THE GOVERNANCE OF SHARED RIVER RESOURCES: TOWARDS SUSTAINABLE RELATIONSHIPS FOR ACHIEVING EQUITABLE TRADE-OFFS

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Water Research Commission

THE GOVERNANCE OF SHARED RIVER RESOURCES: TOWARDS SUSTAINABLE RELATIONSHIPS FOR ACHIEVING EQUITABLE TRADE-OFFS

Report to the Water Research Commission on the project titled

"Promoting Democracy through the IWRM Process Developing a Model for Sustainable Relationships for the Management of a Scarce Natural Resource."

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List of Abbreviations

CMA	Catchment Management Agency
DWAF	Department of Water Affairs and Forestry
GFP	Global Forest Products
KNP	Kruger National Park
SAM	Strategic Adaptive Management
SRIB	Sabie River Irrigation Board
WUA	Water User Association
WMA	Water Management Area

Executive Summary

This report presents the findings of an action research project aimed at developing understanding related to the governance of shared, scarce resources, with specific reference to river resources. Worldwide, there is increasing pressure on society to achieve an equitable, efficient and sustainable use of ecosystem goods and services. The challenge we face is to reconcile the distribution of costs and benefits for society as a whole. The process that should underpin this reconciliation must be founded on trade-offs that have continually to be achieved through democratic processes. Only if these trade-offs are made democratically can we hope for the popular support that leads to compliance. In this way, the attainment of equitable, efficient and sustainable use of ecosystem goods and services will reflect the extent to which democracy is institutionalised in society and the agencies that act on its behalf.

South Africa provides compelling opportunities to improve understanding of the complex nature of democracy in the context of decision-making around trade-offs in the use of the goods and services derived from ecosystems. Prominent amongst these opportunities are the trade-offs that determine the allocation of rights to use river system goods and services and the distribution of costs and benefits resulting from their use. This provides motivation to research the institutionalisation of democracy in water resources management.

Our research was conducted in the Sabie-Sand catchment in Mpumalanga Province, South Africa. The project was divided into three phases. The objective of Phase I was to develop familiarity with relevant underlying theories and to describe the social-ecological system in the Sabie-Sand catchment with respect to decision-making structures, processes and behaviours. From this research, issues were selected to focus the action research phase of the project (Phase II). The objective of Phase III was to draw lessons from the research experience and to highlight the implications for the development of appropriate relationships and cultures for sharing a common property resource.

Phase I identified three models, or frameworks, that would be particularly useful in guiding the research. These were Senge et al.'s process for profound change, a form of action research known as Appreciative Inquiry, and Cook's model for understanding empowerment.

Senge et al.'s process for profound change provides a process-oriented framework of the components of change and the reality of delays inherent in the change process. One of the striking aspects of Senge et al.'s process is the focus on the need to build social capital (aspects such as confidence and trust) long before tangible results are realised.

Appreciative Inquiry is based on the principles of empathy and respect. It encourages groups to expand their collective vision by amplifying the strengths of a group; an appreciative and inquiring attitude promotes the co-evolution of values as opposed to a conflict-based approach to resource-sharing. Appreciative Inquiry concepts are based on the organisational sciences, which confirm that future-building is a more appropriate approach to problem-solving than focusing on current problems.

Cook's empowerment model recognises the need for capacity enhancement in three distinct areas: subjective empowerment (relating to confidence); objective empowerment (relating to responsibility and

opportunity); and competence (relating to skills, knowledge and attitudes). People tend often to focus on skills development in empowerment efforts, and tend to be unaware that building confidence and an ability to see and use opportunities also forms an important part of the overall empowerment process.

Phase I also identified a number of issues around river resource governance in the Sabie-Sand catchment. These were:

- Large discrepancies between organisations and individuals;
- Very little co-ordinated decision-making between organisations, which tend to engage government to resolve resource issues, rather than each other;
- A lack of formal representation of the interests of many resource users; and
- A predominance of decision-making structures not necessarily geared to address their constituencies' resource-related issues.

Apart from the issues identified, a number of opportunities were also identified:

- The Sabie River Irrigation Board had a vision (and matching enthusiasm) to expand its scope to include a number of downstream users. In this way, the board would enhance its representation and empower others. This offered a significant opportunity to the research project.
- The private forestry sector (Global Forest Products) and the Kruger National Park stood out as organisations that are outward-looking, well-resourced and able to seek, engage and drive co-operative processes. They are at opposite ends of the catchment, again providing an opportunity for focus and for integrating upstream/ downstream concerns.

At the end of Phase I, differentials in levels and types of empowerment emerged as a major obstacle to stakeholders' collective capability to develop shared understanding and make wise trade-offs. Learning about what constitutes empowerment and co-operative empowerment therefore became a focus area for Phase II of the project. The Cook model of empowerment was used to guide the research team and resource stakeholders.

Phase II focused on action research. It applied Strategic Adaptive Management (SAM) concepts in its approach. SAM is based on the acceptance of the uncertainty and variability inherent in social-ecological systems and the need to proceed with incomplete information. Thus, management should be experimental, adaptive and learning-oriented, so that learning from each round of implementation informs the next. This approach moves away from the balance of nature theory to a concept of nature as a system of hierarchical patches that are changing and diverse over space and time. SAM introduced an emphasis on being strategic, or future-focused. The future-orientation of SAM was extremely important to the project discussed here. Phase II had the following aims:

- To determine the potential of well-resourced interest groups to own and drive a co-operative empowerment process for the collective benefit of a broader group with shared interests in the same resource;
- To apply the Strategic Adaptive Management and future-building processes as a vehicle for co-operative empowerment; and
- To draw lessons from the action research experience relevant to

catchment stakeholders and water policy implementers.

Phase II of the research project proceeded initially as a series of individual consultations with the 'well-resourced' stakeholders. Once their agreement to participate further in the process was obtained, a joint workshop between the stakeholders, the research team, and the Department of Water Affairs and Forestry was held. This was followed by a further meeting.

There were a number of outcomes arising from the above process. Well-resourced stakeholders were willing to engage and invest in local-level informal processes, but they felt that they would benefit greatly from explicit acknowledgment and endorsement of their endeavours by the Department of Water Affairs and Forestry. Related to this, there is a question about where the responsibility of an informal process ends, and where that of more statutory processes begins. There was also a perceived need for adequate and appropriate representation when people strive to make decisions together. There is a tension between being representative (i.e. having all groups present, but perhaps not participating equally) and building relationships, perhaps more slowly but more thoroughly and meaningfully, to achieve full representation.

The research conducted during this project has allowed the team to identify a number of important lessons regarding co-operative resource governance. These include the following:

- Relationship-building cannot be rushed (as predicted by Senge et al.'s model);
- Repeated reinforcement is important for sustaining relationships;
- Stakeholders can learn to value relatinships as much as the decisions they support;
- Informal resource governance processes require support from formal processes, and there is a risk of failure if they are not supported;
- There is a need to balance the requirements for empowerment (which takes time), and representation (which can be achieved relatively rapidly, but does not necessarily lead to voluntary compliance and truly empowered resource sharing); and
- Individual champions, or catalysts, play a critical role in sustaining and fostering relationships in informal resource sharing processes.

This report provides a broad overview of the outcomes of the research. However, the main products of this research are in the form of papers that have been, or will be, submitted for publication in the open literature. These papers are included as appendices to this report.

CHAPTER 1

1. INTRODUCTION

1.1 Policy context

South Africa's current water law (the National Water Act, Act No. 36 of 1998) envisages widespread decentralised, participative decision-making around the allocation and use of water resources (National Water Act, Republic of South Africa Act No. 36 of 1998). This vision is based on the premise that resource users should have the opportunity to influence directly the decisions that affect how they share (i.e. allocate and use) the water resource. By implication then, the policy expects society to be organised and capable of engaging and influencing the resource decision-making process at various levels of societal organisation; i.e. it expects that "bottom-up" interests and decisions should meet "top-down" government efforts to implement policy. Whilst this is an ambitious expectation, it is based on widespread societal support for an inspired change towards a better, more empowered future in natural resource sharing. In addition, society clearly has the capacity to organise, change and regulate its structures and behaviours to generate local-level solutions to resource issues, and furthermore, to do this in a way that aligns their decisions with policy intent (Van Wilgen et al., 2003).

1.2 The issue: achieving equity in reconciling costs and benefits

Given South Africa's history of inequitable access to, and use of, water resources, achieving dynamic equity in the trade-offs and reconciliation between diverse resource preferences lies at the heart of policy intent. The significance of this is that if society, at the levels furthest from government reach, is able to self-regulate its efforts and decisions and achieve an equitable balance between resource needs and preferences, then such decisions can be communicated effectively to align with policy intent. "Bottom-up" will be able to achieve better synergy with "top-down" government imperatives. The alternative is that society cannot achieve equity in balancing their preferences; government hears only noise, observes entrenched inequities, and is forced to fulfil the role of regulator and arbiter on an ongoing basis. The risk is one of returning to a command-and-control system of resource governance, instead of a more decentralised, participative, co-operative and empowering style of governance. It was against this background that a project proposal was formulated and submitted to the Water Research Commission during 2002. The central issue underlying the project objectives is described in Box 1.1.

Box 1.1: The central issue that guided this project

Worldwide, there is increasing pressure on society to achieve an equitable, efficient and sustainable use of ecosystem goods and services. The challenge we face is to reconcile the distribution of costs and benefits for society as a whole. The process that should underpin this reconciliation must be founded on trade-offs that have continually to be achieved through democratic processes. Only if these trade-offs are made democratically can we hope for the popular support that leads to compliance. In this way, attainment of equitable, efficient and sustainable use of ecosystem goods and services will reflect the extent to which democracy is institutionalised in society and the agencies that act on its behalf.

South Africa provides compelling opportunities to improve understanding of the complex nature of democracy in the context of decision-making around trade-offs in the use of the goods and services derived from ecosystems. Prominent amongst these opportunities are the trade-offs that determine the allocation of rights to use river system goods and services and the distribution of costs and benefits resulting from their use. This provides motivation to research the institutionalisation of democracy in water resources management.

We understand 'governance' to refer to the process whereby individuals and institutions, private and public, manage their common concerns and actions (Borrini-Feyerabend et al., 2000). According to this definition and South Africa's water policy vision, governance is a dynamic, people-centred process with a focus on shared interests, and a collective endeavour aimed at achieving a vision for a better future. Thus, it is not a process confined to the policies and activities of government alone. Within this context, two aspects are central to determining sound approaches to supporting the policy vision. First, a decentralised approach that strives towards reconciling costs and benefits will rely on **relationships** between participants as they engage each other around their resource-related needs and preferences. Many of these relationships will be new, as many people have not previously had the opportunity to participate; or, even if they had, the new context and intensified pressure on the resource calls for the redefinition of these relationships to achieve a shared rationality and sound collective decisions around issues of resource sharing.

Second, the manner in which these relationships are formed and used to support the vision will be critical. This means that in the process of reconciling costs and benefits, inequities can be entrenched or reduced depending on participants' willingness and capability to acknowledge each others' needs and preferences and adjust their resource use patterns accordingly. At one extreme, resource users may take up new opportunities to share the resource more creatively and co-operatively; at the other extreme, users may opt for an adversarial approach, based on legalistic defence of their own individual rights, which will not encourage the consideration of others' needs and preferences. Thus, the formation of new relationships is insufficient on its own. In addition, profound changes in **cultures**, **behaviours** and **norms** within these relationships are required. One can envisage a bottom-up system of decision-making meeting top-down governance where the bottom-up decisions still do not reflect equity in how the resource is shared. We argue that the difference lies in **the manner** in which participants engage each other in the process of reconciling costs and benefits. It is in this area that this project set out to

improve understanding and to influence the way in which the policy vision is interpreted and implemented. The project was thus based on the notion that decision-making and its underlying behaviours must be democratic in their nature if both the relationships and outcomes of joint decisions for resource sharing are to be sustainable.

It was felt that river systems provide a good opportunity to test these ideas because of the dynamic and often intense co-dependence between river resource users. This, and the pressure for rivers to deliver diverse goods and services to society, both for basic needs as well as economic and social development, makes rivers 'magnets' that concentrate society's dialogue and energies.

1.3 Project origins

This project originated from a suite of previous experiences with catchment and river stakeholders that were geared towards building a common vision for resource sharing (Van Wilgen et al., 2003; Rogers and Bestbier, 1997). Central to these findings was that, when provided with an enabling environment, people are able to organise themselves and co-ordinate their interests and preferences in a co-operative manner that is consistent with the intention of South Africa's current water law. They are able to see opportunities for common ground in each other's needs, values and preferences and to use this as a basis to build new relationships as well as to construct voluntary agreements or 'social contracts' around resource sharing.

This learning highlighted the influence of the **behavioural dimension** of joint decision-making for sharing a scarce resource (in particular, the attainment of decisions that are perceived to be equitable) and the realisation that the way in which we do things is as important as what we do. Within this context, it is desirable that formal structures such as Catchment Management Agencies (CMAs), Local Government (LG) and Water User Associations (WUAs) are in place to support the goal of decentralised water resource management. But, unless they are supported by joint decisions based on an ethic and behaviour of mutual respect, co-operative attitudes and a willingness to reach trade-offs together, such structures cannot on their own guarantee the promotion of change in the collective behavioural fabric of society towards greater equity and sustainability, as intended by policy. The underlying rationale for directing research attention to the behavioural aspects of decision-making is covered in more detail in Chapter 2.

1.4 Project objectives

Given, then, that mutually respectful, co-operative behaviour should underpin how people negotiate and arrive at decisions for sharing a scarce and common property resource, the project set out to discover aspects of an enabling environment and appropriate processes that would stimulate the desired behaviours in society. The Sabie-Sand catchment (Figure 1.1) was selected as an appropriate case study area (Van Wyk et al., 2001). The objectives, as they were formulated at the initiation of the project in 2002, are outlined below. Not all of these objectives were explicitly met. The project proceeded as an action research project, and research goals were reassessed as new understanding developed. All of the changes to the original research objectives were considered and approved by the steering committee.

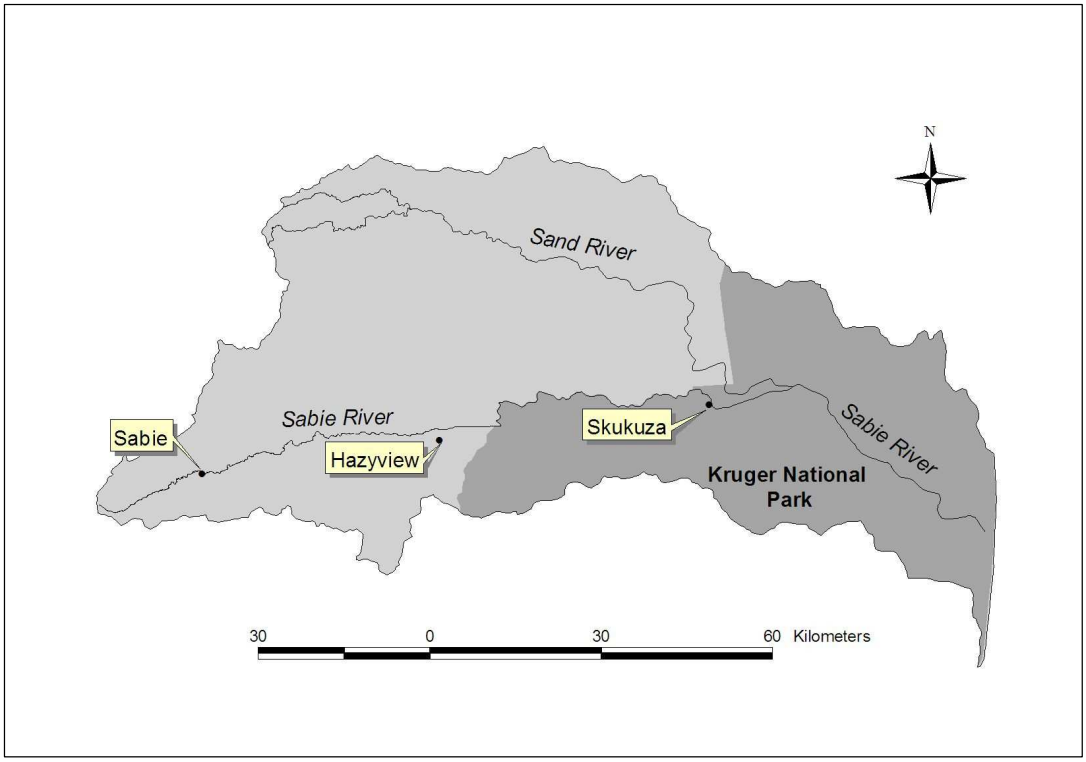

Figure 1.1: The research reported here used the Sabie-Sand catchment as a case study. The choice was based primarily on the diverse mix of resource users here as well as the mix of resource issues that are likely to have an impact on the quality of trade-offs that support collective decision-making for resource sharing. The research team also had existing relationships with organisations and individuals in the area.

Objective 1

To document lessons for co-operative water resource management that aligns human interactions with the principles, values and ethics that underpin democracy. The project aimed to define the mechanisms (principles and processes) that will promote a change in behaviour that will produce self-driven, co-operative, peaceful and equitable solutions to negotiations around the water resources management table.

Objective 2

To communicate our findings to government and other key role players with the intention of presenting a process and principles whereby policy implementation can be used as a vehicle for deepening democracy. As part of this, the project intended to develop a better understanding of mechanisms whereby research can engage government so as to jointly support policy implementation.

Objective 3

To illustrate an approach to research and practice based on trans-disciplinary, learning-by-doing, 'action research' for general use in Integrated Water Resource Management (IWRM). The project intended to build on past and existing positive team dynamics and provide an example of how team dynamics and collective learning can enhance collaborative research in support of democratic principles.

Objective 4

To build capacity in the research team, government and society. The project team intended to build further understanding of the capacity building process and to demonstrate the contribution of capacity building, as part of research, to promoting democratic practice.

1.5 Project team

The project was a collaborative initiative between four organisations. The team members (Table 1.1) represented a mix of backgrounds and skills designed to draw on experience and to engender capacity development in research. While each team member had a recognised role, the team as a whole regarded itself as a "learning group" that focused on action research and "learning-by-doing".

Table 1.1: Research team members, their roles, disciplines and affiliations

RESEARCH TEAM MEMBER	ROLE IN PROJECT	BACKGROUND AND EXPERIENCE	ORGANISATION
Brian van Wilgen	Project leader	Terrestrial ecology	CSIR Environmentek
Ernita van Wyk	Project co-ordinator and researcher	Ecology Social-ecological systems	CSIR Environmentek
Linda Arendse	Researcher	Forestry Policy assessment	CSIR Environmentek
Kevin Rogers	Research advisor and researcher	Interdisciplinary river research and adaptive management of social-ecological systems	Centre for Water in the Environment; University of the Witwatersrand
Tamsyn Sherwill	Researcher	Ecology Public participation in natural resource management	Centre for Water in the Environment; University of the Witwatersrand
Nhlanhla Sihlope	Researcher	Hydrology Development related to natural resources Social-ecological systems	Centre for Environment, Agriculture and Development; University of Kwazulu-Natal
Sandile Zeka	Researcher	Political science Natural resource management	Centre for Environment, Agriculture and Development; University of Kwazulu-Natal
Charles Breen	Research advisor	Botany, Limnology, Ecology Strategic Adaptive Management Social-ecological systems	Centre for Environment, Agriculture and Development; University of Kwazulu-Natal
Dumisani Magadlela	Research advisor	Development sociologist	Ekhaya Consulting Agency

1.6 Project approach

The project was divided into three phases. The objective of Phase I was to develop familiarity with relevant underlying theories and to describe the social-ecological system in the Sabie-Sand catchment with respect to decision-making structures, processes and behaviours. From this, issues with a large impact on how stakeholders make joint decisions were described and the most compelling were selected to focus the action research phase of the project (i.e. Phase II). The objective of Phase III was to draw lessons from the research experience and to highlight the implications of the findings for the development of appropriate relationships and cultures for sharing a common property resource.

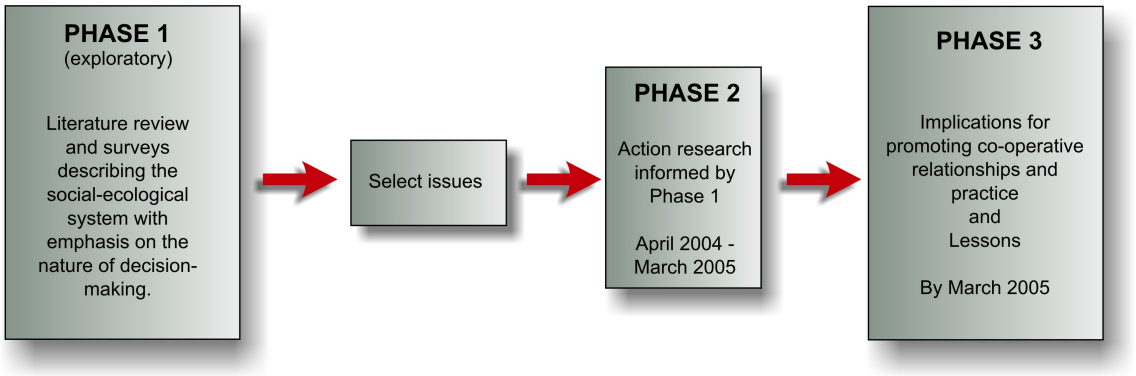

Figure 1.2: The project was organised in three consecutive phases – Phase 1: Understanding; Phase II: Action Research; Phase III: Implications and Lessons.

1.7 Aims and content of this report

The purpose of this report is to provide an overview of the research project's goals, the research process, the outcomes and outputs, and the context in which these are embedded. The chapter on context (Chapter 2) is followed by an account of the three phases of the project. The context chapter provides the philosophical rationale for the project objectives and also describes aspects that are relevant to the specific case study area. Most of the products of this research will be published in the open literature. Submitted and draft manuscripts are included as appendices to this report. While this report provides a summary of the project framework and process, the appendices contain more in-depth accounts of the project components and discussion of issues of special importance.

CHAPTER 2

2. BACKGROUND AND CONTEXT

2.1 The importance of governance

This chapter describes the context underpinning this study. There is a growing appreciation that issues of resource quality, allocation and use are driven not only by the availability of ecosystem goods and services, but also by related systems of governance. These systems are social-ecological, socio-economic and political in their nature (Breen et al., 2003; Gunderson and Holling, 2002; Cortner and Moote, 1999). Furthermore, how resource stakeholders perceive their context exerts a large influence on how human behaviours, and ultimately resource use patterns, evolve (Van Wilgen et al., 2003). People increasingly rely on governance systems to table and co-ordinate their needs and influence complex resource-related decisions. Regulatory or 'governance' systems may constitute formal or informal transactions between resource users, or they may be formal statutory decision-making systems (Figure 2.1) (National Water Act, 1998; De la Harpe, undated). South Africa's current water law (the National Water Act, Act 36 of 1998) has made provision for the creation of structures such as Catchment Management Agencies (CMAs), Water User Associations (WUAs) and Catchment Fora to facilitate decentralised water resources management (Box 2.1). Links and interactions ('connectedness') within and between regulatory systems determine the extent of synergy between components of the system.

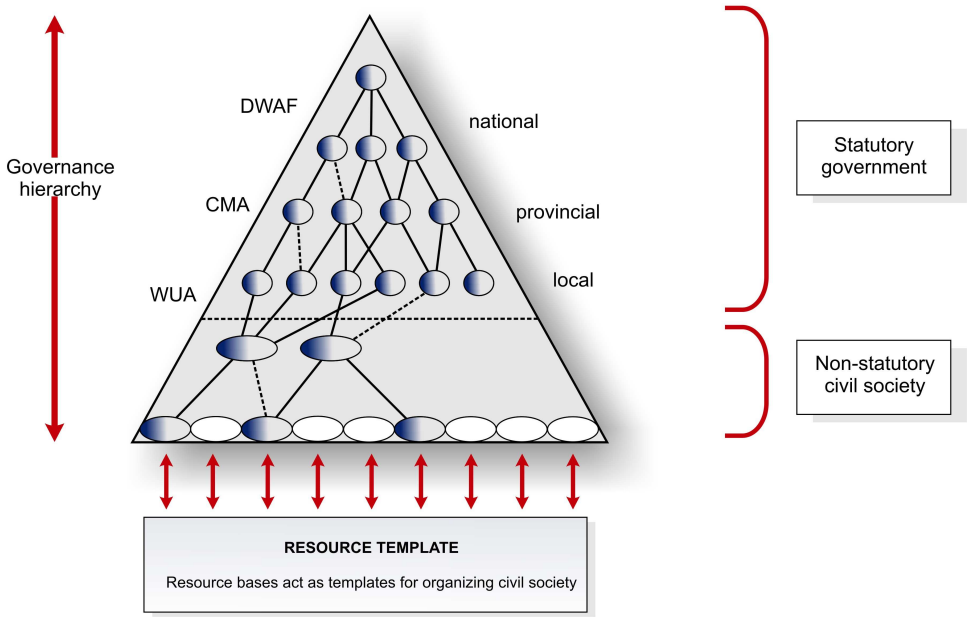

Figure 2.1: Schematic diagram showing a theoretical hierarchy of organisations that impact on the management of a resource at different levels of government and society. Lines indicate existing channels of interaction. DWAF = The Department of Water Affairs and Forestry; CMA = Catchment Management Agencies; WUA = Water User Associations. Unshaded circles indicate the reality of groups with no connection to others.

Box 2.1: Institutional structures for water resource governance in South Africa

The Minister of the **Department of Water Affairs and Forestry** (DWAF) is the overall custodian of the resource.

Catchment Management Agencies (CMAs) are statutory bodies established to ensure that water resources management is appropriately delegated to regional and catchment levels. CMAs have to develop and implement a catchment management strategy. CMAs must also seek and promote involvement and co-operation from stakeholders in resource-related decisions.

Water User Associations (WUAs) are statutory bodies that are co-operative associations of individual water users who wish to undertake shared water-related activities for their mutual benefit. The members of a WUA pool their resources (money, human resources and expertise) to carry out joint water-related activities more effectively. In doing so, communities can address their local needs and priorities.

Catchment Fora are non-statutory bodies that can be developed by any member/s of civil society to engage in collective activity towards sharing the resource more fairly and effectively. Fora represent important non-statutory institutions that can facilitate co-operation and voluntary support for joint activities. Such bodies are often regulated by informal (often unwritten) but strongly shared norms and behaviours (Snyder and Wenger, 2004; Pretty and Ward, 2001).

The policy shift towards more decentralised and inclusive governance reflects a global and growing support for broader societal influence in river resource decision-making. A seminal paper by Jane Lubchenco (1998) and related discussions (Kinzig et al., 2000, Holling, 2001; Gunderson and Holling, 2002; and Robertson and Hull, 2003) highlight the increasingly complex and unpredictable nature of the social-ecological world. In particular, these works argue compellingly for new relationships between science, society and government if the world is to govern towards more resilient social-ecological systems. Societal interdependencies on river resources are so intense that humanity cannot rely on simple ways of augmenting resource supply. Nor can society rely on addressing resource use challenges in an isolated manner. Instead, societies now have to manage demands on resources. Demand management requires governance systems with appropriate links between component stakeholder communities so as to be collectively fit to respond to change (Wenger, 2004; Snyder and Wenger, 2004; and Schein, 2004).

South Africa has a wealth of information about the ecology and functioning of aquatic ecosystems. This reflects past investments in improving our understanding of aspects of ecosystem functioning and resource supply. This information is useful, but unless it can be linked to the human values and behaviours that shape demands on river resources, our knowledge about changes in the biophysical system will have little impact (Breen et al., 2003; Van Wyk et al., 2001; Rogers and Bestbier, 1997). Demands are in turn organised and regulated via social systems that seek to reconcile diverse needs and preferences. The imperative to address resource issues within this context suggests that there is a need to redefine existing relationships and forge new ones to achieve equitable reconciliation between participants in the governance system.

2.2 Governance of scarce river resources through trade-offs

Water resources are under pressure to provide diverse benefits to people and it is difficult to allocate such resources in any simple way (see Appendix 1). As a result, sharing rests on negotiated trade-offs between resource users. A central issue is that of achieving dynamic equity in these trade-offs over time (MacKay, 2003). Such trade-offs are potentially conflict-ridden because they reflect attempts to balance diverse and sometimes incompatible demands and interests in the resource. Reconciliation will require wise management of the relationships within and between those who have demands (society), those who are required by policy to regulate use (government) and those who are expected to develop the new understanding necessary for wise decisions (scientists). Governance in this context is therefore concerned with those human relationships that define the distribution of access to and use of shared river resources (Borrini-Feyerabend et al., 2000). Hence governance is also about the relationships that determine the distribution costs and benefits associated with allocation and use (McLennan and Ngoma, 2004; Van Wilgen et al., 2003). Society is inherently variable, as are ecosystems. This variability requires that people continually shape their relationships to make trade-offs as they strive for equity and sustainability in the allocation and use of resources. Through a representative, inclusive, and procedurally fair decision-making process, a shared vision for the future, and mutually acceptable trade-offs necessary ultimately to achieve this future, can potentially be reached (Appendix 2). When these trade-offs, and the future state they are intended to achieve, are widely accepted and acceptable, governance systems gain legitimacy that feeds back to strengthen relationships and foster greater accountability among those responsible for stewardship of resource use.

Within the context of striving for greater equity and accountability, we argue that relationships ought to be characterised by trust, empowerment, and shared rules and norms (Figure 2.2). Such relationships represent a human capacity that has also been called ‘social capital’ (Coleman, 1988). The concept of social capital is based on the notion that social bonds and norms produce desirable outcomes such as co-operation and the lowering of transaction costs. Such behaviours form an important basis for sustainable livelihoods (Pretty and Ward, 2001). Relationships that foster trust and shared understanding will promote the co-evolution of preferences between resource users (Costanza and Folke, 1997; Appendix 2) and this behaviour in turn facilitates the maintenance of relationships and opportunities for sharing the resource more creatively, even where there are perceived incompatibilities in levels and types of use.

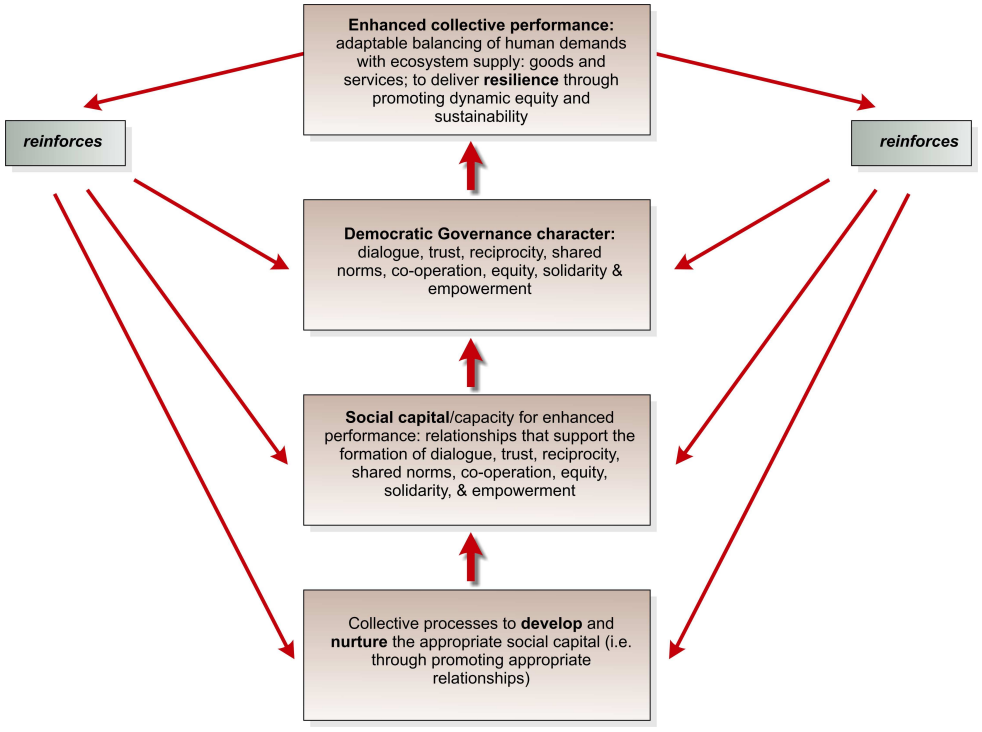

Figure 2.2: The ability to achieve an equitable and sustainable balance between human demand and ecosystem supply depends on the mobilisation of certain types of social capital for use in a system of collective governance.

South Africa's historical water policies promoted private rights to water that promoted inequities and the formation of power bases with regard to access and use. In doing so, these policies also promoted a rights-based (legalistic and adversarial), as opposed to an 'equitable sharing' attitude to resource use (Appendices 3 and 4). Clearly, fundamental and pervasive change (i.e. a paradigm shift) is required in order to help resource stakeholders to engage in effective collective decision-making and action in resource sharing. This change has to promote not only new ways of doing things, but must also address the assumptions, values and cultures of participants that entrench behaviours in the previous paradigm. Decentralised resource management through collective self-regulated behaviour is the policy goal of South Africa's current water legislation. Society will only engage in this self-regulation through new and shared understandings and voluntary buy-in to the perceived benefits of their new behaviours (Van Wilgen et al., 2003). Promoting change away from past or existing paradigms will not be easy because they are products of shared assumptions and ideologies that have been fostered and reinforced over time (Ryan, 1970). Because such assumptions tend to be embedded in the individual and collective subconscious they tend to be tenacious and as a result resist change and adaptation (Schein, 1992; Senge et al., 1999). To adopt new theories, assumptions and ways of doing things, society first invests in testing and reshaping components of the new paradigm to see whether it produces desirable results (Pickett et al., 1994). Such processes of fundamental change are time-consuming and suffer inherent delays and risk of failure (Senge et al., 1999; Kotter and Heskett, 1992).

This project aimed to understand relevant theories so as to catalyse and track the development of a process of change. The process was specifically geared to promote the development of the type of social capital required to support democratic resource governance at the catchment level (Figure 2.2). This objective follows policy intention but is also an outflow of many years of collaboration for improved river research and management. During the 1990s, the Kruger National Park Rivers Research Programme provided a learning model around the integration of diverse inputs towards improved management for the conservation of aquatic biodiversity. The experiences and lessons from this and subsequent projects provided a model for the formulation of this project. Furthermore, it highlights the choice of research approach and indicates how this project has attempted to contribute to a paradigm shift, away from centralised control and towards societal capacity for devolved self-regulation and synergy with other components of the governance system.

2.3 Governance of rivers as a research opportunity

River-related resources include the entire river ecosystem, and not just the water that flows through it. The allocation of these resources is often contested, providing an opportunity for researching the potential for equitable sharing (Appendix 1). Contention and the complex and dynamic nature of rivers and the way they are used by society bring people together continuously (Breen et al., 2003; Van Wilgen et al., 2003). The scarcity, survival, and wealth-dependence aspects of river resources translate to high stakes for all resource users, and thus high potential for conflict.

People depend on river resources as well as on each other to satisfy and balance their resource-related needs. Achieving this balance will require mutual understanding, collective learning, and co-operation. River resources have the potential to promote the co-evolution of interests and at the very least, prompt interest groups to begin to talk about and understand their interdependencies, shared opportunities and possibilities for co-operation. Such behaviour, accompanied by tolerance, openness and honesty, would promote understanding and greater equity in sharing. When such behaviour becomes pervasive and the benefits of it are realised, resource allocation and use will rely less on command-and-control means and legal and economic instruments (Harremoes, 2002).

2.4 Governance by means of Strategic Adaptive Management in a single sector

Our research has its origins in the Kruger National Park Rivers Research Programme, which focused on integrating research and management values and contributions within a single sector (Biodiversity Conservation) and organisation (the Kruger National Park). However, an opportunity for wider applicability of the process was evident, in particular in Integrated Catchment Management and Strategic Environmental Assessment. The approach is suitable for environmental management in its broadest sense, since a major challenge for environmental management within new governance requirements is “to integrate divergent value systems and achieve consensus on the “desired future condition” of the environment” (Rogers and Bestbier, 1997 p. 96).

Strategic Adaptive Management (SAM) (Rogers and Bestbier, 1997) is a local derivative of Adaptive Resource Management (Holling, 1978). It is based on the acceptance of the uncertainty and variability inherent in social-ecological systems and the need to proceed with incomplete information. Thus, management should be experimental, adaptive and learning-oriented in its nature, so that learning from each round of implementation informs the next. This approach to management departs fundamentally from the balance of nature theory to a concept of nature as a system of hierarchical patches that are changing and diverse over space and time. SAM was developed as part of the Kruger National Park Rivers Research Programme (Rogers and Bestbier, 1997; Breen et al*.,* 1994; Breen et al., 1997) and it introduced an emphasis on being strategic, or future-focused. The future orientation of SAM was to become extremely important in its subsequent application to social processes and in particular to the project discussed here.

SAM is aimed at describing (1) a **desired future state** and (2) a **hierarchy of objectives** to help participants progress towards the improved future. Importantly, this process was designed to be consensus-based and focuses on "developing a common understanding among parties of the values and needs which the future must hold" (Rogers and Bestbier, 1997 p. 42). A consensus approach to negotiation builds trust, and an acceptance of and support for a desired state of resource use and protection. The desired state process, with its future-based and consensus-driven emphasis, aims to dissipate conflict and produces more durable, long-term solutions. It is therefore designed to provide an enabling environment and framework within which trade-offs can be made. Rivers usually have diverse and co-dependent users. Thus, river management should promote long-term, durable decisions and must therefore also promote the types of relationships and processes that will support robust and durable decisions. As a result, we adopted the SAM process as a basis for creating an enabling environment for trade-offs between diverse users of river resources.

Even though it is not worded in this way in the Rogers and Bestbier document, the approach chosen for making decisions in SAM is in its nature participatory and democratic. The approach requires all parties to "lay their values, needs and problems on the table, at the start" (p. 43). The process adheres to the following principles: (1) "the best way to achieve what you want, is to help others achieve what they want" and (2) "all perspectives are valid and should be noted with equal importance". These principles indicate acceptance of democratic characteristics such as transparency, co-operation, equity and trust. They also suggest that such a process, when used in an iterative fashion, will continue to require adherence to a democratic manner of interaction between participants.

2.5 Governance through Strategic Adaptive Management in multiple sectors

The Kruger National Park is situated downstream of the source of almost all of the rivers flowing through it. Through the learning of the Kruger National Park Rivers Research Programme, it was realised that effective river management within the Kruger National Park could only be achieved if the park were to engage its upstream counterparts in a co-operative effort to manage river systems at the catchment scale. It was against this background that a project (conducted January 1999 – March 2002) brought the future-building process into Integrated Catchment Management.

The findings of that project (which was a forerunner to the project reported on in this document) are summarised in a report to the Water Research Commission, entitled "Principles and processes for supporting stakeholder participation in integrated river management" (Van Wilgen et al., 2003).

The use of future-building had special significance in this earlier project (1999 – 2002). A diverse catchment community is organised around the water resource via a number of organisations, interest groups and individuals. Such diverse needs and preferences are more difficult to reconcile, relative to the context of a future-building approach applied to a single organisation. With such a diverse mix of needs and preferences, developing a common understanding is important for achieving the type of participation that promotes voluntary support for a shared desired state of a river and its catchment. The underlying character of shared understanding and co-evolution of needs and preferences is described in the paper titled "Public participation in setting the goals for Integrated Water Resource Management: contrasting paradigms, approaches, assumptions and outcomes" (Appendix 2). Co-evolution is supported by an appreciation of each other's needs and preferences, made explicit through recognising all forms of water allocation and use as legitimate, including direct use of the resource (Sherwill et al., 2003). The findings of the earlier project highlighted that water resource management is a social process that must have as its primary objective the development of a **collective rationality** for co-operatively managing a shared and scarce river resource (Van Wilgen et al., 2003; Appendix 3). This is in line with policy requirements for co-operative participation of wider society in natural resource decision-making (National Water Act, Republic of South Africa Act No. 36 of 1998; National Environmental Management Act, Republic of South Africa Act No. 107 of 1998).

2.6 Emerging principles for co-operative governance

Achieving collective rationality in the trade-offs for water resource use is a challenging task, confounded by South Africa's history of disparity in natural resource allocation and use. Added to the complexity of the challenge is the historical view that access to water is a private right, whereas in its nature and now by law, aquatic ecosystems are to be shared in the common interest. The outcomes of the previous project (Van Wilgen et al., 2003) suggested a way in which the attainment of shared rationality could be promoted. These ideas are summarised in Box 2.2 and Appendix 3.

Box 2.2: Premises, principles, processes and products of co-operative governance (from Rogers et al. (submitted), Appendix 3)

A. Premises

1. **Given** that the Constitution legislates accountable and co-operative governance, equity, efficiency, sustainability and a healthy environment, and that the Water Act is an enabling law;
2. **Recognising** that the current state of water resource use is not equitable, efficient or sustainable and that DWAF does not have the capacity to implement the law on its own;
3. **Voluntary compliance** and **support** of all stakeholders (citizens and government**)** is essential for equitable, efficient and sustainable water resource management**.**
4. **Devolution of responsibility and accountability** across the range of stakeholders will facilitate voluntary compliance and support.
5. **A systems approach** is a prerequisite for successful stakeholder partnerships.
6. **Co-evolution** of understanding, among all stakeholders, of values and needs for a **shared future** sustains participation and fosters ubuntu.
7. **Vision**, **willingness to change**, **leadership** and **time** are the essential ingredients for co-evolution.

B. Principles (Institutional, social, economic and environmental**)**

1. **People first**. The "Reserve" delivers ecosystem services to the people (NOT to the "ecology"!).
2. **The ecosystem** is the resource and **stakeholders** define the type and **level** of the services to be delivered by the ecosystem.
3. **Co-operative stewardship** (people and government) of river ecosystems both delivers and allocates ecosystem services.
4. **A "public good" ethic** and acceptance of resource limits determine the distribution of both costs and benefits of ecosystem services delivery.
5. **An enabling environment** sustains dialogue between stakeholders, builds collective rationality, ensures equity and fosters ubuntu.
6. Explicit use of the **skills, knowledge and wisdom** found at all levels of co-operative partnerships leads to committed stewardship.
7. **Real change** comes when communities move from disinterest or distrust, to **commitment to a shared vision** of the desired state of ecosystem services delivery. Real **change takes time**.

C. Processes

1. **Promote future building.** Avoid compromise on current conflicts by developing consensus on an achievable shared future.
2. **Learn by doing** in an integrated social and ecological system. (*Strategic Adaptive Management*)
3. **Learn by prototyping**, demonstration and effective communication of progress.
4. **Research to understand ecosystem services**, their nature, availability and the relationship between the state of a river and its ability to deliver ecosystem services. **Develop an effective knowledge management** system, which integrates understanding into an SAM system.
5. **Create an enabling environment** that promotes **capacity building**, **co-evolution** of values and needs, and **empowerment** to manage for the desired state of ecosystem services delivery.
6. **Effectively devolve** responsibility and power from DWAF, to CMAs, to appropriate local levels.

D. Products

1. **Public participation** in river management leading to socio-economic transformation
2. **Involved, committed and proud people** with a sense of public good and equitable access to river resources
3. **A strong and trusted scientific basis** for management
4. **Healthy rivers** delivering the desired levels of goods and services, efficiently and sustainably
5. **DWAF being seen as a catalyst** for social change in South Africa

One of the concepts worth highlighting is that of "ubuntu" (Appendix 3). "Ubuntu" is a Zulu word meaning "a person is a person through other persons". This interpretation resonates well with the central principles espoused by SAM, namely, "the best way to achieve what you want is to help others achieve what they want" and "all perspectives are valid and should be noted with equal

importance". Ubuntu is a social ethic that is strongly promoted in South Africa to rekindle the idea that individual humanities are co-dependent and that this forms the foundation for co-operation in African societies. Considering the context of political change in South Africa and the imperative for fundamental transformation, together with the links between ubuntu, co-operative resource sharing and the use of SAM to further these goals, this project has evolved to contribute as much to nation-building as it has to natural resource management. In fact, we argue that river resource management can be a powerful vehicle for societal transformation (Appendix 4).

In the previous project (Van Wilgen et al., 2003), we found that most of the requirements for the management of shared resources have to do with human behaviours and relationships, rather than only the structures for resource management. In particular, two findings of the earlier project were of key importance to the formulation of the project described in this report (Box 2.3).

Box 2.3: Key findings of earlier research for the formulation of the project reported here*

1. "People sometimes feel helpless and unable to contribute to or even engage others for an opportunity to contribute. However, people at all levels can make a proactive (not just a responsive) contribution to the wise management of the resource. They must just be empowered, and not necessarily by government, to do so" (p. 19).

2. "The use of river resources tends to attract contention and debate, with people investing energy and effort in the debate, based on their individual and/or collective interest in the resource. The river management process (i.e. SAM) therefore offers opportunities for:

    - Forging quality relationships;
    - The adoption of principles that underpin democratic practice; and
    - Developing community characteristics that support co-operation around river management decisions". (p. 20)

*(See Van Wilgen et al., 2003)

Interactions with river stakeholders indicate that, while society is supportive of the intended policy change towards greater equity in resource sharing, the efforts of participants are frustrated. The current project was therefore built on the understanding born of the 1999 to 2002 project, that, unless trade-offs and decision-making are continuously underpinned by a co-operative ethic, society is unlikely to support resource-related decisions. Without processes with a democratic character, voluntary compliance to allocation and use decisions will remain unattainable. The project reported on here was interested in understanding the dynamics of stakeholder frustrations as they relate to relationships for making collective trade-offs. We anticipated that an understanding of these frustrations would highlight areas that would require more focused research inquiry.

In the design of this project, the decision to focus research on promoting a co-operative culture, rather than on setting up the structures that promote decentralised, co-operative management, was deliberate. In the earlier project (Van Wilgen et al., 2003), it was clear that "the way we do" things is as, or even more, important than "what we do". "The way we do things" is a new manner of interaction required between parties sharing an interest in the same resource, and achieving this is all about shifting cultures and attitudes. The structures for promoting devolved, democratic

decision-making cannot themselves promote a democratic "way of doing". Culture- and behaviour-oriented aspects of natural resource management have not been well addressed to date, with the exception of, for example, the recent work by Nyambe (2005). In contrast, the structural and functional aspects of resource management institutions in South Africa have received quite a lot of attention (Pegram and Mazibuko, 2003; De la Harpe et al., undated; Pegram and Palmer, 2001; Görgens et al., 1998).

The choice to continue basing further research on co-operative, participatory approaches rather than approaches that assume user rights and conflicts was also deliberate (also see Appendix 2). Clearly, processes that promote decentralised and participatory endeavour in natural resource management are not flawless (Dzingirai and Breen, 2005). Neither can they automatically be assumed to translate into good governance (Ostrom, 2000); as a result, such approaches have received their fair share of criticism (Cooke and Kothari, 2001; Manzungu, 2002). However, we believe that commitment to participatory approaches, based on shared understanding and co-evolution of values, provides a firmer basis for empowered, creative and robust solutions to resource sharing (Appendices 2, 3 and 4). Added to this, stakeholders have been shown to be (both within a global and a South African context) predisposed toward, and supportive, of co-operative approaches that will direct society towards a future that is mutually beneficial (Van Wilgen et al., 2003; Friedman, 1999; Allison, 1992; Gintis et al., 2003 and Cohen et al., 2001).

2.7 Project title and significance

The original title of this project was: "Deepening democracy through Integrated Water Resource Management – Developing a model for sustainable relationships of a scarce natural resource". This resulted in misinterpretations of the objective and focus of the project. It is thus important to clarify the intended meaning and interpretation. Given the evolution of the ideas (i.e. around future-building and co-evolution of needs and values) that led up to the formulation of this project, the title of the project refers to developing and sustaining an appropriate culture whereby stakeholders reconcile their diverse needs. It does not refer to democracy within the context of party politics or the dynamics of democracy in wider society *per se*, but rather with a co-operative spirit within the context of river resource decision-making.

What the project aims to achieve is thus specific to decision-making around the allocation and use of a scarce, common property natural resource. By this we do not mean to imply that the social process of resource decision-making and allocation does not have political dimensions. Nor do we propose that making decisions about resource use does not have many social ramifications. In this project, we were concerned rather with the nature of the underlying relationships required to promote equitable trade-offs and the processes that will encourage the formation of such relationships. Initial use of the term "power" led to similar misinterpretations. To emphasise, this project focused rather on aspects of empowerment, which is seen to be a process underlying the development of power, the latter being an expression of empowerment. The project attempted to focus on understanding underlying processes and behaviours rather than institutional structures and process symptoms. The project team then committed to avoid the use of terms such as "democracy" and "power" so as to direct research focus on addressing

issues around relationships that support equitable trade-offs. A glossary is provided at the end of this report, to assist in the appropriate interpretation of terms within the context of the project.

2.8 The study area

Our research was conducted in the Sabie-Sand catchment, which forms part of the Inkomati Water Management Area, situated in the north-eastern part of South Africa and bordering on Mozambique and Swaziland. Major rivers in this Water Management Area are the Nwanedzi, Sabie, Crocodile East and Komati Rivers. The Sabie River is one of the least regulated rivers in the country and is held up to be a river of profound and unspoilt beauty. The area is divided by the escarpment into a plateau in the west and subtropical lowveld in the east. Annual rainfall varies from close to 1 500 mm in the mountains to 400 mm in the lower lying areas. Irrigation agriculture and plantation forestry make up the majority of economic activity but the area also has related industries and commerce and a strong eco-tourism industry. Future population growth in the area is expected to be moderate and to be concentrated in the urbanised areas. Growth in future water requirements is expected to be small (DWAF, 2004).

Apart from the wealth of information about the rivers of this area and in particular the Sabie and Sand Rivers (see Van Wilgen et al*.,* 2003 and Van Wyk et al., 2001 for a summary of research information generated), the landscape, its people, as well as the history, economics, land use, demographics, biodiversity and social-ecology of the area, have also been described (see Van Wilgen et al*.*, 2003; Pollard et al*.,* 2003; Postel and Richter, 2003; Mpumalanga DACE, 2003). This project was concerned with recognising the diverse interests in the resource and how these are brought into and reconciled - or not - in the process of decision-making. This report therefore focuses on aspects such as the diversity of resource-related interests, how people perceive their relationship with the rivers of the area, how people express these interests and what mechanisms are available to stakeholders for expressing interests and making decisions.

Much of this information constitutes the initial findings of this project and is provided in Chapter 3. Suffice it to say here that the biophysical template for the area is diverse and that this diversity has resulted in a diverse mix of human interests in the land and aquatic resources of the area. Benefits from the hydrological cycle and rivers range from the direct use of aquatic ecosystem goods, such as growing mandumbes in the wet zones, to nonconsumptive-use ecotourism ventures, to commercial agriculture and forestry. People are organised at various scales and in various ways to access and use these goods and services. This complex picture of resource use and benefit distribution is further complicated by management and regulatory systems whose boundaries and functions are not always designed for collective synergy with each other or with the scales at which resource issues are felt and expressed. For example, at the time of this project's initiation, the Sabie-Sand catchment was administratively split by a provincial boundary dividing the Mpumalanga and Limpopo provinces. The catchment is further governed by five magisterial (local government) districts responsible for domestic water supply. The social-ecological reality is further confounded by the history of apartheid. Parts of the Sabie-Sand catchment are home to people from the former homelands of Gazankulu, Kangwane and Lebowa. These areas suffer high population densities, great pressure on local river resources and a great need for human and economic development (Pollard et al., 2003).

The Inkomati Water Management Area is currently also in flux in terms of institutional establishment for water resource management (see DWAF, 2000; Sherwill, 2005 for a history of CMA establishment in the Inkomati; and Brown and Woodhouse, 2004). At the time of the writing of this report, the Inkomati CMA governing board was in the process of being appointed; however, it was predicted that it would still take several years before the agency would be fully functional. In the interim, many of the resource management responsibilities will remain with DWAF's National and Regional Offices. The Regional Office in Nelspruit is in the process of setting up a proto-CMA structure with the aim of preparing human and financial skills and resources in support of the CMA responsibilities (D. Weston, pers. comm.). Several irrigation boards in the area have been engaging DWAF in attempts to transform into WUAs, the Sabie River Irrigation Board being one of them. Catchment fora, such as the Sabie River Working Group and the Sabie River Co-ordinating Committee, have been functioning for several years, albeit with activity being scaled down over the recent past in anticipation of new structures and processes for water resource management. The nature of these institutional developments has had a significant influence on how people have viewed and experienced their place in the new decision-making system for integrated water resource management. They have also been influential in terms of attempts by this project to understand the requirements for good synergy between statutory and non-statutory, informal governance processes (Figure 2.1). These issues are discussed in further detail in the following chapters.

CHAPTER 3

3. PROJECT PHASE I: THE THEORY AND REALITY OF NATURAL RESOURCE GOVERNANCE

3.1 Introduction

In Phase I of this project, we sought to develop an adequate understanding of the water resource social-ecological system with an emphasis on collective decision-making. This understanding was required in order to design the second phase of the project, which was concerned with catalysing change. Phase I had four aims:

- First, we needed to review the theoretical understanding relating to behaviours that support collective decision-making within the context of sustainable resource sharing. This was particularly important as the majority of the project team members had backgrounds in the biophysical sciences and no theoretical training in resource governance.
- Secondly, we sought to identify research methods and approaches that could best be used in our study.
- Thirdly, we needed to assess reality. This meant that we needed to understand and describe the current state of how river resource stakeholders perceive their decision-making environment. We also needed to assess how stakeholders engage decision-making through various structures and relationships and the context in which this process takes place (Figure 3.1).
- Finally, we aimed to select issues for further research. These issues had to represent significant challenges to collective decision-making and would therefore highlight areas of research focus for Phase II.

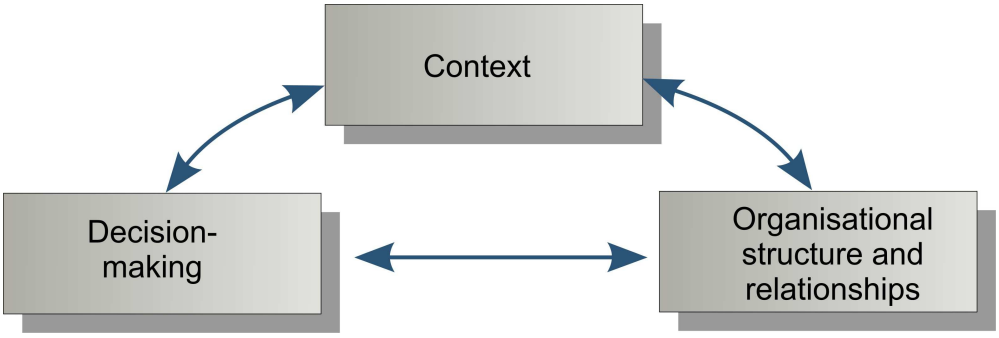

Figure 3.1: The theoretical framework guiding the assessment of reality in Phase I of the project. The framework had three components, namely context, collective decision-making and the organisational dynamics through which needs and preferences are expressed and decisions are made.

This chapter provides a summary of the findings of Phase I. It reviews current understanding of how water resources are governed within the Sabie-Sand catchment. It reviews appropriate research methods and describes three models that assisted the approach to action research and the interpretation of results in Phase II. The results of a survey of resource users, regulators and managers in the Sabie-Sand catchment are also presented. Finally, a combination of theoretical understanding and practical reality were used to identify issues relevant to research in Phase II of the project.

3.2 Current understanding of river resource decision-making

Within Phase I, we undertook a review of published information in the field of collective governance of river resources. The findings of the review are contained in a set of working notes. These notes were used to (1) strengthen the team's theoretical understanding and (2) prepare the research team for a field assessment that would guide the design of project Phase II. The first part of the review expands on the project issue statement (Box 1.1), which deals with the need for equitable trade-offs in resource sharing. It describes in detail why river templates provide a unique opportunity for mobilizing people around more equitable resource sharing (also see Appendix 1) and it clarifies interpretations of key terms that would be used within the course of the project. The second part of the review addresses organisations as units through which decision-making behaviour can be understood. This section summarises key findings of this review.

3.2.1 Rivers as templates for momentum towards equity

With decentralised resource management, the capability to make and influence decisions is meant to be devolved. Growing resource scarcity, variability and multiple and complex interests in the resource tend to mobilize people, on an ongoing basis, around often contentious issues of sharing river resources (also see Appendix 1). Ongoing interactions that require co-operation provide an incubator for promoting human cultures and behaviours that support co-operative approaches to resource sharing. Such behaviours can lead to a more level playing field and hence greater equity in resource sharing and greater robustness in joint decisions. Even though rivers are pre-disposed as catalysts for co-operative resource management, successful change towards greater equity also depends on many broader issues and attitudes. Aspects such as a stable economy and widespread policy, legal and societal support for and goodwill towards democratic principles such as co-operation, transparency, and accountability all contribute to a broader willingness to engage in change processes. In particular, contributions by Mohammed Salih (2001) and Friedman (1999) provide insights into the expectation that African governance should be based on embracing and reconciling the large diversity of values and attitudes inherent in African societies. They emphasise the need to leverage diversity to construct and move towards an improved future. This resonates well with the concepts of "ubuntu" and future-building as espoused by SAM (Rogers and Bestbier, 1997; Appendix 3).

3.2.2 Organisations as levers of governance

While individuals make decisions about the use of river resources, it remains difficult to promote fundamental change in attitudes by focusing on individuals alone. Organisations, on the other

hand, aggregate and direct values and attitudes in society. They are thus potentially effective units or 'levers' of attitudes and behaviours that are widely adopted and supported by society. As a result, they provide useful nodes for studying the dynamics of societal behaviour in relation to resource use. The cultures and habits encouraged by organisations influence value systems and behaviours (Nyambe, 2005; Schein, 1992) and through their cultures, they can either foster or inhibit an environment conducive to co-operation.

In the review we identified three broad types of organisations: (1) statutory organisations, (2) non-statutory, formal organisations and (3) informal interest groups. These groups typically have very different cultures, and as a result, have different capacities to respond to change and different capacities to engage others in collective decision-making.

- Statutory organisations tend to be hierarchical in structure. Lines of responsibility are fixed and functions are controlled by rules. Real decision-making power resides at or near the top end of the hierarchy, and as a result, these organisations cannot respond rapidly to changes or stakeholder concerns at or close to the level of resource use.
- Informal interest groups, on the other hand, often lack the knowledge, skills and resources to have proper organisational systems and mechanisms in place. They tend therefore to be inward-looking and are open to abuse by those who assume and monopolise leadership positions.
- Non-statutory, formal organisations tend to have strong (but not rigid) accountability and are well-empowered through sufficient understanding and skills to make sound decisions. Accountability and power lies within the organisation's members and they are quick to respond to, and capitalise on, opportunities presented by new policy.

These features of organisations are likely to affect the way they make decisions, both internally and also in how they tend to engage other interest groups to make collective decisions. The capabilities and attitudes espoused by each organisation are adopted by members and become entrenched in organisational cultures and systems through the sharing and reinforcement of assumptions (Nyambe, 2005). Such capabilities can be likened to the social capital referred to in Chapter 2. Various types of organisations encourage the development of the various forms of social capital required by each organisation to fulfil its goals and mandates. In a context where collective decisions are required, new social capital is needed to reconcile diverse interests across organisations. Existing social capital is a reflection of past requirements and learned behaviours to support historical goals and endeavours. As a result, existing social capital cannot be assumed necessarily to support fully the skills and attitudes needed for trade-offs and joint decisions. Thus, any organisation, regardless of successful performance in the past, may be only semi-empowered to engage others within the new decision-making context. To make progress, participants will need to commit to collective learning, since no single participating individual or organisation (and this includes the research team) is likely to have the full suite of skills and attitudes to support the new decision-making context.

3.3 Research methods

3.3.1 Qualitative research

Qualitative research involves the documentation of expressed opinions and perceptions as opposed to quantitative research, which relies on direct measurement. It relies on the interpretation of the real world from the perspective of stakeholders. Qualitative researchers then use this interpretation to recognise and describe emerging patterns (Patton, 2002; Cresswell, 1998). The research team aimed to conduct a survey of river resource stakeholders in order to understand how these stakeholders currently perceive and engage the mechanisms of decision-making available to them. Qualitative methods are best suited for this type of knowledge generation (Patton, 2002). The review undertaken in Phase I of the project defined some aspects of qualitative methods that assisted the research team to internalize and conduct field research within a qualitative research paradigm:

- The researcher builds a complex, holistic picture, analyses words, reports detailed views of informants, and conducts the study in a natural setting (Creswell, 1998).
- Researchers establish relationships with people, places and performance. Research and data analysis involves interpreting the practices and meanings of research participants from their perspective (Ezzy, 2002).
- The qualitative paradigm is based on induction, holism and subjectivism. Subjectivism is a key principle of the qualitative paradigm and refers to understanding a situation from the perspective of participants in the situation. A qualitative research approach is *inductive* in that "the researcher attempts to understand a situation without imposing pre-existing expectations on the setting" (Ferreira, 1988 p. 109). General patterns are built from specific observation (Ferreira, 1988).

3.3.2 Rigour in qualitative research

A challenge that faced the research team was to strive for rigour in qualitative research. Qualitative research has attracted much criticism for its failure to "adhere to canons of reliability and validity" (LeCompte and Goetz, 1982 p. 31). One issue is that models of rigour for natural science and quantitative research are not directly applicable to qualitative work. Ezzy (2002) and Creswell (1998 as first suggested by Lincoln, 1995) describe a set of criteria for achieving rigour in qualitative research. Six of these criteria that were considered to be of particular relevance to this study are provided here:

- Focus on process – Social life is continuously actively constructed as part of a process that builds and transforms social life. Awareness of this constant change, and the description of human life and experience within the context of change, is important in qualitative research.
- Appreciation of subjectivity – Social life is integrally subjective, made up of meanings, interpretations and feelings, and it cannot be understood without examining this subjective experience.

- Tolerance for complexity – Simple explanations are not typically the best. Social life and contemporary culture is a complex web of significations and interpretations that shape human action. Research needs to appreciate and address this complexity (Ezzy, 2002; summarised from Gubrium and Holstein, 1997).
- Reciprocity between the researcher and those being researched – This means that sharing, trust, and mutuality exist.
- Researchers should respect the sacredness of relationships in the research-to-action continuum – This means that the researcher respects the collaborative and egalitarian aspects of research.
- Sharing of the privileges acknowledges that in good qualitative research, the researcher shares their rewards with persons whose lives they portray (Creswell, 1998 p. 196 -197).

The following can promote rigour in qualitative research (Creswell, 1998):

- Prolonged engagement in the field;
- The triangulation of data sources and methods; and
- Peer review.

We recognised the importance of using a research process that encourages adherence to the above points. Through the use of the SAM process as a vehicle for research (refer to Chapter 2), the team was able to internalize and apply, on an ongoing basis, aspects such as emphasis on process, appreciation of diverse value systems, acknowledging and working with complexity, and treating all participants (including and especially the researchers) as co-learners.

3.3.3 Participatory action research

Action research is a form of **change research** that seeks to change the process or situation it is researching. Action research therefore has an 'activist' connotation – as it subscribes to and openly declares a particular value-orientation (Ezzy, 2002). Action research has fundamentally three elements: intention (or planning), action and reflection. It is a learning-oriented form of inquiry that helps a group (in this case the researchers as well as the targeted action research participants/stakeholders) to reflect on issues, solutions and practice and helps the group to understand and act on these in new ways (Patton, 2002). It is thus a process that encourages responsiveness. As part of action research, a **learning-by-doing** approach, characteristic of the SAM process (Rogers and Bestbier, 1997), was adopted. It allows for emerging properties to be acknowledged and allows these to influence the subsequent process. This approach was chosen deliberately in acknowledgement of uncertainty, imperfect information and the need to learn and reflect jointly. The approaches we used therefore supported a learning knowledge paradigm rather than a traditional truth-oriented knowledge paradigm (Patton, 2002).

Participatory research requires participation in the research process and it allows for the transfer of some control of the goal and method to participants. It aims "to provide an integrated process in which research, education and action all draw on the skills of all participants (researcher and researched), with the goal of increasing the knowledge of all participants and enabling social

transformation" (Ezzy, 2002 p. 44). Combining participatory and action research creates further value: "From participatory research we recognise power imbalances and the need to engage oppressed people as agents of their own change. From action research, we recognise the value of engaging other stakeholders and of using research findings to inform intervention decisions" (Nelson et al. 1998 p. 885).

3.3.4 Frameworks to assist interpretation of research results

We identified three models, or frameworks, that would be particularly useful in guiding the research in Phase II of this project. These were Senge et al.'s (1999) process for profound change, a form of action research known as Appreciative Inquiry, and a model for understanding empowerment, developed by Cook (1997). These frameworks are described here briefly.

Senge et al.'s process for profound change

Senge et al.'s (1999) model of profound change (Figure 3.2) provided a process-oriented framework of the components of change and the reality of delays inherent in the change process. One of the striking aspects of Senge et al.'s process is the focus on the need to build social capital (aspects such as confidence and trust) long before tangible results are realized.

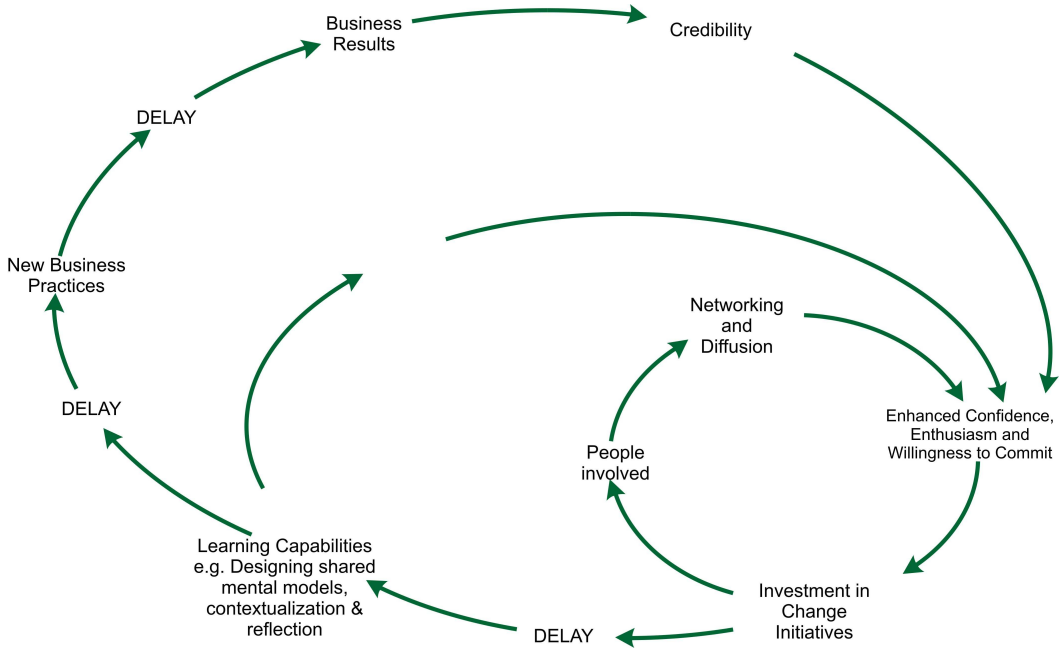

Figure 3.2: A diagrammatic representation of Senge et al.'s (1999) process for profound change. The model suggests that investment in change initiatives will produce results in phases. In the shorter term, this will be through the involvement of people and networking; in the medium term, results will arise from the personal growth of individuals involved in the process; and in the longer term, more tangible changes will be realised.

Appreciative Inquiry

Appreciative Inquiry is a form of action research that is based on the principles of empathy and respect. It encourages groups to expand their collective vision by exposing and amplifying the strengths of a group (Cooperrider et al., 2003; Watkins and Cooperrider, 2000 and Bushe, 1998). The notion of catalyzing fundamental change amongst individuals and organisations with diverse interests will require deep appreciation and acknowledgement of others' values, needs and preferences. Within this context, an appreciative and inquiring attitude will promote the co-evolution of values as opposed to a defensive (of individual rights), adversarial or conflict-based approach to resource-sharing. Appreciative Inquiry concepts are based on the organisational sciences and this body of knowledge confirms that future-building is a more appropriate approach to problem solving than actually focusing on the problem *per se* as a point of departure.

Senge et al. (1999) provide an illustrative description of Appreciative Inquiry (p. 430 – 431):

> *"Without genuine inquiry, people may make costly, unnecessarily harsh decisions based entirely on misinterpretations of the others' intent or meaning. Appreciative interviews draw forth images and ideas from people's peak experiences and aspirations, which in turn can help people articulate the propositions that they agree upon, despite their differences. This approach has been very useful in helping people deal with explosive boundary-crossing issues. Appreciative Inquiry constitutes a method for bringing* ***empathy*** *into day-to-day practice. Empathy does not mean sympathy. It means developing an understanding of another so intimate that the feelings, thoughts and motives of one person are readily comprehended by another. To be empathic means to "try on" different perspectives and assumptions, temporarily suspending your own in the process, so that you can inquire into the reasons why people hold them. This requires the willingness to believe that people aren't inherently vicious, mean, or crazy, but that the world looks very different to them, and that you could appreciate it if you took the time to see it from their point of view."*

Cook's empowerment model

Cook (1997) proposed a model for empowerment that recognises the need for capacity enhancement in three distinct areas:

- Subjective empowerment (relating to confidence);
- Objective empowerment (relating to responsibility and opportunity); and
- Competence (relating to skills, knowledge and attitudes).

These aspects of empowerment, plus the capacity to be empowered in a group/collective set-up, we regard as being critical in terms of the holistic empowerment of participants so that they can contribute as a collective to the SAM process. People tend often to focus on skills development (Cook's competence component) in empowerment efforts, and tend to be unaware that building confidence, and an ability to see and use opportunities, also forms an important part of the overall empowerment process. Another aspect of empowerment that the research team recognised as important was "resource empowerment". This refers to the manner in which resources (e.g. time, money, equipment) enable participation in collective endeavours.

3.4 Current practice in the Sabie-Sand catchment

Before attempting to catalyse and promote change, the research team had to gather information about real-world context and decision-making of water resource stakeholders. To do this, we conducted a survey of 'connectedness' in the Sabie-Sand catchment (Appendix 6). Connectedness refers to the ability of interest groups to interact with each other across different scales and levels of organisation. It therefore aimed to assess the potential of stakeholders to engage, and be engaged by, the new system of participatory resource management as intended by policy.

We sought to understand how people were organised around, and made decisions about, the river resource. The survey also sought to document the context within which organisations or groupings existed, whether or not they communicated with each other, and if they did, how they made decisions and trade-offs (Figure 3.3).

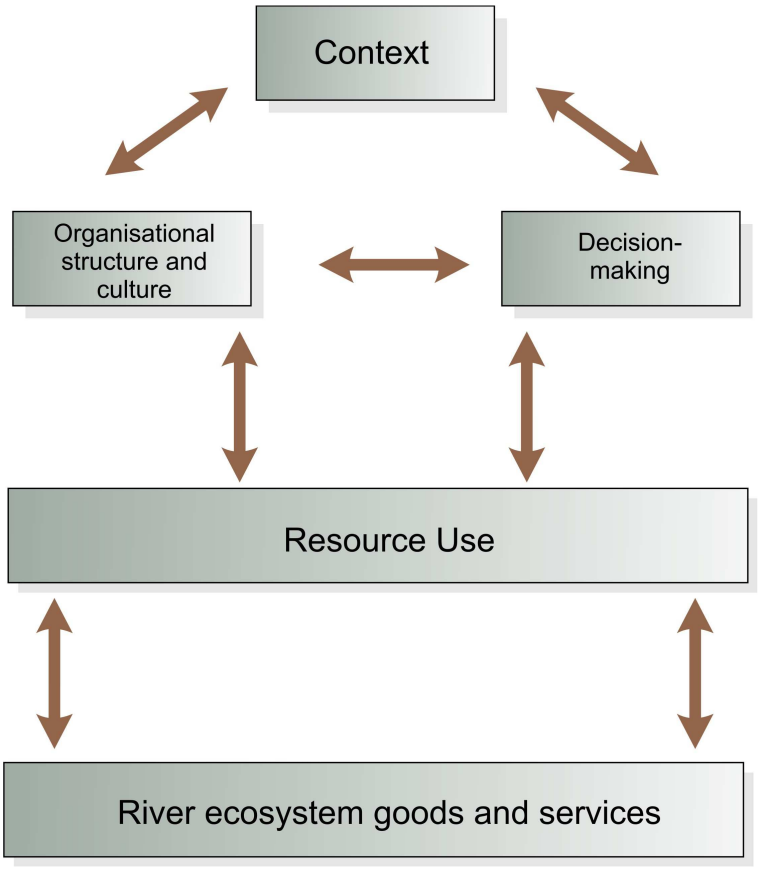

Figure 3.3: A framework used to guide the research team in gathering information about how interest parties engage each other to make decisions about sharing the river resource in the Sabie-Sand catchment

Semi-structured interviews were conducted with 18 interest groupings (Table 3.1) related to water resource use in the Sabie-Sand catchment, in November and December 2003. The groupings were selected to represent the different types of water resource use known to take place in the catchment. Use was also made of a similar categorisation compiled by DWAF to list the individuals and organisations that took part in the development of the proposal for Inkomati CMA establishment. Under South Africa's current water law, 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. 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.

Table 3.1: Organisations representing different interests in, and uses of, the water resources of the Sabie-Sand catchment, interviewed in November 2003

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 and 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-government organizations		Association for Water and Rural Development (AWARD)	Sand
Multi-sectoral fora		Sabie River Working Group	Sabie-Sand

The semi-structured interviews were guided by a checklist, which was 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; and
- Participation in decision-making processes about water resources.

This 'checklist' was not prescriptive, and additional issues were pursued where appropriate. The use of semi-structured interviews was motivated by the clear advantages that 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. 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 of testing and reinforcing developing insights and understanding (Neuman, 2000).

Our findings suggested 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 co-operative initiatives were found to exist, there appeared to be a greater focus on engaging government or legal processes. The few organisations that were pro-actively engaging other sectors were those who perceived an incentive to do so, because they understood the vision of the current water law, and the change of rules governing future access to water resources. Contrary to the intentions of policy, most stakeholders still looked to government to address their resource needs, and to effectively negotiate with other users on their behalf. The huge imbalances in levels of organisation and capacity between the different user sectors were cause for concern. As participation will need to take place via representatives, those who have not formed interest groupings and developed leadership capacity within these groupings, are likely to be excluded.

3.5 Selection of issues for further research

One of the products of the social-ecological survey of 2003 was a list of issues. These issues were distilled on the basis of their impact on the ability of interest groups to engage in collective vertical, but especially horizontal engagement. Horizontal connectedness and local-level collective decision-making are important in terms of encouraging the development of shared rules and self-compliance that strengthen bottom-up collective endeavours around resource sharing.

The following issues were identified:

- Large discrepancies existed between organisations and individuals, in terms of confidence, skills, knowledge and opportunity, to engage in co-operative decision-making.

- There was very little co-ordinated decision-making between organisations, which tended to engage government to resolve resource issues, rather than each other. This reflects habits engendered by the old Water Act (Republic of South Africa, Act No. 54 of 1956) of relying on a centralised authority for decision-making.
- There was a lack of formal representation of the interests of many resource users. Unless most or all interests and values are incorporated into decision-making, inequities in the access to and use of river goods and services (and associated costs and benefits) are likely to persist.
- There was a predominance of decision-making structures that were not necessarily geared to address their constituencies' resource-related issues, but were often the only structures accessible to those with resource issues. This needs to be balanced with the development and involvement of more apolitical structures, in order to promote greater focus on and accountability to constituencies and their interests.

Apart from the issues identified, a number of opportunities were identified in terms of organisations that are geared to engage change towards more effective collective decision-making.

- The Sabie River Irrigation Board has a vision (and matching enthusiasm) to expand its scope to include a number of downstream users (including the Belfast/Hoxane community interviewed). In this way, the board would enhance its representation and empower others. This offered a significant opportunity to the research project in terms of selecting a focus area for testing a process of co-operative empowerment.
- The private forestry sector (Global Forest Products) and Kruger National Park stand out as organisations that are outward-looking, well-resourced and able to seek, engage and drive co-operative processes. They are at opposite ends of the catchment, again providing an opportunity for focus and for integrating upstream/downstream concerns.

At the end of project Phase I, differentials in levels and types of empowerment emerged as a major obstacle to stakeholders' collective capability to develop shared understanding and make wise trade-offs. Learning about what constitutes empowerment and co-operative empowerment therefore became a focus area for Phase II of the project. The Cook model of empowerment was used to guide the research team and resource stakeholders in the interpretation of empowerment in a way so as to be useful within a process of change towards wise and robust collective decisions.

CHAPTER 4

4. PROJECT PHASE II: ACTION RESEARCH FOCUSED ON COLLECTIVE EMPOWERMENT FOR NATURAL RESOURCE GOVERNANCE

4.1 Introduction and purpose

Phase I of the project explored the status quo with regard to decision-making in the Sabie-Sand catchment and concluded with issues that would most likely affect the quality of collective decision-making between river resource stakeholders. The most compelling cross-cutting issue is that of discrepancies in both the levels and types of empowerment between participants who must make collective decisions. The premise is that collective decisions are only as strong as the least empowered decision-making partner. Phase I showed that an unequal playing field, in terms of resources, skills, confidence and opportunity, poses a great risk to stakeholders' ability to make robust joint decisions.

The project team then had to decide how to approach this issue and address it through an action research process. Not all catchments have the luxury of a resident institution (government or non-government) interested in, or tasked with, driving processes of co-operative empowerment. Also, we learnt from the survey that government's capacity, in terms of both sufficient numbers and skills to facilitate this process, is extremely limited. In the absence of government or CMA capacity to drive an empowerment process, users may opt to empower each other to strengthen horizontal engagement and local-level decision-making processes. In this section, we report on the outcomes of action research aimed at catalysing a process whereby stakeholders could help themselves and each other to reduce empowerment differentials.

4.2 Research approach for catalysing co-operative empowerment

Given the choice of focus on empowerment, the research team needed a process for fostering empowerment. As described in preceding chapters, SAM provides a structured but sufficiently flexible process for encouraging co-operative empowerment. SAM also links a vision (in this case for co-operative empowerment) with practical end-points for moving towards the vision. Importantly, we had to use a process that does not only encourage *empowerment*, but *co-operative empowerment*, in the recognition that no one participating individual or organisation is currently fully empowered to engage the joint decision-making process around river resource sharing. This requires that all participants (including the research team) recognise their roles as co-learners within a context where no one is an expert, but where each can bring whatever strength they have to the process. It was important first for the research team to recognise and adopt an ethic of learning and appreciation and furthermore to foster this attitude in other participants.

SAM was selected as a sound vehicle, but the team also strengthened its use with theories around change and catalysing change within the context of aligning diverse interests in a natural resource towards a common purpose. According to Kotter and Heskett (1992), key ingredients for successful change include catalysts, sustaining mechanisms, leadership guided by a realistic vision, stable group membership, geographical concentration, small group size, and incremental successes (i.e. both tangible and intangible benefits of the process). Senge et al.'s model (Figure 3.2) provides a process-oriented perspective that shows that catalysing change must start with agreement on purpose, enthusiasm and willingness to invest. Since both the research team and the three selected organisations would be catalysts for the change process, these participants first had to engage each other in their collective roles as drivers of a new initiative for change.

Apart from the theoretical support, we have seen the practical benefits of the SAM approach supported by catalysts in resource management in South Africa. Both the Kruger National Park Rivers Research Programme and the River Health Programme's successes have, for example, been based largely on the role of champions (both individuals and organisations) inside and outside of the organisations responsible for resource custodianship. Within a catchment context, sustaining processes that build social capital for equitable resource sharing will most likely rely even more on the actions of local champions. Members of a catchment community who understand a policy vision, who understand the benefits of realising the vision for the catchment as a whole, and who have the human and financial resources to mobilise themselves and others, will play a vital role as champions. Supporting such champions is particularly important because they are, and will be, spearheading important social processes that are not directly linked to a statutory mandate, but without which the vision of South Africa's current water law will certainly not be realised.

In summary then, what constituted, within the context of this project, a prospective catalyst – or catalyst group?

- Understanding policy vision and appreciating the associated opportunity for co-operative governance.
- Being outward-looking and willing (both as individuals and organisations) to invest in a process that mobilises diverse needs and preferences towards co-operative governance of the resource.
- Being resource empowered (financial and/or human resources).
- Having a strong notion of dependence on the water resource. This includes the acknowledgement of non-direct and non-extractive use of the river resource (Van Wilgen et al., 2003). The Sabie River is known for its beauty and relative pristineness and catchment residents are very aware of the nonconsumptive-use value of the river resource for tourism. As a result, the catchment has a history of exposing a wide diversity of values associated with the resource and provides heightened incentives to attempt to reconcile diverse needs and preferences.
- Possessing theoretical and practical knowledge (in this case, this contribution came from the research team) of a vehicle (SAM, in this case) that could promote co-operative

empowerment; as well as skills for facilitating this process appropriately (also refer to Van Wilgen et al., 2003 and Groot and Maarleveld, 2000).

4.3 Action research objectives

The purpose of the action research phase of the project was to:

- Determine the potential of well-resourced water resource interest groups to own and drive a co-operative empowerment process for the collective benefit of a group with a shared resource-related purpose, to whom they belong
- Apply the SAM and future-building processes as a vehicle for co-operative empowerment
- Draw lessons from the action research experience relevant to catchment stakeholders and water policy implementers

The project team did not set out to measure empowerment *per se*. The objective was rather to use the SAM process to direct conversation and thinking towards empowerment differentials and the impact of these on joint decisions; and to record participants' response to this process. It was envisaged that the organisation of conversation around empowerment would form a basis for stimulating action in relation to co-operative empowerment. We used the Cook categories of empowerment (i.e. opportunity, skills and confidence; see section 3.3.4) to organise our observations around the responses of participants to discussions on empowerment and joint decision-making. Even though the explicit measurement of empowerment is difficult (Boyce, 2002 and Alsop and Heinsohn, 2005) and was not the main objective, we were subsequently able to describe elements of progress in empowerment through indicators or 'surrogates' of empowerment, within the specific context of relationships that must support sound trade-offs.

4.4 The action research process and its assumptions

We initiated the action research phase by inviting well-resourced groups individually to a process of co-operative empowerment (of which the research process forms a part). If they indicated willingness to engage the process, we aimed to proceed with a joint workshop with the well-resourced groups, DWAF and the research team (Figure 4.1). In line with our chosen approach of Appreciative Inquiry, we also committed to understanding underlying reasons if and where any one of the selected groups indicated a lack of willingness to participate.

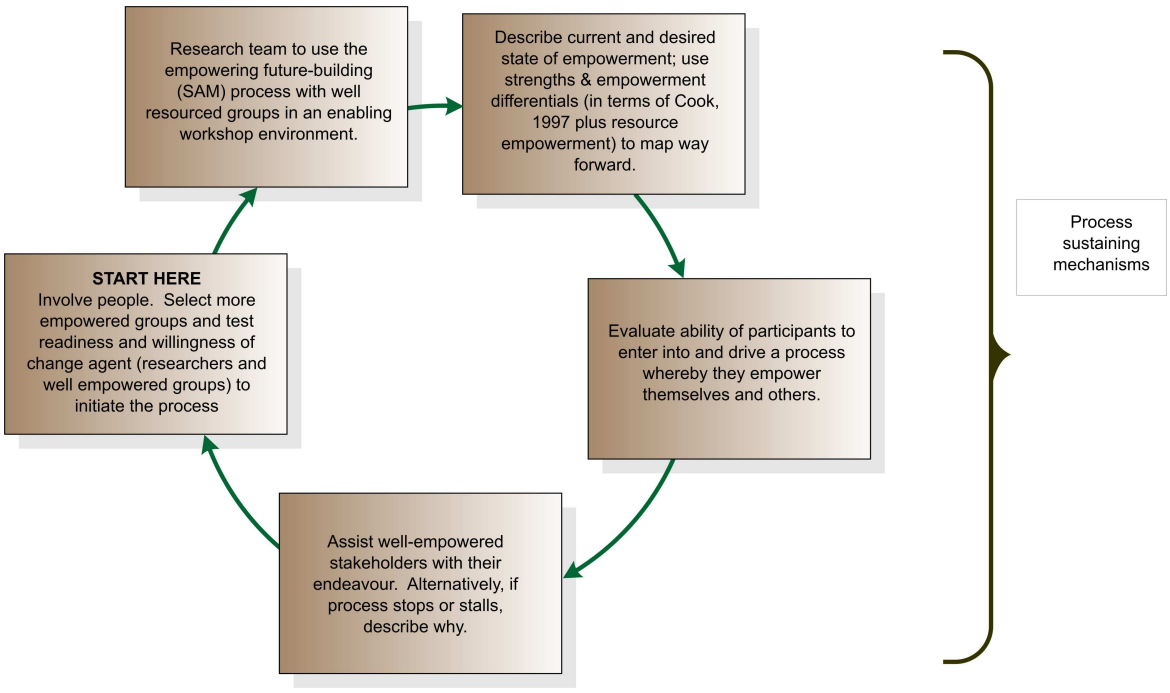

Figure 4.1: The action research process was largely based on Senge et al.'s (1999) model of first involving people (well-resourced groups), discussing the opportunity and testing willingness and confidence to invest in the change process.

It was important to describe key assumptions of the action research process, thus allowing for later testing and reflection. These assumptions were:

- Empowerment differentials between resource-related interest groups will be a major stumbling block for stakeholder connectedness, shared understanding and a co-operative way of making joint decisions. Without appropriate intervention, it is likely that these empowerment differences will be sustained or entrenched in dialogue and decision-making around resource allocation and use (issue statement based on field survey results).
- Researchers (or other agents of change), resource interest groups that are more empowered, and groups that are less empowered to engage the resource trade-off process, all have the potential and capacity and are willing to engage each other in a process of co-operative empowerment in a way that benefits accrue to all, and costs are spread equitably.
- The more empowered perceive a responsibility, and opportunity, to empower others and perceive that they will benefit (financial/personal and tangible/intangible) from the process.

- The research team can measure, in a scientifically rigorous way, how the future-building process enhances empowerment and can measure progress in levels and types of empowerment as per the Cook model.
- The risks associated with initiating, sustaining and institutionalising a culture change towards more democratic behaviour in river resource decision-making are outweighed by the benefits thereof. We assume that a democratic way of making decisions will enhance society's ability to respond to changing conditions.

4.5 Testing willingness to participate in co-operative governance

4.5.1 Invitations and reflections

Change processes rely fundamentally on initial and reinforced willingness and confidence to commit energy and resources to the process (Senge et al., 1999). Thus our first objective was to enter into discussion with the selected catalyst individuals to get a sense of their willingness to participate. Within the context of this project, we also acknowledged that assessing willingness to engage is not just a process of queries and responses, but rather the first step towards building relationships within the framework of the first circle of the Senge et al. model (Figure 3.2). If the research team and the selected user organisations were going to be a catalyst team for setting up a long-term process of co-operative empowerment, then the objective would be to create an environment in which the researchers and the selected well-resourced groups could begin to empower each other.

A letter of invitation was sent to each of the three identified well-resourced stakeholders and this was followed up by telephone calls. The letter briefly outlined the significance of empowerment within the context of joint decision-making to support the vision of the current water law. It emphasised the potential role of well-resourced, organised groups and invited each selected stakeholder to help design and catalyse a co-operative empowerment process.

Responses to the invitation were varied. The Sabie River Irrigation Board was enthusiastic. Their main interest was to obtain more information about statutory processes and how such information might help them transform their Board into a WUA. The Kruger National Park was also keen to engage in the proposed process and had been applying SAM for a number of years to manage biodiversity. They were therefore already familiar with the suggested concepts and philosophy, especially as they are increasingly concerned about building relationships with constituencies outside the Park's boundaries. The proposed process was therefore seen by the Kruger National Park as an opportunity to strengthen an already existing process with the same objective. Global Forest Products was initially extremely reluctant to participate and there seemed to be several reasons for this. The dominant issue appeared to be that Global Forest Products had been forward-going in trying to engage other organisations (notably DWAF and local government at both municipal and district levels) in a process of joint decision-making around river resources. However, they had become frustrated to the extent that they did not wish to engage in a dialogue-based process as proposed by the research team. Based on their experience, they felt that their efforts with such processes lead to discussions that are rarely followed up by appropriate action and therefore no delivery on solving shared resource issues.

Global Forest Products kindly agreed to share with the research team the reasons for their reluctance to participate. This helped us to understand the impact of frustrating or disillusioning experiences on the willingness to engage in further activities related to collective decision-making. Despite their disillusionment, Global Forest Products agreed to meet with the research team to discuss further the nature of their frustrations and the broader objective of the project. The reason for their further participation was that, despite unsatisfactory experiences, they felt that they had little choice but to engage others within the framework of new policy and structures. As a key water user in the Sabie catchment, Global Forest Products is particularly keen to ensure strong synergy between their organisation's activities and the objectives of the Inkomati Catchment Management Agency.

A lesson from this was that we clearly could not proceed on the assumption that all who were invited to participate in a process of co-operative empowerment would be willing to do so. A frustrating experience of engaging others has a large impact on an individual's perceptions of anticipated costs and benefits and thus their willingness to invest further in championing a process. Also, we learnt that it was important to appreciate each organisation's particular motivation to participate or not. Unless the process of change addresses each organisation's interests and context (albeit within a common purpose), the enthusiasm and commitment of participants will be lost.

4.5.2 Understanding opportunities and benefits

We arranged to meet with each of the well-resourced organisations separately. The decision to conduct 'one-on-one' meetings with each organisation before conducting a joint meeting was deliberate. We learnt from the 2003 survey of stakeholder organisations that each organisation and its individual champions have a specific interest in the river resource at a particular scale and have organised differently to manage these interests. Thus, an understanding for the research team of how a stakeholder organisation regards its resource needs and preferences, how it makes decisions and what the perceived costs and benefits of participating would be, would rely on an appreciation of how these factors are expressed within and through an organisation. Individual meetings were therefore important for gaining an in-depth understanding of the nature of each organisation's motivations and decision-making experiences relating to river resource use.

The objective of the one-on-one meetings was therefore to gain a deeper understanding of current relationships that well-resourced groups had developed with those with whom they wished to make joint decisions. We were particularly interested to learn more about their decision-making processes, what kinds of relationships had been built and what they perceived to be drivers of success or failure of these attempts. We also wanted to assess what each organisation saw as the particular benefit to them, if they were to invest in a process of co-operative empowerment. In other words, we tried to identify areas where their objectives and issues could be served by the proposed empowerment process. In the discussions, we sought to learn but also to build sufficient knowledge complementarity through discussion (see Roux, 2004) so that participants' absorptive capacity about the topic of collective resource decision-making was enhanced. This placed everyone 'on the same page' and so prepared participants for a more

focused contribution to the first workshop together. The research team used the following issues to guide the discussion during one-on-one meetings:

- How high on their agenda is collective decision-making regarding water resources and why?
- How do stakeholders perceive a process for joint decision-making?
- What are the perceived costs and benefits of the process?
- Do they regard themselves as potential leaders in a co-operative empowerment process?
- Do they perceive a need for co-operative empowerment?
- If so, do they perceive themselves to have the appropriate capacity to empower others? If not, what capacity do they perceive themselves to lack?

4.5.3 Outcomes of the one-on-one meetings

Global Forest Products (GFP)

Organisation's objectives for decision-making: GFP's main concern was to get local government to take ownership of, and take action with, social development projects initiated and funded by GFP. GFP's experience has been that decisions are made but not implemented.

Perception of their own abilities: From our discussion, and in support of statements made in previous interactions, it appeared that GFP had to some extent given up on directly engaging local government (as their main strategy for achieving their goals), or following local government protocol regarding planning and authorisation procedures. Instead, they had taken other routes to getting their issues onto local government's agenda, particularly using the provincial government, and the process of developing a Spatial Development Plan to influence local government and Integrated Development Planning. GFP expressed that engaging local government successfully in future will depend on local government clarifying their internal roles and responsibilities, and communicating this structure clearly to the public and to corporate business. This will enable GFP to engage the right people, who have knowledge of the subject, and who also have the authority to make decisions.

Intersection of the organisation's perceived need with our intended empowerment process: The main area of common interest identified in our discussion was the issue of engaging other stakeholders/organisations, reaching collective co-operative decisions, and securing commitment and action to these. However, this interest relates specifically to local government, Integrated Development Planning processes, and social development projects. GFP mentioned that water resource issues have not formed part of any discussions held in this regard. Forestry's water resource issues are usually dealt with at the level of national government. Their only 'water' issue recently has been the lack of, or late, invitation of Forestry stakeholders to CMA meetings by DWAF.

The most direct potential benefits to GFP of participation in our research project were thus:

- The development of insights into, or skills with, methods of engagement. For example, GFP mentioned that a potential positive outcome of a workshop process for them would be to achieve an understanding of the bigger picture, so that the different groups can start developing some rules of engagement.
- Insight into the 'problems' that they have with local government, and into local government's difficulties engaging with them.
- Being part of a broader process that will feed into a future CMA.

Sabie River Irrigation Board (SRIB)

Organisation's objectives for decision-making: Irrigation Boards are required to transform into WUAs by law. Previously, the SRIB understood this to just involve a name change, but they now understand that this process must involve 'transformation'. The SRIB exists to manage abstraction from, and maintenance of, the Sabie irrigation canal, and also to collect funds for the repayment of a government loan for the building thereof. They feel that it would be possible for them to set up a representative WUA around the canal, as the canal serves Mbombela municipality at Hazyview, and because a black farmer now lives on the northern bank of the river (the successful outcome of a land claim). However, they have instead chosen to increase the geographic range of the new WUA - it appears that their main motivation for this is the prospect of securing greater control of their local water resource. The SRIB were not sure what form the process of developing a WUA should take, after they have assembled a group of people for the first meeting. They did not have a strategy for identifying the stakeholders who should take part in the process, other than to use the newspaper or other media to get stakeholders to identify themselves.

Perception of their own abilities: The members of the board seemed to feel that they have an adequate understanding of the intentions of South Africa's current water law, the imperative for transformation, and the future role of WUAs. They also seem to have had extensive interaction with, and have also developed a good relationship with, DWAF's 'Institutional Oversight' office in Pretoria as well as the Nelspruit Regional Office. However, they did not feel competent, as farmers, to initiate a process of engaging new stakeholder groups, or to facilitate the participatory process of developing a WUA proposal. One of the group's most striking attributes is their positive attitude toward the change process they are involved in, despite having been exposed to multiple and changing expectations around the requirements for transformation into a WUA.

Intersection of the organisation's perceived need with the proposed empowerment process: The SRIB had the following needs and concerns that could potentially be addressed through participation in the research process:

- They need assistance in initiating, facilitating and managing a process of engagement and participatory decision-making, in order to establish and run a WUA successfully.

- They need to empower marginalised groups to contribute meaningfully to this process in order to have truly inclusive and thus co-operative decision-making and to achieve commitment and action toward implementing these decisions.
- They are concerned about 'free riders', as WUA membership, unlike Irrigation Board membership, is not compulsory (and in their experience people in the valley tend to withdraw from initiatives once they are asked to make a financial contribution).
- They are concerned about the capacity of the current water law and management institutions to achieve enforcement.

Kruger National Park (KNP)

Organisation's objectives for decision-making: The KNP's current river manager has initiated, and plays a role in organising, the Crocodile River Forum, to work toward understanding and co-operation among Crocodile River stakeholders. In the past (prior to the 1998 National Water Act and thus the legal protection for the water rights of the environment in the form of the Ecological Reserve), the KNP has initiated and participated in stakeholder fora for the major rivers flowing through it, e.g. the Sabie, Crocodile and Olifants Rivers, primarily as a means toward ensuring flows to the KNP, particularly in times of severe drought. The river manager is concerned with building trust and relationships between the KNP and catchment stakeholders so that they can 'solve problems together and avoid conflict'. A staff member of the park's Social Ecology Department has been involved in projects with rural communities neighbouring the KNP. Issues for the KNP are the need to overcome poor relationships (resulting from historic conflicts between groups) and dealing with different levels of empowerment in participating sectors.

Perception of their own abilities: The river manager has experience of working in similar roles elsewhere. In his role at the KNP, he believes they have already made progress in building trust and relationships on the Crocodile River.

Intersection of the organisation's perceived need with the proposed empowerment process: In recent years, the KNP has recognised the need for building more widespread support for its conservation role, particularly amongst the impoverished communities bordering the park, and also that this support can only be gained through establishing perceived benefits from the KNP for a broader stakeholder base. This constituency-building imperative ranges more broadly than concerns about river resources and environmental flows, and includes issues about land claims, harvesting of natural resources and access to jobs and markets. Concerns about water resources relate chiefly to the park's vulnerable downstream position – though the Environmental Reserve now provides legal protection for the KNP's 'allocation', this will be difficult to enforce and is best achieved through the voluntary compliance of upstream stakeholders. Thus, the KNP's interest in constituency-building and establishing co-operative river fora was closely linked to the intended action research process. The KNP is also concerned with the goal of empowering local communities.

4.6 Towards a shared understanding of co-operative empowerment

Following the one-on-one meetings, the research team organised a joint workshop involving all three well-resourced stakeholders, DWAF, and the research team. During the three months between the one-on-one meetings and the workshop, the research team maintained fairly frequent but informal contact with stakeholders. These interim interactions (often instigated by the stakeholders) served to collect further issues from stakeholders, allowing the team to design the workshop in line with real on-the-ground challenges. This was important because the research team recognised that unless there are tangible benefits from participating in the workshop process, stakeholders, especially those already disillusioned, would not be encouraged to participate.

4.6.1 Workshop purpose

The purpose of the workshop was to run a process that would help well-resourced stakeholders realise and acknowledge their own levels of empowerment – and to recognise their ability and role to leverage their collective strengths to empower themselves and others towards a better future. In order to allow for flexibility in the process, in line with the principles of SAM, we did not post an agenda to participants but rather an outline of the context, envisaged process and outcomes of the workshop.

At the workshop, our discussion of the workshop's purpose revealed the following objectives that the group hoped the workshop would fulfil:

- To pool our experiences and resources, and learn from each other.
- To find a process, approach or tool with which to go forward, and most importantly, to keep moving, through sustained momentum.

4.6.2 Workshop outcomes

Developing shared context by understanding current realities

The first step in the future-building process involved the articulation of issues (by stakeholders), as they relate to decision-making and empowerment. Voicing issues builds collective understanding and constructs a basis for discussing a better future. Future-building places current challenges in perspective and empowers through providing a "space" where people can learn from each other and co-evolve their perspectives.

Key concerns and aspirations emerging from the issues were expressed as a simple model (an adaptive cycle). The model summarises stakeholder inputs and depicts how key elements (in this case, empowerment, co-operative decision-making and momentum) can provide a basis (process) to move the group forward.

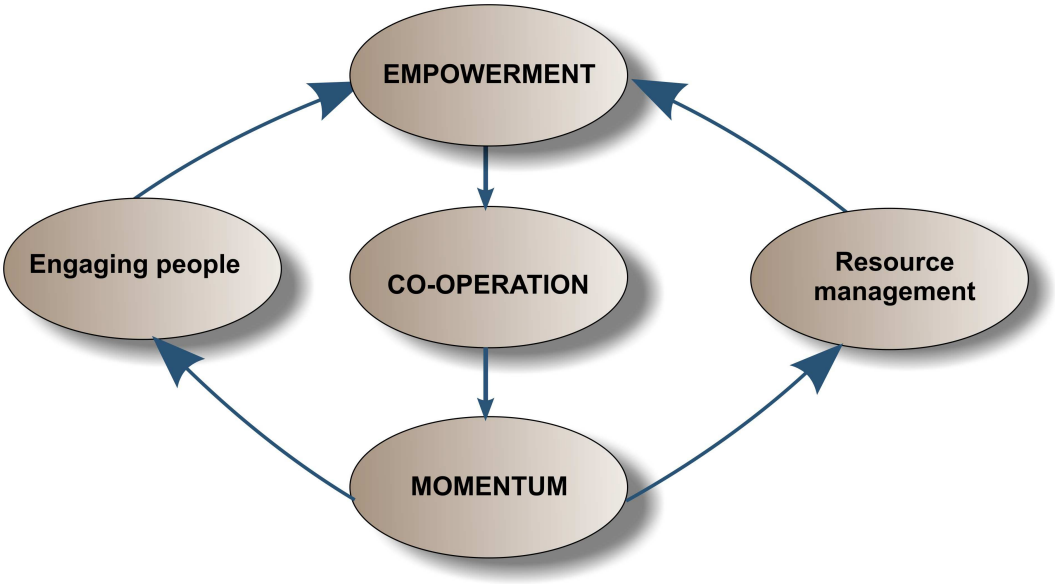

Figure 4.2: A model generated by well-resourced stakeholders in the Sabie-Sand catchment that would assist them in creating momentum in decision-making through empowerment.

'Empowerment', 'co-operation' and 'momentum' were three key concerns and aspirations expressed in the discussion of the most important issues currently being experienced by workshop participants. It was proposed that these concepts are linked in an iterative and adaptive cycle (Figure 4.2). Empowerment of individuals to participate leads to a collective empowerment that enables co-operation – 'as a group we are empowered once we realise we need to work together'. The benefits that this co-operation brings are in turn the key to building momentum. This momentum has positive feedbacks to increase the depth and breadth of stakeholder empowerment, through the positive effects of engaging people and building their capacity for participation and engagement, and also through improved resource management, both in terms of the status of the resource, and the equitable distribution of the costs and benefits of resource use. Ultimately, an adaptive resource management process must also reflect on, and review, the policy and legislation within which it is framed. It was emphasised that South Africa's current water law is intended as 'enabling'. It is not only about what government should do, but about what people can do for themselves. Devolution of decision-making power to the catchment level will enable local users to take part in managing their own resources.

From this point onward, the facilitator focused the group's attention on empowerment, since the group agreed (and the group's model reflects) that empowerment differences would pose a major stumbling block to co-operative interactions and achieving momentum. The workshop group was divided into 3 sub-groups to discuss what was understood about empowerment. An in-depth discussion around the term 'empowerment' was important because, in order to create a picture of the future in which empowerment differentials are reduced, it was important to generate a shared understanding among participants of empowerment, its meaning and the elements that make it up.

In the discussion groups, the following features of both the process and outcome referred to as 'empowerment' were identified.

Empowerment is a process:

- In which the opportunity for all stakeholders to participate is created and in which the skills and knowledge of stakeholders to participate is improved
- That is aimed at achieving a specific goal or outcome

Empowerment is an outcome:

- Characterised by the possession of certain attributes, including skills, knowledge and understanding, confidence, attitudes, and the ability to apply skills
- Characterised by the ability to make informed decisions about one's life/livelihood
- That is a potential, but not necessarily an action, and the empowered individual can exercise their choice to act or not

Empowerment is relative to a particular context or environment, and to a specific purpose.

The process of empowerment is characterised by:

- Empathy
- Accountability
- Responsibility
- Transparency
- Inclusivity
- Tolerance

To get workshop participants focused on the diverse elements of empowerment, they were encouraged to use a categorisation of capacity in the form of skills, knowledge and attitudes (SKA) to describe the elements of empowerment required by government, well-resourced stakeholders and less well-resourced stakeholders. There was a strong coincidence of many of the attributes identified by the different discussion groups for each stakeholder grouping. There were also many common elements of empowerment that it was felt need to be achieved by all groups – government and both well resourced and poorly resourced stakeholders. The most important of these include: communication skills, knowledge about stakeholders' resource needs, a committed attitude, and a willingness to understand, share and compromise. The discussion also emphasised again the need for enabling and supportive government.

A vision for a more empowered future

Each well-empowered stakeholder (including DWAF) was encouraged to articulate what they felt would be an improved future in terms of the relationship between themselves (i.e. their organisation and sector) and other stakeholders, with whom they share the river

resource. The individual sectors represented at the workshop all had their own visions for the future of their organisations and sectors.

These were expressed as follows:

Kruger National Park:

- Harmonious relationship with upstream users
- Upstream users to understand:
    - Why Kruger National Park needs water, but also to experience benefits from Kruger National Park's resource use
    - How the resource is allocated and why
    - Why Mozambique must also receive an allocation
- Upstream users to be empowered with the necessary skills, knowledge and attitudes discussed in the 'empowerment' session

Global Forest Products:

- Identify with, and add to the vision developed in a previous workshop series held in the Inkomati Water Management Area, which read as follows:
    - "We are proud custodians of our rivers. They sustain our economy and heritage. We protect and manage them so that they can continuously bring benefits equitably to our people, the nation and our neighbours."
- Additional aspects of 'protect' and 'manage':
    - Achieving minimal legal compliance for resource protection
    - Understanding our land and land use better
    - Enjoying harmonious relationships with downstream users

Sabie River Irrigation Board:

- The boundaries of the WUA will be determined and established
- The stakeholders within the boundaries will be known
- There will be harmonious relationships within the WUA

The Department of Water Affairs and Forestry:

- We will not blindly assume people's wants, needs, skills, knowledge and attitudes, or that they will benefit/not benefit from our processes
- Have an enabling environment in which people can make decisions and we facilitate their actions to achieve better resource management
- All stakeholders understand what a WUA is and how it is established

Mechanisms for moving towards the vision

In order to move towards achieving the vision, the next step was to come up with action-oriented mechanisms to create momentum towards the vision. An Appreciative Inquiry approach was used to describe strengths from each well-resourced organisation. This approach draws on people's peak experiences and aspirations – to focus on their own strengths and on those of others. This corresponds with concepts of empowerment in so far as it is difficult to empower others unless you are aware of your own strengths and thus the areas in which you are able to empower yourself and others.

To contribute to the generation of 'momentum' and creating energy for further empowerment, each participating group or individual committed to a suite of short-term actions within their capability and that would advance the group towards the vision. This was an important step because one of the major concerns of the research team was to achieve, through the workshop, a framework for action, to which each participating organisation could relate and link immediate and ongoing activities. If the workshop did not yield results relevant to stakeholders, their investment in the process would most likely be withdrawn. Similarly, small successes (as indicated by Kotter and Heskett, 1992), and their anticipation, are extremely important for sustaining the energy of a change in culture.

Workshop conclusions

One of the main themes of the workshop was to assess whether well-resourced groups who are pro-active in their own endeavours and in engaging others in resource management, can (in terms of their willingness, skills, knowledge, attitudes and confidence) combine their strengths to create the space for empowering themselves and others. The role of the research team was to expose this opportunity (Cook, 1997) to well-resourced stakeholders.

At the end of the workshop, Global Forest Products and the Kruger National Park offered to jointly host the next workshop and suggested that the research team might help with facilitation. This indicates:

- Further willingness to invest in the change process with the recognition that further networking with less resourced groups is needed to move the process forward.
- Willingness translated into action: Voluntary collective action on the part of resource users, showing awareness of their role as groups with the means to take the process forward.
- An awareness of opportunities to leverage skills, knowledge and attitudes through access to a wider group of collaborative participants (e.g. stakeholders suggesting they may want to use the research team to facilitate).

The workshop achieved these outcomes because of two main principles. The first is that the process was facilitated in a way that generated a future vision and understanding, and through

this process, empowered participants by helping them to recognise their own aspects of empowerment and to identify new opportunities. The second principle was that of pragmatism. The research team had to run the process so that outcomes included not only enhanced understanding, but also the creation of benefits to participants in terms of knowing how to take the process forward practically.

4.7 Interaction between formal and informal governance processes

4.7.1 Building social capital through non-statutory (informal) engagement

At the close of the workshop, participants indicated that they wanted a further workshop, to broaden the representation of stakeholder groupings that was achieved. They wanted to initially focus the 'broadening' on getting more of the organised, well-resourced groups together and also to start bringing some of the leaders from less well-resourced groupings into the process. Thus it seemed that they felt comfortable with a gradual and iterative expansion of the participating group, as opposed to trying to bring all representatives into the process right away.

This approach is supported by Snyder and Wenger (2004), who researched the dynamics of informal communities of practice that run civil society processes based on a shared passion:

> *".. when one looks at the learning requirements of the world, the complexity of the required learning system may seem so overwhelming as to discourage action. But the advantage of a community-of-practice approach is that it can be evolutionary - **starting small and building up progressively**, one community at a time. It is not necessary to have broad alignment of the kind required for designing or changing formal structures. We can start wherever there is opportunity, energy and existing connections. We can build on what already exists."*

This approach also opens up an interesting debate around the tension between representation and empowerment. Because empowerment is achieved through the generation and maintenance of relationships, it is a generative, evolutionary and rather slow process. Representation on the other hand can be achieved much faster, but does not necessarily translate to the building of quality or lasting relationships as required for ongoing shared understanding between those who must share the river resource.

Following the first workshop, the well-resourced stakeholders arranged a joint meeting to discuss the content of and participants in, a follow-up workshop. This took place without encouragement from the research team and indicates that the group had built sufficient confidence and trust (social capital) in each other to plan further activities together. They had also started connecting with each other around other river issues. For example, the Sabie River Irrigation Board contacted Global Forest Products to discuss a sudden increase in *E. coli* as measured in the canal by the irrigation board. Lines of communication had opened up and stakeholders started interacting with each other with confidence.

At this point, the research team interacted with the well-resourced stakeholders. The stakeholders wanted to host and run the second workshop themselves but with support from the research team, in particular with the facilitation of the process. Increasingly, as the research team engaged these stakeholders to assist with the planning process, it became clear that they had some reluctance to proceed and their reservations were subsequently expressed openly. They indicated that they wanted to postpone the second workshop until they had greater confidence in DWAF's support for their processes.

CHAPTER 5

5. CONCLUSIONS

5.1 Introduction

This project involved action research, and sought to develop approaches to the co-operative governance of a scarce natural resource by working together with affected stakeholders. Action research projects such as this one are, by their nature, long-term undertakings. As this project had a finite and relatively short lifespan, the project has concluded at a point that should be regarded as intermediate in the journey towards developing understanding in this field. In this chapter, we outline the final stages of this project by reporting on the outcomes of a final meeting between the project team, the well-resourced stakeholders, and DWAF. We present some suggestions as to how the process that was initiated by this research should continue. Finally, we document some of the lessons that have been learnt during the project.

5.2 Final project meeting

The request by well-resourced stakeholders to stall planning and momentum towards a second stakeholder workshop in favour of a meeting with DWAF indicated the need to reinforce trust and confidence between formal and informal resource governance processes. Well-resourced stakeholders did not feel confident about investing further in their informal process until support for the intentions of their local level process was built with DWAF. This highlights the need for those who wish to build social capital through bottom-up processes to be acknowledged and supported by formal, statutory processes. The implication is that horizontal connectedness and supporting relationships can be put at risk by a lack of vertical connectedness between informal and formal processes. Stakeholders indicated that they are confident in their roles as catalysts in a process of empowerment, but that such processes rely on support from and alignment with DWAF and other formal governance processes. They were therefore reluctant to invest further until they could get a sense that this confidence might be developed. This was an important lesson in terms of requirements for promoting the sustainability of catchment-based, informal, self-driven processes.

What was interesting from a research perspective was the response by the well-resourced stakeholders to their lack of confidence in the formal, regulatory process. Despite a track record of disillusionment (in particular for Global Forest Products and the Sabie River Irrigation Board), instead of disengaging, they opted to build confidence in the formal system by improving their relationship with DWAF. This also indicated that even though the process had not delivered any personal or tangible results, stakeholders had started to value the formation of relationships as a means to achieving a common purpose. They asked the research team to organise such a meeting with DWAF.

Stakeholders wished to discuss three points at the meeting and to reach some shared resolution on these issues, in order to maintain momentum:

- Acknowledgement and endorsement of efforts: Well-resourced stakeholders are willing to engage and invest in local-level informal processes, but they would benefit greatly from explicit **acknowledgment** and **endorsement** of their endeavours by DWAF. The Department must be and feel part of the initiative as far as is appropriate. When the Department is too removed from the process, stakeholders perceive a great risk that local level processes that are already underway might be stalled if there is insufficient understanding of and agreement with what local-level stakeholders are trying to achieve together.
- Clarification of responsibilities: Related to the point above, there is a question about **accountability** pathways. Where does the **responsibility** of an informal process end and that of more statutory processes begin? This has to do with informal rules (in this case around resource sharing) that groups create at the local level and how these connect with the rules of more formal processes. The representative from Global Forest Products had a good example of building or fixing a road in Sabie. If Global Forest Products funds the road and someone falls and is injured in a pothole, should Global Forest Products be accountable? As custodian, what is the role of government, and especially in such a case, local government? What options do we have, as society, to forge agreements to at least initially promote commitment to being accountable to the tasks that each party agrees to be responsible for?
- Achieving representation through empowerment: There is a need for adequate and appropriate **representation** when people strive to make decisions together. This was one of the reasons for the project's focus on **empowerment**, since it is possible to have all possible representatives in a room but still not have meaningful understanding or participation in the process. Thus there is a tension between being fully and quickly representative (and this view is often the more popular one – because it 'looks good') and building relationships, perhaps more slowly but more thoroughly and meaningfully, but which means that it will probably take longer to achieve full representation. It may be more fruitful to start smaller, learn a little slower about how to understand and empower each other, and then apply this slowly in a way that brings an increasing number of stakeholders on board the process.

At the meeting, the importance of informal processes was recognised. Although informal processes are ones that are essentially governed by people at the local level, there are risks of failure associated with them if and when they cannot engage more formal processes effectively. Key to this is the ability to devise accountability relationships between informal and formal processes. Within the water resources management domain in the Inkomati Water Management Area, formal processes will be provided by the CMA. However, this institution is not yet functional in terms of engaging less formal processes. In the interim, local-level users and stakeholders would wish to interact with proto-CMA staff seated in the DWAF Regional Office.

The tension between initially prioritising the achievement of either 'representation' or 'empowerment' was recognised in our approach to this research, and was also recognised by the 'well-resourced' groups upon which our approach led us to focus. Representation and legitimacy of both informal and formal decision-making processes are inextricably linked. Empowerment, particularly of less-capacitated groups, is the only means to achieve true representation and thus inclusivity and legitimacy in decision-making. Attention to 'representation' (in terms of the *presence* but not necessarily the meaningful participation of previously marginalised groups) in the absence of equal consideration of facilitating the empowerment (including not only competence but confidence, responsibility and opportunity) of representatives can ultimately be 'disempowering', and thus serve only to reinforce existing inequalities. Thus, a pre-occupation with 'representation', though it may achieve the semblance of a functioning representative democracy, can put at risk opportunities for such a democracy to be participatory and for resource users to be empowered in the governance process.

The premise of our research approach was that empowerment can happen between individuals and groups (starting small and focusing on existing energies) without necessarily being representative, but with the important outcome that relationships and co-operative behaviours are developed and fostered over the medium and longer terms. These relationships tend to be focused around resource issues, with the result that the nature and scale of the solution matches that of the resource-related problem. More formal administrative processes are often unable to address local level challenges at the scale that produces appropriate solutions. Starting small, and gradually engaging less-empowered stakeholders enables the ongoing engagement and relationship-building process to be sustained, through the reinforcing of behaviours through small but tangible successes and positive outcomes for both the stakeholders and their river resources.

However, there is a need explicitly to manage and ensure the legitimacy of the process and its champions. If this is not achieved, those stakeholders who are engaged at a later stage than others may not ultimately be willing to join a process that they perceive to be illegitimate from a procedural perspective. It is thus fundamentally important to ensure that local champions enjoy widespread legitimacy so that their efforts do not result in compromises on social capital or in the emergence of inappropriate forms of social capital (e.g. Kontogeorgopoulos, 2005).

5.3 Sustaining the change process

Continued support of the maintenance of a new culture (changed behaviour and practice) will be very important. As the research project has a finite life span, careful consideration must be given to the implications of the decommissioning of the project and consequently for both the energy of the process and the stakeholders participating in the process. Within this particular project, there are several ways of addressing this issue and currently there are additional opportunities with the recent establishment of the Inkomati CMA.

- The project was designed to 'plot a way forward' and to provide the more empowered stakeholders with principles and processes with which to keep the co-operative initiative and spirit going forward. Thus, by its nature, the project was future-focused and the outcomes should be useful and relevant to stakeholders beyond the project life span.

- The project also paid attention to managing expectations. Even though the research team is committed over the medium to longer term to working in this area and with these particular stakeholders (also see below), the project team is obliged to operate within the limitations of the project. The project team endeavoured to be very clear to stakeholders what the project could deliver within the project life span and what it can and cannot deliver beyond the project life span.
- The commitment of the DWAF Regional Office (Nelspruit) and the establishment of the Inkomati CMA offer enhanced potential for the on-the-ground resource management institutions to drive and/or support the processes initiated by research products such as this one. Still there is concern that dedicated focus to such processes requires one or more champions. A simple transfer of knowledge and learning from the project to these institutions via reporting will not be adequate. What is needed is a close and ongoing relationship between the project team and these institutions and the institutionalisation of processes such as those emerging from this project. This integration and relationship-building falls largely outside of the scope of a single research project and must be part of a longer-term strategy between the WRC, researchers, resource management and other institutions involved.
- The project team aimed to build on the strength of their relationship with the Kruger National Park, and through this partnership, to provide ongoing support to the necessary processes in the Inkomati Water Management Area.

5.4 Lessons from research

The research conducted during this project has allowed the team to identify a number of important lessons regarding co-operative resource governance, with specific reference to river resources. These are outlined briefly in this section. It is important to place the transferability of lessons from this research project in context. One cannot make a match between 'generic guidelines' as a purpose, and 'case study' as a method, if one only has one case study, as in this project. In other words, our intention in this report is not to provide generic guidelines. Instead, we intended to document a social process within the context of river resource sharing as well as the learning that came from it. It also suggests how a collaborative research project can be conducted to achieve collective empowerment for more equitable resource sharing. Results must be interpreted within the particular context of the study area and the resource governance processes practiced here. As a result, this study has carefully documented contextual aspects, with special focus on the development of appropriate social capital for robust river resource decision-making.

5.4.1 Relationship-building cannot be rushed

Fundamental change that relies on the formation of new relationships (and the redefinition of old relationships) is inherently slow, with many delays – as predicted by Senge et al. (1999). The step from 'people involved' and 'enhanced confidence' (Figure 3.2), to sustained investment in a change process is particularly vulnerable. Thus it was important to grow a shared understanding of how stakeholders perceive their risk of investment in informal processes of resource governance. Because the formation of quality relationships takes time, the research process was

able to stimulate co-operative empowerment only within a core catalyst group, namely well-resourced water user groups, DWAF and the research team. The use of future-building, appreciative approaches plus continuity of interaction between participants, promotes the shared understanding that leads to willingness for co-operative empowerment and for the institutionalisation of this behaviour through the formation of a catchment forum and a WUA.

5.4.2 Reinforcement is important for sustaining relationships

Stakeholders require continuous reinforcement of their co-operative relationships. Even when stakeholders had committed to the change process, they continuously needed to reinforce involvement, networks, confidence in each other and enthusiasm for the process. Thus, up until the time of the writing of this report, the catalyst group had repeatedly preferred to remain within the smallest circle of Senge et al.'s change model, not yet having gained the confidence to enter a broader engagement process. This was an important finding of our research, and is most likely also related to the issue of informal resource governance processes requiring recognition and support from formal governmental processes (Lesson 5.4.4). Committed and ongoing interaction between the different catalysts, i.e. user groups, DWAF and the research team was an important driver of reinforcement and sustaining the development of new relationships (through the ongoing success of which the catalyst group should ultimately enter the larger learning loops of Senge et al.'s model).

5.4.3 Stakeholders can learn to value relationships

Resource users can develop the ability to value relationships and the social capital that supports longer-term results, as opposed to valuing only decisions and the decision-making process *per se*. The shift to valuing intangible as well as tangible aspects of joint decisions around river resource sharing was evident in the research process. However, fostering values and attitudes for both tangible and intangible benefits is strongly reliant on generating momentum, which is made explicit and is achieved in an ongoing way.

5.4.4 Informal resource governance processes require support from formal processes

Informal processes aimed at building social capital for co-operative resource sharing should in their nature be creative, self-regulating and self-governing in order to achieve devolved, local-level governance. However, such processes require support from and alignment with formal, statutory processes. In fact, they are at risk of failure if they are not supported in the appropriate manner by statutory processes. Appropriate support means that statutory and informal processes are aligned in their purpose but that statutory processes also foster the generative character of informal processes that allows for the development of cross-boundary horizontal relationships.

5.4.5 The balance between empowerment and representation must be managed

Co-operative empowerment and representative decision-making are not the same and their different objectives should be made explicit within a resource governance process that aims to deepen democracy through co-operative relationships. Though both empowerment and

representation are required for effective devolved resource management, representation alone will not promote relationship building.

Empowerment relies on the development of shared understanding and relationships. It is thus a slow process, which is best started from a small core and expanded over time in line with the joint development of stakeholder capabilities, confidence and opportunities. Representation can be achieved much faster (and is easier to measure), but it cannot guarantee quality relationships. This presents a challenge to all involved in terms of measuring how well the vision of South Africa's current water law is supported – not only in terms of representivity, but in terms of relationships that support co-operation and empowerment. Achieving representation will deliver representative democracy, but empowerment plus representation will deliver participatory representative democracy. The latter is what we need to strive for and it will be characterised by self-regulated systems of social capital development and decision-making, voluntary compliance, truly empowered devolved resource sharing and enhanced resilience in society's ability to share the resource equitably.

5.4.6 Champions sustain relationship-building

Individual champions, or catalysts, play a critical role in sustaining and fostering relationships in informal resource sharing processes. Such people spot opportunities for continuous momentum for the process and involve others. In doing so, they create an enabling environment for sharing understanding. Within this project, there were champions in the well-resourced river user groups, in the research group as well as in DWAF. Together they provided continuity in interactions and so ensured that understandings were shared and grown in an ongoing way.

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Glossary

Accountability: Liable to be called to account for one's conduct; answerable. Leads to the development of mechanisms for monitoring of own and others' acceptance of responsibility for actions.

Appreciative Inquiry: Appreciative Inquiry is a form of action research that empowers groups to expand the group's vision by exposing and amplifying the strengths of a group.

Attitude: 'Settled behaviour or manner of acting, as representative of feeling or opinion' and 'habitual mode of regarding anything'. Attitudes can change and evolve, since they are based on feelings and opinions, which are in themselves subject to change. Attitudes, when reinforced, become habits.

Cook framework for empowerment: A model for empowerment that says that true empowerment requires enhanced capacity in subjective empowerment (relating to confidence), objective empowerment (relating to responsibility and opportunity) and competence (relating to skills, knowledge and attitudes). These, plus the capacity to be empowered in a group/collective set-up, are important in terms of reducing empowerment differentials.

Culture: Culture is a dynamic set of shared and implicit assumptions that a group develops and holds and that determines how it perceives, thinks about, and reacts to its various environments. Culture constitutes the unwritten rules of society that determine how values, preferences and needs are formed, expressed and reconciled.

Democratic practice: Democratic behaviour – characterised by greater accountability, openness, tolerance, inclusivity and co-operation in the day-to-day interactions between people concerned with shared water resource issues. Consistently democratic behaviour leads to the development of a democratic culture.

Ethic: A way of living, an active concern for inclusive well-being. Inclusive well-being depends on a balance between self-concern and self-sacrifice, of the nature that promotes the common good. Ethics defines the rules that determine where this balance lies.

Governance: The process whereby individuals and institutions, private and public, manage their common concerns. It is a dynamic, people-oriented process with focus on a common interest, and collective, harmonised endeavour aimed at achieving a vision for a better future.

Legitimacy: Legitimacy means conformity to a rule of principle as considered acceptable by those who are affected by conformity or non-conformity. Legitimacy is a property assigned to a group or person or process according to societal agreement over what is considered legitimate. Legitimacy is earned or lost through society's perception of what is considered legitimate behaviour and is earned or lost through societal support or withdrawal.

Norms: Shared expectations for behaviour that are maintained by sanctions. Rules become norms when the rule becomes universally adopted within a group and expressed in group culture.

Paradigms and paradigm shifts: The ideology of a community – difficult to change on account of its generality. A paradigm's generality and range are sufficiently distant from facts so as to require numerous tested hypotheses to refute it. There are divergent views on how paradigms change. According to Kuhn, a paradigm change must and can only be revolutionary, while Popperian views advocate that paradigms can change more in a "reformist" fashion, i.e. more steadily and slowly.

Political: Describes a process whereby authoritative and legitimate allocation of values in society with respect to river resources takes place. Political relates to power. Allocating values in society tied up with the allocation of costs and benefits associated with which values are given preference. The process is therefore necessarily a process of power sharing and is therefore characterised by contestation and reconciliation around costs and benefits.

Power and empowerment: We understand power to be an artifact, or outcome, of being empowered. This project is more concerned with empowerment towards a more level playing field because empowerment deals with the underlying processes that result in the acquisition and expression of power in relationships that influence the allocation of costs and benefits of resource use.

Senge et al.'s model of change: Senge et al. describe profound change as a generative process with inherent delays and with various prerequisites before tangible results can be produced.

Strategic Adaptive Management: A management and learning model that is inclusive, strategic, adaptive and creative. It recognises that nature is in a continual state of flux and that our understanding of ecosystem functioning is incomplete.

Strong reciprocity: A predisposition to co-operate with others and to punish those who violate the norms of co-operation.

Transparency: Full, open and timeous disclosure of information based on sincerity of purpose. It leads to enhanced effectiveness and efficiency of governance.

Transparency threatens power bases, but also engenders trust and deeper understanding of others' interests and demands.

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