Securing Water to Enhance Local Livelihoods (SWELL):
Community-based planning of multiple uses of water in partnership with service providers

Introduction to the methodology

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Executive summary

Traditionally water supply planning has focussed on meeting basic domestic needs, without considering the multiple water needs of rural people. However, looking at people's livelihoods strategies, it becomes evident that people require water for both domestic and productive needs. Access to reliable supplies of water affects a great number of activities, and water availability can either constrain or provide a wide range of opportunities for the rural poor.

To achieve greater water security at village level, and for water to meaningfully tackle poverty, a more holistic and integrated approach to water planning is needed that is based on an understanding of people's livelihood strategies and the role of water resources (and constraints) within them.

With this in mind, AWARD has developed a community-based planning approach (known as SWELL - Securing Water to Enhance Local Livelihoods) that aims to enable improved allocation and use of water resources for water-related livelihoods and to help reduce poverty. The SWELL methodology is based on a participatory process, which enables villagers, water service implementers and enablers to gain a clearer understanding of the available water resources and how these can be further developed and matched with multiple uses and livelihood opportunities. The process enables stakeholders to develop a greater and shared understanding, and to develop strategies and plans together from a collective platform.

More information on the application of SWELL in the Bushbuckridge area can be found in the case study which accompanies this paper.

# PART 1: RATIONALE AND DEVELOPMENT OF SWELL

Background

The reality of people's water needs

In rural areas people use water for activities such as drinking, bathing and cooking (that we call domestic uses) and also for other "productive" activities such as such as small-scale irrigation, livestock watering, post harvest processing or micro enterprises. The majority of rural people depend upon multiple strategies for their livelihoods and a number of activities are water-dependent. These can make a meaningful contribution to poverty reduction through improved food security and nutrition, income generation, time saving etc.

To perform the multiple activities that directly sustain or enhance their livelihood, people use multiple sources of water. For example, people may make use of a piped domestic system for drinking and other household activities, a well for watering livestock and gardening, and rainwater harvesting for supplementary garden irrigation. Equally, people can make use of a rainwater-harvesting tank, originally designed for gardening, as a source of water for drinking and/or cooking.

There is growing evidence, based on empirical research, that access to **multiple water sources** to perform **multiple activities** is a key issue to ensure **multiple benefits** to people's livelihoods..

The relationship between multiple livelihood strategies, multiple water uses, multiple water sources and multiple benefits is summarised in the following figure.
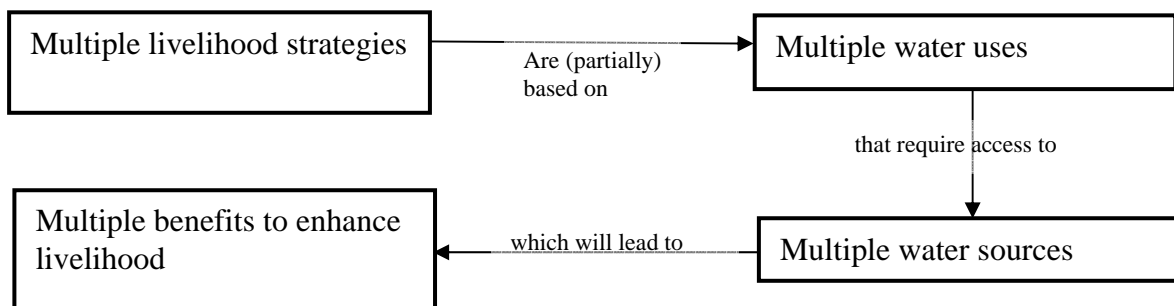
Figure 1: relationship between livelihood strategies, water and benefits

The other reality of conventional water services

Unfortunately, this diverse and holistic reality is seldom reflected in the designs of formal water supply systems and services.

(a) Conventional systems do not consider multiple water needs
Conventional water supply systems are typically designed for basic "domestic" (drinking, cooking, and bathing) needs only. When people try to use these systems for productive uses, these conventional systems may break down under the unplanned load on the

system, and conflicts may arise. For example, a piped reticulation system that has been designed on the assumption that villagers are only going to use this water for basic domestic uses may be 'redesigned' by villagers themselves through illegal connections for unplanned productive uses, resulting in overload and failure. A small-scale irrigation system that has been designed with the assumption that water will be only used for irrigation purposes might not be easily adapted to meeting needs of users of that system for drinking water (for humans and cattle), for home gardens or for washing. This may then affect the operational practices and distribution of water in the system.

(b) Conventional services do not consider multiple resources
The use that people can make of water is limited by the water resources that are available to them, in terms of quantity, quality and variability, and by the amounts needed for use(r)s further downstream. Whereas traditionally people may use a wide range of resources available to them, many formal water services only consider one single source. In some areas where surface water is scarce, conventional water services may be developed that will extract even more surface water whereas rainwater or groundwater could provide a more sustainable alternative. Matching locally available water resources (in space and in time) with the multiple needs people have, and making best use of appropriate technology are necessities that are often overlooked in conventional systems design.

Reasons for this seemingly contradictory situation are found in the fact that various sectors are involved in water development and management, such as drinking water and sanitation, irrigation, social development, industry, etc. Each sector is responsible for meeting only their sectoral demands, and do not consider all water needs. That in itself need not be a limitation. But, despite calls for integrated planning and cooperative governance, sectors do not easily coordinate their activities. Indeed sectors are frequently in conflict regarding water prioritisation.

The result is that systems are developed in such as way that multiple sources and uses are not integrated. Many conventional systems are not tailored to the needs of the people whom they are supposed to serve, or to the resource context. This often leads to a situation in which there is reduced water security: limited reliable access to water resources and water services. Lack of water security reduces the scope of strategies for people to sustain their livelihood (by meeting their basic needs to sustain themselves) or to enhance it (by meeting the water needs for productive uses). The consequence is that poor people's livelihoods become more vulnerable.

Another result is that systems may become unsustainable when they do not meet people's needs. People will try and get their water anyway, e.g. through illegal connections, and this may lead to over-use of systems or conflicts between different users or between users and external agencies, such as local authorities.

Rationale for SWELL
There is a need to develop village level water supply services, in which resources, users and uses are integrated. This need has been increasingly widely recognised, as expressed

during an international symposium held in Johannesburg in 2003 (http://www.irc.nl/page/9077) and by Moriarty et al. (2004a).

Given the fragmented approaches of water service providers, there is a need to bring those together, and with end-users, in processes for planning, design, implementation and management of water services. Various mechanisms exist to enable coordination across sectors in a common planning framework. An example are Integrated Development Plan (IDPs) in South Africa, which are developed at local government level. However, few practical tools and methodologies are in place to facilitate and realise these processes.

As a response to this need, the Association for Water and Rural Development (AWARD), an NGO based in rural North Eastern region of South Africa, has worked on the development of such tools and methodologies over the past 3 years. This has resulted in the SWELL (Securing Water to Enhance Local Livelihoods) methodology. SWELL seeks to provide a comprehensive integrated framework and set of tools for the participatory assessment of 1) people's water-based livelihoods; 2) water resources and services; and 3) management capacity for effective use of water and for integrated planning on the basis of such assessment to sustain and enhance these livelihoods.

SWELL has been developed within the specific context of South Africa, and builds upon the existing legal and institutional framework for water and the reality of water use and management in rural areas of South Africa. SWELL was first piloted in one village and then applied in one Ward in the Bushbuckridge Local Municipality. A ward is the lowest level of administration and demarcation of government, and typically includes between 8 – 12 villages in a rural context. More information on the application of SWELL in the Bushbuckridge area can be found in the case study which accompanies this paper (Maluleke et al., 2005).

This community-based planning of multiple uses of water in partnership with service providers is a methodology that offers scope for more generic application, wherever the above-mentioned problems occur. This paper gives an introduction to the framework processes of SWELL.

PART 2: THE SWELL APPROACH

SWELL is informed by a number of key principles, and has drawn on the sustainable livelihoods framework (Chambers and Conway, 1992) and the RIDA (Resources, Infrastructure, Demand and Access) approach (Moriarty et al., 2004b).These are set out in brief below.

Principles of SWELL

- **Our priority: the poorest and most vulnerable people:** Activities emerging from the SWELL planning process should give priority to understanding and addressing the needs of the most vulnerable households within any community.
- **Villagers as key actors**: Poor people have access to different resources and follow complex livelihood strategies, which should be the basis of our work. The SWELL methodology is designed to make villagers central actors in the processes of analysing their problems, needs and opportunities around their water system, and designing strategies to improve it.
- **Integrated approach towards water management**: Water services need to be developed and managed in a way that integrates the perspectives and interests of different user groups and external service providers towards meeting the multiple water needs of people. It also implies taking an IWRM approach to water resources, considering impacts of any intervention on other use(r)s.
- **Empowerment and capacity building**: SWELL aims to empower and strengthen village voices (especially those of the poorest and most vulnerable) in identifying and planning water services, and so to create accountability to the customers. At the same time, capacity building efforts also apply to stakeholders in water services provision, such as municipal staff, for whom SWELL will help to provide a better understanding of villagers' realities and analysing options to meet their needs.

The SWELL Framework

Sustainable livelihoods
One definition of a sustainable livelihood reads:

A livelihood comprises the capabilities, assets (including both material and social resources) and activities required for a means of living. A livelihood is sustainable when it can cope with and recover from shocks and stresses and maintain and enhance its capabilities and assets both now and in the future, whilst not undermining the natural resource (Chambers and Conway, 1992).

The conceptual framework for livelihoods is given in the diagramme below:
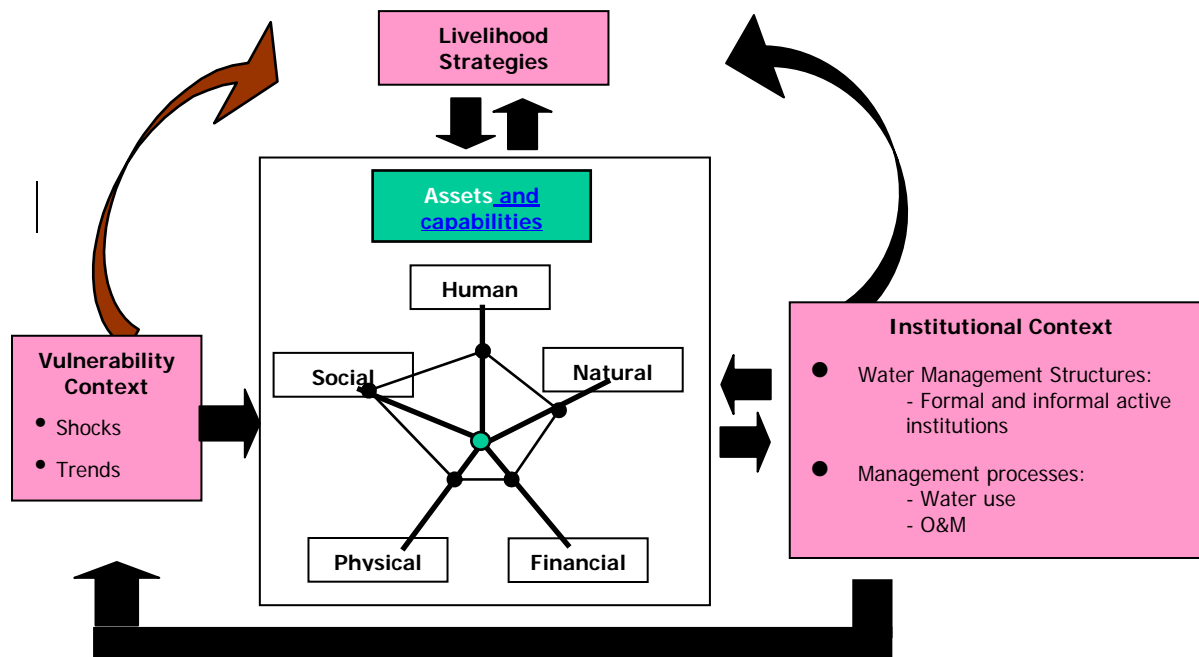
Figure 2: Livelihood framework as simplified for SWELL (Based on Joubert and Radebe, 2004)

The core components of a livelihood have been defined in various ways. SWELL used the following working definitions:

Assets: Assets can be seen as resources of different types, and a distinction is made between social assets such as social networks and material assets to engage in activities to pursue livelihood strategies Assets can be broken down into 5 categories: human capital, natural capital, social capital, financial capital and physical capital.

Capabilities*: Household capabilities have to do with the capacity of a household to secure a livelihood. Capabilities are the knowledge, skills and abilities that the household draws on to secure its livelihood. It is the capabilities of household members – their combined knowledge, skills, state of health and ability to labour or command labour – that enable them to make best use of their assets and engage in different livelihood activities.

Activities*: Livelihoods activities are not only the activities that bring in money and food, they are all the different activities that the household undertakes to survive and reproduce itself. We distinguish between productive, reproductive and community maintenance activities.

Strategies*: The livelihood strategies are the outcome of livelihood activities linked to an understanding of the choices and decisions underlying them. They include: how people combine their income generating activities, the ways in which they use their assets, which

assets they choose to invest in and how they manage to preserve existing assets and income.

A main characteristic of poor people's livelihoods is that they constantly change due to a dynamic environment. To capture the dynamic part of livelihoods, it is important to understand the influence of the **vulnerability context** surrounding them. One needs to consider the shocks and stresses affecting people's assets and strategies on the one hand, and people's ability to cope with that on the other hand. *Shocks* are defined as sudden events, usually with negative impacts and include things like natural disasters, losing one's job, etc. *Stresses* on the other hand are ongoing pressures, which households and individuals face, such as national economic decline, water scarcity or frequent technological breakdowns.

The final element of the livelihood approach is the policy and **institutional context** that influences people's livelihood strategies. A specific issue in this context is the different formal and informal organisations that play a role on water management at local level. The strength of the livelihoods framework is that it offers a way to recognise and take account of the complex realities of poor people's lives. However a potential pitfall here is that of losing focus, collecting too much information and designing unmanageable integrated projects. With this in mind, SWELL focuses on identifying different villagers' needs around water services in order to perform their specific livelihood activities and possible new activities. In addition, it identifies issues other than water that contribute to the success of people's water related activities. Specifically, this means that the following issues are analysed:
- The role and importance of water in people's livelihoods.
- The role and importance of water relative to other assets that make these livelihoods possible
- The role of vulnerability in people's strategies linked for water use
- People's assets (including capacities) to draw on for potential water related livelihood strategies.

In assessing these factors, we pay specific attention to heterogeneity of livelihoods according to gender and vulnerability factors.

Water services
We have been talking so far about water services without conceptualising them, which we need to do assess them. It is useful to look at both the **elements** (natural, technological and human) of these services as well as their **management**.

A framework known as RIDA (Resources, Infrastructure, Demand and Access) has been developed for problem focused holistic assessments at catchment level (Moriarty et al, 2004). We follow the same framework here for analysing water services in their catchment context:

The resources: Water resources include surface water (rivers, streams), groundwater, rainwater and wastewater. These are analysed in terms of quantity, quality, temporal

variability and their location. Given that access to or use of water resources may be regulated, assessment of water resources needs also to take account of water policy and the institutions that have responsibility for managing and regulating use of water resources. This will be dealt with in the section on water management activities (see below).

The infrastructure: The water infrastructure consists of those elements used to abstract, treat, convey and deliver the resource to the end users. It also includes those to collect, transport, treat and dispose of wastewater. It may vary from boreholes with pumps, to local reticulation systems to large dams and piped water schemes, but also gutters and rainwater tanks or sewer systems. Water services infrastructure interacts with the resource at the point of abstraction and at points of disposal.

Different technologies have different requirements for use and management. For example, operation of a community diesel pump requires collection of monies and a water usage monitoring system in order to ensure a fair and long term distribution system. During technology selection, community capacity for use and management needs to be considered in relation to the requirements for use of the different options. The actual functioning of present infrastructure has to be assessed with the users.

The demand and access: Demand and access describe the water requirements of users at a certain time and place. Demands reflect the different needs for water, and may include domestic needs, irrigation, industrial or other uses. Users can be considered as individuals, or groups. Demands are often considered on a group basis, but it is important to consider the variety of individual demands within the groups. The environment is also a user, with specific needs of its own, and important for long term water security. Demand is also hugely variable across users and time.

Access refers to whether people can actually use the water they demand. Access is determined by a number of factors, including the resource and its management, the infrastructure and its management. Water access of any single user is impacted by the demands of other users. Social and political factors, including power and conflict will play a role in determining access. This can happen at various scales, varying from social exclusion of some groups from accessing water from a village tap, to conflicts around water rights between upstream and downstream users.

By looking at the linkages between demand, access, infrastructure and resources one can develop a deeper understanding of where the causes of problems related to water access lie, and identify potential solutions.

The functioning of the water services: water management activities
People are the most important elements of the service as they are the one who (re)shape and manage its elements for their benefits. Within each of the three elements of water services discussed above, there are management activities which impact on their performance. These include decision-making, resource mobilization and financial management, monitoring, communication and conflict management. These activities lie

behind the more visible management activities, and are important to consider in the assessment process, as well as in planning, implementation and monitoring progress of plans.

- Water resources management entails the process of decision-making on assessment, allocation, use, regulation, monitoring and development of water resources
- Management of infrastructure entails mainly the operation, maintenance and financial administration of it. The complexity of these tasks depends on the type of system as noted above.
- The realities of demand and access in particular context are often the outcomes of formal and informal rules and regulations around the use of water and infrastructure.

Institutions
Management tasks are distributed among various formal and informal institutions, and may be overlapping or contradictory. For example, the O&M of a pump may be the responsibility of an operator, accountable to a water committee. At the same time, that person may be actually paid by local government. Institutional arrangements (and how clear or confused they are) affect the way management tasks can be carried out.

PART 3: SWELL Methodology or guideline

In this section we briefly describe the different phases of SWELL, presenting an overview of the whole process. A more detailed description of the content of each phase, including the methods and tools that we used in Bushbuckridge, can be found in the accompanying paper (Maluleke et al., 2005).

Process overview

The two frameworks discussed above (Sustainable Livelihoods and RIDA) make clear that a methodology aimed at understanding issues of multiple use of water and planning improvements of water services must include analyses at least at three levels:
- The household; to understand the livelihood contexts of different households
- The village; as this is the level where water services are normally organised,
- The broader institutional context

In order to address these three levels, the SWELL planning process is divided into 4 phases:
- Preparation with stakeholders
- The Water and Livelihood Strategy Assessment (WLSA)
- The Village synthesis
- The Ward Synthesis and Planning

The actual process followed is informed by the logic of a participatory exercise – both in the sense of villages and their structures participating, and in the sense of cross-sector service provider participation. It assumes a facilitator is present – in our case an NGO played this role.

Preparation
Planning of the assessment is done with village structures and officials of relevant departments and levels of government. This may include preparatory training, if the concepts are new, and team building. An assessment team is established, if possible including officials from different departments and levels, and village people. What is appropriate and possible in this regard will clearly vary from situation to situation. What is important is building institutional understanding and buy-in, which is a re-iterative process.

The Water and Livelihood Strategy Assessment (WLSA) analysis phase
In each village local structures convene open meetings. The village level assessment is carried out first, setting out broad trends and patterns in the village, across the socio-economic spectrum, of the water and livelihoods situation, water resources and infrastructure, institutional roles and relationships, and including a village welfare classification. Some work may take place with focus groups, and verification through transect walks and key informant interviews are included.
Participatory, visual tools are used such as:
- Mapping – of the village layout and water resources and infrastructure.

- Income and expenditure trees indicating the sources of income and expenditure in the community and which of these activities require water.
- A timeline of the history of the village water situation.
- Task and role players' matrix looking at water related tasks and the roles local institutions play in these
- Sources and uses table to set out the various sources of water for the village, and what water from each source is used for.
- Social mapping,
- Well-being or welfare ranking

This is followed by household level assessments, of selected households, across welfare categories (as locally defined). Semi-structured interviews within households are held to understand household livelihood strategies, water use, and how factors such as age and gender affect vulnerability and resilience of households.

The village synthesis
The assessment information is then collated and presented by the facilitators to a village gathering to confirm or add to the information, and to then collectively analyse. This forum identifies and prioritises responses to problem areas. The village synthesis prepares villagers to engage in the multi-stakeholder platform from a considered and mandated position.

The Ward Synthesis and Planning
The objective of the Ward Synthesis is to develop plans for the improvement of water services in the Ward to be included in the municipal planning process. Village assessment and synthesis information is collated and presented to a Ward Synthesis and Planning platform. This brings together village representatives and service providers, to collectively analyse the outcome of the assessments, and to develop agreed strategies, plans and prioritised projects. The projects and plans are then assigned to individuals within institutions for tabling for resource allocation.

The following steps are taken to reach the objective:
Step 1: Identification and analysis of problems around water services in the ward
Step 2: Formulation of objectives for the improvement of water services in the ward.
Step 3: Development of strategies to reach the agreed objectives.
Step 4: Drafting of projects proposals for improvement of water services in villages of the ward.

It is important in this phase to set up an ongoing process for monitoring and evaluation. The platform created by the Ward Synthesis should ideally be convened regularly (perhaps quarterly) to become a forum that provides for monitoring of implementation and coordinated action, and for collective negotiation and learning. What SWELL is seeking to achieve will not happen in an ideal way overnight, but processes that set up a more integrated and community based process for planning, implementation and monitoring of water provide a foundation for building upon to overcome the shortfalls identified in current, dominant practices.

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