Planning for a Multiple Use System Approach at Local Level: experiences from Bushbuckridge, South Africa

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Abstract

Looking at livelihoods strategies of poor rural communities, 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 provide a wide range of opportunities for the rural poor. However, traditionally, water supply planning has focussed on meeting basic domestic needs only.

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, which is based on an understanding of people's livelihood strategies and the role of water resources (and constraints) within those.

This paper attempts to discuss such an approach, which was developed and piloted in Bushbuckridge, South Africa. SWELL (Securing Water to Enhance Local Livelihoods) is a community-based planning approach that aims to enable improved allocation and use of water resources for water-related livelihoods. The SWELL methodology is based on a participatory process that brings together villagers, water service implementers and other agencies. The process enables stakeholders to develop a greater and shared understanding of people's multiple water needs and available water resources, and to jointly develop strategies and plans, based on that information. The paper provides an overview of the methodology, as well of the application in Bushbuckridge, through to the outcomes of the assessment processes and how those were taken forward.

Introduction

Believing that it would be important, in the new water policy context in South Africa, to better understand the realities and economics of water at the local level, AWARD (Association for Water and Rural Development) undertook two surveys to study water use in a total 13 villages (see Perez de Mendiguren and Mabalane, 2001; Perez de Mendiguren, 2004) in the Sand River catchment. A major finding from this research was that where villagers had better access to water, the economic activities of many poor households increased significantly.

At the same time, there was increasing attention to the provision water supply services to meet both domestic and productive needs. This culminated in the development of the concept of the *multiple use services (MUS),* i.e. the design and management of water services on the basis of

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(especially poor) people's livelihoods needs (Van Koppen et al., 2006). The validity and value of this understanding is gaining increasing recognition. However, one major question that remains is "how is this implemented practically?"

One particular challenge is to actually understand people's livelihoods and related water needs, and providing an integrated answer to these needs by intermediate level agencies. AWARD has aimed to respond to this challenge by developing an approach named SWELL (Securing Water to Enhance Local Livelihoods) (Maluleke et al., 2005a). This is a community-based planning of methodology, in partnership with service providers, which specifically looks at providing water for livelihoods. This paper describes and reflects the methodology and the experience of work carried out in the past 3 years as well as the continued development of the SWELL programme.

Context: the Sand River catchment

The Sand River Catchment (SRC) (see Figure 1) lies in the north-eastern region of South Africa, since 1994. The Sand River Catchment includes the area known as Bushbuckridge (BBR), where the majority of the people of the catchment live. The population of the BBR is made up of many dislocated communities, often moved two or three times under Apartheid's grand plan in the 1970s and 1980s. There are dense settlements as people were crowded together into two 'homelands', Lebowa and Gazankulu, which were defined along ethnic lines.

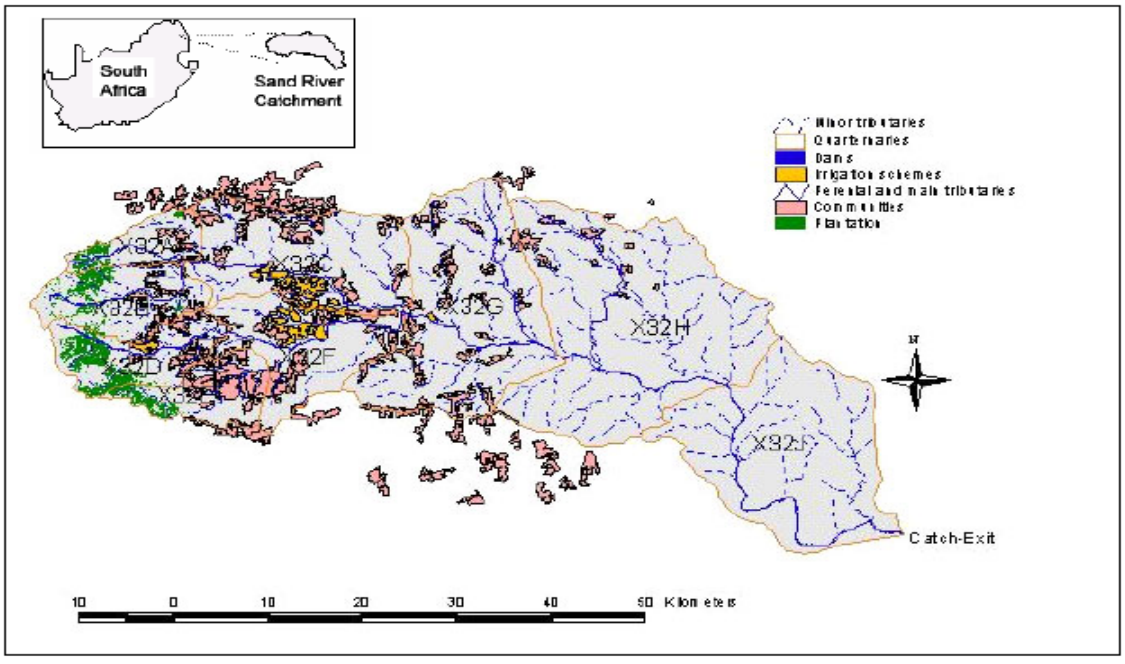

Figure 1: The Sand River catchment in South Africa

The SRC spans an area of some 2 000 km^2 and is home to some 420 000 people. The area is semi-arid with erratic rainfall and the catchment is regarded as vulnerable in terms of water security. Rainfall is seasonal and variable, with droughts occurring as often as every three to four years. The main land-uses include commercial forestry in the upper catchment, rural residential areas

combined with subsistence and limited irrigated agriculture in the central region, and conservation (mainly exclusive high-income tourism) in the easterly region.

Surface water resources in the catchment are not sufficient to meet all these sectoral demands. The available resources are only enough to provide the domestic and basic subsistence needs, as well as the environmental flow requirements. The current use of water for irrigation and forestry goes at the expense of breaking the environmental flow requirements. Groundwater is currently under-used and could contribute to meeting the difference between demand and supply (Smits, 2004). Even then the water resources base remains very limited.

Despite the fact that the water resources are there to meet people's basic needs, water services provision is actually deficient. Most villages in the Sand River Catchment still do not have reliable water supply to the minimum standards (of 25 litres per person per day). Reasons for that are manifold and include:

- Institutional duplication and lack of co-ordination between the two former homeland administration systems resulted in inefficiencies and distortions, and a chaotic actual layout of infrastructure, making Operation and Maintenance (O&M) complicated.
- Uncoordinated efforts of government departments and stakeholders
- Lack of clarity on institutional roles and responsibilities for managing the services between the Department of Water Affairs and Forestry (DWAF), the local authorities and communities. As can be seen in the figure below, a range of stakeholders (governmental, NGOs, CBOs) are trying to address water-related issues, but often in a des-integrated way.

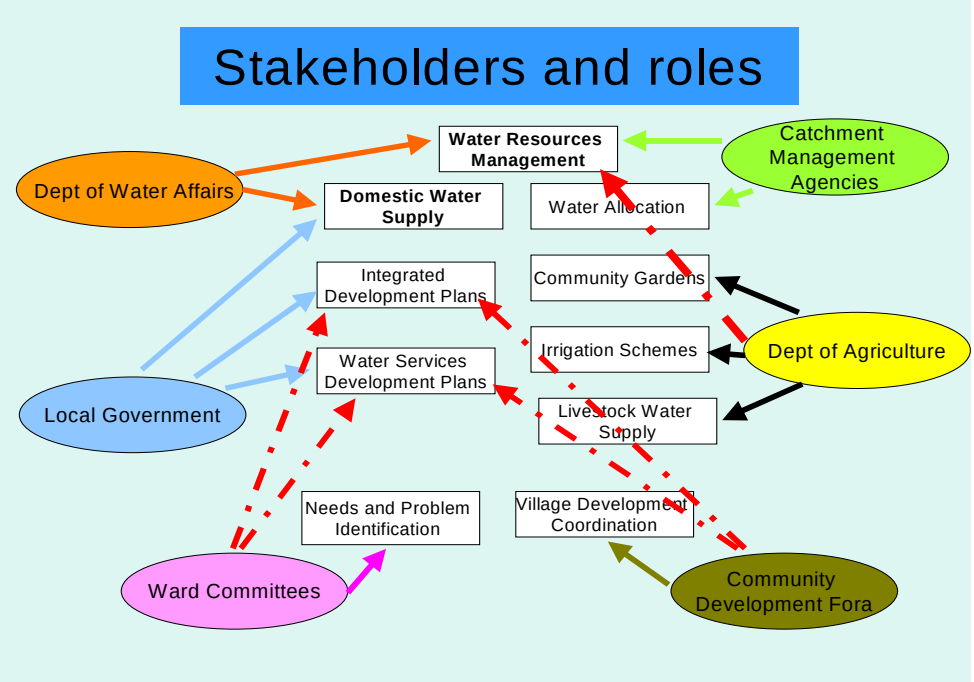

Figure 2: range of stakeholders in water supply provision in Bushbuckridge

As a result, there has been a proliferation of water infrastructural developments, but many of these have quickly fallen into disuse or provide only erratic supplies.

Securing Water to Enhance Local Livelihoods (SWELL): the methodology

There is thus a need for a more holistic and integrated approach to water planning, so as to reach increased village level water security. Such an approach should be based on an understanding of peoples' livelihood strategies and the role of water within them. To adopt such an approach it is clear that integration and collaboration between different government departments and non-government agencies is needed. The SWELL approach aimed to contribute to that.

SWELL is a participatory processes of enquiry, knowledge exchange and learning in order to plan for water services, was developed with the aim of encouraging planning, by multiple stakeholders, for multiple water uses (Maluleke *et al.*, 2005).

This section describes the SWELL methodology in detail. It does so by first providing the framework and then the key steps in the process.

Framework

SWELL has drawn on two main conceptual frameworks and also the principles and practices of participatory learning and action research:

- The sustainable livelihoods framework
- The RIDA (Resource, Infrastructure, Demand and Access) framework

The sustainable livelihoods framework defines "livelihoods" as going beyond mere income generation, but rather as comprising the capabilities, assets and activities required for a means of living (Chambers and Conway, 1992). Understanding these, and the coping strategies (especially poor) households use to deal with shocks and stresses, is critical if we are to support vulnerable villagers' livelihoods to become more resilient and sustainable.

The RIDA (Resources, Infrastructure, Demand and Access) framework (Moriarty et al., 2004b) suggest that 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.

Table 1: The frameworks and their respective themes

SL Framework themes	RIDA Framework themes
1. Assets	1. Water Resources
2. Capabilities	2. Infrastructure
3. Activities and Strategies	3. Demand/Uses
4. Vulnerability context	4. Access
5. Institutional context	

Participation and action research are intrinsic to SWELL. This means that a process is facilitated that engages role-players actively in collecting information, analysing this information, defining problems and priorities, planning actions to address these, implementing the plans and then monitoring and evaluating to inform further planning. To undertake this approach a high level of communication and liaison with the role-players is necessary. Thus the process itself seeks to

overcome the problems of departments and institutions working in isolation from each other, by building integration through collaborative problem identification and planning. It is also critical that this is done on the basis of village realities, with a strong voice of villagers and their structures.

Steps in the process

SWELL was first piloted in the village of Utah in Ward 16 of the Bushbuckridge Local Municipality in 2003. A team of local government officials and AWARD staff were trained to carry out the village level assessment, focusing on livelihoods and water. After a four-day field assessment, a village level analysis of the outcomes of the assessment was held to verify results and to agree priority areas for action from the villagers' perspective. This was followed by a workshop, which also drew in officials and decision makers, to analyse and plan together. There were high levels of participation in the process, and very positive feedback. It was recommended, though, to adapt the methodology as a ward level process, as the ward (typically including 7-14 villages) is the lowest level of planning for local government. In addition, it was recommended that planning and implementation should be embedded within the existing Integrated Development Planning process, for this would mean that plans would become part of district approved, sanctioned, budgeted and monitored processes. In this way the strengths of community-based participatory approaches and local government planning processes would be combined

This resulted in the methodology to be structured as shown below. It also shows the links with the IDP process. The diagram below also shows the key steps in the SWELL process, going from an assessment phase to synthesis and planning, to implementation and monitoring. In that respect it follows a classical project/planning cycle, and can be built into other planning cycles as well.

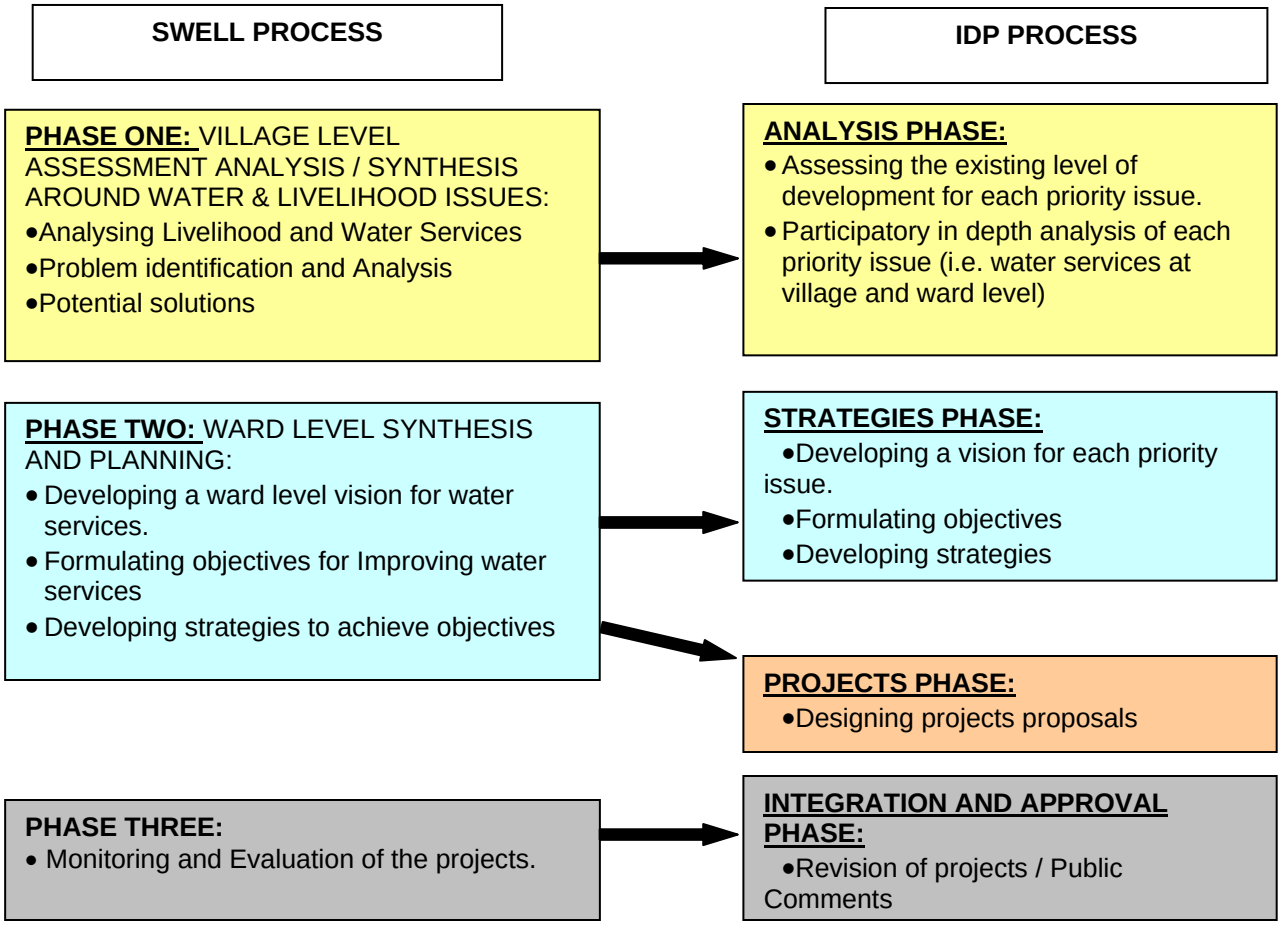

Figure 3: The linkages between the SWELL and IDP cycles

The application of SWELL in Bushbuckridge

Now that we have seen the generic methodology, this section elaborates the application of SWELL in Bushbuckridge. It provides both the overview of the exact steps followed, as well as the key findings of the approach.

Process

After SWELL was adapted into a ward level planning methodology, it was applied on a larger scale in the Bushbuckridge area. This started with village water and livelihood assessments carried out in six more villages of Ward 16 in late 2004 and early 2005, again in close collaboration with a range of stakeholders. In preparation for village assessments, a group of stakeholders was put together. These were "prepared" for the process by undergoing training in PRA and SLA methods of data gathering and analysis. After the analysis, village synthesis processes were undertaken, again, in collaboration with these various stakeholders. This process was rounded up by holding a Ward level synthesis workshop where findings from individual Ward 16 villages were collectively analysed and conclusions drawn for further steps. This resulted in an agreement on objectives and strategies for the ward.

Assessment process

Village level assessments

A meeting with the village leadership (both traditional, local headman, and democratic, community development forum) would be held to discuss the process and how it would unfold. Through these leadership structures the whole community gets invited to a village meeting, from which the assessments are carried out.

The village assessment processes took about two days to complete. Community members were divided into small groups to undertake specific PRA exercises. These groups were comprised of men and women, and people from across all age groups. These groups, simultaneously, worked on a different exercise, after which each group's work would be reported in plenary. An open-ended, semi-structured approach that could be responsive to what was emerging on the ground was employed, while keeping some level of consistency in approach. A number of tools were used in order to build up a picture of **water, livelihoods** and the linkages between them. The methods complemented each other by allowing for crosschecking of information therefore enhancing the depth of the enquiry.

The following assessment activities were carried out (see Maluleke *et al.*, 2005 for more details).

- Water resource mapping; a map of the village would be drawn and on it all existing sources of water and related infrastructure would be added. Also qualitative data on functioning of water infrastructure was added.
- Time line: to capture the history of the development of water infrastructure and use in the village
- Transect walk: to crosscheck the mapping exercise, and hold further discussions on infrastructure status, type, institution responsible for maintenance and specific problems.
- Pocket voting: a matrix of water sources and uses would be drawn out of what the community utilise. Out of all the different uses, villagers would be asked to link their particular use with the source of water they depend on.
- Matrix of task and role players: to identify management tasks around resources, technologies and user, as well as other role players.
- Social mapping: to set out basic social information, and the arrangement of households within the sections of the village, as an introduction to discuss inequalities, social problems and coping strategies in the village
- Well-being or welfare ranking: was drawn out of the social map. Households were grouped together according to a village criter, which formed the basis of discussion.

H**ousehold level** a**ssessment**s

Semi-structured interviews were used to carry out this level of assessment. Questions were structured to capture information on three themes, i.e. **income generation, food generation** and **general domestic water uses;** questions such as

- What are the assets that people draw on to ensure the success of these activities?
- What are the major stresses that make the achievement of these difficult?
- How do people cope in case of shocks?

- What are people's assets that they could potentially draw on to perform water related activities in the case of a water related project?

Process of analysis of the information

Village level analysis and synthesis

The process looked to understand and assess the overall water situation at village level by affirming and analysing outcomes of the assessment with villagers; as well as to develop agreed on priority action areas for improve the village level water supply, for taking into the ward analysis and planning

A presentation of the main findings from the Village Assessment would be prepared and given by the research team. This would be done in the form of statements on the situation, which set out the links between resources, technology, users, uses and management.

Villagers check the statements to see if they agreed with or not, and then in groups explored opportunities that could change the situation presented. Each group made proposals and presented their findings to other groups. These proposals were debated, and input from officials was invited at this stage (from DWAF and Department of Agriculture). After deliberation, priority issues as well as the responsible institution were drawn out.

Ward Synthesis and Planning

This process looked at collectively analysing problems, out of the assessment and analysis processes of all the different villages; in order to work out and agree on plans for the improvement of water services in Ward 16 and, for inclusion in the municipal planning processes (the IDP process).

The Ward Synthesis steps:
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.

The SWELL stakeholders undertook this whole process in a participatory meeting over 3 days. The method that was used was first to prepare a summary of the assessment outcomes from each village for collective problem analysis. The following specific methods were used:

- Develop a Problem Tree together: participants in groups identified key problems on cards, and then developed this problem tree in plenary. (see example in figure below).
- Development of an Objectives Tree: here participants turned each problem into a positive statement. It became known, fondly, as the "Christmas tree". The positive energy, after so much concentration on problem areas, was important for the group.
- Inputs to introduce new ideas and technology options: AWARD and other resource people gave a series of short presentations, in order to open participants' minds to other options or ways of addressing problems. These presentations focused on the Integrated Development Planning (IDP) process, rainwater harvesting, the meaning of water to vulnerable households, and on training resources and opportunities from government funding.

- Development of strategies to overcome key problems: in groups, people were asked to think broadly of what would make a meaningful difference to the problems, considering all they had done before on underlying causes, objectives and new ideas. Through discussion 6 strategies were agreed on.

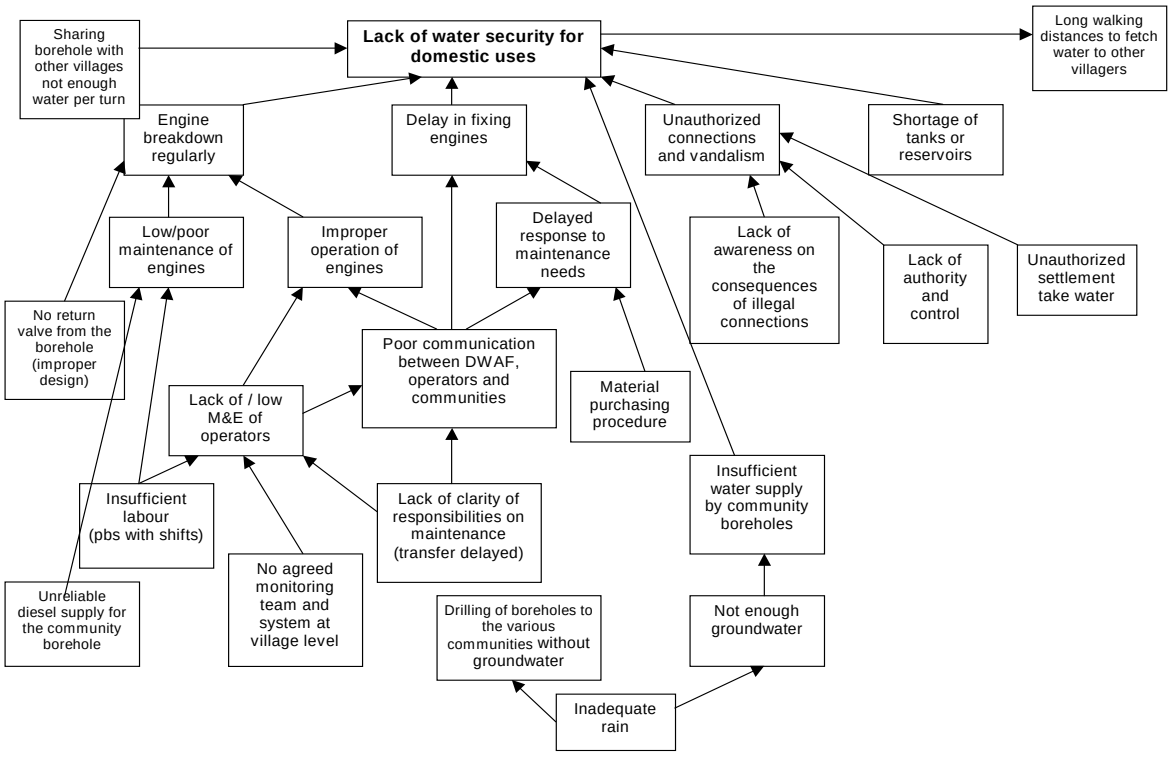

Figure 4: example of problem tree developed for Ward 16

Findings

This section provides the findings at household and village level from the exercise in Bushbuckridge. This gives a clear picture of the relative importance of water in people's livelihoods, the current constraints to that, and the ways forward that was jointly developed.

Findings at household level

Income generation

There is heavy reliance on state provided social grants, i.e. old-age grant, disability grants, child grants and grants allocated to child-headed households, all of which form major chunk of income a household can have. The size and type of household also determines how many of these state grants can be accessed.

For those households that are outside of this social grant bracket, small-scale productive activities are, mostly, the only source of income. This is the second largest area that contributes to household income security. Water is often the limiting factor to the extent at which these productive activities are carried out.

Food generation

Currently, most households produce their food only during the wet season, where they grow food in their rain-fed ploughing fields. These fields produce enough food to last a household three months on average. There is thus currently no major dependence on irrigated agriculture, or a clear drive towards that. It must be noted though that where people have food gardens, these provide complimentary food sources to the bulk food.

General domestic water uses

Other than domestic purposes, i.e. cooking, drinking and cleaning, some households engage in other (productive) activities such as making of ice, brewing beer, baking, livestock watering and small scale irrigation. It is usually those households that have a yard tap or live near a standpipe, that provides water most of the time, engage in food production for sale.

As long as there is waater, people tend to stretch its uses as far as they can to accommodate income generation. However, as soon as water supply becomes erratic, the productive activities can no longer be undertaken, hampering people's potential livelihood activities.

Findings at village level

A suite of outputs was realised through the village level analysis and synthesis processes as shown in Table 1, below.

Table 2: example of infrastructure assessment in Delani

Infrastructure elements	**Status**
Engines/pumps	3 electric engines are located the lower part of the village (next to the dam). Regular breakdown occur because of technical and managerial incoherence The capacity the 3 engines is said to be sufficient to supply domestic water for the whole village. The functioning of the engines is supposed to be automatic but it happens that the operator intervenes manually in their operation
Main reservoir	1 main cement reservoir at the top of the village in a fenced location in good status.
Reticulation (pipes and taps)	28 communal taps are present and in good status. The reticulation system is problematic regarding the connection set-up between the 3 engines and is a cause of regular breakdowns.
Dam (earth dam)	There are occasions when the dam is dry during the dry season (for 2/3 months). It is believed that this is caused by siltation, which leads to the dam losing its water retention capacity.
Rain water tanks or buckets	No rainwater tanks exist in this village. In few cases, basic arrangements are made to collect rainwater, on a larger scale, in 200-litre drums during the rainy season, else through the use of a few 20-litre buckets.

These assessments helped people understand the relation between general water supply and their livelihood activities. To address the problems, people formulated strategies, as shown below.

Strategy formulation
An outcome of the Ward Synthesis and Planning workshop was a list of strategies and projects that would lead to securing water for both domestic and productive uses

- Strategy # 1: Investing in water storage infrastructure for domestic use, livestock and gardening, along with capacity building for maintenance of the infrastructure
- Strategy# 2: Investing in rainwater harvesting technology to provide water for domestic, productive and water for income generating activities, along with capacity building for operation, maintenance and use
- Strategy # 3: Create technical and institutional capacity to maintain and repair water distribution infrastructure (for multiple uses)
- Strategy # 4: Define and enforce clear lines of responsibility, accountability and communication on water management (by all actors, covering all water uses (Domestic, Agriculture and productive)
- Strategy # 5: Develop awareness raising on land, and water resources and water infrastructure
- Strategy # 6: Measures in place to ensure secured supply of domestic water in emergency (e.g. during drought periods and breakdowns)

After this, agreement was sought on specific projects to realise the strategies. Roles and responsibilities for taking these forward were assigned with actions, names and a time frame. The specific projects that were prioritised include:

- Project #1: Awareness campaigns against vandalism (developing communities' capacity to understand the Water Distribution systems)
- Project #2: Rainwater harvesting for domestic and productive uses
- Project #3: Land care project on Agricultural practices and soil conservation
- Project #4: Assessment of borehole situation; and fixing of boreholes, and training of local people
- Project #5: Infrastructure for livestock watering

Follow-up

Some programme responses were agreed to and a budget of R500, 000 was allocated by the municipality for taking forward refurbishment of exiting infrastructure along with an approach in line with the agreed strategies.

This encouraging response turned to frustration as the detailed plans to implement the above could not get off the ground as the technical and political processes of required to release the said budget became blocked. While the team struggled to understand the process and how to get resources flowing, the last group of village assessments were undertaken.

In response to questions arising about aspects of vulnerability and the need to understand the linkages to water and the livelihood strategies of those affected by HIV/Aids, extreme poverty and so on, the last village assessments included more focus on this aspect. In preparing for the assessments additional stakeholders were included i.e. the Department of Social Development and HIV/Aids support organisations and home based carers. It soon emerged that there is no coherence in the understanding of and approach to vulnerability by the various stakeholders. Moreover the village assessments revealed how marginalized the very vulnerable can be from processes and programmes, and that there were indeed special needs with regard to water that are neither well understood nor responded to.

The R500, 000 was not released, seemingly, due, to lack of capacity of the technical official to process it. A few months later a promise of funding was made form the District Municipality. This did then not materialize, in that case seemingly due to due process not being followed by the official who allocated it.

Departments did make some efforts to respond to what emerged from the assessments. But a challenge is that, unlike the local municipality, sector departments work on plans developed by provincial, and even national, level. It is difficult to integrate these with local plans. Furthermore there is lack of clarity on whom the relevant officials, or what the relevant procedures are to take agreed strategies forward into sector plans.

Reflections and lessons learnt so far

The SWELL work has provided many new insights into the water needs for multiple uses of the poor, as well as into the way in which local authorities and other agencies are responding to these. This section presents these in detail.

About people's water needs

- Well-documented understanding of the water and livelihood situation in the ward show that people will engage in income generating activities, provided a stable and reliable supply of water is guaranteed.
- Households that have a yard tap or live near a standpipe engage in various income generating activities, whereas others do that less so. Distance is therefore a major enabling or hindering factor for multiple uses of water.

About the SWELL process in Bushbuckridge

- The most recent IDP has not drawn on this work done in Ward 16. Although attempts are being made to have the municipality consider the work done, the IDP document is put together hurriedly, for officials to worry about accuracy or even usefulness of any plans.
- The budgets "allocated" by both the district and local municipalities for projects identified were never released. As a result, officials have not been able to engage each other to see a project through.
- As a result of SWELL, Departments know more about what each other are doing, and how they work, and valued the opportunity for communication. This is yet to translate into real action, where there is active "consultation" between departments.

- Officials and villagers willingly attended the events, whenever AWARD convened and facilitated those. But, they are tardy to take action for integration or follow-up forward on their own
- Power dynamics and conflict started to emerge between villagers as soon as actual budgets were potentially there for allocation.
- Village water committees and community development fora (CDFs) need more capacity and understanding. But there are questions about how to do this in a way that works in the long term when membership changes, in line with local government elections.
- In conclusions, we have not yet succeeded in introducing an approach that is indeed being taken into the existing processes of planning and project development in IDPs or sector departments

Where do we go from here?

- Continue working with these various stakeholders. It is not a quick process, and needs more reiteration, deepening, a longer term and well structured learning process for all,
- To understand the institutional processes better, by all stakeholders – not only how they are supposed to work formally, but how they do work in reality,
- To build a true *institutional* partnership of joint research and action, rather than just individuals from these institutions participating in this process.
- To find a way to get some practical and material responses to water problems while undertaking the longer term learning process – in order to respond to urgent community needs so as not to be blocked by frustration
- Meet some of the immediate needs of the most vulnerable (water and livelihoods) to demonstrate how to do this in an integrated way.
- Strengthening local organisations – including awareness raising and accountability: This would be a programme of awareness raising with the Ward Committee, the CDFs and water committees, so that they can play their role more effectively and as they should – to be elected regularly, to represent community interests and needs (including vulnerable groups) and to support implementation of programmes.
- Building capacity of the invisible silent voices to have influence in community structures
- Do further research into accountability. How are people able to hold local government accountable? And how to include people who are most marginal, invisible, silent in these processes? We want to get such understanding

Conclusion

This paper aimed to describe a process that, through proper buy-in by officials, could contribute to addressing the problems of service delivery in Bushbuckridge local municipality. It is an IDP requirement that a needs assessment be carried out in order to inform planning processes. The SWELL process offers just that, with a specific focus on the relation between water and livelihoods, a key issue in the area.

The SWELL application in Bushbuckridge helped creating a better understanding of the water situation in the area, and the limiting impacts it has on people's livelihoods activities. Plans that were developed by the communities in partnership with the local authorities tried to address these through a combination of short-term measures with long term strategies. However, sticking to the

plans proved difficult. Officials quickly fell into the trap of uncoordinated planning, and tedious budget release procedures.

The actual buy-in by all stakeholders can occur if, firstly, relevant officials are identified and brought on board. The challenge here is in getting the officials to be willing to test this way of thinking, although it is clearly spelt out in their official planning documents. Secondly, if it is not only individual officials wanting to take part, but the department as a whole in order to ensure continues support for the approach even after changes in personnel.

Acknowledgements

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