

## Secure Water? Poverty, Livelihoods and Demand-Responsive Approaches

### Introduction

Access to clean water is central to healthy and productive lives for the poor. Yet at the beginning of the 21<sup>st</sup> Century over one billion people still lack this vital resource (WWC, 2000). A decade ago the 'Dublin Principles' shifted global thinking towards treating water as an economic good. The concern was that overly supply-led approaches had been financially unsustainable and, therefore, failed the poor. In focusing on water as an economic good and the costs attached to its supply, the reasoning was that greater financial sustainability and improved services for the poor would result.

This conceptual shift was subsequently embedded in the so-called Demand-Responsive Approach (DRA) (World Bank, 1998), which brings water users into the process of selecting, implementing and, ultimately financing the long term delivery of water services. Major proponents of the approach – including the World Bank and the Water and Sanitation Program (WSP)<sup>1</sup> – have helped to support its uptake across a range of policies and strategies in Asia and Africa.

Accompanying this conceptual shift has been a wider move towards achieving poverty reduction targets.<sup>2</sup> The water and sanitation sector is now catching up and seeking to understand in greater detail water, sanitation and poverty linkages, over and above the oft-stated water and health links. The question arising is how approaches such as DRA, which focus on financing sustainability, can be made to work for the poor through helping to achieve wider poverty reduction objectives: it is one thing to create a sustainable supply system, but another, a system that directly benefits the livelihoods of those financing it.

As a key policy direction it is therefore reasonable to ask how DRA can be made to address broader poverty reduction concerns. This question is central to the research programme *SecureWater*<sup>3</sup> led by ODI with ITDG, SC UK and a number of overseas partners, and initially funded by DFID under the Knowledge and Research Programme. Achieving an appropriate balance between financial sustainability and

poverty reduction objectives will depend upon a better understanding of the structure of demand for water at different levels and the complex and multiple linkages between water, poverty and livelihoods. *SecureWater* aims to address this challenge through case study analysis and the development of decision-support tools for pro-poor DRA implementation.



(Sudan, *SecureWater*, 2002)

### DRA development

DRA emphasises sustainability, cost recovery and devolution of responsibility for financing and management to lower levels (see Box 1). It is rapidly influencing policy orientations and sectoral reforms in developing countries, although commitment to and capacity for DRA implementation varies significantly (World Bank/OECD, 2000). In contrast to previous supply-led approaches DRA requires that water users be directly engaged in the process of selecting, financing, implementing and managing water services. This implies significant changes in the roles and responsibilities of many sectoral stakeholders including communities, NGOs, the private sector, government and donor agencies. A number of World Bank studies have argued that adopting DRA ultimately increases water system sustainability, but initial progress reviews acknowledge significant challenges to implementation, particularly relating to financing arrangements, institutional capacity and political will (WSP, 2001).

Recent research conducted in India, Kenya, Malawi, Sri Lanka and Sudan as part of the *SecureWater* project, further highlights gaps in conceptual understanding (principal amongst which is the need to improve understanding and assessment of *demand* among sector practitioners).

DRA is intrinsically linked to finance with an implicit assumption that demand, as expressed by poor communities, can be equated with willingness-to-pay for a particular kind of service. However, important questions surround the extent to which the type and level of service offered is itself 'demand-driven'. Furthermore the willingness and ability of poor households to contribute, in cash or in kind, to the costs of

#### Box 1 Key principles of DRA summarised

- Informed choices made by communities through participatory planning and community involvement in implementation in order to ensure ownership
- Complete community management responsibility for operation and maintenance (O&M)
- Cost recovery – capital cost sharing (expression of demand and 'ownership') and 100% O&M
- Promoting more options for service delivery
- Integrating water supply with sanitation, environmental management and hygiene education
- Targeting the poor
- Supporting integrated water resource management

Source: WSP East Africa (2001)

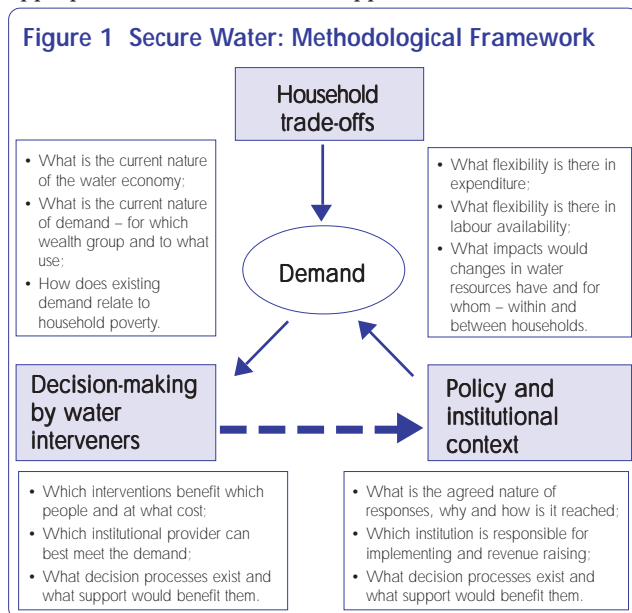
financing and managing water varies significantly. Supply sustainability is unlikely to be achieved unless these issues are addressed.

To improve implementation by policy makers and practitioners in developing countries there is a need to:

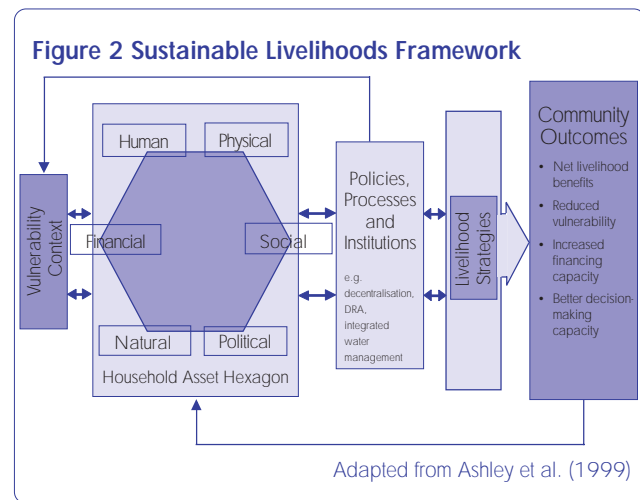
- increase understanding of the principles and aims of DRA, and the implications of adopting such approaches;
- identify key issues/entry points where intervention could be strategically important for effective poverty reduction, either at a local level or policy level;
- build the capacity to respond of decentralised decision-making bodies, communities, and sector practitioners;
- provide appropriate technological choices for the poor;
- improve assessment, monitoring and evaluation of the poverty impacts of water supply interventions.

### SecureWater Assessment

*SecureWater* seeks to address these issues by developing a step-by-step method for thinking through the complex and multiple linkages between water, poverty and livelihoods and the sustainability of water supply interventions. The aim is to combine new tools of poverty analysis with established methods for assessing water resource availability, access and use. The methodological framework outlined here (Figure 1) forms the basis for the development and testing of appropriate forms of decision-support.

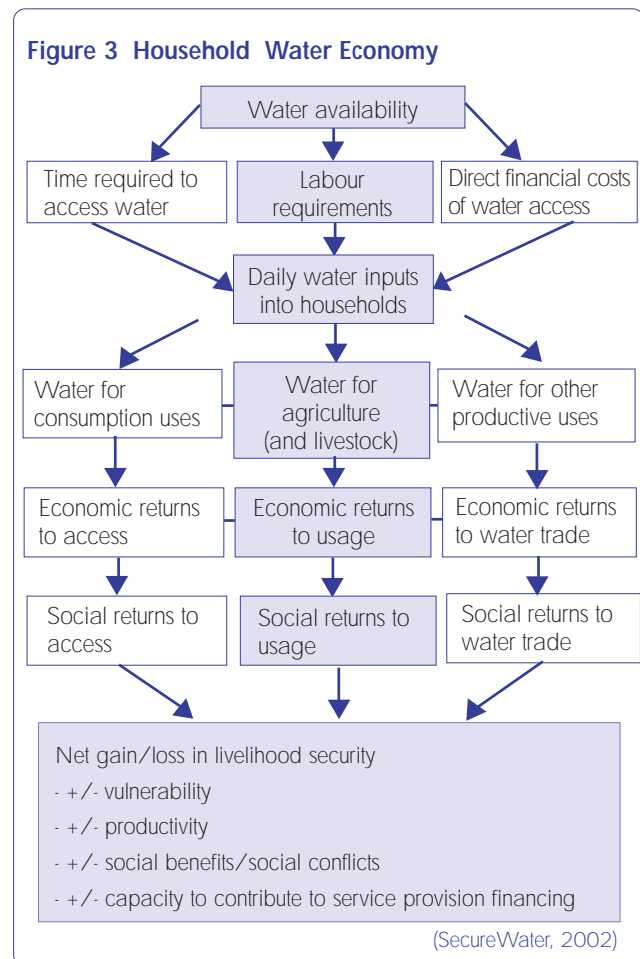


*SecureWater Assessment* builds upon Sustainable Livelihoods (SL) approaches which understand vulnerability in terms of access to and returns from different livelihood *assets* (including water). SL approaches help to highlight the ways in which policies, institutions and processes enable or constrain different *livelihood strategies*. A key strength of the SL framework (Figure 2) is that it requires intervening agencies to look systematically at how macro level policies and resulting institutions and decision-making processes translate into micro-level livelihood outcomes. Understanding the implications of the policy shift to DRA and the potential costs – direct and indirect – as well as the benefits for different socio-economic groups is a core concern. Adopting a livelihoods approach helps to suggest multiple entry points from the local to national level where water supply interventions could be strategically important in effective poverty reduction (e.g. in facilitating access to key assets, transfer of technology, institution-building etc.).



A key issue is understanding water as a *productive asset* for the poor as well as an economic good, which can be combined with other assets to generate financial and non-financial livelihood benefits. Recognising that potential livelihood impacts of good interventions go far beyond health is an important starting point. In addition to human consumption, water is put to a wide range of productive uses in order to secure food and non-food income at household level. Furthermore, significant opportunity costs are associated with accessing water, both in terms of time/labour expended on water collection activities as well as cash expended at the source and transport costs. In short, access to water is often a key determinant of *livelihood security*, by impacting on a broad range of other activities and assets. A useful way of conceptualising this idea is in the form of a model *household water economy* (see Figure 3).

If this theoretical understanding is to be operationally useful in the water sector, a dynamic model is needed to capture



the complex interactions between water and other livelihood assets. *SecureWater Assessment* uses techniques adapted from the Household Economy Approach<sup>4</sup> (HEA) and gender analysis to analyse these interactions and the impact of changes in water supplies within and between households. Describing the strategies people use to access food and income and the way different wealth groups within a community live and interact economically, HEA quantifies by wealth group the main sources of income and items of expenditure in a 'normal' year, and models the effects of shocks. It is particularly useful in predicting the ability of different households to cope with changes in economic conditions (e.g. crop failure, market loss, increased cost of basic services etc.), and identifying vulnerable groups.

### A Sri Lankan Case Study

Methods and tools for *SecureWater Assessment* were developed during a workshop in Hambantota district, Sri Lanka in 2002, in which SC UK played a key role. The study area is one of the poorest districts in the country, and is frequently affected by drought. It is also the focus of a major Asian Development Bank (ADB)-supported water supply and sanitation project that seeks to implement DRA. Simplified techniques designed for rapid assessment that were employed in two case study villages covered:

- Individual and group interviews using an HEA structure
- Identification of basic characteristics and economic dynamics of principal livelihood activities
- Characterisation of wealth groups based upon livelihood assets including land, labour and livestock
- Mapping of availability, across and use of water from multiple sources
- Constructing a dynamic model of household economy in terms of food and non-food income through 'good', 'normal' and 'bad' years
- Understanding seasonality in income and expenditure flows and plotting variations in food, cash and labour availability against variations in water resource availability
- Establishing a basic data set that enables modelling of the impact of changes in water availability, access and use, on poor households – both within and between years

The emerging model allows analysis of the likely impact of different types of water supply intervention on household livelihoods within different socio-economic groups. Specifically, it enables interveners to assess the ability of a given type of household to meet new water charges under different economic conditions (i.e. implications of intra- and inter-annual variation in income) and changes to household income (and therefore capacity to pay), arising either directly

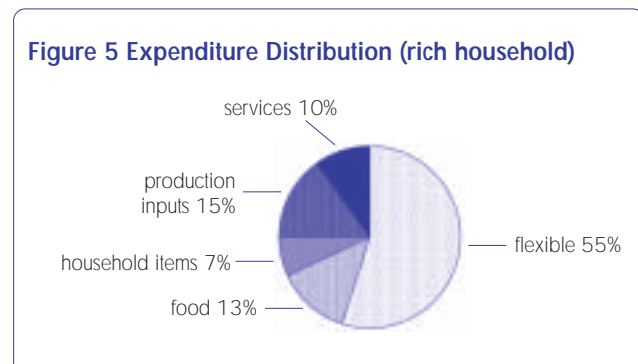
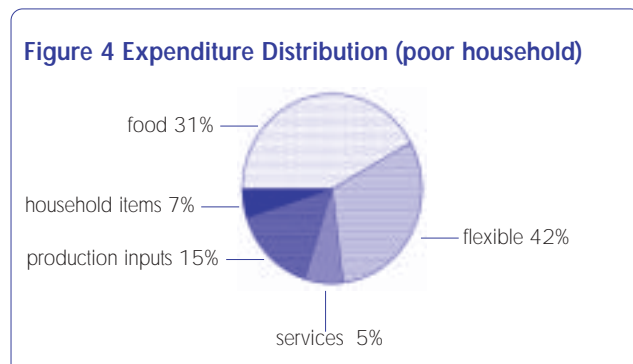
from water interventions, or indirectly from associated changes in agricultural or other employment opportunities.



(Sri Lanka, *SecureWater*, 2002)

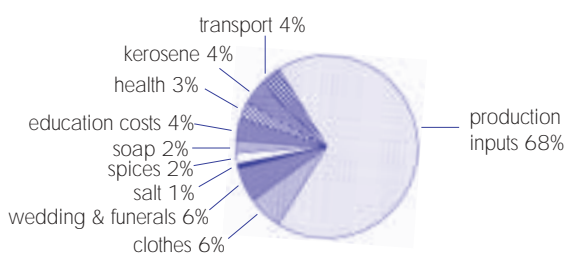
HEA analysis of expenditure distribution and 'income flexibility' (Figures 4, 5 and 6) provides a more rigorous basis for assessing how changes in water expenditure are likely to affect the overall household economy. In the Sri Lankan case study most of this 'flexibility' consists of rice or millet held in store, a practice which has enabled households in this area to maintain their food security during three successive drought years. Analysis of the relative importance of different food income sources (Figure 7) highlights the importance of agricultural uses of water in this area. This contrasts with many semi-arid areas of sub-Saharan Africa where livestock watering represents the single most important productive water use. A basic understanding of these linkages between water availability, access and use, and food security, is an important prerequisite for planning 'pro-poor' water interventions.

Descriptions of expenditure patterns in 'good', 'normal' and 'bad' years indicate potential trade-offs for poor households as a result of, for example, increased water tariffs under a new DRA scheme. The impact of doubling the cost of water (or any other commodity) is rarely as straightforward as simply doubling expenditure. Depending on other household priorities and demands, this might result in cutting one type of expenditure completely or shaving a little from each category of expenditure ranging from health to other household items. Many of these basic expenditure categories are effectively 'inelastic'. Fieldwork suggests that in such circumstances categories such as girl children's education are often the 'first to go'. Understanding the elasticity of demand for water in relation to 'income elasticity and flexibility' is particularly important for planning cost recovery across a range of basic services.

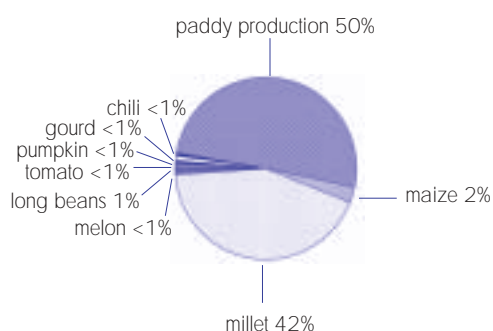


Comparative data for typical 'rich' and 'poor' households in Bellagaswewa and Kantawewa communities, Hambantota district

**Figure 6 Example of Household Expenditure**



**Figure 7 Example of Income Sources as Food**



Where relevant (e.g. semi-arid sub-Saharan Africa), the data set can be expanded to show intra-annual variations in food, cash and labour, and be plotted against seasonal variations in water resource availability, access and use. This can help to highlight temporal patterns of vulnerability which can then help in assessing the impact of longer-term changes in the household water economy, either as a result of drought or the installation of new supply systems. Impacts can be demonstrated in terms of changes in household expenditure (labour or cash) required to access water and/or changes in household food and non-food income resulting from productive water use. Analysis can also be repeated for a series of years by household type in order to show inter-annual variations.

Even at the most basic level of analysis it is clear that periodic shocks such as droughts – which are common in Hambantota and other semi-arid areas – can have a substantial impact on the capacity of poor households to meet their basic food and non-food needs, with implications for capacity to sustain expenditure on water services. In practice multiple scenarios can be developed, based upon different policy assumptions, which can show a range of possible outcomes for a proposed water intervention, and a range of possible scenarios from a financial vulnerability perspective.

## Conclusions

*SecureWater Assessment* (SWA) is based on HEA and offers a logically consistent way of thinking through the complex and multiple linkages between water, poverty and livelihoods. It has the potential to add value to existing demand assessment techniques by highlighting the most appropriate set of service options in support of different livelihood strategies, and by improving assessment of the 'fit' between cost options and the capacity of poor households to pay for different levels of service. Through improving understanding of the livelihood

impacts of different types of intervention, SWA can also provide the basis for improved cross-sectoral interventions that address broader livelihood issues such as food security, education and HIV/Aids. Overall this represents a valuable tool for achieving a more appropriate balance between the need for financial sustainability of supplies, on the one hand, and poverty reduction objectives, on the other.

## Endnotes

- <sup>1</sup> World Bank/UNDP Water and Sanitation Programme (WSP).
- <sup>2</sup> Notably the establishment in 1999 of a joint IMF/WB lending framework – the Poverty Reduction Strategy Paper – aimed at the world's poorest countries.
- <sup>3</sup> *SecureWater* brings together agencies in five countries to address both policy and practice issues surrounding the development and implementation of DRA. The core research partners are ODI, ITDG (UK and East Africa), Save the Children UK (HQ and Sudan), WaterAid (Malawi), the Water Resources Secretariat (Sri Lanka), and the University of Southampton (undertaking the India research component).
- <sup>4</sup> A methodology developed by Save the Children (UK) and used by a variety of development agencies – see Save the Children (UK) HEA Manual (2000).

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<http://www.savethechildren.org.uk/foodsecurity/>

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