



WATSAN and rural livelihoods approaches

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WATER, PARTICULARLY IN arid and semi-arid regions, is probably *the* single most important element in peoples lives. On one level water is essential for all life and for environmental wellbeing. However, water also plays an economic role in peoples' livelihoods, as a key productive resource. In particular, small scale water based economic activities form a vital part of the livelihoods of many poor people, and women.

While some of these activities make use of rainfall or other 'non-domestic' sources of water, many use water that is primarily intended for, or is a potential source of, domestic consumption.

Current approaches to water supply that focus on payment for a 'service' and cost recovery, particularly those that follow the World Bank's Demand Responsive model all rely to a greater or lesser extent on the 'killer assumption' of community ability to pay. Much has been made of the *willingness* of communities to pay for water supply, far less attention has been given to their *ability* to pay.

There are worrying indications that communities' willingness may in fact not be supported by ability and that the result is an overall lessening in water consumption and reversion to 'traditional' and less safe sources (see for example Rall, 2000).

The issue of ability to pay is a serious one with the potential to undermine the development of sustainable water supply systems. However, there is an emerging body of experience that points to a solution to the problem. This experience comes from water supply projects that take a livelihoods based approach, where water supplies are developed that explicitly provide for both domestic *and* productive uses of water. The productive uses of water provide an income source that is both dependent on and explicitly linked to the water supply, thus providing both and incentive (willingness) and means (ability) to pay for system maintenance.

This paper briefly examines the role of water in rural livelihoods. It argues that the WATSAN sector should adopt a 'livelihoods approach' to water supply projects for two main reasons. The first is that by doing so it will greatly increase the impact on poverty and human welfare of the water supplies. The second is that it will directly support existing efforts to improve sustainability and demand responsiveness. The paper also examines the main barriers to taking such an approach and the steps necessary to overcome these barriers.

Water in rural livelihoods

"A livelihood comprises the capabilities, assets (including both material and social resources) and activities required to make a living. A livelihood is sustainable when it can cope with and recover from stresses and shocks and maintain or enhance its capabilities and assets both now and in the future, while not undermining the natural resource base"

(Adapted from Chambers and Conway (1992))

Since the early 1990s 'livelihoods approaches' have gained increasing attention within the development (and particularly the rural development) community, both as an academic and practical approach. For example they now form the core of DFID's rural development. They are seen as a way to address in a more focussed but at the same time holistic manner the needs of rural people, in particular the poor and women. By examining the whole range of activities and assets involved in making up a livelihood they attempt to avoid the mistakes made in the past by an overly narrow 'sector specific' approach.

Water plays a number of important roles in rural livelihoods. The most familiar to those from the WATSAN sector are drinking, cooking, washing and other 'domestic activities'. However, there are in addition many productive roles that are not traditionally considered. These include growing vegetables, watering livestock, brewing alcoholic drinks, running laundry services, making bricks and a host of other activities.

As rural societies change, particularly through increasing populations and reduced access to land, the pressure to diversify and intensify livelihoods increases. Many of the activities to which people turn are heavily reliant (directly and indirectly) on water as a key productive resource. For example, a study in rural Zimbabwe, where growing vegetables has traditionally been seen as mainly women's work has found that acute land shortage, combined with the need for a cash income, is giving rise to a generation of young people where both men and women engage in using water for productive purposes (Moriarty 2000). The same work has shown that (at least in some areas) development of groundwater for productive uses through digging shallow wells has outstripped development for domestic use. In Northern Gujarat an approach that targeted women's use of water for productive purposes while fostering economic activities using the time saved in collecting water led to a clear difference in willingness to maintain the water supply (STI/IRC/SEWA, 2001)

It is becoming increasingly clear that when considering the overall role of water in people's livelihoods, particularly in many arid and semi-arid regions, the sum impact of non-health related uses of water will in fact be greater than that of health related uses (Nicol, 2000). This has clear implications for the WATSAN sector. The most important of which is that it will be necessary to adopt a broader focus than 'domestic' use alone if the impact of rural water supplies on poverty and equity is to be maximised.

Where the traditional WATSAN sectoral approach has seen water supply as being largely an issue of improved health and, to a lesser extent, one of reducing women's drudgery, it should now start to adopt a livelihoods-based approach which identifies all the roles that water plays within people's current and future livelihoods and based on this provides an adequate and sustainable supply to meet these needs.

Integrating production into rural WATSAN

While it is true that traditional WATSAN has a blind spot for the small scale productive uses of water, there are already a number of cases where such an approach has been taken either explicitly as part of WATSAN projects, or implicitly as part of more general rural development.

A good example of the former comes from Zimbabwe where the DFID funded 'collector well pilot project' (Lovell et al, 1996 & 2000) developed large diameter wells to extract groundwater from shallow aquifers to provide both domestic and productive water supplies. In addition to the water supply infrastructure, the project fenced 0.5ha community gardens in which up to 100 members had plots for vegetable cultivation. The revenue streams derived from the gardening activities were more than sufficient to cover O&M costs, while also providing important income to garden members, money that was then used for purposes such as buying agricultural inputs, paying school fees, and starting other projects (Waughray et al 1998).

In South Africa, the Mvula trust in association with CARE South Africa, is piloting a household focussed approach, to providing 'better-than-basic' service levels. This approach which focuses on providing individual household connections rather than communal standposts, is encouraging the economically productive use of water as a means of helping to pay for the maintenance of the upgraded service.

Although this project looks primarily at improving household livelihood security through the productive use of domestic water, it hinges on the provision of appropriate technology (low pressure supply to household "trickle tanks"¹) (see also Tipping and Scott, 2001) at the same cost to the state as basic water provision (communal standposts).

The project also addresses a wider package of economic measures (including micro-credit) to allow women to make productive use of the time saved transporting water. The approach uses a low pressure supply to household "trickle tanks" which store the water for later use (Venter-Hildebrand, pers. comm).

Both CARE International² and Save the Children (Nicol, 2000) are involved in projects that encourage productive use of water for community livelihoods improvement, these are examples of the second type of project where rural development projects have taken a water based focus to improving rural livelihoods.

However, while there are a growing number of such success stories at a project or pilot level, there are few, if any, examples of more widespread application of the approach at a national or regional level. The next section briefly addresses some of the reasons for this failure.

Barriers to wider implementation

Barriers to the uptake of livelihoods based approaches in rural WATSAN projects come under a number of headings. The concept is of course relatively new, and the sector (despite great strides in the last decade or so, particularly on the 'software' side) continues to be dominated by a technical/sectoral focus. This aside, probably the greatest single impediment to widespread adoption of a livelihoods based approach is a combination of institutional 'inertia' and 'ring-fencing', aided by a general lack of capacity particularly technical and social.

Key personnel in WATSAN implementing agencies lack the skills necessary to change their approach. They have neither the social-development tools to identify the different roles of water in peoples livelihoods, nor the technical skills to develop the non-domestic aspect of water. Given a culture of institutional collaboration and cooperation to solve problems holistically this should not pose a problem, as agencies with the necessary skills can be identified and included. However, in the existing culture of sectoral ring-fencing the lack of key skills can act as an insurmountable hurdle.

In addition to the lack of core skills, there are a number of technical problems linked to taking a livelihoods based approach, not least of which is that of system size. Total quantities of water for 'domestic' purposes are generally low (in the order of 20-25l/p/d). Designing systems to cater for productive activities will generally need greater quantities. For example at one collector well in Zimbabwe, total use over a year was five times as great for 'productive' as for domestic use (Moriarty, 2000). However, in much of the semi-arid world Watsan projects rely on low yielding hand pumps, which can typically provide 2-3l/s, often far below the sustainable yield of the borehole to which they give access.

These technical problems are not insurmountable, in particular the development and management of multiple sources can help solve the problem of limited supply capacity. So, for example, if high quality groundwater for drinking is in short supply, other options can be examined for productive uses – rainwater harvesting, wastewater reuse and so on. The point is that both the skills and the will to carry out livelihoods-based approaches need to be developed.

**Good ideas are not enough
– failure to scale up a promising pilot approach**

The previously mentioned collector-well projects in Zimbabwe were implemented as small scale pilot projects by a group of UK and Zimbabwean research organisations. As a result, they were developed outside the framework of Zimbabwe government policy for either rural water supply or irrigation. The micro-irrigation projects were too small to interest the department responsible for irrigation (to whom small scale irrigation means individual plots of a couple of hectares – not 100 square metres). On the other hand, the District Development Fund (DDF), main agency responsible for rural drinking water supplies saw its remit purely in terms of providing potable water (through boreholes). In many DDF schemes it is against the rules to use water for any use other than domestic. The community owned and managed schemes have therefore been 'on their own' institutionally, yet despite this have managed to maintain their systems for up to 10 years (the first system was implemented in 1991).

However, while the original schemes continue to function well, the approach as a whole has not been taken up more widely, principally due to the failure to fit existing institutional models. This illustrates well the dangers of 'parallel' development of innovative approaches, and the necessity of involving 'government' from the earliest stages

- Lack of non-drinking water skills in implementing agencies – i.e. micro-irrigation, and the development of 'resource management' structures.

Moving forward

Moving forward on the issue of adopting a livelihoods based approach will call for a concerted action from a range of key stakeholders in the WATSAN sector. Advocacy of the change will be essential, but in addition capacity building of implementing agencies, and the creation of training materials and collection of case studies are all necessary.

To date most of the experience of implementing water supply projects with a livelihoods focus have been in the form of research projects, or small scale pilots. There is a pressing need to identify experiences of adopting the approach at a larger scale within district or national frameworks.

The following list briefly outlines some of the most important actions necessary to start the work of 'mainstreaming' a livelihoods-based approach in the water and sanitation sector.

- The most important, and immediate need is for the WATSAN sector to embrace the issue of livelihoods. To this end advocacy is needed within sector forums and leading sector organisations such as the WSSCC and WSP;
- Capacity needs to be developed in sector organisations. This should include the ability to undertake participatory assessments of the roles water plays in peoples livelihoods; the ability to plan water supply systems *and* strategies to meet peoples water requirements; and the ability to work collaboratively with and give leadership to multi-sectoral/disciplinary teams;
- To develop this capacity training materials based on validated examples of good practice are required. A recent example of such materials describes the steps towards using shallow groundwater for productive use in Zimbabwe (Lovell, 2000);
- (I)NGOs and donors can (and do) lead in piloting the approach. However, their efforts need to be backed up by development of the necessary training materials for national and local government and line ministries; and
- In addition to the validation and use of existing experience from innovative projects there is need for action research into the institutionalisation and scaling up of a livelihoods based approach.

Managing water resources for productive use

With a livelihoods focus comes a need for improved resource management. Moriarty and Lovell (2000) found that as people expand their water related activities, and as the share of water related production in their total livelihoods expands, so their exposure to resource failure increases. Experience in India, shows that wholesale and un-controlled development of water for livelihood-based activities can be disastrous, leading quickly to the failure of domestic water supplies, and capture of the resource by the richest (Moench et al, 2001).

Taking a livelihoods based approach is therefore inextricably linked to improved water resource management, and provides a compelling reason for the WATSAN sector to become more involved in community level WRM.

Summary

A number of points can be made in summary:

- Water plays a crucial role in livelihoods, particularly in arid and semi-arid countries, and particularly in the lives of the poor and of women. This role is considerably wider than the traditional health and timesaving focus of WATSAN projects and includes a range of small scale productive activities;
- Catering to the non-health related livelihoods aspects of water supplies can increase the impact of the water supply on recipient communities; improve the O&M of the supply; and support different service levels under DRA; and
- The main impediments to wider inclusion of a livelihoods focus are:
 - A conceptual focus on 'drinking water' that sees other aspects of water use as somebody else's business; and

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- 1 For a fuller description of the technology involved and its application in the Nondayana community, see Tipping and Scott (2001) in this volume.
- 2 CARE International UK's website gives details of some of their livelihood focussed projects. The following link is to an overview of their work in Zimbabwe <http://www.careinternational.org.uk/Articles/zimbdams1.html>
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