



Accelerating Self Supply

A Case Study from Mali 2010



Executive Summary

Self Supply is an approach whereby households are supported to make their own investments in water supplies. Mali is one of four countries considering the adoption of Self Supply into its rural water supply strategy. This follows moves by the Rural Water Supply Network (RWSN) to highlight the potential that household investment may have as an option for increasing the rate of water supply improvements in a country with over 200,000 unlined traditional wells. This represents one for every five households. Initially it is the health sector taking the initiative, as they recognise the numbers of people using these wells and the potential impact of progressive health risk reduction. Protection from contamination is accompanied by promotion of the productive use of water to repay investment. This paper documents progress in relation to Self Supply approaches in Mali and identifies some of the issues which may influence strategy or which need resolving.

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Abbreviations and Definitions

ASACO	Neighbourhood Health Management Committee
CSCOM	Rural Health Centre Management
DHPS	Division Hygiène Publique et Salubrité
DHS	Demographic Health Survey
DNH	Direction Nationale d'Hydraulique
DNS	National Directorate for Health
DRS	Regional Directorate for Health
HDI	Human Development Index
JMP	Joint Monitoring Programme (WHO/ UNICEF)
MDG	Millennium Development Goal
NGO	Non-government Organisation
PNAEP	National Plan for Access to Drinking Water
RWSN	Rural Water Supply Network
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund

Conventional community supplies refer to small piped supply, borehole/well and handpump, or lined well with pulley and windlass or bucket and rope. The supply is funded largely (more than 85%) by government or an NGO and managed by the community.

The Self Supply Approach

Supported Household Investment in Water Supply

Approximately one billion people around the world do not have access to a safe and reliable water supply at a reasonable distance from their home. Many more consider their existing water supply to be inadequate in terms of quality, quantity, reliability or convenience. Consequently, increasing numbers of households have improved their own water supply in small and affordable steps using their own resources. Their capacity to do so and the advantages this may bring are seldom recognised or built upon.

Supplies that have been improved with household investment tend to be more effectively managed and maintained. They are particularly relevant in small or remote communities, and where there is easy access to groundwater or plentiful rainwater.

Under the Self Supply flagship, the Rural Water Supply Network (RWSN) is encouraging authorities, NGOs and the private sector to recognise that many households and small groups can actually construct, or pay for the construction of wells and rainwater harvesting facilities. Households can also improve water quality by upgrading existing water sources or undertaking household water treatment, or a combination of the two. Many are showing the demand for such improvements and the constraints which they face in achieving their aims.

To enable and encourage them to make such investments, four supporting pillars are required (Sutton 2009):

- Policies which encourage individual initiatives
- Technology and technical advice for consumers
- A developed private sector
- Access to micro-credit or savings mechanisms

The overarching aim of piloting initiatives in the four countries of Ethiopia, Mali, Uganda and Zambia is the establishment of these pillars to create an enabling environment and ultimately taking the self supply approach to scale.

This report is the first in a set of five. Four of these reports present progress in countries (Ethiopia, Mali, Uganda and Zambia) which have been piloting Self Supply. The fifth report draws together the lessons from these projects.

Country Context

Physical Environment

Mali is the largest country in West Africa, stretching from the desert lands of the Sahara down to the more hospitable sub-tropical parts of the South. The country is landlocked and covers more than one million square kilometres, of which only 2% is arable.

Desertification is progressing rapidly, and there have been two major droughts in the past



Figure 1: Map of Mali

twenty years. There is considerable dependence for water on the Niger and Senegal rivers and their seasonal floods, but more dependence is on the associated groundwater resources. Rainfall averages 1100 mm per year in the southern 10% of country, reducing to less than 100 mm per year in the northernmost parts.

In terms of geology, there are large areas of poorly consolidated strata in the vast secondary and quaternary basins underlying parts of the Koulikoro, Segou, Mopti, Gao and Timbukto regions (see Figure 2). In these areas, reasonable quality groundwater can be found within 20m of the surface without much difficulty. These are also the areas of highest rural population concentration. It is more difficult to find in water in the north, where the geology comprises deeply fissured or discontinuously fissured aquifers of the basement complex. In these parts of the country, boreholes are often unsuccessful. The cost of drilling a successful borehole in Mali is currently about \$12,000, but rises to 2-3 times this amount in the remote areas of the north.

Population and economics

The total population of Mali is 12.6 million (CIA 2009). The major part of the rural population (of 8.5 million) lives in the low-lying areas along the rivers. An estimated 5% of the population obtain their water directly from the rivers, and 95% obtain it from their associated aquifers (i.e. groundwater) (DHS 2006). Most cholera originates from the rivers, and the people who use surface water or shallow aquifers live in areas which are prone to flooding, further increasing water-related health risks.

Levels of poverty in the country are high, and Mali is 178 out of 182 in the UNDP Human Development Index (UNDP, 2009), with 51% of the population living on an income of less than a dollar a day.

Of the total population, 68% live in rural areas, are relatively sparsely distributed and rely mainly on rain-fed agriculture which is drought-prone. Traditionally, many settled people are livestock owners. In the north, most people are nomadic, living live along the edges of the Sahara. In the South, the Bambara people are chiefly agriculturalists, whilst the Peulh are the main livestock holders. Water supply is often regarded by the Peulh as more valuable for livestock than for human consumption. The Bambara also use their domestic water supplies for productive purposes such as irrigation, food processing and animal watering.

Rural Water Supply

In 2008 the Direction Nationale d'Hydraulique (DNH) estimated that 61% of the rural population or 5.2 million people would have access to an improved water supply for domestic use in 2009 (DNH 2008). The Government target is to reach 82% coverage (i.e. 7.2 million people) by the year 2015. The same report indicates a shortfall in finance for over 1500 new or rehabilitated water point equivalents in 2009 or about the same number as were completed in 2007.

Data from the JMP (UNICEF/WHO 2008) shows that rural water coverage is increasing at 1.25% per year, but that 3.4% per year is actually required to reach the MDG of 75% coverage. Both sources of information demonstrate the need for additional strategies and types of funding to reach targets.

The proportion of handpumps not working was found to be 38% in a survey undertaken in 2003 (DNH 2004). DNH estimate that this figure is now 40% or more. The low level of functioning handpumps may explain why the Demographic Health Survey (DHS) of 2006 put the rural water coverage considerably lower, at some 46% (3.8 million). The DNH figure assumes 400 people per source, whilst DHS surveys are based on household questionnaires that ask which water sources people actually use. In reality, fewer than 400 people may actually use a community source.

The number of people who require improved water supplies by 2015 is somewhere between 2 and 3.5 million, depending on the target. Even if the targets are met, a further 1.5 to 3 million will remain un-served.

Government gives first priority to rehabilitation. The rural water supply technology options considered by Government are

- modern wells (lined large diameter wells with pulleys) for isolated communities and pastoralists
- boreholes with handpumps for villages (one pump per 400 people)
- small piped supplies for villages over 1500 people.

DNH are aware that once coverage reaches 80%, much of the population left behind will comprise communities of less than 100 people. At present there is no strategy on how to improve access to water supplies for such communities.

A Tradition of Household and Family Wells

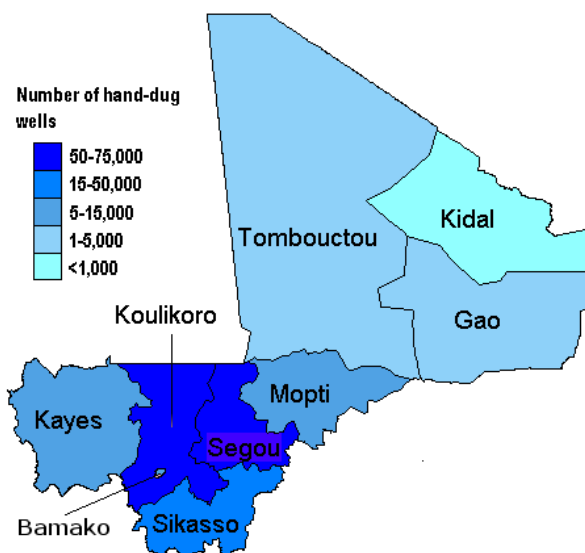
According to Government figures, numbers of communal water supplies have increased rapidly over the past five years. The JMP data (WHO/UNICEF 2008) also shows an increase in use of improved water supplies.

Despite the increasing provision of communal supplies, it is common for households to invest in their own water supplies. In the areas where water lies within 25 metres and ground is well-consolidated (firm), people are investing heavily in un-lined hand-dug wells (see Figure 3). In practice, this means that households dig wells themselves or contract skilled or unskilled labour to dig for them. Costs depend on the depth and difficulty of digging, but excavation alone usually costs \$50-300.

These traditional supplies are privately owned. However, with few exceptions, the wells are shared with neighbours, who have unlimited access and are required to keep to the rules that the owners has imposed. As the well is located near the owner's house, the enforcement of the rules is easy to achieve. This is one reason for preferring private ownership over community ownership.

The tradition of household or family wells in Mali has led to the excavation of over 200,000 traditional wells in the country (Figure 2). These are mostly situated in rural areas. As a result, there is a traditional well close to most houses, with an average of 30 people (5 households) per well (Osbert and Sutton 2009). The 2006 DHS survey shows that 41% of the rural population own their supply for drinking water. If water supplies for other purposes are also considered, the figure is likely to be considerably higher. The convenience of these traditional wells means that where they are numerous, communal supplies, provided by Government, NGO and donor programmes, tend to be less sustainable.

Figure 2: Numbers of traditional hand-dug wells, by region
(Source: DNH Survey 2004)



The Potential for Self Supply

The widespread use of household and family wells, coupled with the slower than planned increases in coverage and limited sustainability of conventional communal supplies, has led to considerable interest by health professionals to reduce health risks incrementally through up-grading the traditional sources. Water supply professionals are also seeking lower cost solutions to cater for the large number of small villages ('hameaux') with scattered homesteads and insufficient inhabitants to support a handpump.

Figure 3: A typical unlined traditional hand dug well



People in Mali are considering how to improve or upgrade existing traditional sources rather than only constructing new, more expensive communal supplies (e.g. Box 1). It has been demonstrated that well owners have the financial capacity to make small investments (up to perhaps \$300 at a time) to upgrade their traditional wells in an incremental manner.

These features led to Mali being chosen as a focal country, first for a study (summarised in Box 2) and subsequently for piloting the Self Supply approach.

Box 1: Example of Investment in a traditional well

Aminata Traore, a lady well-owner in Kolokani invested over \$200 in a hand dug well without finding water and was prepared to keep paying to dig deeper. This was despite the fact that there is a communal well within 150 metres of her home.

Traditionally, in areas of shallow groundwater, there is a high desire to have a supply over which one has complete control

Box 2: Key Findings of the Survey on the Potential for Self Supply in Mali (Sutton, Maiga and Maiga 2006)

- Payment for well-digging is increasingly common, payment for water is not. This does not favour communal supplies, which require payment for maintenance.
- 41% of Mali's rural population own their well; 70% have a supply within 20 metres of their home.
- People with access to water within 100m use 40% more water at home than those walking more than 500m.
- 60% of unprotected sources had no faecal coliform, while 82% had <10 FC/100ml.
- At point of consumption 77%, of households had no FC, while in 15% of cases contamination had increased from that at the source.
- 25% of sources had been chlorinated recently; 6% of households chlorinated water in their house regularly; more chlorinated their drinking water in time of cholera.
- 57% of wells were used for animal watering and 44% for small-scale irrigation. Of these, 85% were privately owned. Communal ownership made productive use difficult.
- 42% of traditional wells had dried in the previous year, but over half had been re-deepened. Most villages had several wells of which one or two did not dry.
- Women preferred their own wells for privacy, convenience, control of users and of their children, and ease of washing clothes in the yard/ growing vegetables
- Men liked it that family wells kept the women from 'straying' but liked also the solidarity and security of having a communal supply.

The above risk-reducing measures are largely self-financed (i.e. paid for by households themselves). All bring with them a spirit of progressiveness and status alongside risk reduction. They can all contribute to development of the rural economy and private sector capacity. Improved access to water can also directly and indirectly lead to income generation and improved nutrition.

These four elements have aspects in common. All require household-level marketing and promotion by health centres. Improving access to water and sanitation requires training of masons in well-head protection and slab making as well as in marketing. Improved access to water and associated productive use can provide additional income for further up-grading of the source and improvement of water quality.

Key Actors

In Mali, the driving force to adopt Self Supply has been through the health sector in search of health risk reduction. This is similar to the progression that happened earlier in Zambia and Zimbabwe. However, it differs from that in the pilot projects in Ethiopia and Uganda, where the ministries responsible for rural water supply are taking the lead.

The initial scoping study was carried out through WaterAid and through DHPS, who are responsible for health and environmental hygiene. It was their enthusiasm which led to the implementation of the pilot projects. The pilot projects have mostly been carried out through DHPS and UNICEF. WaterAid and its local NGO partners have also followed up with demonstration higher cost well up-grading for communal supplies.

DHPS regional staff have trained district personnel to reach out to local health centres (CSCOM) and management committees (ASACOs). Thus a cascade system of communications is developing. Each region has taken a slightly different approach with some more effective than others in supporting the initiative. At health centre level, response has depended on previous history of well-upgrading and the interest of health staff, mairies and chairmen of the management committees.

UNICEF has provided much of the funding to facilitate the training sessions, the provision of materials and the supervision of activities. It has also provided funds for planning and evaluation workshops. Although the DNH (responsible for water supply) were key players in the scoping, changes in personnel have recently led to reduced input.

The role of RWSN has been to:

- provide technical assistance to initiate the process (accessing funds from WSP) and writing TOR for the scoping study
- help analyse the results and promote them
- provide technical support to DHPS and UNICEF
- ensure international promotion of the findings and wider debate.

Overview of the Self Supply Pilot Project

Objectives

The long-term objective of DNS and UNICEF is to develop an environment within which households can make significant improvements to their water supplies with or without financial support. This objective forms part of a wider package of four **Risk Reducing Measures**, particularly relevant to child survival:

- Improved access to water (source up-grading, rainwater harvesting)
- Improved water quality (household water treatment)
- Improved sanitation (community-led total sanitation and sanplats)
- Hand washing (increased frequency, use of soap and jug with basin)

Approaches Used

The approach taken by the project has been a pragmatic one of incremental change, summarised by one health worker as 'we do not seek perfection, we seek progress'. The approach taken in Mali can be broadly divided into four stages as described below. To date focal districts have reached this second stage, with a few progressing towards the third. There is no specific model for stage 4, going to scale.

Stage 1: Introduction of the idea

The first stage of introducing the Self Supply approach was to identify the need and potential for water supply improvements at household level (e.g. Box 2). A small national workshop was held to gauge interest and identify partners. This was followed by a study of the potential for self supply in Mali (Sutton, Maiga and Maiga 2006), and a national workshop to discuss the findings and plan the next steps.

The first stage provided the opportunity to raise awareness among policy makers, district administration and communities of the large investment that people are already making in their own water supplies.

Box 2: The need for traditional and communal supplies

Statements of preference from rural dwellers:

"Boreholes provide the safest water, but if the taste is heavy [mineralised] we tend to use traditional wells for drinking water".

"If we had 400 people using the pump it would be broken every day. As it is it breaks so often we are tired of repairing it, and the queues are long."

"The repeated expense of repairs [of the pump, which serves 320 people] is heavy, so we appreciate using both the borehole and the improved traditional wells. Breakdowns are fewer and queues shorter"

The first stage enabled consideration of (i) the ways in which existing investments can be built upon to trigger further household investment to fill the gaps where public services cannot reach and (ii) to bring about progressive reduction in the health risk among people who will continue to use their own sources.

During this stage there was much debate with sector professionals on the pros and cons of standardised community supplies (mainly handpumps) versus informal developments by individuals. The fact that it is not a competition between these two approaches, but that each can assist the other was discussed during the national workshop.

As noted in Box 2, the complementary nature is especially true with a government standard of 400 people per handpump. This tends to result in long queues and frequent breakdowns. Alternative sources can reduce the pressure on the communal supplies.

Stage 2: Demonstrating what can be done

The second stage was to increase awareness, demonstrate what can be done, and monitor performance and demand. This has been undertaken by a combination of:

- Sensitising health workers at all levels as well as the chain of de-centralised administration
- Training and capacity building of the private sector and, in the first instance, providing most materials needed for demonstrations of supply up-grading
- Testing of technologies suitable for household-level investment. Higher cost options are not yet included.

Up-grading of traditional wells is not a new concept in Mali (unlike the other piloting countries), but it has previously been undertaken in a way that discouraged other well-owners from copying (Box 3).

Box 3: Mainstream approaches to up-grade family wells

Over the past ten years, efforts have been made by a variety of NGOs to improve people's family wells. However, these efforts have primarily used donor funding, with no effort to spread the effect beyond the specific physical improvements made.

The high cost of these improvements has made wider adoption by rural dwellers impossible without outside funding. Following this approach means that donor funding will only ever cover improvement to a very small proportion of family wells.

Another result of such interventions is that projects tend to take over private wells and introduce communal ownership and management. Unfortunately, this actually removes the main advantages of family ownership (i.e. sharing the source, simple management, pride of ownership, productive use and willingness to invest). It may even de-motivate others from investing in new wells in case they are taken over for the community.

The general feeling was expressed by one community where private wells had been made communal i.e. 'what is owned by everyone is owned by no-one'. The result was neglect of rules and maintenance.

The aim of the Self Supply demonstrations is to reduce costs, increase users' own investment and build capacity locally so that others can make the improvements themselves. Interestingly, response has been greatest where there is no previous history of well up-grading projects and thus no confusion over the aim of the project. Box 4 provides a typical example the growing aspirations stimulated by the piloting.

Box 4: The Continuous Process of Well Up-Grading

"Now the well head is improved, I plan to buy a diesel pump and irrigate this area for tomatoes and other vegetables. I did not think I could do this before as the well was not safe. My neighbour is going to build his house here. He has had a well dug and contracted the mason to make the same improvements, so he will have a good well when he moves in."

District Health Authorities have varied in their approach to owner investment. However, in most of the demonstrations, well owners were required to purchase hinged metal lids (e.g. cover photo), provide sand and aggregate, and where wells are more communally used, pulleys. Well-owners also usually pay for the mason's services. Owner capital investment has been about 40% of total cost.

As part of the wider sensitisation, well-owners have been encouraged to change their behaviour and keep buckets and rope out of the dirt (especially when not in use). They are also encouraged to improve hygiene around the waterpoint.

Masons have been trained so that that wellhead protection can be undertaken in stages, and thus protection can be increased incrementally as financial resources become available. A further effect of establishing local capacity for wellhead improvement is that it is encouraging others to construct their own wells and make them safer.

Figure 4: Masons have been trained to in sanplat and latrine construction as well as well head improvements



Stage 3: Increasing self-reliance

The third stage is to move to increased self-reliance and less donor dependency, by increasing the public and private sector capacity to provide advice and carry out works. Emphasis is placed on stimulating and responding to the market for improved wells and water lifting/storage systems.

This stage essentially involves the strengthening of the four pillars of self supply, which are described fully in Sutton (2009):

- Technology and technical advice for consumers
- A developed private sector
- Access to micro-credit or savings mechanisms
- Government policies which encourage individual initiatives

The role of government is particularly to provide advisory and regulatory services and promote incremental improvements. Local administration may also host micro-credit facilities or pro-

vide subsidies. Advisory services include ensuring that the private sector is capable of providing services for:

- well construction, and protection,
- pump production and installation,
- general maintenance,
- household water treatment consumables and
- advice on stocked products.

Only three districts in Mali have reached stage 3. This has been largely due to their own initiative, demonstrating effective response to strong local demand.

Stage 4: Going to scale

The final stage would be to go to scale, provided that this is the wish of the Government Health and Water Ministries. Clearly, this stage is based on the results of the previous stages and acceptable performance of the water points. It should be noted that lessons from stage 3 provide the models by which national strategies can be established, relevant training given and specific guidelines produced.

Technologies Promoted

The technologies promoted so far have been simple, addressing principally wellhead stabilisation and contamination arising from the return of surface water and shallow seepage into the well.

This has meant provision of a parapet, apron, top-slab, lid and partial (shallow) lining as shown in Figures 5 and 6. Such additions seal the wellhead from rain and seepage of water accumulating near the well mouth and reduce the amount of debris falling into the well (and so the need for cleaning out). They also reduce contamination from dirty ropes, aided by the introduction of pulleys and/or posts on which rope and bucket are hung when not in use.

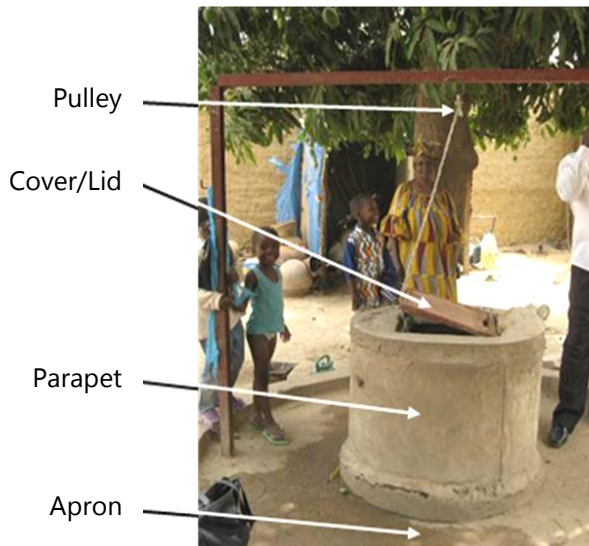
Stabilisation of the wellhead allows installation of improved water lifting devices, such as pulley and rope pumps. The latter are being piloted by Oxfam in Gao and Winrock near Bamako. WaterAid are also testing a locally produced pump in peri-urban Bamako.

Wellhead protection has been generally achieved with stone masonry or breeze blocks with a mortar covering. In the Niono area, blacksmiths make steel ring moulds which masons buy and make concrete rings from. Wells here are unstable at depth, and so full lining is necessary. Rings require much less cement than masonry with breeze block or even stone, but the technology has not spread on its own to new areas, partly because the greater cost effectiveness has not been recognised. Cement is widely available in rural Mali making the rings a feasible and cost effective option.

Figure 5: Example of an up-graded well in Mali



Figure 6: Example of an up-graded well in Mali



Results of the Piloting

In addition to the completion of stage 1, which sparked an interest in the self-supply concept, and included the study and pilot project, there has been significant progress with respect to stage 2 - demonstrating what can be done.

Facilities - numerical outputs

Implementation of demonstrations began in late 2007. So far, a total of 13 communes in 9 districts have completed the second stage of the pilot at three or four of their health centres. This has been largely achieved through cascade training by DHPS (with UNICEF funding).

Over 300 demonstration wells of the 370 planned have been up-graded. Current progress indicates that the remainder will be completed by early 2010. A further 75 wells (25%) have been improved by owners wholly at their own cost. They have simply copied the demonstrations, mainly by engaging the trained masons. The full level of up-take through copying has not been systematically surveyed. Unfortunately, monitoring to date has been limited to project progress, and so the wider impact remains largely un-assessed.

Capacity building

Regional health personnel have, with national-level support, held Training of Trainer workshops for districts. Training is mainly in the principles of well improvement, Sanplat construction, promotion of household water treatment and the roles of health centre and voluntary management bodies. District level staff have subsequently trained local artisans. Over 45 masons have been trained at commune or village level. Training varies from district to district, and some local authorities are clearer than others that the intention of the training is to build sustainable capacity and not just to fulfil the short-term aims of a project.

In more enlightened districts, local government officials and volunteer management committees were also trained. Results are variable, but in Diolia, an active sanitary technician and strong and innovative health centre management team bought sand at the time it was cheapest (low river-water levels), bought a brick mould, organised safe storage for cement and pre-financed brick making and Sanplats. They accessed the funds partly from the community fund (caisse locale). As a result, the demonstration facilities were rapidly completed and other well owners, who were not selected for demonstration purposes, were encouraged to make their own improvements.

Water quality

Despite water quality being a major concern of authorities, little monitoring has been done. One district collected 36 samples from up-graded sources and found that 95% had no faecal coliforms. However, systematic sampling has not been done yet. Anecdotal evidence suggests that the up-grading of well heads causes more people to collect drinking water from these

sources, suggesting consumers feel quality is improved, but this needs to be confirmed systematically.

Costs

Costs have been greatly reduced from the \$2-5000 that up-grading was costing as a DNH or project-based product. At \$350-500, they are still too high for well-owners to pay in full, and further reductions, coupled with smaller steps, are needed. It is interesting to note that those copying the improvements in Diolia have managed to complete wellhead protection for less than \$100. In Niono, two locally made concrete rings and a top-slab with cover cost \$35 from the mason's yard. Thus, small steps and cheaper options offer alternatives.

Figure 7: Well Up-grade in Boura



Policy

So far, the concept of Self Supply has gained acceptance most easily at commune level. Here, administrators are particularly aware of the problems their electorate face and the realities of what people actually do.

In general, health officials at all levels accept the reality that people very often use traditional sources for drinking and other purposes, and often have no convenient alternative. They have therefore strongly supported Self-Supply activities which they see as reducing health risks. In fact, the health sector is planning to extend the approach to new districts and new communes within the districts where demonstrations have already taken place.

At national level in the water sector, there is still need to establish whether or where Self-Supply can fit into rural water strategy.

Stage 3: Increasing self-reliance

This stage has not really yet been reached. However, the three target communes in Diolia, through their own initiative and with district authorities' advice, seem to have established a more sustainable support mechanism than the others. The mechanism

comprises strong promotion, marketing and advice by artisans and health personnel, financial bridging mechanisms to allow more people to improve their sources, and adequate equipment and skills available in the private sector. Much more can be learnt from how they have developed a good working model.

Synthesis of Key Issues

Technical issues

Designs and principles for wellhead protection and pump installation can be further improved and are still to be formalised. Platforms around the well generally have no raised rim to guide spilt water to channels and soak-aways or gardens. The depth of top lining is not always adequate. There is also considerable scope to reduce costs by omitting reinforcement except when it is really necessary (i.e. oversized aprons and depths over 20m) and making 'leaner' (less cement) mixes for shallower works. The current improvements are not as cost-effective as they could be. Guidelines are needed, not just for one step in up-grading, but with later steps in mind (e.g. top slabs which can allow later installation of pumps without needing to be replaced).

Monitoring of Impact: In the pilot, most source up-grading was undertaken as a demonstration. Numerous other improvements already exist or have been made by well-owners incorporating features demonstrated in the pilot. However, there has been no monitoring of the impact of these changes (e.g. in terms of water quality, user satisfaction, quantity of water use, purposes of use, social status, economic benefit, and replication by other well-owners). Without such information, marketing the concept to different stakeholders (from policy-makers to households) remains difficult. Relevant and reliable evidence of effectiveness is required.

Planning issues

The Self-Supply approach is not uniformly applicable everywhere. Not all households need household water treatment and not all groundwater is affordable at family level. There are some villages with traditional wells, but they dry up and cannot be deepened. In other areas, boreholes are being drilled in villages with existing protected sources or traditional wells which offer a more convenient supply. There is need to combine the planning of new construction, pump maintenance and self-supply in a flexible and integrated manner.

Policy issues

Coverage Data and Self-Supply: Self-Supply options in well-up-grading cover a wide range of progressive levels of improvement. However, the cut-off point for a supply that is 'acceptable' in government terms to count towards national targets for safe water has not been established. This links to monitoring of impact as data is required to assist policy-makers to determine the levels of improvement required. If such bench-

marks can be established, Self-Supply may attain a more concrete position within sector policy.

Strategies are required for the un-served and difficult to serve. At present, Government policy leaves out those who live in small villages (hameaux). Boreholes and handpumps, (or even large-diameter lined wells) are not considered as a cost-effective or viable option for this group. In addition, those who Government is not intending to serve by 2015 are left out.

Both of these groups require a strategy which can either provide a lower level of service, or at least ensures that they are not left without any way to improve their own lot as they patiently wait for "their turn" in the distant future. Here, Self-Supply may offer an option which could help fill the gap.

Social and financial issues

Studies show that in rural Mali, water has a particular **value in society**. Despite mainly private ownership, the supply is shared freely with those who do not have their own source. It is regarded as a major asset by owners who generally do not share its costs but share its benefits. There is a cost to the well owner but no tradition of consumers paying for water itself. As a result, community supplies are finding it very hard to solicit regular payments for water to cover maintenance costs.

There is strong **ownership** by those who have constructed their own wells at their own cost, whether individually or in small groups. This has implications for ways of making water safe within the house, since purchasing chlorine, filters or bottles for solar distillation, or rainwater harvesting gutters and storage is an investment which has direct impact on the investor.

Sources of funding: At present, capital costs of community supplies are funded mainly by government and donors, sometimes with a proportion (10%) of commune funds. Households usually contribute between zero and 5%. In Self-Supply, households would be expected to contribute the full cost. However in the demonstration phase donor support is still significant (60%). Government contribution is expressed mainly in marketing, training and capacity building.

There is a high individual willingness to invest in water supply, but the financial means varies from person to person. Moving on from the demonstration phase requires a shift in thinking by all stakeholders to find ways to reduce or remove subsidy. There is need to explore mechanisms to make this possible. At present, commune funds cannot be used by less well-off individuals to up-grade their water sources. Adventurous villages have used their traditional savings schemes to help fund improvements. In particular, there is a tradition of revolving funds (ton-tines), which allow members of the saving circle to benefit from the whole accumulated fund in rotation. Building on such experiences, a revolving fund or combining sources of funds might make up-grading easier, and accelerate the process. However, care is needed to avoid subsidising in a way which 'kills' the desire for owner investment.

Conclusions

The potential for Self Supply in Mali is beginning to be understood by both the public (health, water and local administration) and private sectors. Initial efforts to trigger greater investment by households show that there is great scope and demand for source up-grading and household water treatment. The real challenge is to move out of the donor dependency which has accompanied previous attempts to up-grade traditional supplies. This needs to be done in a way which expands the numbers with access to improved supplies and impacts on the national targets in a sustainable fashion.

References

- CIA (2009) *The World Fact Book*, US Central Intelligence Authority, Available on the World Wide Web on <https://www.cia.gov/library/publications/the-world-factbook/geos/ml.html>
- DHS (2006) *Mali Demographic and Health Survey*. Available on the World Wide Web on http://www.measuredhs.com/pubs/pub_details.cfm?id=759
- DNH (2004) *Situation des points d'eau moderne au Mali*, Direction Nationale d'Hydraulique, Mali
- DNH (2008) *Programme sectoriel eau et assainissement (PROSEA)*. Cadre de dépense a moyen terme 2009-2011. Secteur eau, Direction Nationale d'Hydraulique, Mali. Juin 2008
- Maiga H, Maiga B, Diallo M (2005) *Etudes de faisabilité de l'auto promotion des systèmes alternatifs d'approvisionnement en eau en milieu rural au Mali*. WaterAid Sept 2005
- Maiga H, Maiga B, Sutton S (2006) *Self Supply in Mali*. Waterlines vol 25 no 1, July 2006, http://www.practicalaction.org.uk/publishing/waterlines_25-1
- Osbert N, Sutton S (2009) *Self Supply in Mali- early steps towards an innovatory approach*. Proceeding of 34th WEDC conference Addis Ababa 2009. Available on the World Wide Web on <http://www.rwsn.ch/documentation/skatdocumentation.2009-07-13.2321533742>
- Sutton S, Maiga H, Maiga B (2006). *Improving Household Water Supply (Self Supply) – The Potential in Mali*, Consultancy Report for UNICEF, WaterAid and RWSN, Available on the World Wide Web on <http://www.rwsn.ch/documentation/skatdocumentation.2009-04-30.3921708438>
- Sutton S (2009) *Introduction to Self Supply*. Water and Sanitation Programme, February 2009, Available on the World Wide Web on http://www.wsp.org/UserFiles/file/Af_SelfSupply_1.pdf
- UNDP (2009) *Human Development Report 2009 – Mali*, Available on the World Wide Web on http://hdrstats.undp.org/en/countries/data_sheets/cty_ds_MLI.html
- UNICEF/WHO (2008) *Joint Monitoring Programme for Water Supply and Sanitation Coverage Estimates Improved Drinking Water Mali (Updated in July 2008)*. Available on the World Wide Web on http://www.childinfo.org/files/MLI_wat.pdf

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Dr. Sally Sutton is the RWSN Self Supply Flagship Theme Coordinator. She has more than 30 years of experience in rural water supply, starting as a practical hydro-geologist and moving increasingly into planning and evaluation, systems and policy development for improved sustainability. A major interest is in helping to bridge the gaps which often exist between end-users and policy makers/sector professionals, so that consumers have informed access to a wider range of options which reflect their concerns and values.

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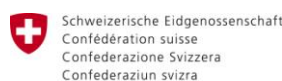
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