Demand response approach in practice: why sustainability remains elusive

DISCUSSION PAPER

Paper written by:

Edward D. Breslin,
WaterAid Country Representative,
Mozambique

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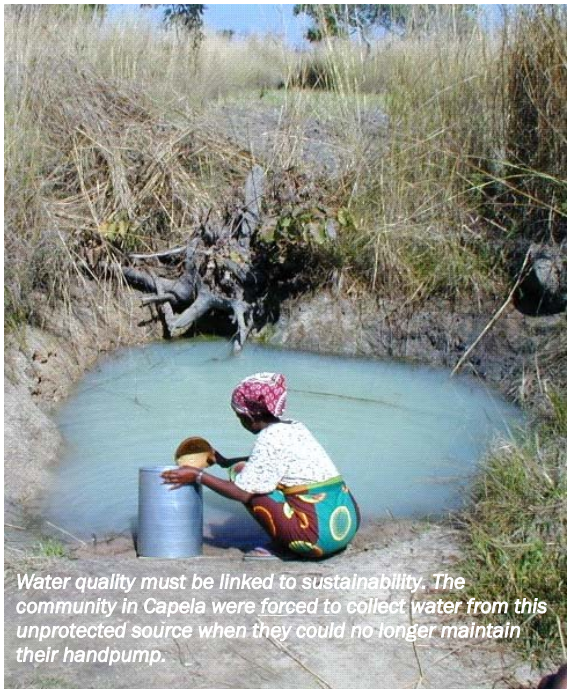
Introduction

In recent years, the Demand Responsive Approach (DRA) has become the cornerstone of government and donor water supply policies throughout the world. Funding proposals, Country Action Plans and Implementation Manuals are full of references to DRA, and it is hard to find international non governmental organisations (NGOs) or funding agencies that do not claim to be implementing projects based on this approach.

The shift from supply-driven water supply interventions to programmes focused on demand is easily understood. In general, supply-driven water interventions have not succeeded in providing poor communities with sustainable water supplies. Communities who simply receive a water point, and who play a minor or symbolic role in project implementation understandably do not feel a sense of ownership of the project. As a result millions of dollars have been wasted as communities watch schemes, implemented on their behalf, fall into disrepair.

In response to these problems the international water sector is increasingly trying to implement programmes based on a different approach. Instead of villagers waking one morning to find drilling rigs in their community, DRA-based policies mean that they must take the lead in water supply interventions. Communities have to demand improved services, play the lead role in the project, choose which facilities they want and how they want to manage them. They have to make meaningful contributions to their project in the form of cash, labour or in-kind contributions. And, in the long term, the communities must take responsibility for sustaining their systems.

Based on WaterAid's experience in the Niassa Province of Mozambique, this paper explores whether a DRA-inspired water supply policy necessarily creates conditions for more sustainable water supply interventions than traditional supply-driven models.



Water quality must be linked to sustainability. The community in Capela were forced to collect water from this unprotected source when they could no longer maintain their handpump.

WaterAid has been working in Niassa, northern Mozambique since 1996 with a range of governmental, private sector and NGO partners. WaterAid is supporting these partners implementing the Government's National Water Policy and Implementation Manual s (1999, 2000 and 2001) based on a Demand Responsive Approach[1].

These partnerships have given WaterAid unique insights in to the experiences and difficulties faced by a range of different water sector actors during the transition from supply-driven to demand-responsive approaches. The shift is not easy, and this paper highlights critical tensions that are emerging within the sector.

Niassa Province is located in the northwest corner of Mozambique and is the most sparsely populated province in the country (population of 809,800 in 1997). The province is characterised by poor infrastructure, a weak cash-based agricultural economy, and political and social isolation. Niassa has some of the highest poverty, illiteracy (particularly among women) and infant mortality rates and percentages of people without access to potable water in the country[2].

1. The key water sector documents in Mozambique are: *Política Nacional de Águas* (Direcção Nacional de Águas, República de Mozambique, Maputo, 1995); *Plano de Transição de Água Rural: Estratégias de Implementação da Política Nacional de Águas* (Ministério das Obras Públicas e Habitação, Direcção Nacional de Águas, Maputo, November 1997); Draft "Manual de Implementação de Projectos de Abastecimento de Água Rural", Departamento de Água Rural, Direcção Nacional de Águas, 1999 and 2000; and Final "Manual de Implementação de Projectos de Abastecimento de Água Rura", Departamento de Água Rural, Direcção Nacional de Águas, December 2001.
2. República de Mozambique, *Action Plan for the Reduction of Absolute Poverty 2001-2005 (PARPA)*, published in April 2001.

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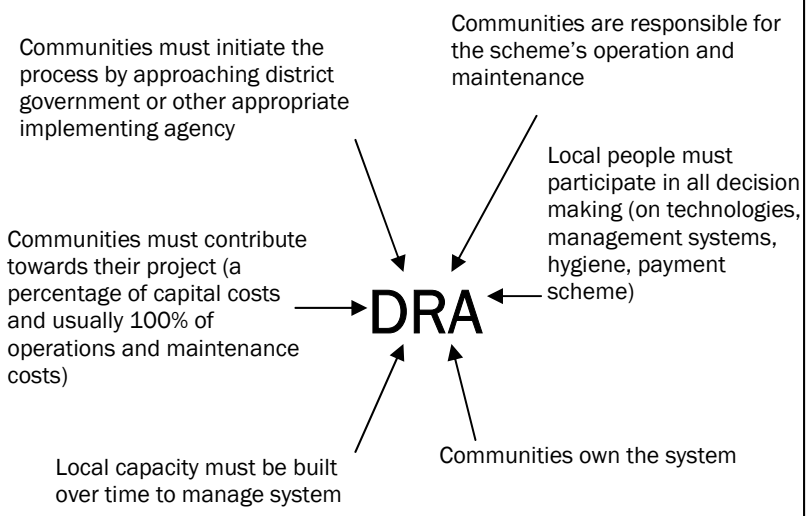
The international NGO dedicated exclusively to the provision of safe domestic water, sanitation and hygiene education to the world's poorest people.

BOX 1: Characteristics of DRA



The paper focuses on three areas. Firstly, it provides an overview of DRA, followed by an examination of Mozambique's switch from supply driven interventions to DRA-inspired policies. Secondly, it examines partner experiences in applying the new policy in five districts in Niassa over the past three years[3]. It questions which parts of DRA seem to enhance sustainability prospects within the context of Niassa and which parts need to be modified. The difficulties experienced with the transition are also explored, specifically looking at policies and practices that could undermine sustainability. The final section offers some conclusions on how DRA can be better supported in future, based on the lessons from Niassa Province.

The paper places sustainability at the forefront of the analysis and questions whether projects based on DRA are more sustainable than other models. WaterAid's experience in Niassa suggests that while DRA does offer advantages over supply driven approaches there are gaps and weaknesses with DRA that need to be understood and addressed. These insights are relevant for other countries and programmes attempting to enhance sustainability through DRA.

DRA in Mozambique – theory and policy

Both the Mozambican National Water Policy and Implementation Manual are based on the Demand Responsive Approach. The principles of DRA (summarised in Box 1) are that:

- Water is an economic and social good and needs to be managed as such
- Management should be focused at the lowest appropriate level, ie community or water point users
- Women are critical players and not just water collectors. As the main users, women generally respond much quicker to technical problems at water points, and have more capacity than is generally acknowledged within the sector. This capacity needs to be acknowledged and integrated into water supply services
- Water resources should be managed in a holistic manner

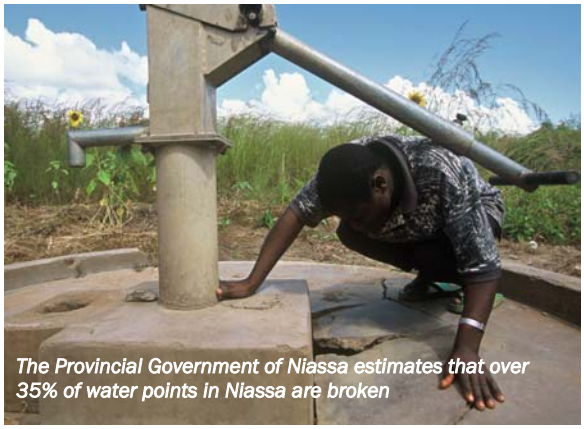
The basic aim is to enhance the chance for water supply service sustainability in the field. As such, DRA-inspired policies are being promoted by many donors in the belief that they will effectively achieve sustainable water supplies.

The failure of the supply driven model

Prior to the development of the National Water Policy and the subsequent Implementation Manual s, Mozambique's water supply policies were supply-driven. This approach did not lead to sustainable services for the following reasons:

- Government or donors usually identified suitable projects with little or no community involvement
- The only technology available was Afridev handpumps. The community's financial, technical, organisational and social means to sustain Afridevs were not considered
- Responsibility for water point siting was most often dependent on local politics rather than issues of access. Local leaders (male) insisted on water points near their homes. Families living far from the water point continued collecting water from closer, unprotected sources
- Communities were told to form a committee of two men and two women to manage the scheme. Alternatives were not considered. The committees lacked the ability to respond to technical problems and the influence to secure community contributions for spares, so breakdowns were common and committees were ineffective. The Provincial Government of Niassa estimates that over 35% of water points in the Province are broken. Some districts have much higher failure rates such as Macula where 90% of the pumps are broken down[4]

It is not surprising that people did not believe that a new water point was their system. Consequently, Mozambique has many broken water points



The Provincial Government of Niassa estimates that over 35% of water points in Niassa are broken

3. The districts are Maúa, Nipepe, Mandimba, Lichinga and Sanga
4. DAS- Niassa "Banco de Dados", 2002.

because communities do not consider water point failures their responsibility to resolve. Monitoring and evaluation work by WaterAid and its partners shows that over 80% of communities have never repaired their handpumps and the remaining communities either do not have the financial means to repair them or only did so once with the spares kits that were provided as part of the projects in 1998[5]. Many water points are only functioning because they have been rehabilitated by Government or other donors.

Broken handpumps by district
Source: DAS – Niassa Banco de Dados, 2002

Problem District	% Broken
Cuamba	38
Mecula	90
Marrupa	48
Maúa	40
Nipepe	37
Metarica	41
Ngauma	33
Majune	70
Mavago	65
Muembe	37
More successful districts	
Mechanhelas	12
Lichinga	22
Mandimba	16
Sanga	24
Lago	29

Changing direction: from supply to demand in Mozambique

The publication of the National Water Policy in 1995 demonstrated the Government's recognition of the problems with the supply driven model. Guided by project failures, lack of sector capacity and a need to transfer more responsibility to the communities, the new policy suggested a dramatic new approach to water supply in Mozambique.

The new policy and official Implementation Manual argue that communities are more likely to sustain their new water system if they:

- **Initiate the project themselves.** Rather then being given a project the participating community must request a project to show that they are interested in addressing their water problems
- **Make decisions** on technologies, management systems and hygiene programmes
- **Contribute money up-front.** Communities must contribute 2-10% of the total cost of the water service to demonstrate their commitment to the project and their financial and organisational capacity to sustain the project over time
- **Manage their system.** Communities must accept full responsibility for their water service by deciding on a tariff structure and paying all operation, maintenance and replacement costs

The Implementation Manual calls for the decentralisation of responsibilities from national to provincial and district levels, in keeping with DRA principles. Those closer to the project have a better sense of what is possible and sustainable than decision-makers further removed from the field.

BOX 2: WaterAid partners in Niassa

Government:
- Provincial Department of Water and Sanitation (DAS-Niassa), which has responsibility for water supply and sanitation development in the province. DAS-Niassa is located within the Provincial Directorate of Public Works and Housing (DPOPH - Niassa)
- District Directorate of Public Works and Housing in Maúa and Nipepe (DDOPH - Maúa and Nipepe), which is responsible for water supply and sanitation at district level

NGOs:
- ESTAMOS, which is implementing water supply and sanitation projects in the districts of Lichinga and Mandimba
- Ulongo – dance, theatre and cultural association

Private Sector:
- Supporting c10 private construction companies

CBOs
- Local Community Education Programme (PEC) teams in Maúa and Nipepe, made up of activists from the districts, financed directly by WaterAid

DRA in practice - lessons from the field

The challenge facing the Mozambican water sector is to transform the way programmes are implemented based on the new policy and Implementation Manual . To support this process, WaterAid and its partners (see Box 2) have been testing the Implementation Manual s in five districts in Niassa since 2000. Most of WaterAid's work in Niassa has been based on two draft Manuals (1999, 2000).

This section highlights some of the key lessons WaterAid and its governmental and non-governmental partners have learned through the application of the draft policy in these districts. It offers WaterAid's insights into whether DRA, as applied in Mozambique, is leading to more sustainable water services for poor communities.

5. Data collected as part of WaterAid's support programme, April 2001

Rope pumps like the one above, installed outside Lichinga, provide an additional option for communities in Niassa to consider.

Create demand, build trust and guarantee finance over time

Some government leaders in Mozambique fear that the shift from a supply driven approach to a demand responsive approach may lead to a dramatic decline in the number of communities serviced per year. A common argument is that a long time is needed for communities to understand the policy and express demand. Coverage rates are only 36.6% in Mozambique, and a programme that undermines delivery in such a context would be politically and morally misguided[6].

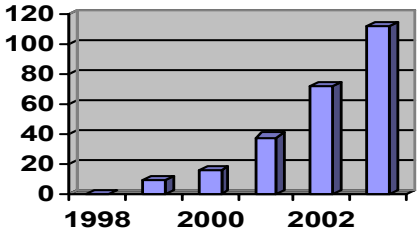


Figure 1: Water points requested in Maua and Nipepe

This is a legitimate worry but is not demonstrated by WaterAid's work in Niassa. The district-based programmes have grown considerably since 2000 when the policy was first introduced by WaterAid partners. Demand for improved water sources has increased dramatically at district level, as Figure 1 on Maúa and Nipepe suggests. The demand has in fact outstripped previous targets set by provincial government for these districts. This suggests that, where communities have to express demand for a project, the percentage of people unserved by improved services is likely to be reduced far quicker than is possible with the supply-driven approach.

A number of critical factors explain this trend. Funds for the work supported by WaterAid have been guaranteed to the districts over a relatively long period of time. This has raised the confidence of district government and so local officials are proactively helping to create demand. Our experience suggests that districts will be able to manage the demand if long term funding is guaranteed. Community confidence in the process has grown over time. More communities are inspired to approach government because they can see results in other villages and understand that government will respond to their demands.

WaterAid's experience suggests that multiple communication channels for both demand creation and community demand expression are valuable and should be encouraged. Simplified messages and procedures are best. These include:

- **Radio**: simple messages on how to apply, coupled with stories told by local people on their project experiences
- **Drama:** a drama has been developed that explains the principles of DRA in a simple, yet compelling way. The drama looks at issues of applications, community contributions, choice, roles and responsibilities
- **Involving traditional leaders**: workshops have been organised with traditional leaders who are influential in Mozambique, and are an invaluable resource for the programme
- **Exchange visits:** communities interested in participating in the programme visit villages that have already taken part and this facilitates the sharing of information

This model of demand creation, enhanced community trust through effective responses to their requests and guaranteed finance over time seem to lead to increased demand and increased coverage rates. However a number of factors threaten this process.

WaterAid's experience suggests that district capacity must be strengthened to ensure that community requests are encouraged and responses assured. Investment in government structures is needed so that demand can be created, heard and managed. However, many donors are implementing policies that strip the state, including local government, of its responsibilities at precisely the time when it needs to be enhanced. On-going visits by the government are essential to gain and keep the communities' confidence, particularly once they have made a formal request for support.

Currently, government and donors still tend to control the programme selection process. WaterAid's experience has shown that when communities actively seek a project themselves, it creates a greater sense of urgency, ownership and commitment than in villages selected by donors or government. Both government and donors must relinquish their control over the selection process to ensure this enthusiasm continues.

There is a pressing need to co-ordinate funding, linked to strategic water supply planning to ensure the demands made can actually be met. Communities and both district and provincial government will be unwilling and unable to truly promote the programme without proper funding in place. WaterAid's view is that a lack of sector

6.Rural coverage data is cited in the "Draft Review Report of the Mozambique Water and Sanitation Sector for the African Development Bank" by SEED LDA (22/12/01). The report adds that "the review team has serious reservations about the veracity of [these] figures" (SEED: ii).

coordination lies at the heart of the financing in Mozambique problem rather than a lack of funds. For example Niassa is scheduled to receive c. US$100,255 from the Central Government in 2003 for improved water supplies, US$1,225,000 from WaterAid and Ireland Aid, and smaller amounts from other donors (such as Oxfam Belgium and FDC). The African Development Bank (ADB) will also start a large programme in Niassa in 2003. The funds from Ireland Aid, WaterAid and the ADB are guaranteed for the next three to five years. State funds are allocated annually and they too are assured. If well coordinated, this amount of finance could be used to stimulate demand in each district in accordance with the Government's DRA-inspired policy as applied by WaterAid's partners over the past three years.

However, while the funds do exist, strategy and coordination within the sector does not. Many of these funds continue to be allocated on the supply driven model and some districts are not targeted for support. Instead, a set number of projects per districts are allocated and communities simply chosen by district administrations. A strategic plan should be developed, based on DRA, that different donors can then finance together.

Finally, the greatest threat to this process may reside in water point costs. In 2002, WaterAid and the Provincial Government constructed a series of water points around Lichinga to ascertain the costs of different types of systems. A workshop was then held with eleven private companies and Água Rural to discuss the material and additional costs (such as contingencies and administrative and staff costs) required to implement a water project. Transport costs were calculated for Nipepe, which is the district furthest from Lichinga that WaterAid finances[7]. Profit was set at 20% of the total cost of the hypothetical project. The total costs for a water point in Nipepe were estimated at:

- Protected well: US$1167
- Afridev handpump: US$1923[8]

Private companies then bid on 67 contracts for Maúa and Nipepe. All the winners either bid at these rates or lower. At the conclusion of the process one private company was able to purchase a lorry as they felt the profit they had made was sufficient to invest in new equipment. In comparison other projects much closer to Lichinga have been financed by Government and donors at double these rates. Handpumps are generally financed at US$4000 when the true cost is less that US$2000.

Government leadership on this issue is desperately required so that the finance available can be allocated most effectively to needy communities. Community demand can be met with the finance available to the province if efforts are made to clarify costs. If donor and government funds were better coordinated and brought in line with national policy, districts could stimulate demand. WaterAid's work suggests that coverage targets could be exceeded if communities were encouraged to voice their demands and construction costs made more realistic.

BOX 3: Technology options in the final Implementation Manual

- Handpumps (only option being promoted and financed now is the Afridev)
- Protected springs (available in only certain parts of Mozambique)
- Rainwater harvesting systems (do not supply water year round and water quality issues are significant)
- Small piped systems (unaffordable and proving to be unsustainable in many towns let alone rural areas)

Who decides on technology?

Technology choice is a key component of DRA internationally and this was recognised in the draft Implementation Manual s of 1999 and 2000. Both drafts included several options including hand-dug wells with **or without** a handpump. This meant that protected wells with a windlass and dedicated bucket could also be considered along with Afridevs and other handpump options.

Mozambique's policy argues that technologies need to be matched to the needs and capacities of local communities and that community groups themselves are best placed to decide what is most appropriate for their particular context. This is fundamental to DRA.

The problem with the supply driven approach applied in Mozambique in the past was its reliance on one technology, the Afridev handpump, for hand-dug wells and boreholes. While these are excellent handpumps, which, when maintained properly can provide valuable service to communities for over ten years, they are expensive to maintain and require access to spares that are not locally manufactured. The economy in Niassa is weak, cash is limited and spares are generally unavailable. As such, abandoned Afridevs litter the countryside. The National Department of Rural Water (DAR) recently estimated that US$28 million has been lost by the sector, as 35% of water points financed are now broken, although water point failures are generally under-reported[9].

Since the expansion of technical options, protected wells have become the favoured choice of communities through the districts supported by WaterAid partners. They are inexpensive to

7. The distance from Lichinga to Nipepe is 548 kilometres. An additional 100 kms was added (to the furthest point in Nipepe) to arrive at a figure that would be the absolute maximum cost of a water point. Transport was therefore calculated on a single trip being 648 kms. It should be noted that there are only 2 districts (Mecula and Marrupa) that would be further from Nipepe, and thus more costly.
8. Água Rural indicated that they accepted that all the costs were correct but that they had ~70 staff members in contrast to the smaller private sector companies involved. Água Rural is trying to shed staff to become more competitive in an open tendering environment.
9. Princípio de Procura – Department of Rural Water, Maputo, 2002

BOX 4: The case of Chimbonila

Chimbonila, lies within 25 kilometres of the provincial capital of Lichinga, and is serviced by a tar road. It is, in many respects, unusual for Niassa as population density is high, families have better access to resources and income than others living in more isolated parts of the Province.

In 1998, WaterAid financed eight water points with Afridev handpumps. In 2000, four of these water points were rehabilitated. In February 2002, the Projecto de Desenvolvimento Agrário de Niassa (PDAN) installed a further Afridev on a borehole near the Administrative Centre of the town. At the time of writing, only the new borehole and one other water point are operational. The others have failed because the operation and maitenance teams have been unable to secure enough funds to repair the water points. Some water points have been vandalised and one has been stolen altogether. Most members of the community have given up on the project.

The main reasons for project failure are:

- Users of the water points cannot collect sufficient funds for spares
- Most community members do not consider the project theirs, as the water points were imposed on the community

When this community could not repair their handpump they removed it altogether to collect water from the open hole, creating a health hazard. Sustainability is the key.

maintain, simple technologically (they do not require special equipment or complex training), and are easy to sustain as communities can buy ropes and buckets from almost any private sector merchant in the province. Many communities asked for their broken handpump to be replaced with a protected well as they, understandably, would rather have a regular and reliable supply of water that they can sustain than a handpump that supplies higher quality water but is unreliable and too expensive to sustain over time.

Evidence on project sustainability supports this. WaterAid has financed 146 protected wells, 139 handpumps and 55 handpump rehabilitations. After three years, only two protected wells have fallen into disrepair because of technical problems that the community should repair[10]. During the same period, 32 of the 39 handpumps financed by WaterAid (since 2000) are experiencing technical problems or have broken. Communities are not sustaining Afridevs.

In an environment that has historically been characterised by failed water points, the evidence that protected wells are being maintained and provide communities with improved water supplies (compared to polluted rivers and swamps) is good news. WaterAid's experience in Niassa suggests that technology choices should be offered, and that programmes that allow communities to decide which technology is best for them are preferable to programmes where sector professionals decide instead.
Unfortunately, the current version of the Implementation Manual has narrowed the technology options. Protected wells, that were allowed in the draft Manuals, are no longer available to communities. The two previous drafts of the Manuals stated that the level of service must conform to the economic and organisational capacity of the community. The final Manual has ignored this position, despite clear evidence of weak economies in Provinces like Niassa, sustained protected wells in Niassa, the inability of communities to sustain Afridev handpumps nationally as well as the dearth of handpump spares or cash to buy them.

WaterAid's experience has shown that less choice means less sustainability, as is evident from years of supply-driven programmes. DRA should enhance sustainability prospects for poor communities. By disallowing protected wells the final Implementation Manual effectively eliminates low cost sustainable options for communities that are organisationally weak and impoverished. As discussed further below, this goes against the DRA-inspired policy that states that communities are 100% responsible for the operation, maintenance and replacement of their water supplies.

The Government's arguments against protected wells tend to focus on issues of water quality. The Government is concerned that protected wells can be easily contaminated by litter, debris and most importantly diseases such as cholera. The National Directorate of Water is worried that a person with cholera will touch a bucket that, when lowered into the well, will contaminate the well with cholera and cause a broader outbreak in the community.

While this concern is understandable, it is important to bear in mind the realities communities face in sustaining their water supply. A well maintained, protected well is better than a broken handpump. Where communities cannot sustain a handpump, as is often the case in Niassa, people are forced to collect their water from polluted rivers, streams or swamps. Community disease will not be reduced until families have access to a safe and sustainable water service.

In fact, evidence shows that water quality in protected wells with a dedicated rope, bucket and windlass is quite good[11]. Government water supply departments in Zimbabwe, Zambia, Malawi and South Africa now consider protected wells to be a legitimate technical option.

BOX 6. Numbers of water points and different technologies financed by WaterAid in Mozambique since 1996:

- 139 Afridev handpumps
- 55 Afridev rehabilitations
- 146 protected wells
- 2 Nicaraguan rope pumps
- 1 small piped system
- 1 rehabilitated public tap

Box 5: Water quality in Malica

Water quality tests over a six-month period showed how water quality has improved with protected wells. In one village outside Lichinga, the community handpump had broken and was then stolen. A series of protected wells were installed in the village and have been maintained ever since (new buckets and new ropes have been purchased and installed for instance). The results showed that:

- Rivers and swamps where residents had been collecting water before protected wells were installed had more than 300 cfu (representing faecal coliforms)/100ml.
- Open well where a handpump used to stand and was then stolen, leaving an open hole (see photo above). This site was used by people before protected wells were installed in the village. Water quality readings at this site had too many cfus to count
- Protected wells with windlass and dedicated bucket never had more than 4 cfu/100 ml over a six-month period, well within Mozambican water quality standards

10 Some wells and handpumps ran dry because of the drought that has hit southern Africa. WaterAid has purchased a jackhammer and is now deepening wells financed in the past as this is viewed as a problem outside the responsibility of the community

11. See K Nyundu and S Sutton (2001). Community led improvements to rural water sources. P Morgan, E Chimbunde, N Mtakwa and A Waterkeyn (1996). Building on Tradition - Zimbabwe's shallow wells in *Waterlines*; S Sutton "Main Findings" from *Community-Led Improvement of Drinking Water Supplies*, *DfID KAR Study*, and *Upgraded Family Wells in Zimbabwe: Household-Level Water Supplies for Multiple Uses*, (2002). World Bank Water and Sanitation Program *Blue Gold Series*.

Cholera is endemic in Mozambique because sanitation coverage is extremely low and people are collecting water from polluted rivers and streams. However WaterAid's experience suggests that cholera outbreaks are occurring where improved water services have failed. For instance, in the town of Cuamba, WaterAid is working with partners to contain a cholera outbreak in two bairros where Afridev handpumps have broken down, forcing residents to collect water from contaminated sources[12].

Some government and donor representatives also argue that communities should not be given a wide range of technical choices because they are unable to make an informed choice. This highlights the discomfort many leaders feel with losing control of the decision-making process and perpetuates the commonly held view among sector professionals that communities are uneducated and ignorant. This claim not only goes against development experience worldwide but also undermines DRA in general.

Communities are better placed than governments and donor officials to decide which technologies suit them best. They have a greater understanding of the local environment, capacity, politics and economy as well as a practical understanding of the health risks from living without a safe water supply.

Sustainability will remain elusive in Mozambique unless government allows other technologies to compete with the Afridev. The debate is not about protected wells but about lower cost options that are sustainable for the poorest communities. Policy should be guided by what has proven to be successful in the field. Rather than limiting options, national Government should be actively promoting a wider range of options that are sustainable for even the poorest communities.

Capital cost contributions need to be linked to issues of sustainability

In Mozambique communities are expected to pay 2-10% of the cost of their water supply systems. Capital cost contributions are an integral part of DRA as they are meant to indicate the financial and organisational capacity of communities to sustain their water points, in theory revealing:

- **Interest and ownership:** a community that contributes to the up-front cost of a water system is considered to be demonstrating their interest and commitment to the project. By actively participating and contributing communities are making a choice over other competing needs, showing that water supply is a priority for them

- **Organisational capacity:** communities are showing, by their actions, that they have the organisational capacity to arrange their contribution. This is an indicator that suggests that the chosen organisational structure will be able to organise funds in the future, and resolve any future technical and social problems that may emerge. Capacity gaps can be addressed at an early stage, rather than later on when external support has been withdrawn.

- **Finance for spares in the future:** capital cost contributions show that the community can gather a relatively large quantity of funds, which suggests they can do so again in the future when they need to pay for spares. This is therefore an indicator of a community's capacity to financially sustain a system over time once external support is removed.

The question is therefore clear - do communities who make a contribution to their project actually sustain their water points over time? Obviously it is too early to tell whether communities who have been supported by WaterAid partners over the past three years will sustain their water points for the next decade. However, important insights have emerged that suggest that capital cost contributions may not achieve the desired results as suggested in DRA and as set out in the National Water Policy and Implementation Manual in Mozambique. WaterAid results suggest that capital cost contributions need to be reconsidered.

Many within the water sector in Mozambique argue that communities are too poor to make cash contributions. Instead, communities are asked to make in-kind or symbolic contributions to show

BOX 7: Support Provided to DDOPH by WaterAid

WaterAid support to district government in Maúa and Nipepe now totals c.US$4,000/ year and has included:

- The purchase of a car and a motorcycle
- Basic office equipment (computer, solar panels)
- US$30/month for administration
- Field costs (diesel for transport, money for field expenses)
- Training support

Results have included:

- Increased understanding of sustainability issues within district government
- Increased community demand for improved services
- Better quality construction and thus better services for the poor
- The broad and effective application of government policy
- Innovations in capital cost policies, technological designs, and community management systems

Marietta Remula collects water from a well maintained protected well with bucket and windlass in Multa village. Note the older cords on the windlass. These show that Multa residents have replaced the cord three times already and is solid evidence of sustainable management by the community.

12 In 2001, a cholera outbreak occurred in Maúa and Nipepe. None of the communities with protected wells in these districts were affected, although numerous communities with broken handpumps reported cases of cholera.

BOX 8: Conflict in Lichinga

Communities as a whole almost never contribute labour. Instead individuals within communities contribute labour on behalf of the community. Unfortunately, this often leads to conflict as people who excavated a well as a contribution (ie without payment) feel that they have contributed more to a given project than others in the village.

In a small village outside Lichinga, a conflict emerged because the families who supplied the labour felt it was unfair that others benefit from the new water point when they contributed nothing to the project. The conflict boiled over, and led to the vandalisation of the water point as families who paid with their labour tried to block other families (who contributed nothing) from collecting water from the "community water point". The project was eventually abandoned.

Although this is an extreme example, WaterAid has found simmering conflicts in almost all villages where some paid with their labour and others did not.

interest and commitment to the project. These include labour, materials like stone, sand and water, and agricultural products.

WaterAid partners have explored commonly applied in-kind contributions and found them to be of limited value in answering sustainability questions. It is true that communities who make some form of capital contribution feel a greater ownership of their system and this is an important improvement over supply-driven programmes. Yet, in-kind or symbolic contributions that have no relationship to sustainability issues say little about whether the community has the financial and managerial means to sustain a water point over time. For instance, the fact that members of a community can dig a well does not mean that that the community will be able to collect the necessary funds to repair a broken handpump when needed. Symbolic contributions are of little value when communities need to repair broken systems. Moreover, as suggested in Box 8, in-kind contributions can lead to conflict at local levels.

Better models are needed if capital cost contributions are to increase the likelihood of sustainability as intended. A poor community needs information about a range of technology options so they can decide which systems they can sustain.

WaterAid and its partners are now experimenting with alternative models that look for community contributions that are related to their system's sustainability requirements. For example if a community chose an Afridev handpump, a good sustainability indicator would be a contribution of a rod, a PVC pipe, a foot valve, a complete spares kit and a sack of cement (needed to fix cracks in aprons). Likewise, if a community can purchase two ropes, a guide box and a bag of cement then this is a useful, although not perfect, indicator that it can sustain a rope pump over time. If a group can show it can access local funds and purchase the materials needed to sustain a particular technology this gives a better indication that the community can sustain their system than if the community simply dug a well.

Community contributions which are linked to what is required to sustain a particular water point gives the demand responsive model more meaning to local communities. Communities learn, through the purchase of these goods, what is required to sustain a given technology over time. They learn about where they can access materials, about pricing spares and about justifying community costs. Local groups can then make a more informed choice on whether a given technology at the beginning of a project then the long term sustainability of that system is doubtful.

Project rehabilitations and sustainability

Government policy states that communities are completely responsible for the operation, maintenance and replacement of their water services. However in practice, government and donors (including WaterAid) consistently undermine this objective by repairing broken water points.

The original idea behind rehabilitating water points was that many handpumps had been destroyed during the war. These types of rehabilitations are now complete and yet other project rehabilitations continue. There are other justified reasons for rehabilitation. For instance, some broken handpumps are of bad quality or have been installed incorrectly or at too shallow a depth by a either a private sector company or by Government's Água Rural. In these cases it is unfair to expect communities to make capital cost contributions and then receive a substandard piece of equipment or a water supply that does not function.

However rehabilitation work is often taking place where the water points have failed because communities cannot sustain them, not because of poor quality installation. The Government's own policy of enhancing ownership and responsibility through DRA is therefore being undermined. Government's policy will never be realised in Niassa (and Mozambique in general) if communities know that government or donors will eventually come and repair their broken water point.

WaterAid's experience suggests that a clear decision relating to operation, maintenance, responsibility and technology should be made to clarify this situation. If government wants to support a policy where communities are entirely responsible for operation, maintenance and replacement then project rehabilitations should be stopped and technology options must be broadened to allow communities to choose an option that they can sustain.

This will require a change in policy that reflects the reality on the ground, and would be warranted given the fact that there are legitimate reasons why 100% community operation and maintenance responsibility is unreasonable in Mozambique. Furthermore, a changed policy would reflect the reality that few communities will ever be able to replace a water point that has run its course. Funds need to be allocated to this process in an open and transparent way to ensure that

rehabilitations for just reasons occur rapidly and effectively.

DRA advocates may resist such a change in policy, but the operation and maintenance part of DRA is actually unrealistic. The idea that communities in poor countries can or should be 100% responsible for operation and maintenance and replacement is unreasonable in practice. No country in the world actually makes communities 100% responsible for operation, maintenance and replacement, and our experience suggests that DRA is somewhat overstated in its zeal for 100% community operation and maintenance responsibility. Water supplies are heavily subsidised in the USA and Europe, where water is artificially low in cost and where new water systems and upgrades to existing systems are always done with state funds. This is done on the grounds of public health and development, and is as equally relevant in Africa, Asia and South/Central America as it is in United States[13].

Serious Implications of an un-enforced policy

The biggest problem with DRA in Mozambique is that both donors and government are not following the national policy. For instance the Government's Água Rural continues to apply supply driven models and many donors simply ignore the policy. As the Government is undermining its own policy, others quickly follow suit and ignore it.

Government officials have cited lack of sector capacity and the need to wait for lessons from a national pilot project run in Inhambane Province with finance from the World Bank to explain why they haven't applied the new policy nationally. However WaterAid's own programme experience suggests that capacity is built by applying the policy. The policy will only become alive when it is applied, when lessons are learnt and when the policy is modified based on concrete field experiences. Likewise lessons from the pilot project, which could inform practice in other parts of the country, are not being shared outside of the programme. These lessons may not be applicable in Niassa or other regions with different geology, infrastructure, financing and capacities.

Models from a range of provinces and government commitment to its own policy are now needed to go forward.

The lack of consistency has already led to confusion, conflicts, projects collapsing and communities not receiving improved water supplies. The results of this confusion between policy and government/donor practices are easy to see. WaterAid's partners have been applying the draft policy for three years with the support of National Government. Yet, problems emerge when WaterAid partners have tried to implement projects in districts where other donors or even the government were not applying the policy. For example in the district of Sanga, eight water points had to be abandoned in 2003 because of conflicts over capital cost contributions[14]. The conflict was not over whether the community could pay. The projects collapsed because the communities correctly argued that neighbouring communities had just received handpumps with no contribution at all and that is was unfair to ask them to pay when others had not. With reason, these communities then refused to participate and have consequently seen no improvement in the water supplies despite expressing demand for improved services. In this case WaterAid's partner was implementing the national policy, while others in the area were not.

Similar problems can be expected in future, for example arising from the forthcoming African Development Bank (ADB) initiative in Niassa and Nampula. The ADB Implementation Manual is in many senses more complex than the more complex than the National Implementation Manual as it allows communities to consider protected wells as a technical option. It also asks communities to apply for water projects in writing which is an alarming and unnecessary bureaucratic step in a province with such poor infrastructure and high illiteracy rates[15].

The danger is that multiple policies will be applied in the same province or districts leading to confusion and allowing implementing agents to apply only selected parts of some policies. These decisions will most likely be based on what is easiest for the implementing agency, not on what is required for sustainable water supplies. Communities in the end will lose out.

Conclusions

WaterAid's experience suggests that the DRA-inspired policy of Mozambique offers considerable advantages over previous supply-driven approaches. Projects are being maintained better, and communities have a greater sense of ownership of their water points than has been the case in Niassa in the past. District and provincial

13. The option of the Government abandoning DRA and supplying and operating handpumps on the grounds of public health, community poverty and development (as is being argued in South Africa with the "free water" campaign) is not considered in this paper.
14 All the communities had chosen Afridev handumps
15. República de Mozambique, Ministério de Obras Públicas e Habitação (Final Version, January 2002). "Integrated Water Supply and Sanitation Project for the Provinces of Niassa and Nampula: Project Implementation Manual".

capacity to monitor and promote the Government's policy has been secured through a funding arrangement that creates security and confidence. Health improvements are possible if not yet proven, and new community management models are being developed and tested that seem to enhance community control. In addition, costs have come down, meaning that more communities can be serviced than was considered possible in the past, even if budgets stagnated over time.

WaterAid's experience therefore suggests that DRA can lead to more sustainable projects but that it is far from perfect at theoretical and practical levels. Proponents of DRA therefore need to reconsider or fine-tune aspects of DRA based on WaterAid's experiences in Niassa. In summary, these modifications would include:

- Demand needs to be generated proactively. This can be supported by enhancing community trust through rapid and effective responses
- Reconsider financing issues so that support to districts and provinces is long-term and sustained
- Communities must be allowed to choose the technologies that suit their financial and social resource capacities
- Linking capital cost contributions to sustainability issues, and thus moving away from generalised percentages of finance required from communities. A better approach would be to clarify what is required to sustain each particular system on an annual basis and ask communities to contribute at least that to the project. The contribution could be cash (for systems that require on-going payments like a motorised scheme) or specified spares for systems that require on-going but somewhat irregular interventions by operation and maintenance teams
- Expecting communities to pay all operation, maintenance and replacements costs is unrealistic. Instead, clarity is needed on what repairs are beyond the responsibility of the community. The challenge is to develop support systems to respond to the problems beyond the community's responsibility, and to ensure that this response is effective and rapid
- Invest in the state, and be sure that government has the resources necessary to promote, monitor and supervise construction and highlight best practices in the sector. The Government's policy should be applied consistently to avoid confusion, unfairness, loss of credibility and ineffectiveness

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WaterAid—water for life

WaterAid is an international NGO dedicated exclusively to the provision of safe domestic water, sanitation and hygiene education to the world's poorest people. These most basic services are essential to life; without them vulnerable communities are trapped in the stranglehold of disease and poverty.

WaterAid works by helping local organisations set up low cost, sustainable projects using appropriate technology that can be managed by the community itself.

WaterAid also seeks to influence the policies of other key organisations, such as governments, to secure and protect the right of poor people to safe, affordable water and sanitation services.

WaterAid is independent and relies heavily on voluntary support.

For more information about WaterAid please contact:

WaterAid
Prince Consort House
27-29 Albert Embankment
London
SE1 7UB
UK

Telephone: + 44 (0)20 7793 4500
Facsimile: + 44(0)20 7793 4545
Email: wateraid@wateraid.org.uk

www.wateraid.org.uk

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