Stakeholder connectedness and participatory water resource management in South Africa

Tamsyn Sherwill[1]*, Linda Arendse[2], Kevin Rogers[1], Nhlanhla Sihlophe[3], Brian van Wilgen[4], Ernita van Wyk[2] and Sandile Zeka[3]

[1]*Centre for Water in the Environment (CWE), University of the Witwatersrand, Private Bag 3, WITS 2050, South Africa*

[2]*CSIR Natural Resources and the Environment, PO Box 395, Pretoria 0001, South Africa*

[3]*Centre for Environment, Agriculture and Development (CEAD), University of KwaZulu-Natal, Pietermaritzburg, Private Bag X01, Scottville 3209, South Africa*

[4]*Centre for Invasion Biology, CSIR Natural Resources and the Environment, PO Box 320 Stellenbosch 7599, South Africa*

Abstract

Establishment of catchment management agencies (CMAs) is central to South Africa's new policy vision for achieving decentralised, participatory integrated water resource management. However, CMAs cannot directly engage every individual stakeholder – inputs will need to be channelled via a hierarchical representation system. The issue of 'connectedness' is crucial: how do interest groupings interact across and between scales? Research in the Inkomati catchment suggests that current levels of organisation, communication and capacity could result in inequitable, unsustainable participatory decisions. Large imbalances in degree of organisation and negotiating power exist between different sectors and regions. Though some cooperative initiatives exist, there appears to be a greater focus on engaging government or legal processes, contrary to the intentions of the new water policy. Suggested interventions include: capacity building for disadvantaged groups; facilitation of catchment-based fora as vehicles for co-learning and relationship-building; and educating all stakeholders about the new water policy. All must create awareness of benefits of engaging other stakeholders and the future CMA, and thus an imperative for resource users to align themselves towards this goal.

Keywords: public participation; stakeholder organisations, collaborative natural resource management

Introduction

In order to make water resource management more responsive to local needs, South Africa's new water law, the National Water Act (no. 36 of 1998), is based on a policy of decentralisation and participation. Devolution of power to a local, catchment-delineated scale is to be achieved through the establishment of a catchment management agency (CMA) for each of 19 water management areas (WMAs). CMAs will be governed by a board containing both stakeholder representatives and technical expertise, and will be tasked with seeking 'co-operation and agreement on water-related matters from the various stakeholders and interested persons' (National Water Act, Ch.2). A large part of the CMA's role will involve engaging various stakeholder groupings, to build cooperative relationships, and to generate shared vision for the goals and strategies of resource use.

Achieving a truly 'bottom-up', participatory management system is, however, chiefly dependent on the initiatives of the **lower** levels of the management hierarchy. This begs the question: to what extent are water resource users in South Africa able to take the initiative to participate meaningfully in resource management decisions, and in a way that enhances the equity and sustainability of resource use? This readiness most likely stems from a suite of attributes, including stakeholder knowledge, attitudes and behaviours, as well as systems of organisation and communication which enable them to engage government, the CMA, and each other. Further questions then arise: How can government facilitate the development of stakeholders and their organisations toward this ideal? How can CMAs catalyse the organisation and activities of systems of stakeholder representation, and also develop a culture of cooperation in the interests of a shared resource?

Several challenges exist, particularly the tensions experienced in attempting the top-down implementation of a bottom-up ideal. As McKay (2004) pointed out: 'While the opportunities for initiating, encouraging and supporting transparent, consensus-based processes are significant, the challenges and pitfalls of institutionalising this approach from national level downwards are equally significant'.

The research reported in this paper was inspired by these questions and challenges, and attempted to investigate these through the lens of stakeholder 'connectedness'. In turn, this exploratory study hopes to inspire further awareness and work in this field.

Connectedness and social capital

Connectedness refers to the existence of groups of individuals in society and the connections both within and between these groups, from micro to macro levels. Many different types of connection exist (e.g. mutual help, exchange of information, trading of goods, providing loans, common celebrations) which may be two-way or one-way, and either long-established or 'subject to regular update' (Pretty and Ward, 2001). Though more complex categorisations exist (e.g. Pretty and Ward, 2001) this paper distinguishes only between 'vertical' (between different spatial scales within a single sector) and 'horizontal' connected-

* To whom all correspondence should be addressed.
☎ +2711 717 6419; fax: +2711 717 6499;
e-mail: tsherwill@gmail.com.
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ness (between various sectors and groups, at a similar spatial or organisational level).

Connectedness (along with several other properties) is considered to be a form of 'social capital' – a concept finding increasing use and popularity among academics and policymakers (Portes and Landolt, 1996) and in diverse fields, including that of natural resource management (Pretty and Ward, 2001). The sociologist Bourdieu (1986) first used the term to refer to the advantages possessed by individuals as a result of their membership in particular communities. Coleman (1988) later defined social capital as the 'structure of relations between actors and among actors' that acts as a resource for individuals, enabling productive activities. Applied to the context of natural resource management, the term social capital has been used to capture the idea that 'social bonds and social norms are an important part of the basis for sustainable livelihoods' (Pretty and Ward, 2001). In particular, social capital is thought to facilitate cooperation, by lowering the costs of working together. In addition to connectedness, three other central aspects of social capital are described by Pretty and Ward (2001): relations of trust; reciprocity and exchanges; and common rules, norms and sanctions.

Stakeholder connectedness and catchment management agencies (CMAs)

Though CMAs must take on the responsibility of engaging resource users within their WMA, they cannot directly engage every individual stakeholder. Inputs, both from and to the CMA, will need to be channelled via a representation system, which will probably be strongly hierarchical. Vertical connectedness is the basis of hierarchical representation systems that must operate over various spatial scales. An investigation of the existence of these interest groupings – and their ability to accountably represent their constituencies' interests at the various levels – is crucial to assessing the potential for effective participatory resource management.

Horizontal connectedness, in turn, is a primer for cooperation. If CMAs are to involve stakeholders in both decision-making and implementation, then the nature of interaction between sectors and regions is critical to how and whether they are able to cooperate in reaching decisions and managing their shared resource. The very nature of water resources - their biophysical connectedness and their status as scarce, contested and vital to human life and production - calls for such cooperation.

Horizontal interaction and connection are essential to cooperation because they imply the existence of relationships. Whether these relationships are positive or negative at first, their existence provides the opportunity to hear and understand the perspectives and preferences of others. Understanding others' positions may in turn lead to the accommodation of others' views, needs and values in one's own perceptions, preferences, decisions and actions. This 'co-evolution' of perspectives and preferences (Costanza and Folke, 1997) is the key to developing common vision and inspiring collective, cooperative action.

Enduring relationships are also a precursor to other aspects of social capital, such as trust, and the development of shared norms and values. Trust facilitates cooperation by decreasing its transaction cost, reducing the need for repetition and costly negotiation (Bromley, 1993). People are more likely to invest in collective action when they are able to trust that others will also do so. Trust is also integral to compliance with shared norms. Shared norms and values are 'mutually agreed or handed-down norms of behaviour that place group interest above those of individuals' (Pretty and Ward, 2001) and thereby exert a form of 'peer pressure' which can lead to self-regulation, or voluntary compliance.

'Peer pressure' of this nature has even been proposed as a potential mechanism by which nation states are led to ratify and comply with international agreements (Finnemore and Sikkink, 1998). From the perspective of the International Relations theory of 'social constructivism' (Ruggie, 1998), actors' behaviour, and particularly cooperative or compliant behaviour, reflects not only rationality (seeking to promote the actor's individual interests by weighing the benefits vs. costs of cooperation/compliance) but more importantly the influence of social norms and social learning processes. Social constructivists argue that a group's preferences are not given, but are socially constructed through the influence of shared identities, principles and behavioural norms (Chayes and Chayes, 1993). Convergence of actor's behaviour, in the form of cooperative agreements and compliance with these, then results from normative changes which set new standards for acceptable and legitimate behaviour (Finnemore and Sikkink, 1998).

The differences which exist between water resource stakeholder groups in terms of identities, norms and values can thus deter their engagement or cooperation. However, interaction within a process enabling social learning in the context of interdependence potentially allows for the building or discovery of joint identities, norms and goals, which promote cooperation and sustained interaction.

Applying the concepts of connectedness and social capital to this research

Writers using the concept of social capital have been criticised for casting the phenomenon in an unconditionally positive light. Often it is prescribed as a cure for a variety of ills plaguing the modern world (Portes and Landolt, 1996), with many a publication lamenting the loss of 'social capital' and calling for the restoration of strong community ties.

However, a particular instance of social capital can only be evaluated relative to a function or purpose, and within a context. A certain type of social structure may be valuable for facilitating one action, but useless or detrimental to another (Coleman, 1988). Inasmuch as social bonds can be seen as **inclusive**, from one perspective, often groups must **exclude** to include, e.g. the existence of so-called 'old boys clubs' that act informally and perhaps even subconsciously at times, to advance the prospects of their 'own'. Some associations 'encourage conformity, perpetuate adversity and inequity, and allow certain individuals to get others to act in ways that suit only themselves' (Pretty and Ward, 2001).

Similarly, though shared norms and values are often important in encouraging members to forgo self-interest in the interest of the 'collective', the boundaries of this 'collective' may be either narrowly or broadly drawn. Shared norms and values are only likely to be beneficial to natural resource management if they coincide with the interests of equity and sustainability, and this may not always be the case.

For all these reasons this research considers connectedness not as an entity or property of value in itself (divorced from its social context and function) but looks instead at the functions and implications of different connections within the context of participatory decision-making for water resource management, and with the goals of equity and sustainability in mind. We thus hope to avoid perpetrating the error of indiscriminate promo-

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tion of all forms of 'social capital' but instead focus on types of social capital that 'enhance capacities to solve public problems and empower communities' (Civic Practices Network, 1999).

Research aim

This research aimed to explore the issue of 'connectedness' in the Sabie-Sand catchment, a part of the Inkomati WMA. The Inkomati CMA is the first to have been established in South Africa, 6 years after the passing of the new water law. This study aimed to assess the potential for stakeholders to engage, and be engaged by, this new institution and the new system of participatory resource management, through their organisations. This includes these organisations' current approaches to dealing with water resource issues through systems and networks.

This paper presents impressions emerging from this research, based on an exploratory survey of stakeholder organisations. These impressions are currently based on a small sample of individuals and organisations, and further research will be required to validate these findings.

Our intention in presenting these ideas is not to draw definitive conclusions, but to stimulate purposeful debate. The aim of this paper is therefore not to test or develop theory, but to generate awareness among WRM practitioners about these issues, and thereby potentially inspire new approaches to thinking about, assessing and implementing participatory WRM through CMAs and stakeholder involvement.

Approach

Description of the study area

The location of the Sabie-Sand catchment within South Africa, and the location of the Sabie and Sand Rivers and the major towns within this catchment, are shown in Figs. 1 and 2 respectively.

The Sabie-Sand is one of three subcatchments of the Inkomati WMA, and one of those for which a catchment management committee will be established as part of the Inkomati CMA. The Crocodile, Komati and Sabie Rivers all flow into the Incomati River in Mozambique, and their catchments thus form separate management entities from the perspective of resource users within the South African part of the Inkomati basin (with the exception of the Crocodile and Komati catchments' combined responsibility to provide minimum cross-border flows into Mozambique). The Sand River is a tributary of the Sabie River, but has a very different pattern of resource development, having been part of the former Black homelands of Lebowa and Gazankulu, and is therefore considered to be a distinct 4th element of the WMA (DWAF, 2000). Land use in the Sabie can be divided into 3 zones. The upper catchment has been afforested with exotic plantations, the middle reaches of the river are chiefly used for irrigation agriculture (sub-tropical fruit), with a small area of communal rangelands. The lower reaches of the Sabie (in South Africa) are conserved within the Kruger National Park. The upper catchment of the Sand is also afforested, while communal rangelands, along with a number of irrigation schemes and also areas of dry-land crops, form the middle section (Pollard et al., 1998). In its lower reaches the Sand River flows through privately owned conservation land, before entering the Kruger National Park.

With the completion in 2002 of the Injaka Dam on a tributary of the Sabie, the Sabie and Sand catchments are now effectively also linked upstream of the confluence by a transfer pipeline, intended to augment flows in the Sand River using water originating in the Sabie catchment.

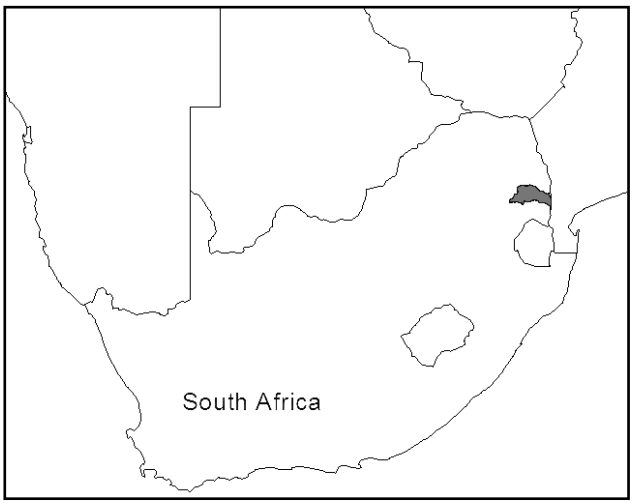

Figure 1
Location of Sabie-Sand catchment within South Africa

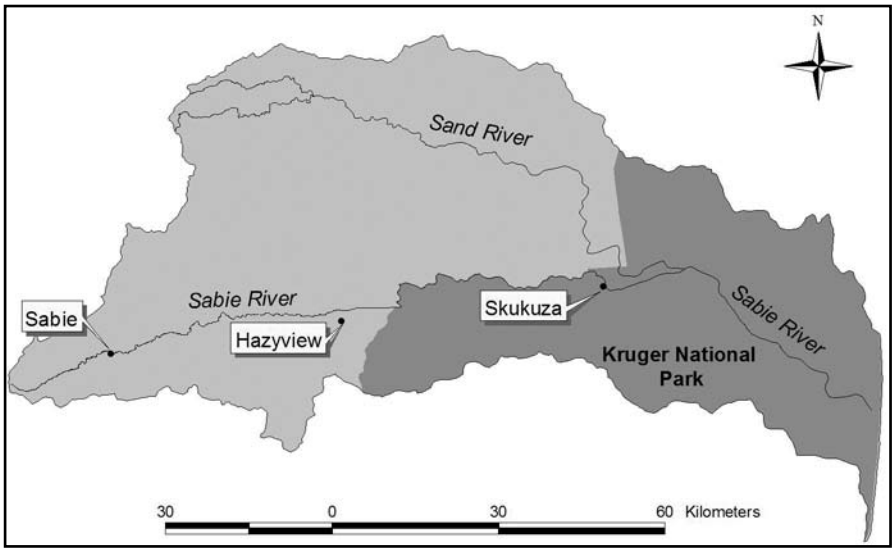

Figure 2
Sabie-Sand catchment

Methods

Semi-structured interviews were conducted with 18 interest groupings (Table 1) related to water resource use in the Sabie-Sand catchment, in November and December of 2003. Interest and user groups were identified and selected to reflect the different types of water resource use known to take place in the catchment. Use was also made of a similar categorisation compiled by the Department of Water Affairs and Forestry (DWAF) to list the individuals and organisations who took part in the development of the proposal for Inkomati CMA establishment. Under the new water policy the water resource is considered to be the entire aquatic ecosystem, and not just the water it provides, thus resource users are those who make use of a variety of aquatic ecosystem goods and services, including water. A sample of organisations and individuals for each sector was then selected for interviews. An attempt was also made to speak to resource users for whom no organisation was likely to exist, by seeking out people making direct use of the river, for domestic use, and small-scale agriculture.

The semi-structured interviews were guided by a checklist categorised into 4 themes:

- Interest or stake in water resources (rivers) and their management
- Nature of organisation and representation
- Relationship with other water resource users
- Participation in decision-making processes about water resources.

However, this 'checklist' was not prescriptive and additional issues were pursued where appropriate.

The use of semi-structured interviews was motivated by the clear advantages this method offers over more standardised interviews or survey questionnaires. Open-ended questions enable a deeper understanding of an individual's perceptions and experiences, by allowing the interviewee to focus on the issues to which they attach the most relevance (Morison, 1987). Because of their qualitative nature, semi-structured and unstructured interviews also offer a greater potential to interpret individuals' contributions in their appropriate social context.

Where appropriate, issues raised by one interviewee were pursued in subsequent interviews with other interviewees, in order to cross-check the information given and also to gather a diversity of perspectives on the same issue. The survey was undertaken by a team of 5 researchers, resulting in interviews being conducted by between 1 and 5 (and most often 2 or 3) interviewers. Interviews were recorded (audio) but not transcribed. As a means of data triangulation (Denzin, 1970), the different interviewers kept separate notes and developed individual interpretations and syntheses. These multiple interpretations were only merged in the final stages of analysis, in order to make best use of these different perspectives to avoid possible misinterpretation of interview responses and as a means to testing and reinforcing developing insights and understanding (Neuman, 2000).

Key findings

Stakeholder perceptions of the new water policy

Interviewees generally displayed poor knowledge or understanding of the new water policy. Though many of them had been exposed to the new legislation, through their participation

TABLE 1
Organisations representing different interests in, and uses of, water resources of the Sabie-Sand catchment, and interviewed in the November 2003 survey

Sector/interest grouping	Organisation	Catchment
'REGULATORS':		
Department of Water Affairs and Forestry	Nelspruit Regional Office	Sabie-Sand
Irrigation Boards	Sabie River Irrigation Board	Sabie
	White Waters Major Irrigation Board	Sabie
Local Government	Bohlabela District Council	Sabie-Sand
Tribal Authority	Hoxane Tribal Authority	Sabie
MAJOR RESOURCE USERS:		
Forestry	Global Forest Products	Sabie
Agriculture	Mpumalanga Department of Agriculture, Environment & Conservation	Sabie
	Mpumalanga African Farmers Union	Sabie
	Individual small-scale irrigation farmer	Sabie
Domestic use	Bushbuckridge Water Board	Sabie-Sand
	Belfast villagers doing laundry at river	Sabie
Conservation	Kruger National Park	Sabie-Sand
	Mpumalanga Parks Board	Sabie
	Hazyview-Kiepersol Conservancy	Sabie
Tourism	Hazyview Tourism Authority	Sabie
	Induna Adventures	Sabie
NON-GOVERNMENTAL ORGANISATIONS:		
	Association for Water and Rural Development (AWARD)	Sand
MULTI-SECTORAL FORA:		
	Sabie River Working Group	Sabie-Sand

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in an extensive process to develop the proposal for CMA establishment (from July 1997 to September 2000), there is much confusion about its implications. It seems that disillusionment due to a delay in CMA establishment (the proposal was submitted in early 2001 and few interviewees claimed to have had any news since), and frustrations experienced in trying to engage and respond to unfolding implementation events, have caused a state of apathy among many stakeholders. Many interviewees reported having taken on a 'wait-and-see' attitude, and will not invest in further effort in engaging the new policy until they have clarity about its implications. In particular the 'mood' of many of the 'previously advantaged' stakeholders appears to be one of apprehension tempered by fatigue.

Stakeholder perceptions of the water resource

From our interactions, and as indicated by the number of organisations that have water resources as their key focus, it seems that people in the Sabie catchment are very aware of their dependence on the water resource, and identify strongly with the rivers in their area. Water is a key factor responsible for organising and mobilising society in this region. Though the region was experiencing a drought at the time of the survey, the majority of interviewees expressed little concern about the long-term sustainability of the Sabie River, or their continued use thereof. Thus, though many current resource users on the Sabie recognise their dependence on the resource, they do not foresee that this resource, or their use thereof, is likely to change much in the future. In particular, those from the irrigation agriculture sector felt that it was unlikely that demand for abstractive water use had much scope for increase in the near or distant future.

Perceptions of the Sand were quite different, as attested to by AWARD. The Sand River is an extremely stressed water resource, and conflict among some stakeholders is high. The building and completion of Injaka Dam has created high expectations of improved resource availability in the future. One stakeholder predicted increased tensions and competition between the needs of domestic use and conservation in the future, for both the Sabie and Sand catchments.

Connectedness

Levels of participation in water resource management – engaging government directly

In the view of a staff member of the DWAF Regional Office (Nelspruit), there has been more engagement of the Department by stakeholders in recent years than there has ever been in the past. She reported comments by stakeholders that indicate that they have become aware of a 'participatory space' that has opened up with the transition to democracy in 1994, and perceive a new incentive and opportunity to voice their concerns directly to government, or through multi-sectoral fora chaired or attended by government. Until a CMA is established and fully functional the regional office is required to effectively act as an interim CMA. It appears that though the DWAF regional office is responsive to stakeholders who engage it, it does little to proactively engage stakeholders itself, due to capacity constraints. Thus it is likely that it is only those resource users who understand the opportunity and incentive to engage DWAF, and who have the capacity to do so, who are currently being heard by government.

Levels of organisation and representation

There are huge disparities in the degree to which different sectors and communities are organised to represent individuals' interests in the water resource, and to interact with government and other regulators. Some sectors, e.g. commercial irrigation farmers and tourism, have access to well-administered structures and communication networks that can carry their concerns all the way to the national level, and have considerable influence on both local and national decision-making bodies. Other stakeholders are members of more informal groupings, which function mainly at a local level. Some resource users, particularly those struggling with issues of domestic water supply, or small-scale farming, appear to have no formal organisation through which to represent their concerns. Many organisations at the very local level are based on, or have developed from, party political structures. These structures do not have water resource issues as their main concern and have the potential to ignore or distort individuals' issues to suit political motives.

Respondents from both the Sand and Sabie subcatchments reported the loss of local institutions and practices which traditionally existed to protect water resources, particularly the springs and wells that were used extensively in the past. Similarly the pipes and pumps which currently deliver water are subject to high levels of theft and vandalism in some areas.

Vertical vs. horizontal connectedness

On the whole, for the organisations surveyed, we found that organisation tends to be geared towards vertical, rather than horizontal, interaction, i.e. there is far more interaction within sectors than between them. Some sectors, e.g. tourism, have a highly developed system of structures and processes to facilitate communication between different geographic scales of representation within the sector, yet little or no such processes to facilitate interaction with other sectors. Where horizontal interaction needs to occur, this is often first channelled vertically through an organisation or sector, so that the highest level of a particular sector then engages the highest level of the other. This may be routed via government, e.g. negotiations between the Minister of Agriculture or Minister of the Environment with the Minister of Water Affairs and Forestry. It is common for stakeholders to look to government to address their resource needs, and effectively to negotiate with other users on their behalf.

Two user groups who showed considerable investment in horizontal interaction were the forestry sector and the Kruger National Park (KNP), respectively occurring at the top and bottom ends of the catchment. Both have recognised a considerable incentive to engage other stakeholders. Forestry has needed to build public support for its activities after a period (largely during the drought of the early 1990s) of extremely negative perceptions of its impacts on the water resource. The KNP, in its vulnerable downstream location, and in the absence of adequate legislation protecting aquatic ecosystems prior to 1998, has needed to negotiate an allocation of available flows with upstream users in the past. The KNP has also embraced a policy of 'constituency building' to gain support for its position as a conservation land (and water) use, particularly from the impoverished communities neighbouring the park. In addition to these strong incentives to engage others, both the forestry sector and the KNP have sufficient administrative, financial and human resources to invest in this task.

The predominance of intra-sectoral connectedness also raised concerns about the potential negative effects of certain types and contexts of 'social capital'. At least one example emerged in the survey study of a community whose cohesiveness serves it well in some areas (e.g. security), but which is also able to use this strong bond of mutual obligation to exclude and

overpower the interests of new members who do not share the group's cultural identity (which most likely forms the strongest basis for this cohesion).

Multi-sectoral forum activity

There are at least two multi-sectoral fora that have been formed in the Sabie-Sand catchment. The Sabie River Coordinating Committee exists to coordinate the clearing of invasive alien plants along the river by the appropriate land owners, and involves forestry, commercial agriculture and the Kruger National Park. The Sabie River Working Group (SRWG) is concerned with coordinating voluntary actions by its members in all aspects of managing the river. The SRWG was formed by the Kruger National Park during the drought of 1992 (Woodhouse and Hassan, 1999), with the initial main purpose of ensuring a flow to the KNP by managing members' abstractions from the river. The group has had considerable success in building good relationships between sectors and individuals, and achieving and implementing successful cooperative agreements. After an initial phase of conflict and conflict resolution, the group was able to adopt a joint problem-solving approach and a consensual decision-making process (Lubbe, 2004). In particular, it seems that the SRWG has been instrumental in bridging the rift between forestry and downstream users in the Sabie catchment. In the past the group has been well connected to DWAF, at both the regional and national level, and involved influential role players in prominent user sectors in the catchment. However, the forum has also struggled with perceptions of it being non-representative, as it has largely not succeeded in including previously disadvantaged members, or in engaging members of the Sand subcatchment in its activities. Its strongest participants appear to have been forestry, irrigation agriculture, the Kruger National Park and DWAF.

The SRWG is currently inactive, having more or less suspended its activities during the time (1997 to 2000) when the Inkomati CMA proposal was being drafted through a participatory process managed by DWAF. The group claims to have done so in anticipation of the CMA and a Catchment Management Committee for the Sabie-Sand being established, within which a new role for the SRWG would then be defined. It would seem that the group saw itself as somehow duplicating, or being duplicated by, a government initiative, which it did not want to appear to be opposing. The group has now expressed regret at having suspended its activities, given the unexpectedly long time it has taken for the CMA to be established. The strength of cooperative agreements and activities on the river has decreased in the interim.

Style of horizontal interaction

Within the organisations surveyed it was evident that individuals and organisations make use of both negotiation/diplomacy, as well as legal/confrontational approaches to achieve their resource use goals or deal with conflicts with regulators or other resource users. One organisation may make use of both approaches depending on whether the conflict concerns 'rights' or simply 'interests' and depending on the individual stakeholders involved. The new water policy has altered the balance between the outcomes of diplomatic vs. legalistic approaches for all stakeholders, but most stakeholders did not express an awareness of this or that it has influenced their choice of problem solving approaches. However, one sector which is highly aware of its changed status under the new law is conservation. The new policy now protects the right of aquatic ecosystems to an allocation of water quantity and quality (termed the Ecological Reserve), before any other allocations (other than for basic human needs) are made. No such right existed in the past, requiring that conservation interests be negotiated from a position of minimal power (using diplomacy as no legal defence of environmental flows was possible under the old Act).

Discussion

Current networks reflect past incentives

It is likely that the current pattern of vertical organisation and interaction, and appeals to government as a mediator of horizontal disputes, reflects the legacy of the previous water law, and the previous entrenchment of a centralised, authoritarian (command and control) and non-participatory approach to resource management. People are therefore currently organised to influence authority, not each other.

The few organisations that are pro-actively engaging other sectors, and preparing for a participatory management system, are those who perceive an incentive to do so, because they understand the vision of the new water law, and the change of rules governing future access to water resources. They also have a large stake in the resource, and the necessary resources and expertise to undertake cooperative activities. There are some organisations who do perceive incentives to engage both government and other resource users but lack the capacity or confidence to do so successfully, or have tried to do so and been confused or frustrated by the seemingly changing requirements and interpretations resulting from the early implementation processes of an as yet unfolding policy and law. It is possible that some organisations are not yet able to see sufficient incentives to invest in any interaction or participation at this stage, and for some this will continue unless they are mobilised in opposition to a perceived threat to their activities. Those sectors who are not 'water users' in the strict sense of Section 21 of the National Water Act appear to identify least with their status as water resource stakeholders.

Concerns about the likely outcomes of participatory decision-making

It will still be some time, perhaps years, before the Inkomati CMA is fully established and staffed, and before all of the appropriate functions and powers have been devolved to it. However, participatory decisions will need to be made in the interim, e.g. when it becomes necessary to develop a vision for the desired state of the catchment's rivers, in order to inform an Ecological Reserve determination process, and when a catchment management strategy is developed. A process with huge potential for conflict is the ultimate reallocation of water resources via the water allocation reform process. What are the likely outcomes of such participatory decision-making processes given the apparent levels of 'connectedness' displayed by stakeholders and their organisations in the Sabie-Sand (and greater Inkomati)?

Of greatest concern are the huge imbalances, in levels of organisation and capacity, between the different user sectors and geographic areas of both the Sabie and Sand catchments. As participation will need to take place via representatives those who have not formed interest groupings, and developed leadership capacity and communication mechanisms within these groupings, will effectively be excluded from the decision-making process. Alternatively they will be represented by organisations or leaders who are not truly 'in touch' with their issues. Even should decision-making fora achieve true inclusivity, there

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is still a risk that decisions will reflect and entrench inequities of the past through an imbalance of negotiating power, confidence and capacity. A combination of decentralisation and participation does not automatically equate to greater inclusivity and equity of resource management decisions. This concern was voiced by Woodhouse and Hassan (1999) who undertook an evaluation of the early stages of the participatory process toward Inkomati CMA establishment. They felt that previously disadvantaged communities may be 'ill-equipped to take advantage of the provisions of new legislation' and decentralisation may simply result in the management process being 'captured by some locally influential interest groups to the exclusion of others.'

An apparent lack of horizontal interaction is also of concern for future participatory interactions, because (with the exception of the Sabie River Working Group) it suggests that few inter-sectoral cooperative relationships already exist. Though the more powerful stakeholder organisations may have developed capacity to represent their interests, insist on their rights, and outargue their opponents, they may not have had much opportunity or incentive under previous management regimes to acquire experience in consensual negotiation techniques, reaching 'all-gain' agreements (Susskind and Cruikshank, 1987), and building cooperative relationships. A participatory process attended by those skilled at debate and confrontation will merely result in more articulate and heated exchanges and arguments, not a mutually acceptable, sustainable and implementable solution. High levels of unproductive conflict in inter-sectoral meetings could lead to the CMA being used in the same way as DWAF is now, as a mediator of disputes and a substitute for sectors actually having to engage each other.

The long history of cooperative engagement of the Sabie River Working Group, suggests that past participants in this forum will have developed the appropriate skills, attitudes and relationships of value to a participatory management system. It is this kind of social capital on which the CMA will need to draw. It is therefore a great concern that the SRWG has ceased its activities in response to a government initiative. Similar depression of forum activities has been reported from other areas within South Africa where participatory aspects of NWA implementation are taking place (MacKay, 2003). Government will need to pay attention to what is driving this behaviour and how it can be avoided in the future. It is possible that established and relatively successful volunteer groups respond negatively to the imposition of similar, but externally designed, structures and processes, by external agents, perceived to be taking over their role. If a vibrant and truly 'bottom-up' participatory system is to be attained, government will have to find ways to balance the tension between formal and informal, statutory and non-statutory structures and processes. Simply recognising the achievements of voluntary groups may be a good place to start. Understandably, there are also concerns about giving legitimacy to potentially non-inclusive, or poorly accountable groups – this is a challenge that will need to be sensitively addressed.

Opportunities for building on existing social capital

Recognising and creating a space for fora is one opportunity which CMAs and government should take to build on existing social capital, and harness existing stakeholder energy for voluntary cooperative management actions. Other such opportunities that we identified in the Sabie-Sand are as follows:

- People already identify strongly with their water resources. They are therefore more likely to invest in opportunities to participate in the management of these resources, once such opportunities are made known to them.
- There are already 'champions' working in the catchment who are driving a participatory or consultative approach and ethic in their own sectors.
- Many sectors have good vertical connections, facilitating a good flow of information to and from representatives at different levels.

Recommendations

Based on the above ideas, we suggest three key interventions that could help to improve the catchment's overall capacity to successfully engage a participatory management process:

- Build capacity where it is needed most. Capacity-building programmes for previously disadvantaged stakeholders must be designed to help counter likely power imbalances within participatory decision-making processes. The narrow view of capacity as simply being the possession of relevant knowledge or skill should be rejected in favour of a more holistic view of capacity – i.e. as including competence/skill as well as the ability to utilise opportunities, and the confidence to do so (Cook, 1997). Confidence in particular is a neglected aspect of capacity, and requires more than simply information or awareness campaigns to build, yet is crucial to levelling the playing field for equitable participatory processes.
- Facilitate the activity of multi-sectoral fora, to start building relationships between stakeholders, building confidence and skill in participants, and demonstrating the value of a cooperative ethic. Government can play a role in initiating new fora and supporting those that already exist.
- Educate stakeholders about the new water policy, thereby creating awareness of the benefits of engaging other stakeholders and the future CMA, and thus an imperative for resource users to align themselves towards this goal. It is vital to inspire stakeholders who have become passive to abandon their chosen 'wait and see' positions, by providing clarity about the new water policy, the future institutional framework, and the opportunities this holds.

Suggested future research

The ideas presented above were based on an exploratory survey intended to stimulate debate and inspire further investigation. Further research will be required to adequately analyse the range of stakeholder groupings relevant to WRM across the country's diverse WMAs – their norms, identities, values, interests and connections – and the effect of these variables on interactions and cooperation with other, interdependent groups. Research is needed to predict under which conditions stakeholders with divergent interests can develop shared interests, and ultimately a shared vision for the future of WRM.

Future research should draw on theories of cooperation and group identity, across the disciplines of sociology, international relations, sustainable development and participatory democracy or governance. Of particular interest would be an examination of the measured and perceived utility functions (cost-benefit analyses) of stakeholders' cooperative (or uncooperative) behaviour, and the influence of a) stakeholder perceptions of interdependence and b) exposure to opportunities for social learning.

Further work in the Inkomati WMA should increase the breadth and depth of organisations and individuals surveyed, using a methodology informed and framed by an appropriate

theoretical framework.

Finally, there is a need for research to focus on the issue of power imbalances and the appropriate management of empowerment differentials within participatory processes. Our work has shown that a lack of empowerment in important interest groups will limit their ability to engage with other groups in the development of sustainable solutions to water management problems. Again, more case studies from a range of catchments will be needed.

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