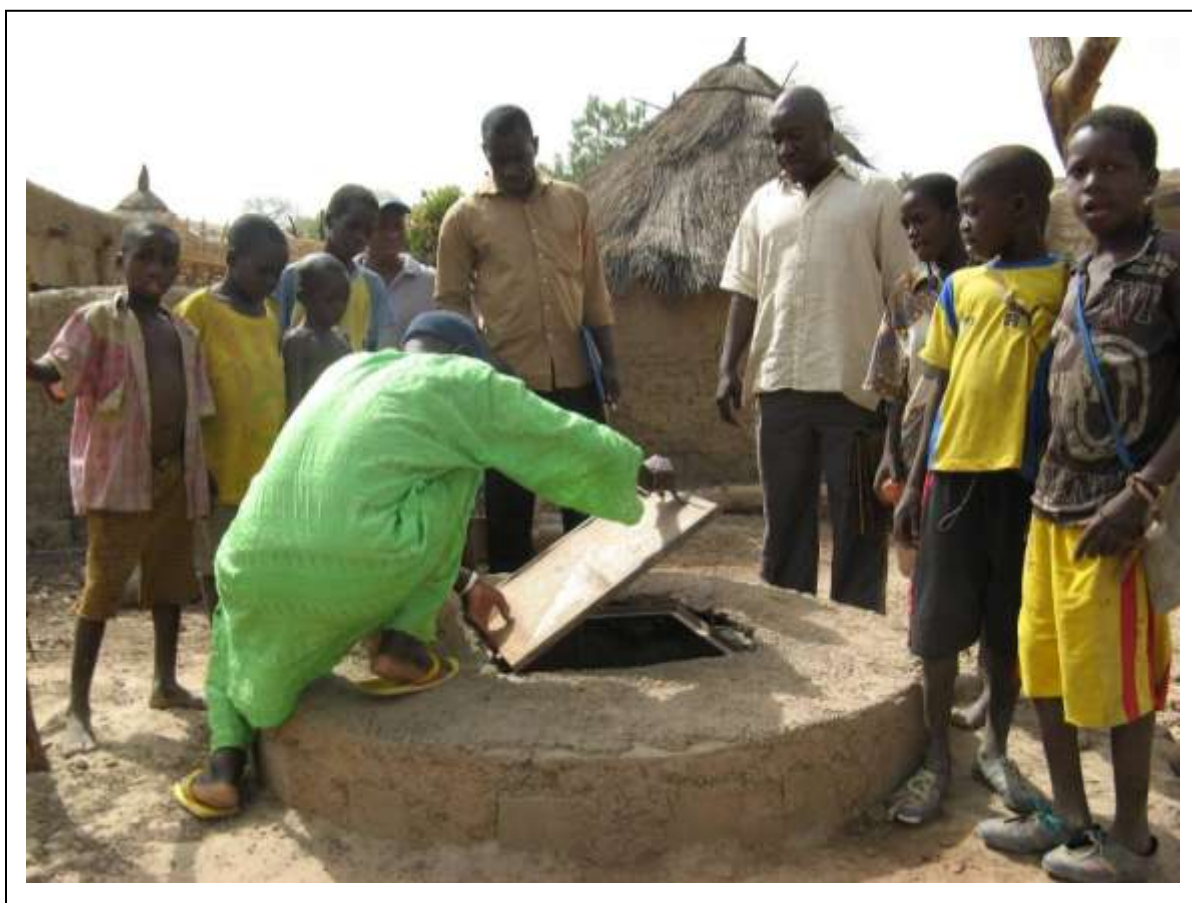




PROGRESS REPORT ON SELF SUPPLY/ RISK REDUCTION IN MALI



March 2009

Sally Sutton

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ABBREVIATIONS

ASACO	Neighbourhood Health Management Committee
CC	<i>Cadre de concertation</i>
CFA	Central African Franc
CSCOM	Rural Health Centre Management
DHPS	<i>Division Hygiène Publique et Salubrité</i>
DHS	Demographic health Survey
DNH	<i>Direction Nationale d'Hydraulique</i>
DNS	National Directorate for Health
DRS	Regional Directorate for Health
FELASCOM	Federation of ASACOs
JMP	Joint Monitoring Programme (WHO/UNICEF)
<i>mairie</i>	Local Government at Comune Level
MDG	Millennium Development Goal
NGO	Non-government Organisation
PM	<i>puits modernes</i>
PNAEP	National Plan for Access to Drinking Water
PRSP	Poverty Reduction Strategy Paper
PT	<i>puits traditionnel</i>
PTA	<i>puits traditionnels améliorés</i>
RWSN	Rural Water Supply Network
TFC	Total Faecal Coliforms
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund

EXECUTIVE SUMMARY

1. Over 150 traditional wells have improved protection as a result of the demonstration works supported by *Division Hygiène Publique et Salubrité* (DHPS) and UNICEF and well owners, in the last six months. This is in addition to the 150+ up-graded in 2007/8. At least further 25% have been improved by owners alone (communities or individuals) copying such changes using the trained masons. Others have made partial improvements based on seeing what can be achieved. A further 45 demonstration wells remain to be improved in Ségou, and at least 25 in Sikasso when masons are trained and materials distributed.
2. DHPS have led the way nationally with good support from most regional and district levels and from UNICEF. Participating regions plan to extend the districts covered. Main inputs have been the cascade training from regional to village level of government personnel and artisans. The preventive nature of improved water supply to health risks means that it is an initiative which fits well with the aims of DHPS.
3. There has been some variability in the understanding of the initiative, some taking it to be just yet another exercise in well up-grading at district commune and household levels. Others have correctly interpreted it as a first step in self-help through which people can make incremental improvements.
4. Where the concept has been well-understood (eg Dioila) , results have been very positive, with good up-take and replication at users' own cost (both household and communities), even though supporting elements such as micro-credit and alternative technology demonstrations are not yet in place, and training has been limited.
5. ASACOs and *mairies* have proved effective in marketing, and innovative in finding ways to support individual and community efforts to improve supplies, where these organisations are strongly developed. However they ask for a) more training, b) provision of information materials they can use in promoting self help concepts and c) a system of revolving funds.
6. In overall risk reduction for child survival it has become apparent that four elements – improved access to water, improved water quality, sanitation and hand washing,- form an integrated package which can be developed at *commune/aire* level. This would mean providing -:
 - trained mason(s) (trained in Sanplat construction and well head protection, well-lining in areas of collapse, plus low cost pump installation and maintenance),
 - technology demonstrations (eg. well rings, brick making, pulleys, low cost pumps, solar pumps, Sanplats, improved traditional latrines)
 - chlorine production with low cost consumables or sale of nationally produced chlorine
 - promotional materials on hand washing, water treatment, well up-grading, and small scale irrigation (for better nutrition and income generation), and sanitation linked either to CSCOM/ASACO or to local government at commune level (*mairie*) and supported by micro-credit.
7. The lack of baseline data and of monitoring of water quality and progress means that it remains difficult to evaluate the effect of the changes that are taking place. This, in many areas, would reflect the combined impacts of greater up-take of water treatment, and improved access to water and sanitation. Without this information it is not possible to say whether the prototypes so far developed for wellhead protection offer a real improvement in water quality and access, nor to judge the existing level of up-take of household water treatment with which future campaign results can be compared. A comprehensive study is needed, which goes beyond the evaluation of progress planned for May this year and includes

assessment of changes to non-demonstration wells, and potential for and any effects on income generation.

8. In order to achieve wider national awareness of the potential of Self Supply and to co-ordinate initiatives there needs to be a '*cadre de concertation*', of partners and interested bodies. An interest group was previously formed but needs to be revived and formalised. A national workshop has been proposed and a budget secured through UNICEF. A programme of discussion points are proposed in this report.
9. Wateraid have also been involved in well-upgrading but not using the Self Supply approach. They have employed local NGOs which have proved useful in their capacity to train and monitor, and UNICEF and DHPS may find that some similar NGO involvement may help in capacity building at *commune* level as well as in the development of guidelines and IEC materials.
10. Oxfam (85 pumps) and now Winrock (10) are introducing the rope pump, the former mainly at community level. This has been done with approval of DNH in Gao, with a requirement to monitor performance. Such pumps now need also to be introduced as a resource available to household level, where they are a more durable option, and affordable, especially with a form of micro-credit/ revolving fund. Development and piloting of micro-credit systems may be done through local administration or local NGOs initially, and needs to be a priority to expand the range of households for which Self Supply may be attainable.
11. Piloting also offers the opportunity to test out different technology options. Prototypes of well head improvements could be expanded to include the use of well rings which use less cement than the bricks widely used at present. They also allow better partial lining systems to prevent collapse below the water level and/ or near ground level. Training of masons should include ring making using the same principles as Sanplats, but generally without reinforcing. The masons of Niono have the expertise and the best could help with training, whilst their local blacksmiths make light moulds in metal. Alternatively glass fibre moulds can be made, as in Zambia. A standardisation of mason training would make for more consistent quality of products.
12. In this piloting phase, it is especially important to collect and share information. There is much to be learnt from the different initiatives undertaken, which have evolved in slightly different ways in each district. National workshops offer an opportunity to share such information, and to raise issues which need resolution. These issues include the need for funding options, more training for public and private sector, including some standardisation of levels of protection.

ACKNOWLEDGEMENTS

People met February 2009, whose information and ideas are gratefully acknowledged. Special gratitude to Sory Bouaré of DHPS, who accompanied me in the field with patience, lots of helpful observations and constructive discussions. Also to Boubacar Maiga (DHPS) for leading the move for Self Supply piloting and Nicolas Osbert of UNICEF for discussions and arranging the logistics for field visits.

Name	Organisation	
Soumaro Diélika Diarra	DRS Koulikoro	
Christine Casellas	Oxfam, Bamako	
Yaya Maiga	Chef du Centre de Documentation et Informatique DNH Bamako	
Nicolas Osbert	WASH UNICEF Bamako	
Djibril Coulibaly	JIGI (NGO working with WaterAid in Kolokani)	
Dr Kokaina	UNICEF Koulikoro DRS	
Boubacar Maiga	Chef DHPS, DNS. Bamako	
Sory Bouaré	DHPS water and food control	
Adama Sanogo	Wateraid Bamako	
Nicolas Sidibe	Wateraid Bamako	
Tidiane Diallo	Wateraid, Bamako	
Patrice Beaujault	Winrock – intro of rope pump + small scale irrigation	
Dr Souleymane Diarra	Siby, Médecin Chef CSCOM	
Joachim Jakobsen	DANIDA Tech adviser DNH	
Daniel / Loriana Riccarelli Dembélé	Ji Duma, NGO for watsan/ educ and solar panels for pumps etc	
Reza Kasrai	ECHO project coordinator Oxfam, Mali/Mauritania nutrition/ water	
Toumani Konaré	Médecin Chef Kati CSREF	
Dr Bagayoko Moussa	Médecin Chef, Dioila CSREF	
Abdoulaye Savadogo	Tech sanitaire Dioila CSREF	
Dr Bacary Kampo	Regional Director for Health, Sikasso	
Datié Coulibaly	DRS, Sikasso (Service d'Hygiène)	
Masséydou Traore	Chef, DHPS, DRS Sikasso	
Dr Touré Drissa	Médecin Chef Yorosso, Sikasso	
Abdoulaye Coulibaly	Tech San. Yorosso, Sikasso	
Drissa Touré	Alfalog (ONG working with WaterAid in Bla)/ CLTS	
Dr Alassane b. Dicko	Regional Director for Health Ségou	
Daniel Traore	Chef, DHPS, DRS, Ségou	
Dauda Coulibaly	Tech San. DHPS, DRS Ségou	
Dr Brahim Sanogo	Regional rep UNICEF Health Ségou	
Dr Lassana Keita	Regional office UNICEF Ségou	
Dr Oumar Sangho	Médecin Chef Niono Ségou	
El Hadj Moussa Diallo	Tech Sanitaire Niono	
Bakary Diakite	Tech Sanitaire Niono, Ségou	

EXCHANGE RATE

In February 2009, US\$ 1 = 516 CFA.

1. BACKGROUND

Self Supply involves incremental improvements to water supply and sanitation in steps that are mainly affordable to the households adopting them. Thus they are largely user financed. A major part of the inputs is software; providing an environment within which people are empowered and facilitated to make their own improvements. This requires a marketing approach and a change in mentality of all stakeholders. It therefore takes time to establish, and early stages do not necessarily show fast progress on the ground. However as the experience of Zimbabwe and Ethiopia shows, once established, the idea spreads fast and introduces dynamism to the sector which can complement the public sector initiatives, and result in very significant reductions in risks to health and eventually also increase of coverage.

In 2004 RWSN carried out a brief assessment of the potential for Self Supply in rural water supply in sub-Saharan Africa, funded by WaterAid. As a result Mali was identified as a country with large potential for this approach since so many people had already invested in their own supplies (more than 200,000 traditional wells for 5 million people). RWSN (WSP funding) then worked with WaterAid to undertake a study of the real potential for this approach in Koulikoro region, partnered by the Ministry of Health. This was completed in 2006, and was accompanied by a draft proposal for funding drawn up with DNS and DNH.

WaterAid included Self Supply into their existing programme, and UNICEF sought funding to introduce the concept into theirs. They successfully applied for Norwegian funding in 2006, but with implementation delayed to 2007. A meeting of all partners was held in Ségou to discuss the approach in September 2007, and to address their concerns. WaterAid and UNICEF have been implementing pilot supply improvements since this date, in the regions of Koulikoro, Segou and now Sikasso. The approach is not region-wide, but targets specific communities so certain districts have been chosen and specific communes or health post catchments (*aires*) within those as a piloting stage before going to scale.

This report forms the first stage of evaluating the effectiveness of what has been done to date. A wider supervisory study will be carried out shortly to provide systematic evidence of progress. What is really needed next is a more rigorous study to test the validity of scaling up the approach, including assessment of the impact so far, the acceptability of the approach at all levels from households to local and regional administration, and what changes might need to be considered.

2. THE EVOLUTION OF SELF SUPPLY IN MALI

At the start partners viewed Self Supply as simply a way to up-grade wells, with user involvement limited to provision of sand, gravel, and labour as with conventional water supply. This began to change with the involvement of National Directorate for Health (DNS) who have begun to sensitise householders to their ability to bring about change.

In areas with active ASACOs (Neighbourhood health management committees) the interaction between the members of these committees and the villages they represent can be seen to lead to a rapid change in mentality (eg. Dioila district). ASACOs have small funds available, and may also have good relationships with the local *mairie* (local government at comune level). The latter, in the spirit of de-centralisation may have slightly more funds but little compared with the needs of their 'commune' and so little financial or human capacity to respond to their needs. In such a situation, low cost solutions are particularly relevant. However it is very apparent that success can be highly variable and much depends on the good will and initiative of individuals.

Self Supply is becoming as much about software aspects, i.e. unlocking communications skills, changing attitudes and developing networks as it is about technologies (see Appendix 4, checklist of activities). The networks involved are those of traditional hierarchies, the health sector (district and health centre extension staff, CSREF/CSCOM/FELASCOM/ASACOs, relais), political elements of the

mairies (elected and answerable to voters), and development groups such as women's, youth and religious groups.

The principles involved are now developing into a package of four largely self-financed RISK REDUCING MEASURES, particularly relevant to child survival and consist of:

1. Improved access to water (source up-grading, rainwater harvesting)
2. Improved water quality (household water treatment)
3. Improved sanitation (CLTS, Sanplat)
4. Hand washing (increased frequency, use of soap and jug with basin)

All four bring with them a spirit of progressiveness and status alongside risk reduction, and all can contribute positively to development of rural economy and private sector capacity. Improved access to water can also directly and indirectly lead to income generation and improved nutrition. This report deals mostly with items 1 and 2, and, to a lesser extent 3.

3. SUMMARY OF PROGRESS ON THE GROUND

The progress in terms of physical outputs has been pretty much as planned. Since August 2008 UNICEF has financed the improvement of a further 100+ demonstration supplies in Kati and Dioila districts of Koulikoro region, and 50 undertaken with CREPA in Bla and Niono (Ségou). UNICEF is also supporting further work (around 25) in 4 communes of Yorosso, Sikasso and a further 45 in 3 districts of Ségou (Baroueli, Bla and Niono) and DHPS has provided the training to district and sub-district levels. Each district seems to develop its own prototypes.

3.1 Kati District, Koulikoro Region

In Kati two communes (Dogodouma and Siby) were visited as part of this study, the latter including Siby town and Dogoro village.

Dogodouma

The situation was complicated as there had previously been much well up-grading provided for free to well-owners by Plan and others. In addition, Dogodouma, which is peri-urban has a piped water supply. However the piped water was intermittent and traditional wells were still much used, not least because of their lower cost (100 CFA (US\$0.19) per 20 l at the standpost, 15 CFA (US\$ 0.03) at the well). Wells had nicely protected headwork in Dogodouma but most had no covers or aprons/drainage. The ASACO which is active and supported also by the *mairie* plans to install covers, using user fees.

Figure 1 Improved well in Dogodouma, with ASACO president and sanitary technician



12 villages were chosen and a further village and two private individuals paid for their own improvements (the village paid the mason in kind, by giving him a sack of cement). All villages came to the health centre to collect reinforcing and cement. This arises both from the very active ASACO in Dogodouma and also close working with the *mairie* who would be happy to be more involved and supportive.

Siby

Dogoro village in Siby had a nicely improved well with no cover or apron but with additional design features (standing points so more than one could draw water at a time) Interestingly nearby were six wells already improved by families copying each others' good ideas, i.e. not project driven (Figure 2). These were fitted with covers (costing 6000 CFA (US\$ 11) in Siby, 3000 CFA (US\$ 5.8) in Bamako), and slabs/aprons (using three sacks of cement costing 22,000 CFA (US\$ 43) and masons labour at 10,000 CFA (US\$ 19). They were more than three years old and were functioning well, except that the screed to keep the slab/apron water-proof had worn in places. However there were signs that the owners had made previous repairs to this. The owner interviewed said that he chlorinated the well in the rainy season to reduce risks to those who shared it. **Such features nicely demonstrate self supply in practice, including choice and sustainability in improved access and quality.**

Figure 2 Owner-initiated improvement in Dogoro, Siby



The five wells improved in Siby town seemed to be almost cosmetic. In general the improvements were done by local masons chosen by village leaders. As only one of the trained masons remained, it appears that the rest felt that the 5,000 CFA (US\$ 10) was not enough payment.

However there are also several wells already improved by individuals or by Plan, plus a hand pump and a large diameter well. The first pilot project improved well visited was dry and known to dry every year. The second belonged to a family who already have a well

they had improved themselves, nearer the house. The pilot improvement was to a well far from the house, said to be used traditionally for drinking by all the houses around, but actually unused now, and minimally improved. **All the wells seen in this area seemed to have been poorly improved and used less than the four bags of cement and iron allowed for. This reflects badly on both district and regional level supervision.**

3.2 Diolia

In Diolia three communes are involved in the piloting (Ngolobougou, Banco and Massigi). All appear to have completed their targets, (45) with 12 additional wells being upgraded by communities and individuals who covered the full cost themselves (ie they were not part of the pilot project). Three villages were visited in Ngolobougou. This commune has no previous history of well improvements. In addition to the 15 pilot project wells, there have also been initiatives by villages (4) and private individuals (2) to fund their own improvements using the trained masons.

Figure 3 Solid and Hollow Brick Production



Progress has been good thanks to both an active sanitary technician at district level, and a strong and innovative ASACO at commune level. The sanitary technician has taken pre-improvement water samples for analysis (range 97-263 TFC/100ml). The ASACO bought sand and gravel at the time it was cheaper, and also bought a brick mould and organised safe storage of cement when it was delivered. The ASACO pre-financed the brick making (Figure 3) which has been paid back by the participating villages. A similar mechanism was followed with the

Sanplats (Figure 4), of which 15 (6 big, 9 small) have been sold so far from the small workshop.

Figure 4 Ngolobougou Sanplats Ready for Sale



The other two communes seem to have done similarly with well upgrading thanks to encouragement from district level and strong ASACOs, working with *mairies*. **This district would seem a good one for future piloting of integrated risk reduction and local workshops for the four risk reducing measures set out on page 1, because of the combination of strong regional, district and local health management.**

Villages in Ngolobougou communes not chosen for the pilot project came forward with plans to raise funds and complete the work themselves at an average cost of over 35,000 CFA (US\$ 68), to cover bricks, cement and iron, plus masons' fee. This was due to promotion by both the ASACO and the health technician. They accessed funds partly by using their own social funds (*caisse locale*). All villages paid for the mason and the cost of brick production (10 CFA (US\$ 0.02) per brick). Some people said they were using Javel for household water chlorination in the rainy season, and that although it was not widely practiced there was sufficient market for small local kiosks/stores to stock it. **This could form a good starting point for the locally manufactured chlorine, as long as local traders are included rather than being cut out by the new supply chain.**

Figure 5. Communal use of an improved well in the yard of the ASACO chairman's house, Ngolobougou



As in the other areas, problems mainly arose, because of cement delivery in the rainy season and difficulties of storage. Timing of activities is not well geared to seasonal availability of labour and water level fluctuations. Both Siby and Dioila remarked on cement wastage because of necessity to stock in periods of high humidity which lead to cement “going off”. Note that the ASACO secretary in Ngolobougou provided a room in his own house specifically to protect the cement.

Note. Dioila has some communes with many ‘hameaux’ (Senou *aire* has over 100).

At a later stage these could be a target for Self Supply as it is the only level of service possible, and one which could trigger greater acceptance of the approach with DNH.

3.3 Sikasso,

Sikasso has 9 districts (one is new and not yet well established), and 167 *communes/aires*, most of which are functioning. Yorosso is the target district because it is focal for UNICEF already. Within Yorosso, four communes are being targeted: Mahou, Boura, Kiffosoi, and Yorosso town. Materials for Sanplats were delivered to the *communes/aires* at the end of last year but Self Supply materials remain at the regional level due to the lack of payment for transport. Training of masons and ASACOs remains to be done and the Regional Directorate for Health (DRS) would like all districts to benefit from this and receive training at all levels

The DRS in Sikasso are very much in favour of Self Supply and the combination with other elements of the package and want to see how they can work. There is already one local chlorine production unit working in the region (Kadiolo district, producing chlorine for disinfection in the health centre), and they would like the opportunity to develop more. They have developed four Sanplat workshops and so can visualise the package well. **The main problem at present would seem to be the need for a coherent information pack for each level, eg regional, district, and commune to clarify the aims and strategy of Self Supply. There is also a lack of water quality monitoring and supervision in the budgets for implementation of the piloting which constrains progress.**

Boura

Discussions with the local administration in Boura found that whilst they are interested in well upgrading, this needs to be integrated into wider planning. Some villages have no perennial supplies and so improvement is not their priority. Two villages had raised the 825,000 CFA (US\$1,600) needed as their part of the total cost for a borehole, but can find no partner donor/DNH with funds for the rest. Several villages have raised over 500,000 CFA (US\$970) towards new supplies.

Figure 6 Self-financed well protection by householder in Boura



However, at the time visited, there are 20 boreholes in the area with handpumps which don't work. **Thus UNICEF should see how to combine new construction with pump maintenance and self supply in integrated planning. Tying handpump repair to well-developed local savings schemes might help to establish payment (loan for repair /rehab needs to be repaid).**

Well up-grading is not a foreign concept to this area in that people are doing it a lot for themselves with good quality works by local masons and even buying their own covers (e.g. Figure 6). **There may therefore be some early interest in higher levels of supply (e.g. low cost pumps).**

3.4 Ségou

There are many actors in the sector in Ségou. Thus there is a need to see how approaches can be better harmonised. Børne fonden, Save the Children, WaterAid/Alfalog, Helvetas, World Vision, Carter Centre (trachoma initiative) and UNICEF are all supporting Sanplat production; each with different strategies. Some develop village level production, while some are at commune-level, some are highly subsidised and some are not subsidised at all. This has led to a feeling that some people are being penalised by the policies of organisations which require full cost recovery from households. **There needs to be more debate, relevant also to self supply, to explain the global, country specific and local reasoning for un-subsidised approaches, and more advocacy with the various actors in the sector.**

The DRS made a very good presentation summarising progress and constraints, and felt that a **regional 'cadre de concertation'** would help bring about more harmonised approaches and provoke discussion on strategies within all four elements of risk reduction.

Bla

Sanplat coverage has reached 95-100% coverage in several villages in Bla. WaterAid established a training centre, initially for production in Touna, but then to move production to village level, where local masons have been trained. They have also developed a 'sit-on' latrine seat for handicapped and elderly (Figure 7).

Touna has more recently begun to adopt CLTS in a few target villages, with assistance from Alfalog. The results seen were impressive and the pride of the community in the changes they have made was enormous. So far they had tackled solid waste and sanitation, but were planning that they would then add in supply improvement in terms of source up-grading and water treatment, as a natural progression. However at the moment the only source improvements are high cost with no prototypes for lower cost solutions, underlining the rather different approach of WaterAid at present. This tends to be a more project approach and to equate Self supply to well-up-grading not a move towards replicability and sustainability. Alfalog support to CLTS finishes in June.

Figure 7 Locally developed 'sit-on' slab for the handicapped and elderly



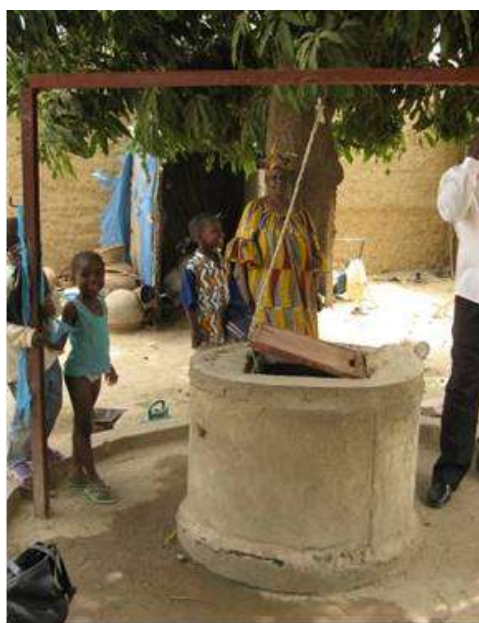
In terms of Self Supply, materials have been delivered to Ségou but without funds for their onward passage to the districts and beyond. This is estimated to cost a further 2.6 million CFA (US\$ 5,000). Training therefore remains to be done.

Niono

Some of the 50 improved wells done with UNICEF funding to CREPA in 2008 were visited. These were of a good fairly low cost prototype, with top-lining using well rings made locally (Figure 8). There is a tradition for this as in the Niono town area. The aquifer is poorly consolidated sand which collapses.

As a consequence, several masons are making rings, with the moulds are made by local blacksmiths. The moulds are relatively light and potable, and the rings are strong concrete around 6 cm thick, with no re-inforcing. Water levels are shallow (mostly <5 m), so there is no great weight on the rings, and many are also used for soak-aways (*puissards*). A 0.8m dia. rings cost 4,500 CFA (US\$ 8.7) and the top slab with cover costs 7,500 CFA (US\$ 14.5). **This makes top lining with rings a very cost effective method in comparison with bricks, where the well diameter does not exceed about 1.3 m diameter.**

Figure 8 CREPA/UNICEF Prototype Well Protection, Niono



Unfortunately it appears that CREPA did not use local masons or local animators, leaving no improved practices behind. Neither regional and district administration were much implicated. Rather the NGO worked in isolation. CREPA did not require any payment towards costs, but did target more 'needy' households.

Unfortunately it was not made clear to anyone that this was a first step in trying to develop the market for improvements rather than just another project for well upgrading. CREPA has not produced a report including water quality data, although the district says that they did carry out the analyses and sent them the data. **This underlines the need for supervision, and for the responsibilities for this to be clearly defined between regional UNICEF, DRS and district sanitary technician, and budgets included accordingly. Contracts with NGOS should also perhaps include some element of measurement of baseline conditions and impact, rather than simply measures of progress in implementation.**

Note also that CREPA masons engraved CREPA/UNICEF in the top slab of wells, which hardly encourages 'ownership' by users.

One of the ring-making masons has also been trained in Sanplat manufacture, which he sells at 6,000 CFAs (US\$ 11.6) for 1.2m dia. The Technicien Sanitaire estimates some 30% of households use them at present but questions affordability. **This may indicate a need for discussion and advocacy to change attitude from all levels of stakeholders not just households in terms of donor dependency.** The signs of disposable income in the area are as high (or even higher) than for other areas where there is no irrigation and fewer cash crops. This suggests that willingness to pay, priorities and marketing are greater issues than actual cost vs income.

4. TECHNOLOGIES

4.1 Prototype improvements.

Improvements to date vary in the provision of elements such as covers, aprons, drainage, pulleys, and the depth of lining below ground surface. It is suggested that these elements need further consideration in the light of design options, their suitability for incremental improvement steps, minimum starting point and associated costs. Further thought needs to be given to cost reduction in cement mixes and whether there is a real need for reinforcing in designs under only surface ground pressures. The merits of concrete bricks and rings in terms of cost, versatility of use in wells of different diameters etc needs to be assessed carefully. Since different elements involve different costs, the effects of each need better definition in terms of influence on water quality and

availability. The lack of a well-designed apron and low cost drainage has been remarked on previously.¹

4.2 Rope pumps

Oxfam have introduced 25 rope pumps at community level in Gao and established production there. These have been in operation for nearly a year, and their functioning is being monitored. DNH would like monitoring over 2 years before considering them as a level of service, but have meanwhile given the go-ahead for installation of around 60 more. Winrock have also begun small-scale production in Bamako and will install 10 near Bamako this year. Thus it is technology which is beginning to be demonstrated and tested and offers household level as well as communities the possibility to invest in more efficient (yield and water quality) water lifting.

WaterAid have also been testing the Ciawarra pump in prei-urban Bamako, and it seems to operate successfully, so options can be offered.

Such pumps should be demonstrated in focal districts, if possible, perhaps using health centre wells where available, to be tied in with the Sanplat and chlorine production. Different types of pulley (wood and metal), could also be made available for copying. Information on costs should be readily available for interested people, perhaps in an information leaflet.

4.3 Other technologies

Technological information should not be limited to lowest cost options. Even if few are yet considering such ideas. There should be information available on the costs and suppliers for solar pumps, storage tanks etc. Some people may want to improve water supply or even to sell water to neighbours in peri-urban areas, but not be aware of what technologies could help provide more and better water.

5. SOME ISSUES ARISING

5.1 Choosing focal districts/ aires/ communes

Some communes chosen seem to offer better potential for piloting than others. Common criteria might be developed during the national workshop. Suggested factors might include some or all of the following -:

- Lack of previous project-driven supply improvement
- Water table within 15 m
- Interested/dynamic local admin (*mairie* and/or CSREF/ ASACOs)
- Identifiable sources of income
- Local micro-finance systems developed

5.2 Baseline and impact

In future attention might be paid to baseline situation analysis, with which changes can be compared. This is normally done already by WaterAid during their initial assessment with *mairies*. Some of the information may be readily available from *mairies* or health centres. It would be helpful to define before starting the following parameters, among others-:

- Number and size of villages/hameaux
- Number of protected supplies (PGD, forages, PAm) and their functioning status, by village*
- Number of traditional wells and their ownership and age*

¹ Progress in Introducing Self Supply in Mali. RWSN Sutton 2008.

- Proportion/number with different levels of protection, and how many used for drinking water (sometimes/all time/never) *
- Number of masons/well-diggers/carpenters*
- Number of traditional latrines and improved ones*
- Proportion of households chlorinating a) wells b) household water and frequency*
- Availability of savings/ micro-credit systems, and of javel and cement*
- Main sources of local income
- Main concerns of local admin with regard to water and sanitation.

* factors which could be compared a year after completion of piloting and after start of continuous marketing

5.3 Training materials and information packs

It is apparent that each region/ district has different ideas of what Self Supply entails. This is not necessarily bad as each should tailor concepts to their own circumstances, but there should be a common understanding of the basic principles. DNS and DRS are providing useful training but their efforts could be assisted with provision of more information, and may be Powerpoint presentation materials. Clear definitions and strategies may emerge from the national workshop, and some of the presentations to this may also furnish useful training materials. An output from the workshop should be a clear picture of training materials needs and a plan for their provision. Special attention should be paid to the needs of ASACOs as they seem to be key in ensuring continued promotion of risk reduction measures to households via their own advocacy and the training of 'relais'.

5.4 Seasonality of activities.

Water levels and seasonal work patterns mean that source excavation/deepening and up-grading is most easily undertaken in the period Jan-June. This is not necessarily well-fitted to the release of donor funds to and the financial year of government, UNICEF, Wateraid and others. It may mean that thought needs to be given on how funds and material delivery can be carried over into the following year wherever possible.

5.5 Need for additional information.

There are two additional areas in which supporting studies may be needed. These are -:

- a) Local systems for savings and credit and how links could be made to them to support risk reduction measures.
- b) Up-take of household water treatment so far.

Savings and credit

There are probably one or more *tontines* systems in every village, which are traditional and provide accumulated funds to members in rotation. Their size, aims, and linkages need to be understood. There are also locally developed '*caisse villageoise*', '*caisse locale*' or '*caisse de crédit*'. Some are for men only, some are for women and some for whole communities with their own conditions, large variation in size of funds available. These could become linked to waterpoint maintenance (handpumps) and user fees, or could be used to enable well owners to buy low cost pumps if that were their priority. However the mechanisms by which they operate, their distribution (all/some/few villages), and the need for advocacy to include investments for water, sanitation and hygiene may need to be better defined. The same is true for how the more conventional small scale micro-credits requiring income generation could be of use and what advocacy is required to get water included as an acceptable target?

Up-take of household water treatment

Eau de javel is available in many communities but is often only used for disinfection and clothes washing. Little is known of who treats their water, and when or of how effectively they treat it. Equally the quality of javel sold is highly variable. We need better understanding of these points if effective chlorination is to be promoted, and also to measure the effectiveness of the promotion. This might also be included in the health monitoring systems at household level (SAP?). Currently, this included questions on sources of water used but not yet on water treatment.

5.6 Procurement of materials.

Whilst well owners procure sand, gravel and well covers themselves, cement is generally procured centrally and distributed to regions by UNICEF and then to communes. However cement is generally available at '*commune*' level and often even in villages. Certainly the wide availability of ox carts and donkeys means that transport of materials over a few kilometres is not a problem (as it can be in countries with less animal power). Centralised procurement of cement causes many problems of transport (eg Sikasso where lack of budget for distribution to communes has led to delays in distribution). Perhaps even more importantly it de-motivates local traders from stocking cement and does not develop the links between local well owners/ communities and suppliers which can provide a real basis for sustainability.

Purchasing cement as it is needed rather than bulk purchase with long term storage may also reduce risks of low quality cement due to deterioration over time, and make the local entrepreneur answerable for the quality to the user. The indications are that more effort should be made to find ways in which local procurement could be developed.

6. CONCLUSIONS

6.1 Progress

Thanks to the drive of DHPS, the commitment of the regions and support of UNICEF considerable progress has been made. Indications are that it is possible to develop a greater willingness to invest in progressive reduction in health risks through the contributory elements of improved sanitation and water supply. There are now over 300 examples of this on the ground. Many districts have proved active in this and have motivated the *aires* (ASACO and CSCOM) and *mairies* to promote and market the idea beyond those with whom demonstrations are being made. It is beginning to be understood that success is not measured in the number of demonstrations made, but seeing the number of people who have copied at least some key elements of them. Most communes have noticed some copying and use of the trained masons to make supply improvements at users' own costs.

What is now needed is to establish what continued support is necessary to households so that up-take and incremental improvements continue. This should as far as possible be put in place during piloting in future, and so needs to be well defined now before much more piloting happens. It should mainly use capacity already in place (ASACO, local traders and artisans, mairies, women's groups etc) and be linked as far as possible with some incentive which comes directly from successful marketing. This principle is already established to some degree with the Sanplat production.

6.2 Harmonisation

An interest group was formed in May 2008 to act as a forum to discuss issues of Self Supply. This needs re-vitalising to become a '*cadre de concertation*' (CC) which could feed information to various government departments and to policy makers. It may need establishing formally (minister level plus UNICEF Residential Representative) or may be at a more pragmatic level. This '*cadre*' might be reproduced at regional level, with a regional representative at the national meetings.

Approaches vary between districts and organisations. Each can learn something from the other, but eventually there needs to be some convergence. Certain principles need to be established and should be defined during the national workshop. (see Appendix 1 for TOR/plan) and in discussions of the CC.

6.3 Documentation and information sharing

There is a significant lack of documentation of what has been achieved and of the processes and impacts. Water quality which is a key barrier to acceptance of Self Supply by water sector professionals has not been monitored specifically to show how improved and traditional sources compare with accepted technologies. In addition, what little information there is seldom shared with others. The CC should ensure that this situation changes and encourage its members to document and share information more effectively.

6.4 Evaluation of Impact.

Following on from the supervision visits scheduled, there should be a formal study of the impact and effectiveness of the piloting so far. This is needed urgently to test the validity and potential of the approach within the context of Mali before spreading to more communes and developing the support needed after piloting. Suggested indicators are outlined in Appendix 2. The results of the study would indicate any necessary modifications to the strategy. The experience gained so far is not only of value to Mali itself, but also many other countries considering whether to adopt the approach, in which Mali is a leader.

APPENDIX 1 DRAFT PLAN FOR NATIONAL SELF SUPPLY WORKSHOP

(or Software approaches to diarrhoeal disease risk reduction)

Suggested participants (total around 30-35) – DHPS (3), DNH(1), Assainissement (1) UNICEF(2) + 2/3 from regional offices of Koulikoro and Ségou, WaterAid(2), Oxfam (1), Winrock (1), JIGI (1), AMPDR (1), Børne fonden (1?), Helvetas (1), Plan (1), WV (1?), Save the Children (1?). DRS/ Tech Sanit. From key focal areas – Kolikouro/Dioila- Kolokani-Kangaba-Banamba-Dialokoroba (6), Segou/ Bla/ Niono (3), Sikasso/Yorosso (2)

Suggested time 4.5 days.

Objectives of workshop.

1. A common view of what Self Supply means in the context of Mali,
2. Awareness of differences in approach being adopted, and different applications (supply up-grading/ treatment/ sanitation).
3. Way forward/plans (especially for how to develop the continued support after demonstration), workshop recommendations.

Session 1. PRINCIPLES

What are our objectives with Self Supply? (Plenary discussion)

How are they being achieved at present? Presentations UNICEF/DNS/ DRS Kolikoro/ Ségou/ WaterAid /NGOs. Results of the evaluation study.

Discussions on different approaches and elements to take from each.

Summary – definition of aims, differences in approach, gap to be bridged (between principles of Self Supply and SS on the ground) . Self Supply as one of four elements of the Minimum Package for Risk reduction

Session 2. TECHNOLOGIES

What technologies do we include? (include presentations on ‘*javelisation*’ units, rainwater harvesting (WaterAid Mopti), rope pump (Winrock), and possibly small solar panels (Ji Duma – Daniel).

What should be the principles of any designs? How can each be broken up into small steps. (each district to bring photos of their basic designs (or take from Sally’s file of photos)

What do we not know enough about? (eg how to reduce costs, need for re-inforcing etc)

Summary

Technologies included in ladder, who is developing what and who will fill gaps – eg reducing unit costs, working with DNS on standardisation and delivery of local javel, costing of systems on the ladder.

Session 3. MARKETING/ PROMOTION

Who will do this and how in the short and long term. (ASACO/ mairies, with support from district level and regional supervision. – other groups eg, women’s groups,)

What training is needed at the start and after piloting to provide skills in changing attitudes, up-grading wells in steps, providing advice on finance/linking to financial systems, and sources of skills and technologies.

What information materials do we need/ have/ not have?

Could exchange visits between communities help?

Summary.

Different routes for promoting/ marketing, how to combine them for maximum and continuous impact

IEC materials for training and promotion – what still needed and how to develop it

Session 4. FINANCING

How can people pay? How much support should be given and in what form? What links need to be strengthened? (Presentations by JIGI and others who are involved in micro-credit on systems which have worked. Dioila also has experience of different ASACOs finding different ways to raise funds)

Summary.

Levels of subsidy/ no subsidy/ credit systems. The principles to be adopted and how to spread this to others, so that highly subsidised/ high cost up-grading does not kill users own initiatives? The same problem with Sanplats... is there any way in which this can be avoided?

Session 5. MONITORING

Objectives of monitoring.

What to monitor, when, and who will do it?

Base-line information, progress monitoring and impact/ effectiveness

Aims of water quality monitoring and how to provide more focussed data.

Analysis of project dependence. i.e are systems being set up operable within the capacity of villages and government funds. What elements need to change and how to ensure sustainability.

Session 6. WAY FORWARD AND RECOMMENDATIONS.

Plans for 2009. Partnerships, focal areas, plans. Principles to be adopted (even with flexible approach), and identification of districts with most potential. Responsibilities each organisation will take. Formation of Interest Group / *cadre de concertation*, and plan of subsequent meetings, especially for design of study on real evaluation of impact and lessons learnt.

APPENDIX 2 DRAFT PROPOSAL FOR MONITORING/SUPERVISORY STUDY IN APRIL 2009.

1. Objectives.

To establish what progress has been made in Self Supply activities. Aspects should include -: the successes, failures and constraints, and the degree to which the approach is regarded as acceptable/ relevant at all levels (from national/ regional to user/ household).

The results would be presented at the national workshop and would form the basis of some of the discussions.

The study should come up with recommendations for the way forward and required further training and information needs.

2. Some suggested points of discussion for the study.

2.1 Regional and district levels

- Focal areas selected for Self Supply piloting and reasons chosen
- Training given to districts, commune levels. and masons
- Results achieved so far – numbers, costs, materials
- Constraints
- Strengths to encourage
- Weaknesses to be addressed.
- Degree to which the piloted activities are relevant in other districts/ communes (proportion of region or district thought to be suitable).
- Any interest shown by other areas/ communes/ districts wishing to be included?

2.2 District level.

- Availability of operating water quality analysis kits (bacteriology/ chemistry)
- Water quality data available
- How could data be made more relevant to assess impact of improvements and household water treatment needs/ practice.
- Water quality data which could be collected during monitoring visits.
- District identification of training requirements.
- Depths to water in district
- NGOs working in the district whose approaches may assist or conflict with those of Self supply
- History, if any, of supply up-grading (ie other previous interventions and whether 100% subsidised)
- Why do they feel Self financing would/ would not work in their district?

2.3 Commune/aire level,

- Water supply situation (ie handpumps existing/ functioning, puits à grand diamètre (PAGD)etc). Any record of numbers of traditional wells, improved and unimproved
- Degree of dependence on traditional wells and PAGD. Level of traditional source use 1/ 5 households, 1/ 20 households, 1 per village, few, none.
- Degree to which traditional wells used for other purposes (animal watering, gardens, shea bean processing etc).
- Incidence of diarrhoeal diseases/ cholera
- Availability and use of javel for household water treatment, and well chlorination practiced?
- Responsibilities taken by ASACO, Médecin Chef /CSCOM, *mairie*.
- Ways in which ASACO or others have facilitated well improvements and 'sensibilisation'

- Access to finance to help with sand/ gravel, moulds, or credit for Sanplats or *aménagement*.
- Number of masons trained, number still operating
- Number of wells improved in piloting/ demonstration
- Number of others asking to do the same ... communities or individuals?
- Number who have raised necessary funds (how much?), and those who have arranged their own improvements
- What further support is needed for activities which would not be subsidised
- Plan for water quality monitoring during supervisory visit.... Mix of supply types (PAGD, P am, P Trad).
- Successes
- Constraints and ways to get round them.

2.4 Masons.

- How do they view the training they had? What was most useful and what was unnecessary?
- Is the equipment provided sufficient/ relevant to the job
- Is cement/ cover/ sand/ gravel/ pulley available locally?
- What do they think of the 'prototypes' and what further improvements do they think could be made?
- Is the cost of prototypes proving affordable to individuals/ communities
- Could costs be reduced?
- Could credit be accessed by well-owners? If so, where?
- How many requests have they had to come and improve other wells (private and community requests). How many of these have already been implemented?
- Has anybody else copied some of the features (if not all) of the prototype since these were constructed? If so what, and how many?
- Has their skill in 'aménagement' increased their workload? Do they see a market for this? If so how would they promote it?
- Is the suggested payment enough to cover their costs? On the open market would they be able to ask for more, without losing all their customers? Are they paid in cash only or also in kind?
- What further training would they like to receive?
- Successes and constraints/ failures

2.5 Well owners/ well sites. (both prototype and copies)

- Prototype or copy?
- What improvements have been made and are they pleased with the results?
- Since the improvement are there fewer/ the same number/ or more people using the well
- Uses of water before and after improvement
- Has the improvement made any difference to them/ family/ women/ children
- What did they pay/ contribute to well improvement?
- How did they raise the cash??
- Have they ever accessed credit/ savings for any family/ community project? From where, how much?
- Has anyone asked them how to do the same improvements, and what advice did they give
- Ideas of any further improvements.

APPENDIX 3 FORMULAIRE PROVISOIRE - INVENTAIRE DES SOURCES D'EAU

Locators -

Région		Village	
Cercles		Quartier	
Commune		Famille	
GPS	E.	N.	

A. Type de source

A1. Désignation (x)

1. Pompe à main/Forage (F)		
2. Puits moderne/grand diamètre (Pm)		
3. Puits traditionnel amélioré (PtA)		
4. Puits traditionnel aménagé (PtAg)		
5. Puits traditionnel		
Autre (préciser).....		
A2. Profondeur à l'eaum	

A2 Changements effectués pendant les derniers mois

Détails.

.....

Ou rien

A. 3 Condition des éléments (x)

Élément	Aucune	Bonne	Moderée	Mauvaise	Commentaire
Cuvelage					Profondeur au dessous de sol.....
Margelle					Hauteur au dessus de sol
Platform/aire de passage					
Rigole					
Puissard					
Couvercle					Fermé? Oui/ non
Suspensoire					Utilisé? Oui/ non
Poulie					
Puisette					
Corde					
Pompe					Fonctionne? Oui/ non/ quasi
Abreuvoir					Utilisé? Oui/ non
Lavoir					Utilisé? Oui/ non

A.4 Conditions autour du puits/ risques

	Oui/ non
Latrine à moins que 30m	
Possibilité d'infiltration de l'eau de pluie, ou le gaspillage dans le puits	
Présence de l'eau stagnante autour du puits	
Propreté du site autour du puits (Pas d'ordures, de selles, de débris, végétation en surplomb)	
Indications des divagations des animaux autour du puits	
Est-ce que le puits s'est tarié pendant l'année dernière?	

A.6 . Si la chlore est ajoutée au puits, combien de fois pendant les 2 dernières années.....Jamais.....fois.

L' acquisition de chlore était ...AchetéGratuit

B.1 Propriété et financement du Puits (O/N)

Puits possédé par	O/N	Excavation/ aménagement financée par -:	O/N
Individu		Individu	
Famille		Famille	
Chef du village		Chef du village	
Communauté		Les voisins	
Mosquée/église		Communauté	
Ecole		Mosquée/église	
Autres		Ecole	
		Autres	

B.2 Usages et accès à l'eau... avant et après l'amélioration.(x)

Usages	Oui/non - commentaires		Usages econ	Oui/non - commentaires	
	Avant	Après		Avant	Après
Boisson			Abreuvement		
Cuisine			Maraîchage		
Vaisselle/ Lessive			Construction de briques		
Toilette			Teinture		
Bain			Autres (spec)		
Autres					

B.3 Environ combien de familles utilisent le point d'eau avant et après l'aménagement ?. (X)

Plus		Le même nombre		Moins	

C. Indications de la qualité des eaux du puits

	Résultats
Code de la source	
Date d'analyse	
Turbidité	
Chlore résiduel (si chloration récente)	
Conductivité	
pH	
Nombre de colonies de coliformes fécaux	
Nombre de colonies de coliformes totaux	
Échantillons pris par	
Échantillon analysé par	

ANNEX 4 ELEMENTS OF SELF SUPPLY – A FRAMEWORK TO BE MODIFIED TO SUIT THE SITUATION

