameters - Funding scheme for WASH technologies through Savings- and Credit Cooperatives (SACCO) involving also local government and local leaders - Promotion of Self-supply approach and technologies using various media channels - Testing of other funding options for poor rural households such as saving schemes	- Started in 2003; so far > 2500 wells for Self-supply upgraded with rope pumps ; - > 20 artisans trained per year since 2006 - mostly in Iringa and Njombe regions, , with partners and external training sessions all over the country and abroad
Sierra Leone	Welthungerhilfe, WaterAid, CARE and GOAL	- Training of artisans - Development of supply chain for various products for water and sanitation that providing added value focussing mostly on so called ”EMAS” products - Piloting of financing scheme for savings for WASH investments - Sanitation marketing - Supporting small workshops to set up business including seed money - Linkages and embedding of Self-supply within government at national and local level - Policy dialogue at national level	- Successfully piloted 2011-2013 in several districts; - Funding assured for rolling out at national scale - Roll out planned as soon as Ebola situation allows using linkages with programmes in other sectors
Malawi	Mzuzu SMART Centre and Watsan Centre of Excellence PumpAid	- Training of artisans on pump production and manual drilling - Technology development in collaboration with Connect International - Promotion of low cost technologies using Self-supply approach	- Started 3 years ago - SMART Centre is cooperating with Centre of excellence and is linked to University of Mzuzu
Ethiopia	Government of Ethiopia; related initiatives led by JICA; Millennium Water Alliance – Ethiopia Programme (MWA-EP) and others	- Government led awareness raising campaigns, support to development of microenterprises (e.g. for manual drilling) and bulk rope pump procurement - Related Program to improve quality of Rope pumps led by JICA - Piloting of Self-supply acceleration approach and woreda-led Self-supply acceleration plans - Promotion of household water treatment and household irrigation currently through different initiatives - Experiments in financing schemes for Self-supply - Policy dialogue and coordination at national level	- National policy established and included as part of One WASH National programme - Wide uptake reported anecdotally but little data available

In all approaches listed in Table 1 training, quality control and financing schemes for Self-supply are among key components for accelerating Self-supply activities. The **training packages** for local artisans provided by these support organisations include theoretical and practical training on techniques and production of technologies suitable for WASH Self-supply and MUS in that region as well as on basics for

business development and marketing. For the practical training e.g. on welding rope pumps, well equipped venues are needed that also offer adequate space for training, meetings and accommodation. One approach to assure **quality control** of products is by establishing a brand and a certification system. In 2014, SHIPO in Tanzania launched a certification system for the rope pump which should ensure that trained workshops really provide the quality of the agreed standard. The standard was developed between leading implementing organisations working on the production of rope pumps in Tanzania such as Winrock International and Msabi. To embed the system in the national procedures and institutional framework close collaboration with relevant official Tanzanian entities such as SIDO and VETA is envisaged. Currently, the first round of follow up of the **certification system** has started. So far, there are only few **financing mechanisms** documented which support investments for WASH Self-supply, such as water credits by www.water.org or individual and community saving schemes for Self-supply e.g. in Sierra Leone. Apart from formal schemes there are also traditional saving schemes such as the "Susu" system in West Africa which might be used to build up savings which can be invested in WASH infrastructure.

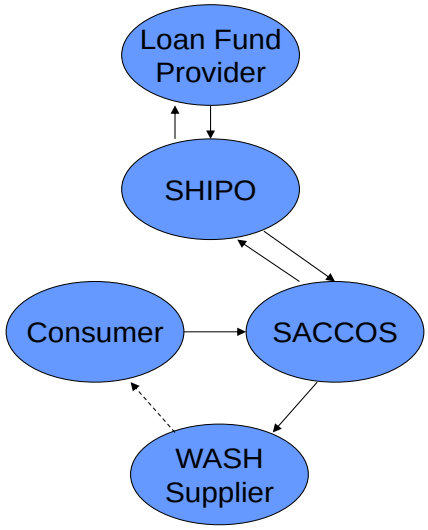

Figure 3. SACCO funding scheme of SHIPO

To allow rural households with irregular income to invest in WASH Self-supply and MUS, SHIPO introduced in 2012, a specific credit mechanism using the SACCO banks. SACCOs are locally owned saving and credit cooperative banks. Using this credit line through selected SACCO banks allows the consumer to purchase a quality Self-supply technology, e.g. a rope pump and to pay back the cheap credit over a period of one year (see Figure 3). Trained workshops can apply to provide Self-supply products to SACCO clients (e.g. a water pump) and might benefit from promotion and access to cheaper loans as seed money. SHIPO will make the loan funds available for this credit line to the SACCOs for a specific period of time and will help SACCOs to link up clients with the local artisans. However SHIPO needs to closely follow up each SACCO bank to assure proper financial management of the scheme as well as to follow up the quality of works installed by the artisans. This year SHIPO will also launch saving schemes to trigger savings for WASH–Self-supply.

Challenges for rolling out Self-supply

The results of different investigations of water quality from different types of water sources including Self-supply have shown that improved wells have better water quality than unimproved wells, however that also not all conventionally improved sources have water quality which comply with standards (Bain et al. 2014). There is evidence that water quality does not so much depend on the type of a pump but more on quality and the installation, avoiding for instance water leaking back into the well. See the comparative study of rope pump and piston pumps (Coloru et al 2012). However, there is clear evidence that proper siting, installation, and maintenance of wells, as well as proper hygiene behaviour do significantly improve water quality in wells (Sutton 2012, Pera at al 2014). Household water treatment is an additional option to improve water quality at point of use. Apart from water quality there are other challenges which might hamper acceleration of Self-supply, such as conflicting approaches implemented for similar services e.g. by NGOs or

governments or challenges to monitor Self-supply sources. Ongoing activities in Ethiopia will produce interesting cases to learn on how Self-supply can be rolled at national scale.

Findings and outputs

Support organisations involved in improving Self-supply services such as SHIPO in Tanzania are instrumental in lifting the quality of products provided for Self-supply. Experiences where the training and follow up has been financed over a long period clearly show that impact is only possible after a longer period of time (5-7 years), which allows close follow up of artisans and of financial institutions such as SACCO banks. In Self-supply there is strong ownership, accountability, leading to high functionality which makes Self-supply a sustainable and very cost efficient intervention (Burr et al 2014). However acceleration of Self-supply needs reliable funding of comprehensive approaches to reach the demand through products and processes that meet demand. As for sanitation marketing it will need context specific measures and extra efforts for accelerating Self-supply to establish viable financial business cases (HYSTRA 2014). Despite local efforts of capturing data by implementing organizations, so far there are hardly any overall systematic monitoring and evaluation of long term impacts of Self-supply implementation projects.

Conclusions

The experiences from pilots show that accelerating Self-supply has a huge potential as a complementary service delivery approach to improve access to safe water and to provide water for productive use on a sustainable basis as examples show from Nicaragua and Tanzania where privately owned rope pumps work for domestic and productive uses for more than 5 years. On the way to achieve the Sustainable Development Goals (SDG) improving Self-supply will play an important role in particular for small communities and families in rural and remote parts of countries. Self-supply sources are also often used for multiple water uses (MUS) including productive uses, such as home gardening and animal watering so accelerating Self-supply will improve livelihoods and reduce dependency and build up resilience of rural households and might generate incomes. Several comprehensive approaches for accelerating Self-supply have been started but so far, there is little documentation of activities and impacts.

Recommendations

Accelerated Self-supply should be acknowledged by more governments and development partners as a viable service delivery model and as step towards achieving full coverage and the SDG. To assure quality of Self-supply products and services, specific measures should be introduced to link sales with certification, technical support, and supervision, e.g. through supporting code of conduct, self auditing by artisans, provision of cheap loans through specific credit schemes for certified masons. There are more efforts needed to allow that even poorer households can purchase Self-supply technologies. Synergies with complementary programmes should be capitalized including links with activities outside the rural water sector to achieve the intended results, e.g. in the area of rural development, small scale agriculture and income generation for women and youth. Reliable technical and financial support is needed for actors involved in accelerating Self-supply in particular for service support organisations, learning platforms and for specific research as well as for the follow up and monitoring of impact of Self-supply initiatives.

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