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TOWARDS THE MILLENNIUM DEVELOPMENT GOALS

Sustainable rural water supply in Africa: Rhetoric and reality

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THE TERMS 'SUSTAINABILITY' and 'sustainable' can be found repeatedly throughout Government policy documents and the mission statements of external agencies in the rural water supply sector in Africa. However, how many institutions in the sector are truly committed to the concept of sustainability, or have a firm idea of what it means? This paper is based on research undertaken at the Water, Engineering and Development Centre (WEDC) under DFID-funded Knowledge and Research project 'Guidelines for Sustainable Handpump Projects in Africa' (R7817). The early stages of the research identified a surprising range of definitions of sustainability and perceptions of what the term means. Based on existing literature and definitions, for the purposes of the project a sustainable rural water supply has been defined as one in which:

'the water sources are not over-exploited but naturally replenished, facilities are maintained in a condition which ensures a reliable and adequate water supply, the benefits of the supply continue to be realised by all users over a prolonged period of time, and the service delivery process demonstrates a cost-effective use of resources that can be replicated'.

As a result of the International Drinking Water Supply and Sanitation Decade (1981-1990), developing countries and donors began recognising the importance of the handpump as an appropriate water supply technology. The benefits of low cost and ease of operation and maintenance, and the availability of shallow groundwater resources beneath much of Africa, meant that wells and boreholes with handpumps were promoted as the most viable option for rural water supply. According to HTN (2003) there are approximately 250,000 handpumps in Africa, yet less than half of them are operational. This is backed up by data from Uganda (DWD, 2002a) and South Africa (Hazelton, 2000) which indicate similar operational failure rates. The Millennium Development Goal of halving by 2015 the proportion of people without sustainable access to adequate and affordable safe drinking water will be hard to achieve in rural Africa due to low levels of existing coverage, but this will become almost impossible if sustainability levels cannot be improved.

Recent field studies in Ghana, Kenya, Uganda and Zambia have indicated that the actions of many stakeholders in the rural water supply sector undermine the provision of truly sustainable services. Table 1 summarises some of the key constraints to sustainability common to all of these countries. Much talk of sustainability is simply rhetoric, since it is often in the self-interest of NGOs, bilateral and multilateral agencies, Governments and the private sector to limit the sustainability of rural water supplies. This paper outlines some of the ways in which current practice hinders sustainability, particularly for handpump-based water supplies, and identifies needs to be recognised and addressed.

Policy issues

Many African Governments have adopted handpump standardisation policies, often on the advice of external donors, whereby usually only one or two public domain pumps are allowed to be used in the country. Such policies may have positive effects by minimising the number of different handpump models in a country and encouraging the provision of spare parts. However, standardisation should be carefully regulated and should allow flexibility so as not to stifle local innovation and manufacturing. If this not the case, such policies simply sustain dependency on imported pumps and spare parts, the qualities of which are often poor.

World Bank/IMF-influenced poverty reduction strategies promote economic liberalisation which makes it cheaper to import pumps, such as the India Mark II and Afridev, and associated spare parts from India than to manufacture the same pumps locally. Even in countries such as Kenya and Uganda where there is existing manufacturing capacity, local companies cannot compete with subsidised imports. The procurement procedures of External Support Agencies (ESAs) and Non-Governmental Organisations (NGOs) often compound the problem. Instead of buying locally, donors opt for the cheapest price internationally and persuade recipient Governments to waive import duties and other taxes to reduce costs further. This benefits the donor but undermines sustainability. The more local the purchase of the pump (for example at regional or district level) the more likely the retailer is to make sure spares are available locally. This can be seen in Kenya where some district pump centres only stock spares if they have recently sold pumps.

Privatisation is another key component of many African poverty reduction strategies, but is it the panacea it's promoted to be, or simply yet another obstacle to achieving sustainability? There is nothing inherently wrong with private sector involvement, but it is important to recognise its limitations and some of the constraints to its promotion. Where decentralised Government institutions are now encouraged to contract out to the private sector, such as in Ghana and Uganda, the private sector currently lacks the

necessary skills and expertise to deliver. This is especially the case for 'software' activities such as community mobilisation. The experience and skills of NGOs in such areas is now becoming under-utilised with the move to budget support, local Government regulation and private sector implementation. As a result, many lessons learnt from the past are now being lost. Uganda is an example of where new water supplies are implemented by the private sector and rural water supply is once again becoming facility-driven rather than demand-driven. If the millennium development goals are to be achieved, water supply coverage must be increased, but if more emphasis is placed on the facility than systems to sustain services, any gains will be short-lived.

Private sector participation is also seen by many as an important aspect for sustainable spare parts supply. Many donors have promoted this by providing a 'seed fund' of spare parts to private enterprises to stimulate commercial involvement and viability. However, in general, this approach has not proved successful for spares supply to date and has simply promoted, rather than relieved, the dependency culture. For example, the spares supply chain remains heavily subsidised by UNICEF in Zambia and DANIDA in Ghana despite such attempts. Many ESAs therefore continue to subsidise spare parts supply without well planned phasing-out strategies. The low density of pumps leads to a low demand for spare parts and hence low profits, which minimises private sector interest. The separation of pump sales from spares sales also compounds this problem. Privatisation of spares supply may therefore be inappropriate in many cases.

Another downside of privatisation is the increased potential for corruption. Corruption among external support agencies, NGOs, Governments and the private sector remains a serious obstacle to sustainability since it reduces efficiency ('a cost-effective use of resources') and stifles opportunity for long-term solutions. 'Arrangements' with pump manufacturers and importers may prevent the development and uptake of more sustainable local solutions such as the rope pump or locally developed pumps.

Project approaches

The water sector in Africa is heavily dependent on external support and, consequently, the provision of improved water supplies is still fundamentally donor-driven. The traditional approach to rural water supply has been that of the 'project' with a finite life span. This is convenient for donors and implementing NGOs but conflicts with the very principle of sustainability. A water supply is a service, and any service requires ongoing management and support. The focus on the facility or static infrastructure (which it is hoped that the users will keep going somehow) detracts from the importance of maintaining a water service, which is a dynamic process. Whilst some donors have recognised the limitations of the project model and are moving to a programmatic approach, there remains a need to recognise the importance of ongoing support, whether this be fulfilled by Government or NGOs. The National policy for water resource management in Kenya states that:

'The Government will continue to promote the development of water systems that are self-sustaining and where the beneficiaries themselves are encouraged to take full responsibility for operating and maintaining systems.' (MWR, 1999).

The term 'self-sustaining' is slightly ambiguous but implies that communities should be capable of sustaining their water supplies all by themselves. Such assumptions are dangerous since experience to date shows that successful community maintenance requires ongoing institutional support. Many urban water supplies are heavily subsidised by Governments and it is unreasonable to expect rural supplies to become immediately subsidy-free.

Whilst community management is based on the well-intentioned principle of encouraging ownership and empowering communities, it also acts as a convenient concept for shifting responsibility for ongoing operation and maintenance (O&M), and hence sustainability, of services from facility-provider to end-user. Community 'sensitisation' or 'mobilisation' is designed to instil a sense ownership and responsibility, but findings of the research to date suggest that this does not automatically lead to a willingness to manage or finance a water supply over a prolonged period of time. Despite much talk of demand-responsive approaches, this very demand is often artificially generated by the implementing agency. Communities rarely acquire a full understanding of what will be required of them in the long-term if services are to be sustained. Consequently many facilities fall into disrepair soon after installation or as soon as anything goes wrong with the pump.

Many long-term strategies for increased sustainability are also unrealistic. The five year Rural Water and Sanitation Operation Plan in Uganda states that:

'Government will support major rehabilitation expenses in the interim, in the long-term it is expected that communities will also take over these expenses.' (DWD, 2002b).

It is a gross overestimation to assume that communities will be able and willing to finance major rehabilitation costs where they often fail to finance the simplest repairs.

Donor interests

Whilst tied aid from bilateral agencies has decreased in general, some donor Governments continue this practice to satisfy national commercial interests. This has led to many cases where new or inappropriate technologies have been introduced with no mechanism to ensure sustainable O&M after project 'completion'. Some smaller NGOs and church organisations also introduce new technologies but largely ignore O&M issues or do not enter into consultation with other stakeholders to ensure sustainability. Facilities are donated to satisfy the moral or religious well-being of the donor (the 'feel good' factor), to the ultimate detriment to the well-being of the beneficiaries. This self-interest demotes the interests of the rural poor to secondary impor-

tance, yet the same organisations claim that they are of paramount importance.

Low levels of sustainability are fundamentally good for external support agencies since they justify continued funding for them for future rehabilitation projects and hence their self-existence. Even well-intentioned agencies and staff often put self-interest far up the agenda at the cost of true sustainability. Selfish humanitarianism is the norm, not the exception, and there is a need for the donor community to recognise this if they are serious about achieving sustainability.

Demand for change

The research findings to date indicate that many African governments put rural water supply low down on the agenda and there is a need for clear policy and regulation, which may potentially have a greater impact on sustainability than social or technical factors. Aspects of current policies which limit sustainability, such as economic liberalisation, privatisation, handpump standardisation and duty-free aid, must be identified and adapted as appropriate.

Although the predominant approach to sustaining handpump water supplies in Africa over the past two decades has been through community management, on the whole this approach has resulted in low levels of sustainability and alternatives should be investigated. If community management and maintenance systems are to be applied it must be recognised that the level of support required is significant. It is essential that a major funding institution plays a pivotal role in providing this support if such systems are to be successful.

Spare parts

The provision of spare parts for handpumps remains one of the greatest barriers to sustainability and there is a need to adopt more realistic approaches to technology choice, private sector participation and subsidised supply chains. Imported pumps require imported spares, but the procurement of pumps is often viewed in isolation to the ongoing procurement of spares. Spare parts supply is clearly not a stand-alone commercial activity. If donors are serious about sustainability they need to change emphasis from lowest price to local purchase. If the private sector is to be effective in spares supply then the link between pump manufacturers, pump retailers and spares distributors must be made stronger. One way of doing this is to give responsibility for spares supply to manufacturers. Alternatively, not-for-profit organisations such as churches, NGOs or local Government can be used to distribute and sell spares.

Demand for water

The demand for an improved water supply ultimately has a major influence on its sustainability. True demand cannot be manufactured and is affected primarily by the distance to, quality of and perceptions surrounding existing water sources. When a community expresses an interest in obtaining an improved water supply this does not automatically mean that demand will be sufficient to finance operation and maintenance. Field research in all four countries visited indicated that neither a contribution to capital costs nor a sense of ownership necessarily leads to a sense of responsibility for, and willingness to manage, O&M. It is important that donors and implementing agencies challenge the existing 'wisdom' that they do.

The demand for safe water will determine the willingness to pay for it by water users and hence what price can be charged for it. Service levels should be determined by the perception of need among the user community, rather than an arbitrary number per pump. Shifting attention away from paying to maintain the facility (i.e. the pump) to paying for water may be a way of sustaining willingness to pay but in many cases this requires considerable attitude change.

Technology choice

The handpump should be seen as an option in rural water supply programmes not an exclusive choice. The technology should not be predetermined in any programme and simpler technologies require greater consideration if systems are to become fully sustainable without ongoing external support. Local solutions using non-specialised low-cost components available in existing markets eliminate many of the problems associated with spares supply. Whilst technology alone does not determine sustainability it can have a significant impact. The search for the 'holy grail' of handpumps which never breaks down, however, is unrealistic and inappropriate.

Conclusions

Self-interest among donors, ESAs, NGOs and the private sector is inevitable, and fundamentally there's nothing wrong with this. However, if talk of sustainability is to be more than rhetoric, it is important to recognise potential conflicts of interest. Many current actions benefit external stakeholders while undermining sustainable water supplies. At present there is a *cycle of sustained dependency*; i.e. rural communities depend on donors and this status quo is sustained. A few years after implementation, water supplies become non-operational and the next rehabilitation or development project begins. The alternative is a *path of supported sustainability* whereby communities are able to prioritise their own needs and wishes and meet these incrementally. This is not a question of simply leaving users to manage their own supplies, but developing an interdependent framework in which water supplies are sustained through appropriate support, which is gradually reduced over time, depending on local conditions.

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Outputs of the project to date can be accessed via: http://www.wedc.ac.uk/projects/shp/index.htm.

Table 1. Key constraints to sustainability in four African countries

Sustainability factor	Constraints to sustainability common to Ghana, Kenya, Uganda and Zambia
Policy	Privatisation: insufficient private sector capacity; lack of commercial viability/ incentives Economic liberalisation: threat to local manufacturing and supply
Institutional issues	Lack of institutional support for community management Tied aid: inappropriate technology / approaches
Financial issues	Procurement procedures: pump separated from spares Corruption: inefficiency, inappropriate technology /approaches
Community aspects	Manufactured 'demand': inadequate willingness to manage service and pay for water
Technology	Inflexible standardisation policies: lack of support for local solutions

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