CIVIL SOCIETY DIALOGUE IN WATER RESOURCES MANAGEMENT:

LESSONS FROM FOUR LOCAL-LEVEL EXPERIENCES OF RIVER SYSTEMS

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EXECUTIVE SUMMARY

Civil society is incrisingly expected to participate in and even lead processes that direct behaviours in relation to the sustainable use of natural resources. Within this context, civil society groups and organisations are encouraged to enter into dialogue with others to expose issues constructively and to promote shared understanding and learning. The ability of such groups to use dialogue to reflect and learn and to apply the learning to subsequent actions becomes an important way of coping with change and uncertainty. Civil society groups have a particular opportunity in that, even though they may be structured informally, formal and even statutory, they are able to operate as communities of practice and to conduct their business with a degree of flexibility and innovation.

The rules that guide natural resource allocation and use follow a common property regime. This means that the resource and its users are co-dependent in complex ways so that the rules for resource protection and use have to be continually reinforced or renegotiated over time. Within such a regime, civil society groups who act to influence the resource or society in relation to the resource, do so within the context of shared rules defined by the values that society attaches to the resource and the services that emanate from the resource. Thus in order for civil society groups to sustain their operations in ways that are seen as legitimate, such groups, their rules and actions, must be sanctioned by society.

Securing and maintaining legitimacy in the eyes of society thus becomes an important goal for such communities of practice in terms of mediating the governance and management of natural resources. This report proposes a framework that illustrates the role of dialogue in promoting legitimacy of local intent and action through enhanced appreciation of the consequences of actions for river resources and for those in society that depend on river resource services. The report illustrates by way of four examples how groups who manage natural resources on behalf of society may use the framework to interpret their own experiences and recognise levers to enhance connectedness and legitimacy. The framework stimulates an awareness of the legitimacy imperative within the context of a social-ecological system that is dynamic and in which legitimacy relies on connectedness sustained through dialogue. The dynamic nature of this system requires a structured approach, as offered by the framework, so as to promote purposeful dialogue and action in a context where issues often seem intractable. The framework is best applied to examples that are expressed as historical narratives. The objective of this report is for any civil society group challenged by issues in common property natural resource management to use this report as a means to guide self-reflection, learning and action that is likely to sustain legitimacy and voluntary behaviours in support of environmental decisions.

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1. INTRODUCTION

1.1 The origins of this work

The work reported on here was based on a proposal to the Water Research Commission, developed in collaboration with The Department of Water Affairs and Forestry (Directorate: Institutional Oversight). The work builds upon past Water Research Commission funded research conducted in the Sabie-Sand catchment since 1999. That research was carried out in an effort to gain a deeper understanding of the human and institutional dynamics (at the local level) that underpin co-operative actions and equitable trade-offs in water resource allocation as intended by policy (Van Wilgen *et al*., 2003 and Van Wyk *et al*., 2006a). Of key concern here was to discover how civil society mobilises itself to achieve its goals in line with policy intent, and the motivations that energise and sustain participatory engagement over time.

Among other things, this research exposed how failures in dialogue limited shared understanding among resource user groups. Commonly information is not shared - sometimes deliberately as users strive to gain competitive edge in allocations. Yet, once parties began to appreciate that a sustainable solution could be achieved through continually sharing and co-evolving understanding, there was increased willingness to share information and to strive for a common purpose.

It also became evident that whilst the initial excitement associated with sharing and learning sustained collaboration for a while, evidence of tangible results (and systems that support these) also mattered in the longer term. Stakeholders rely on a process that will incrementally deliver (or at least influence) the desired tangible and legitimised processes and products. A track record of stakeholder energy investment without delivery on the investment leads to scepticism and eventually risk of withdrawal. A common critique by local level stakeholders is that 'all this talk delivers nothing', implying that under certain conditions, the transaction costs associated with dialogue are too high to justify engagement. Withdrawal from the dialogue and participation in the water resource allocation process erodes the opportunity for sustaining connectedness. Consequently, it erodes the opportunity for creating the institutional rules, norms, commitment, accountability and energy (both formally and informally) to sustain a governance system that creatively regulates itself around its devolved powers. The consequence of this is that withdrawal erodes the likelihood of a truly 'bottom-up' arrangement in society that reflects democratic participation and the creative resolution of water resource issues at the local level. These findings formed the foundation for the work reported on here.

1.2 Purpose and structure of this report

Securing and maintaining legitimacy over time via dialogue is a key concern for communities of practice who act on behalf of society in relation to the state of a natural resource. The purpose of this report is to present a framework to assist communities of practice in reflecting on their performance in relation to the legitimacy which they wish to maintain as they act on behalf of society. This report is intended for natural resource management professionals and researchers interested in

the role of dialogue in promoting connectedness and legitimacy between civil society players concerned with a common property natural resource.

The report first provides historical background to civil society in South Africa with emphasis on how past policies have affected civil society's current ability to participate in natural resource decision making processes. A conceptual framework is then presented and described and a way of using it is suggested. The framework was derived by interpreting theory and two known examples of communities of practice interested in natural resources. This is followed by a section in which we illustrate by way of four examples how the framework can be applied across various contexts. The last section presents lessons and considerations for civil society and for policy makers. This report contains a CD at the back with detailed descriptions of two of the examples used, as well as a publication that presents the theoretical underpinnings of the material in this report.

Material available on CD at the back of this report:

- Theory-oriented manuscript on the role of dialogue in securing legitimacy of CoPs, prepared for publication;
- Duzi-uMngeni Conservation Trust detailed reflection used in analysis
- Sabie River Irrigation Board detailed reflection used in analysis

1.3 Civil society, participation and natural resources in South Africa

Negotiating and securing legitimacy in natural resource use requires that players connect and participate in a process of checking whether their values, norms and behaviours are aligned and sufficiently appropriate to invite sanction. In other words connectedness (varying in intensity over time) relies on a tradition of participation and relational capital (e.g. trust) that makes the legitimating process effective. South Africa's recent history bears significant impacts on the way civil society constructs dialogue in relation to natural resource issues and the extent to which people are empowered to connect and build relationships to resolve such issues without having to rely heavily on government or legalistic intervention.

This section provides a background description of South African civil society history in the context of water, river resource and natural resource management in general. South Africa's history of racial segregation and isolation has had significant impacts on efforts since 1994 to promote a sense of equity and responsibility in sharing and managing environmental resources. Stated differently, the democratisation of natural resource management is a challenging endeavour since the lags in civic mindedness and participation and large empowerment differentials caused by apartheid era policies deeply affect how people currently think about natural resource issues and the way they approach solutions to them. During the apartheid years, environmental functions were grouped with the Department of Planning to form the Department of Planning and the Environment. This department was responsible for planning racially defined spatial segregation and as a result, environmental affairs became strongly associated with the explicit instruments of oppression and spatial segregation. During these years, the environmental non-governmental organisation in South Africa (ENGO) had an apolitical character as the government suppressed initial NGO attempts to politicise the South African environmental movement. This resulted in a

loss of opportunity to develop and strengthen a national environmental consciousness. At the same time South Africa's exclusion from global initiatives also resulted in the government of the day failing to keep abreast of environmental developments in the global arena, notably the important paradigm shift to sustainable development during the 1980s (Steyn, 2005).

Differentiated education systems plus segregation during this time is also now resulting in large gaps in understanding and appreciation between members of civil society of each other's cultures, values and needs and preferences around the use of natural resources (Sherwill, 2007; Van Wyk et al., 2006b) as well as other aspects of life. South Africans in general suffer the effects of disparate understandings, disparate capacity to influence decisions (i.e. empowerment differentials) and a tradition of participation in decision-making that has been largely confined to political endeavours. The apartheid era did encourage social movement but it was biased towards political resistance which became a particular characteristic of urban society in South Africa from the 1960s. The environment was a relatively new context and was a new goal for civic action. This explains why the environment as a provider of social goods was not an issue that mobilised SA society in the past (Bond, 2004; Heller, 2007). By implication South African civil society has to rebuild an effective civic tradition and action around natural resource management.

Yet there is a compelling opportunity for natural resource sharing (and in particular river resource sharing) to unite an historically disparate society whilst retaining the diverse character and contributions of South African civil society, whilst being careful to not promote uniformity (Van Wilgen et al., 2003; Van Wyk et al., 2006a). At the same time the issue of legitimacy is raised in the consciousness of South Africans as the arrival of the new democratic dispensation declared many then existing structures, processes, institutions and actions, borne of the apartheid dispensation as non-legitimate. This has led to an awareness of the need to re-organise and redefine structures, processes, norms and behaviours at all levels of governance that align better with new sets of norms, values and institutions that are regarded as legitimate.

1.4 Current challenges for civil society

Over and above a legacy which has left civil society poorly equipped for deliberative decision-making, co-learning and mutual adaptation, the common property nature of river resources also complicates decision-making. The allocation of resources with a public good nature is complex over space and time and must be freshly negotiated over time so as to reflect dynamic equity in the sharing process as well as in resource use levels and patterns (Mackay in Breen et al., 2003). For this reason, current water policy recognises water resources not as a private right but as both a basic and a strategic resource to be managed in the public good. This in turn means that dialogue used to test and assign legitimacy to use levels, types and patterns becomes important in the resource allocation process. Members of society seek to establish and agree, in an ongoing way, on an appropriate state of the resource, state of allocation and use of the resource and the state of human values that drive patterns of resource use.

This process often presents a source of tensions among stakeholders, particularly under conditions of increasing scarcity and declining ability of such resource systems

to supply the services desired by society. These tensions find strongest expression at the local level where scarcity and supply of services have direct impacts on the wellbeing of society (Ashton et al., 2008; Goldin et al., 2008). Ironically, it is also at the local level that the best opportunities exist for stakeholders to establish rules and norms for common property governance and to appeal to society's sense of voluntary compliance (via legitimacy), thus moving away from the need for excessive command-and-control mechanisms to direct resource use behaviours. South African water policy specifically intends to support and enable local institutions to promote collective, decentralised local action so as to promote local self-governance so as to limit the need for state intervention (DWAF White Paper, 1997).

Within this context, some of the biggest challenges facing civil society are (1) to be effectively organised to devise collective rules and norms and to build the relationships needed to support the ongoing negotiation, refreshing, reviewing and refinement of these rules and norms and; (2) for organised groups to secure and maintain legitimacy as custodian of those rules and norms and the state of the water resource that results from the behaviours guided by the said rules and norms. This report focuses on a special form of organisation, the 'community of practice', as an emergent property of natural resource social-ecological systems at a local scale. Such communities of practice form and respond to issues of shared interest that arise as a result of dissonance between the state of the resource, the services provided by the resource and society's values in relation to the resource.

2. **DIALOGUE: A STRUCTURED APPROACH**

2.1 Communities of practice, legitimacy and dialogue

Within the context described above, legitimacy is fundamentally shaped by the connectedness among three interrelated dimensions: (1) society, (2) community of practice (CoP) and (3) common property resources. From a natural resource sector perspective, we consider a CoP as an association of individuals acting with common cause in their intentions to use or influence the state of a common property resource. Members of such an association align their competencies in ways that enable them to learn how to connect effectively with society and a common property resource. Since society has a vested public interest in the common property resource, the intentions and actions between a CoP and a common property resource requires to be legitimized by society. Thus society confers legitimacy upon such intentions and actions as well as the connectedness between players which allows for the expression of intentions and actions. The aim of such interactions and the associated dialogue is to sustain a desirable distribution of benefits to society that emanate from the common property resource. (Implicit in this is the need to sustain a dynamic state of the resource that can support the desired and reasonable benefits). Thus, the connectedness among society, CoP and common property resource is important insofar as the degree of legitimacy depends on the factors that help to create and sustain that connectedness.

We suggest that purposeful dialogue affirms the CoP's credibility by way of demonstrating its competencies as measured by desirable change in the distribution of benefits from the resource as well as in its relationships with society. Society's

perceptions of the CoP's credibility and accountability can be founded on purposeful dialogue that is directed at promoting awareness, appreciation and understanding about the dynamic connectedness between society's needs and values and the state of the resource. Hence, we suggest that enhanced perception of the CoP's credibility and accountability has the effect of reinforcing societal acceptability of the CoP's actions; and thus legitimacy.

2.2 Connecting communities of practice, legitimacy and dialogue

While the term community of practice has been discussed from a number of different perspectives, we draw primarily from authors concerned with organizational collaboration (see Wood and Gray 1991, Wenger 2004). The term denotes social units that comprise organized actors joined together by shared interests and/or problems, whereby their competencies are defined by mutual engagement (relationships defined by shared norms and trust) as well as by their sets of shared resources such as common terminology, tools and artefacts (Wenger, 2004). Such units are dynamically constructed around shared issues and interests. Actors involved in CoPs "orient their processes, decisions and actions towards issues related to the problem [or interest] domain that brought them together" (Wood and Gray, 1991: 148). CoPs here are viewed not as being objective or predetermined structures, but rather as processes of social construction. Such processes emerge as actors perceive themselves to be connected to common issues. Thus, the social relationships of CoPs may be conceived of as collective arrangements among organized actors pursuing a set of agreed goals that may change over time. In the context of natural resources management, they are typically guided by policy principles and intent but are not organised around a mandate from higher levels of decision-making in the governance system. Thus, they tend to be legitimised by and directly accountable to civil society.

The term legitimacy denotes the degree of acceptance that a CoP enjoys amongst other social actors (Ponton and Gill 1982). In this way, legitimacy concerns both the intent of the CoP as well as the processes and actions through which the intent is achieved (Suchman, 1995). In addition, legitimacy is assigned to the information and knowledge that is generated and used to support the CoP intent, processes and actions (Berger and Luckmann, 1966). As a consequence, legitimacy is primarily concerned with the nature and quality of relationships amongst social actors. However, this is not simply a matter of attitudes but of behaviour, which translates to the levels of trust and commitment (relational capital) (Cullen et al., 2000; Nkhata et al., 2008) exhibited by other social actors in relation to a particular CoP. In this way, legitimate relationships amongst social actors characterize CoPs as they engage common property resources.

Social actors operating in particular CoPs need to take appropriate measures to preserve and enhance legitimacy. We have identified purposeful dialogue as one such key measure. We perceive purposeful dialogue as a social process (also see Innes and Booher, 1999) that is strongly associated with the positive attributes of legitimacy. Such attributes, for example, may include the manifestations of collaborative behaviours, enhanced levels of social/professional agreement, lawfulness, compliance and social acceptability. These manifestations signify support for a particular CoP. Thus, the conscious management of purposeful dialogue to strengthen legitimacy is

the essence of CoPs engaged in the governance and management of common property resources.

The notion of purposefulness suggests that the behaviour of members of a CoP is guided by specific values and preferences. As Coleman (1990) explains, the concept of purposefulness denotes that we are able to understand the behaviour of actors as being driven by collective and individual goals. It also implies that we are able to comprehend how their actions contribute to those goals. As earlier noted, purposeful dialogue by members of a community of practice helps to establish and strengthen legitimacy. In essence, therefore, purposeful dialogue can be viewed as a social process that involves collaborative conversations. Theorists normally emphasize that such conversations differ markedly from casual discourses of daily life, persuasive discussions, and negotiations or formal debates (see for example Hardy, 2003; Reed, 1998; Isaacs, 1994). As such, purposeful dialogue is most useful for efforts aimed at promoting change by learning through sharing understanding, appreciation and knowledge. Information flows are a critical component of such efforts.

2.3 A framework for structuring self-reflection and dialogue

Our framework represents a social-ecological system and is founded on the premise that purposeful dialogue is of central importance in creating the connectedness among society, CoP and common property that helps build legitimacy (Figure 1). Such dialogue is managed so as to purposefully connect (1) perceptions of intervention actions by the CoP that impact on the state of the resource, (2) society's awareness of the consequence of the intervention actions on the state of the resource and thus on societal well-being and (3) the legitimacy of the CoP to engage with the common property resource on behalf of society. We suggest that the connectedness among the three dimensions should be invoked and renegotiated in ongoing processes through purposeful dialogue to secure and enhance legitimacy.

A CoP's legitimate engagement with a common property resource is sustained through its connectedness with society. In this case, a key process for the CoP is to sustain the legitimacy of its intentions, existence and actions by connecting with society through purposeful dialogue. While the process of purposeful dialogue will differ in time and space depending on intended outcomes, such a process is ultimately aimed at securing acceptability from society and it is structured in such a way that it dynamically connects a CoP's actions (in relation to the allocation and distribution of benefits from the common property resource) and societal awareness of evidence of those actions. Legitimacy can therefore be viewed as an emergent property resulting from the use of purposeful dialogue to consciously enhance the alignment between perceptions of the state of the common property resource and society's values and norms.

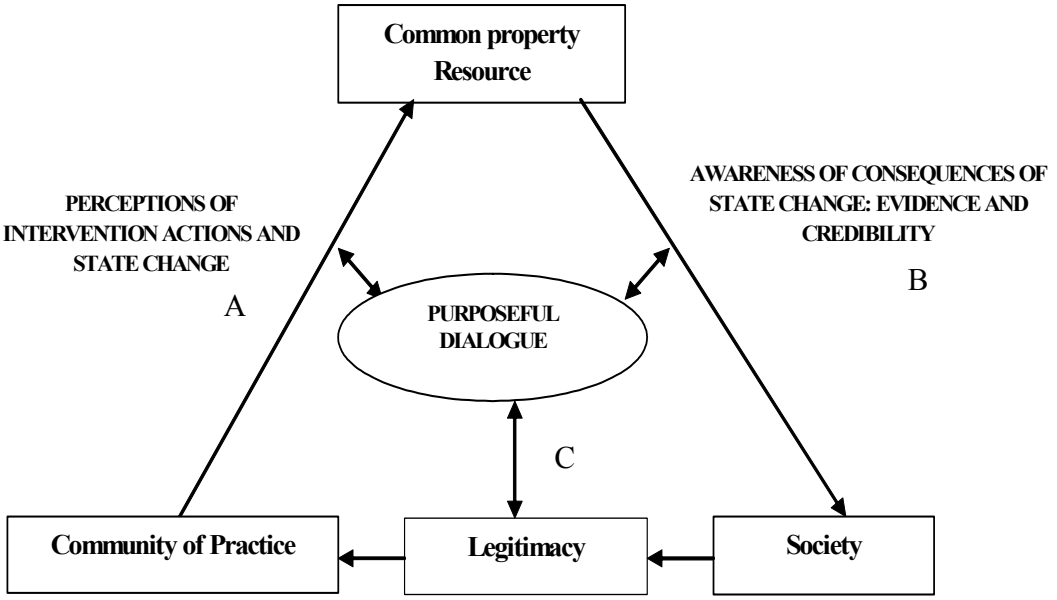

Figure 1. *A dynamically connected social-ecological system illustrating the central role of dialogue for communities of practice seeking to build and sustain legitimacy in relation to the right to use or the right to influence the state of a common property resource.*

2.4 How to interpret the framework

A CoP that desires to legitimately engage a common property resource on society's behalf needs to secure ongoing acceptability and support for its actions from society. The need for its existence and actions are motivated by perceptions around how it influences the state of the resource in accordance with its own goals as well as society's values, norms and needs. For example, fish deaths in a stream resulting from an industrial pollution event may prompt a CoP into action on behalf of society. The 'resource' in this context would include the aquatic ecological system and the associated services. In this case, society would also try to oversee the behaviour of the agency responsible for enhancing/maintaining the state of the resource in line with societal norms and values. Thus, one can argue that the state of the resource and associated societal values, norms and behaviours are dynamically connected over space and time. And for the purposes of this paper, these attributes collectively constitute a dynamically connected system of society, CoP and common property resource.

The dynamic connectedness between the state of the resource and prevailing societal values and norms necessitate ongoing effort to achieve congruence between them particularly in ways that promote behaviours that accord with the chosen values and norms. A CoP may seek to influence both the state of the resource (the ecological

system) and the societal values, norms and behaviours (the social system) so that a preferred overall social-ecological state may be better sustained. But the dynamic heterogeneity within the coupled social-ecological system means that congruence can never be perfect. It therefore becomes necessary to direct purposeful dialogue towards one or more variables in the social-ecological system with the aim of enhancing alignment between the state of the resource and the state of societal values and preferences. For example, purposeful dialogue can be based on the intent for directional change in the state of the resource (if the state of the resource is perceived to be poor) so that the associated ecosystem services can accord better with society's values and norms. Tensions between the resource state and values/norms create opportunities for the CoP to intervene by informing society of the need for intervention actions. Dialogue about informed actions would encourage society to perceive the CoPs actions as serving the public interest. In so doing, the CoP would enhance its prospects of earning legitimacy from society for its continued existence, purpose and interventions.

A CoP may seek to engage in purposeful dialogue about societal perceptions of its intervention actions (Fig 1; A). It would do this by portraying the tensions between the state of the resource and societal values, norms and behaviours in relation to the state of the resource. It may also wish to portray changes in its own values, norms and behaviours to accord better with those espoused by society. For example, the CoP may 'advertise' through public media to show that it is action oriented and that its actions are intended to enhance the state of the resource and/or society's values and behaviours. By engaging in purposeful dialogue about its activities and behaviours in relation to the social-ecological system, the CoP is in effect highlighting and portraying its awareness of dissonance between societal needs, values and behaviours and the ability of the current resource state to satisfy the defined societal needs and values.

The CoP may also seek to initiate purposeful dialogue in which it portrays positive evidence about its intervention actions (Fig. 1; B). Such dialogue would be aimed at placing improvements of the state of the resource within the context of societal needs, values and norms that are consistent with the legitimate use of a common property resource. The intent from the point of view of the CoP would be to create in society a 'state of mind' or consciousness about the tensions between the existing state of the resource and societal values and norms, and the consequences of the CoP's intervention actions on behalf of society. In this way, purposeful dialogue would reinforce the perception that the CoP performs the actions it proposes to do (demonstrating delivery on intent) and also that it has impacted on the resource and on societal perceptions in ways that accord more closely with societal needs and values.

The CoP may further wish to engage in purposeful dialogue that establishes and sustains its legitimacy (Fig. 1; C) as an entity that can be trusted to influence the state of the resource on behalf of society and to influence values, norms and behaviours within sectors of society. Such legitimacy, if secured and sustained, would encourage social acceptability and support. The CoP's proficiency as a trusted entity will depend on its ability to employ purposeful dialogue to demonstrate its competence and sustain its legitimacy and acceptability. Conversely, the legitimacy of a CoP may also decline to the extent that society may discontinue the trust it places in the CoP to act on society's behalf. This can happen as a result of misalignment between a CoP's

constitution and societal values, or could be the result of a CoP's actions that lead to undesirable changes in the state of the resource or failure to provide evidence of positive consequences of intervention actions, or a combination of these. In the absence of evidence for sanctioned intent and delivery on intent through appropriate actions, purposeful dialogue may be ineffective to restore the legitimacy of the CoP. Society (and/or the CoP itself) may then engage in purposeful dialogue that seeks to disperse the CoP or to change a CoP so that its constitution and associated behaviours are redesigned to align more closely with the values and norms held by society and thereby to re-establish legitimacy.

In sum, the framework we propose exposes the dynamic connectedness between society, CoP and common property resource. Such connectedness operates within the context of a CoP that wishes to act legitimately on society's behalf in relation to a common property resource. Importantly, the connectedness is designed to support societal values and norms that accord with what is required for the effective governance and management of a common property natural resource. This understanding suggests that a CoP must purposefully direct dialogue in relation to achieving effective action and demonstrating credibility and competence in order to sustain legitimacy over time. The strength of the framework lies in its application across diverse contexts as a generic conceptual tool within the bounds of interrogating dialogue as managed by CoPs interested in common property resources. In the following section we use four examples to illustrate the application of the framework.

3. **REFLECTION AND ANALYSIS: FOUR EXAMPLES**

3.1 Introduction to the examples used

To illustrate how the framework can be applied we chose four examples of common property resource management involving the actions by a community of practice, or attempts to set up a community of practice in relation to common property resources. The map shows where the case examples are situated spatially and the descriptions below provide a brief introduction and background to each example.

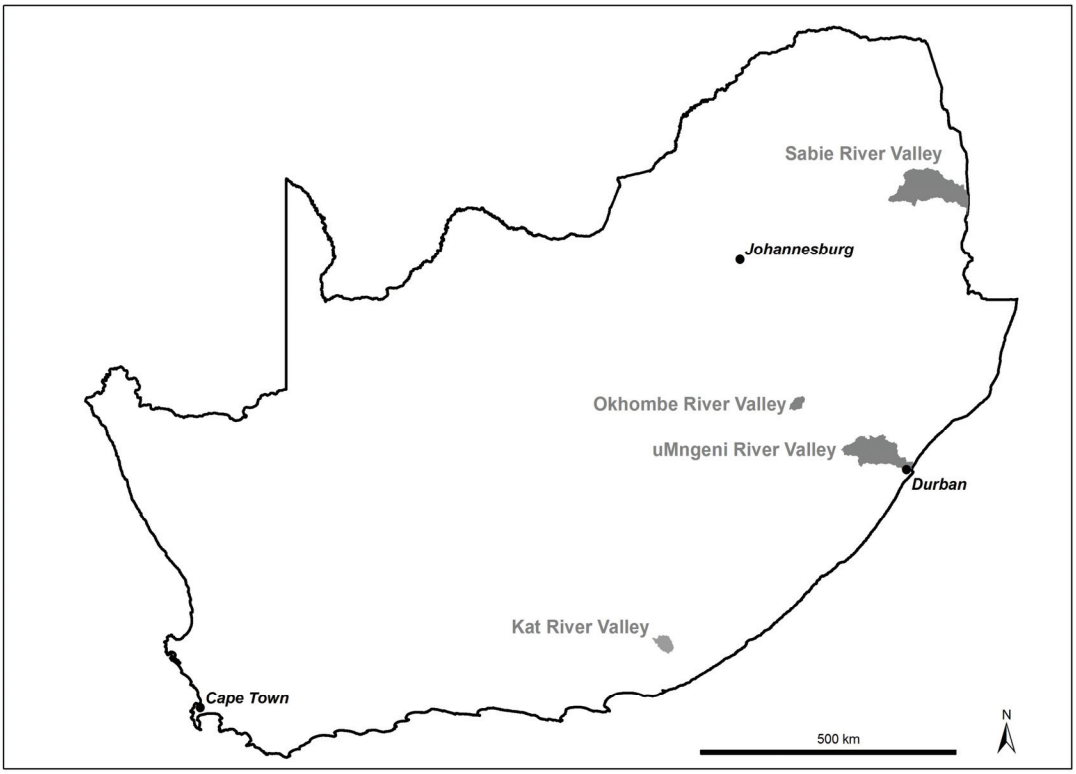

Figure 2. *Map of South Africa showing the positions of the four river valleys considered in this report where communities of practice have been acting, on behalf of society, in concern for the state of a common property resource. (Map: CSIR; Devlyn Hardwick)*

3.1.1 The Sabie River Irrigation Board

The Sabie catchment (6 308 km^2) is located in the north eastern portion of South Africa and forms part of the Inkomati primary drainage region with rivers flowing eastward into Mozambique. The Sabie River Irrigation Board (SRIB) was formed more than 50 years ago to govern and manage the operations of an irrigation canal that serves a predominantly commercial agricultural community in the Sabie River Valley. Although this CoP is now required to transform into a Water User Association (WUA) under the new National Water Act of 1998, it was originally established through the old Act (1956) as a statutory body of individuals to perform specific functions organised solely around the canal and its water. Currently, its membership includes 52 farms, 10 tourist resorts and 1 municipality. Under the old legislative regime, members of the SRIB were the only ones who had government-authorised rights to abstract a prescribed quantity of water from the 25 km long Sabie River Irrigation Canal. Since 1998, the SRIB has been part of a process of transformation, with the aim of forming a WUA with a wider, more inclusive membership and new constitution.

3.1.2 The Duzi-uMngeni Conservation Trust

In 2005, a group of individuals concerned about the deteriorating health of the uMsunduzi and uMngeni rivers in KwaZulu-Natal (catchment size 4 416 km^2) formed what is now popularly known as DUCT. This CoP has since been registered as a Section 21 company whose mission is to champion the environmental health of the two rivers, which jointly comprise more than 200 kilometres of water ways. It pursues this through a multi-pronged approach tackling eight key river health issues: faecal pollution; industrial pollution; solid waste pollution; invasive alien vegetation (aquatic and terrestrial); bilharzia; soil erosion; unregulated sand winning operations; and poorly managed dams (not releasing the mandated environmental flows). While DUCT identifies itself as a lobby group – raising public awareness and pressurising government departments to perform their mandated roles – it is also proactive in proposing solutions and taking action to help to resolve these river health issues.

3.1.3 The Kat River study

The Kat River is a tributary of the Fish River in the Eastern Cape of South Africa. The catchment covers an area of approximately 1 700 km^2 with the town of Fort Beaufort more or less in the middle of the catchment. Based on several years of action-participation work on IWRM in the Kat River Valley in the Eastern Cape, but also drawing from experiences from the Save the Sand and other projects, researchers prepared a comprehensive set of guidelines for participation in integrated water resource management (IWRM) in South Africa. These are captured in Water Research Commission reports no. TT 258/06 (A Quick Reference Guide); no. 1233/1/06 (Participatory Guidelines; Motteux, 2006); no. 1233/2/06 (Environmental Guidelines; Rowntree, 2006); and no. 1233/3/06 (Planning and Economic Guidelines; Fargher, 2006). Overall, the purpose of these guidelines is to assist IWRM practitioners in encouraging bottom-up, civil society participation in water resources management and to do so in partnership with The Department of Water Affairs and Forestry and with regional catchment managers. The emphasis is on making IWRM a reality, as opposed to desktop planning alone. The guidelines introduce the necessary social tools and insights from scientific research to enable practitioners to facilitate and communities to participate as envisaged by the legislative framework. The analysis of the Kat example in this report focuses specifically on the Participatory Guidelines (report no. 1233/1/06) which are guidelines for good practice in community participation initiatives.

3.1.4 The Okhombe Land Care Monitoring Project

The Okhombe Land Care Monitoring Project was a five-year initiative (ending in 2006/7) run jointly by the University of KwaZulu-Natal and The University of Newcastle (UK) and funded by the Water Research Commission (Everson et al., 2007). The Okhombe sub-catchment (approximately 252 km^2) is a mountainous area located in the upper Thukela catchment just north of Lesotho. The Okhombe community comprises about 4 000 inhabitants under the Amazizi Traditional Authority and the people here rely directly on the local natural resources which are also their only productive asset. A large part of the area is degraded with large erosion

gullies leading to the loss of land for crop production and livestock production (mainly goats and cattle). The purpose of the project was to assist and build capacity in the Okhombe community to engage in land rehabilitation. Although the Land Care project has been successful, a specific need arose from a lack of quantitative and qualitative information on how effective the rehabilitation techniques have been. A key focus area for the project was therefore to establish an Okhombe Monitoring Group and to assist and empower this community to record, analyze and interpret changes in their landscape in a structured manner. A crucial step in this process was to secure the commitment of the Okhombe community to take responsibility for detecting change in their natural resources and to recognise the improved grazing potential and hydrological benefits of land rehabilitation.

3.2 Process to gather information

3.2.1 SRIB and DUCT

The Sabie River Irrigation Board and Duzi-uMngeni Conservation Trust examples were set up specifically for the purpose of this project, to interrogate the role of dialogue in sustaining community of practice legitimacy.

In part, we selected the two case examples because members of both CoPs shared some historic association with one or more members of the research team. By virtue of this association, the research team already enjoyed some familiarity with each CoP's broad purpose, context and most recent history. Our approach to investigating and documenting the case examples was predominantly but not solely based on each CoP's subjective account of its history. We used interviews and writing exercises designed to guide members of each CoP in reflecting and telling their own stories (Appendix A: briefs to CoP). This was mainly achieved through using a non-prescriptive set of open-ended questions focussing on:

- Their vision, objectives and goals.
- Their relationships, partnerships and interactions with other organisations and individuals.
- The most important challenges, achievements, successes and failures they have experienced in the past or anticipate for the future and the role of dialogue in their efforts to collaborate with others.

For the SRIB we developed a document based on verbal accounts of experiences that were given by key members. This document was then reviewed and corrected by the interviewees through a series of drafts. Members of DUCT on the other hand produced their own written accounts of experiences through a collaborative process with the research team. Further information about the structure and process of dialogue in these CoPs was derived from a variety of other sources and experiences such as:

- Documents produced by CoP – chiefly minutes of meetings held within the organisation or as part of external dialogue processes.
- Documents produced in previous research projects involving the SRIB.
- Direct observation of meetings and workshops held in the course of the organisation's work.

- A workshop held with the research team and both SRIB and DUCT to discuss their respective stories in the context of a conceptual framework linking CoP practice, dialogue and legitimacy.

3.2.2 Kat and Okhombe projects

The Kat and Okhombe catchment studies were WRC-funded projects that were completed and written up prior to the start of this project which was directly concerned with gathering of data for the SRIB and DUCT examples. The Kat and Okhombe studies were therefore not set up to address the same questions around dialogue and legitimacy as were done for the SRIB and DUCT. Nevertheless, the Kat and Okhombe situations have attributes relevant to the analysis here, for example the concern around improved management and governance of common property resources and issues relating to the use of dialogue to promote legitimacy of communities of practice. Thus, the SRIB and DUCT examples involved action research while the Kat and Okhombe studies were analysed retrospectively by desktop analysis by interpreting the content of the relevant research reports.

For the Kat River Valley example, we chose to focus on the Participatory Guidelines (report no. 1233/1/06), because this section of the Kat study report places emphasis on participation in IWRM by civil society (whilst the other two reports were structured more around environmental legislation and economic instruments for planning). Thus the Participatory Guidelines lend themselves more to the analysis used here. Also, the intent of the analysis of the role of dialogue is not to be exhaustive, but is rather used to illustrate how the framework might be of use across a variety of contexts. Specific sections of interest in the Participatory Guidelines are: Communication Strategies and Capacity Building.

3.3 Applying the framework to reflect and generate insights

We used the framework presented (Fig. 1) as an interpretive mechanism (Pimbert, 2004) to analyse the examples. The approach used was deliberately nomothemic (Babbie, 2004), meaning that we sought to generate a general and primarily theory-based understanding of the system that encompasses the connectedness among society, CoP and common property resource. Following from this, it was not our intention to understand each example fully, but to understand them to the extent that we are able to use them to illustrate the more general patterns of connectedness as described by the framework.

3.3.1 The Sabie River Irrigation Board

The SRIB was formed more than 50 years ago to govern and manage the operations of an irrigation canal that serves a predominantly agricultural community in the Sabie River Valley. Although this CoP is now required to transform into a Water User Association (WUA) under the new National Water Act of 1998, it was originally established through the old Act (1956) as a statutory body of individuals to perform specific functions organised solely around the canal and its water. Currently, its

membership includes 52 farms, 10 tourist resorts and 1 municipality. Under the old legislative regime, members of the SRIB were the only ones who had government-authorised rights to abstract a prescribed quantity of water from the 25 km long Sabie River Irrigation Canal.

A number of salient features can be highlighted to illustrate the nature of the connectedness among society, the SRIB and the irrigation canal prior to the promulgation of the National Water Act of 1998. To begin with, it is important to note that during this era the legitimacy of the SRIB was assigned statutorily by the government of the day. The SRIB had a tightly prescribed set of competencies which were expressed through its joint enterprise of facilitating water allocation to its members. Dialogue within this set-up constituted internal conversations and deliberations around the operation of the canal within the bounds of their membership. Such dialogue was reinforced by the operational nature of how the members defined their shared task and their success relative to their internally defined goals. While the members did connect with other individuals and organizations outside of the CoP, their engagements and dialogue were primarily of a procedural nature such as canal cleaning. The SRIB was not challenged to engage in dialogue outside of the CoP that could have helped to create shared understanding about the state of the resource and associated values in society. As a consequence, the members' shared repertoire of dialogue, terminologies and rules were tightly bounded within the SRIB. Therefore, one would contend that such a scenario epitomized strong connectedness internal to the CoP but ineffective connectedness between society, the SRIB (the CoP) and the resource.

Prior to the 1998 Act, the SRIB maintained and reinforced a strong notion of the common property resource as being the water in the canal, the lifeblood of their agricultural activities. The CoP was never challenged to engage in dialogue in ways that sought to test new understanding about whether the use of the common property resource accorded with wider societal values or to test the legitimacy of the CoP itself within a wider sector of society. Accordingly, internal conversation- and deliberation-type of dialogue supported the legitimacy of the SRIB by the members themselves and to some extent by the government of the day. Yet, such legitimacy may not have been perceived as such by a wider sector of society. This situation, however, appears to have changed with the coming in of the National Water Act of 1998 through the new democratic dispensation.

To begin with, the 1998 Act describes river resources (including water) as a common property resource to be managed and shared in a cooperative manner by society as a whole (Van Wyk et al., 2006a). As such, the current government does not *per se* confer legitimacy on entities that manage river resources for the private good. This means that river resources have now acquired a legally assigned common property/public good status. As a consequence, this new development does not provide for the continued existence of Irrigation Boards, requiring instead that they transform to WUAs, which to some extent could be regarded as new forms of CoPs. The new Act devolves management authority for a local water resource to WUAs. This requirement reflects a widespread change in societal values by demanding for more inclusiveness, equity and collaboration in the sharing of common property resources.

At first the SRIB viewed this transformation process as being merely an administrative one. However, when an initial proposal submitted on the premise of the new Act failed to win the approval of the Department of Water Affairs (DWAF), the SRIB began to realise the need and opportunity to build a new CoP organised around a common property resource that is geographically and conceptually broader than an allocated quantity of water from a canal. The SRIB's first response to the crisis was to attempt to invite DWAF to a discussion-type of dialogue. They did this in order to seek DWAF's support in developing their 'own' understanding of policy intent so as to test whether it accorded with DWAF's interpretation and societal expectations. In this way, the SRIB sought to establish legitimacy as a local leader in the transformation process and by so doing to gain and strengthen legitimacy both with government and society at large. Initially, the SRIB was not able to get a direct response from DWAF (national office). And as a result, the SRIB and government were not able to develop a 'shared' understanding of policy intent and expectations of a new CoP.

Confounding the process is that dialogue with DWAF has almost always been indirect, through consultants, and that DWAF has not provided a consistent portrayal of what they expect of a new CoP (WUA). Consequently, the SRIB has found itself entangled in uncertainty as to how to understand government's expectations of a new CoP and the values required thereof. Disappointed by this avenue of seeking to establish purposeful dialogue and thus legitimacy, the SRIB considered engaging in dialogue more directly with society. For example, the SRIB initiated a forum for local water resource stakeholders (wider than the SRIB) to discuss their resource management issues along with the details of a future WUA. Key members of this forum are the Sabie River Farmers Association (SRFA), which is a group of emerging farmers cultivating communal land in the downstream area of the Sabie canal and seeking to share the water of the canal. It is envisaged that efforts aimed at establishing purposeful dialogue through this new forum will enable participants to build a shared understanding of the resource and of each other. This in a way would also help in effectively mapping the social-ecological system on which a WUA can be based, and at the same time creating awareness of the future demands on the resource along with the limitations of supply.

Prior to the establishment of the new forum, which encourages face-to-face interactions, attempts at mutual engagement were unsuccessful and dialogue was adversarial. For example, resentment toward the existing water allocation schedule has witnessed the emergence of a clique of individuals who have repeatedly vandalised the distribution infrastructure of the irrigation canal. In a sense, this is indicative of a possible lack of perceived legitimacy for the SRIB as allocators of water. However, through the new forum, the wider society has managed to establish a basis for effective information exchange with the SRIB, thereby creating opportunities for shared understanding and clarifications (skilful discussion) through which basic assumptions are revealed so that people can see the reality they face though purposeful dialogue. This in a way is also suggestive of recognition of the imperative for change by the members. As Senge et al. (2005) would put it, the members have started to feel the need to fundamentally re-negotiate meaning.

We postulate that the co-creation and flow of new meaning will need to be structured around the fundamental redefinitions of the user community and the identity of this

community. In other words, the legitimacy of the SRIB in the eyes of society will depend to a large extent on its ability to sustain purposeful dialogue that not only promotes skilful discussion, but that also recognizes the effects of the previous dialogue crises and how to navigate through them in order to place sufficient emphasis on promoting the negotiation of new meaning. Such purposeful dialogue must strengthen legitimacy based on shared societal norms and values. The creation of new meaning will in turn help to create a new CoP with a new set of players capable of legitimate engagement with a common property resource and instilled with a new set of societal values. New meaning will have to lead to a shift from the previously narrowly defined resource, the water in the canal as defined by the SRIB, and the expansion of associated values, norms and entrenched behaviours to broaden societal perceptions of the new CoP and the state of the resource. This will ultimately result in the redefinition of the range of (societal) stakeholders who share the resource (in terms of both costs and benefits). Although the transaction costs of creating new meaning may be high in this phase (Isaacs, 1994; Critchely and Casey, 2004), the trust, credibility and accountability built through the new connectedness will determine the legitimacy of the new CoP (WUA).

3.3.2 The Duzi-uMngeni Conservation Trust

In 2005, a group of individuals concerned about the deteriorating health of the uMsunduzi and uMngeni rivers in KwaZulu-Natal formed what is now popularly known as DUCT. This CoP has since been registered as a Section 21 company whose mission is to champion the environmental health of the two rivers, which jointly comprise more than 200 kilometres of water ways. It pursues this through a multi-pronged approach tackling eight key river health issues: faecal pollution; industrial pollution; solid waste pollution; invasive alien vegetation (aquatic and terrestrial); bilharzias; soil erosion; unregulated sand winning operations; and poorly managed dams (not releasing the mandated environmental flows). While DUCT identifies itself as a lobby group – raising public awareness and pressurising government departments to perform their mandated roles – it is also proactive in proposing solutions and taking action to help to resolve these river health issues.

The common property environmental services derived from the two rivers provide DUCT the impetus to legitimately connect with society. These services are used and accessed by both the local community and visitors to the area, particularly canoeists. DUCT's interest is not only in recreational use but also in maintaining and restoring the ecological functioning of these rivers. As such, DUCT initiates and participates in a number of dialogue processes with other actors and with the broader society. These actors include the national government departments mandated to manage the region's natural resources (Water Affairs and Forestry, Environmental Affairs and Tourism, and Minerals and Energy Affairs), provincial departments, the eThekwini Metro, and the Msunduzi and uMngeni Municipalities. In addition, DUCT engages in dialogue with NGOs such as A Rocha, the Keep Pietermaritzburg Clean Association (KPCA), the Wildlife and Environment Society of South Africa (WESSA), the KZN Canoe Union, several Catchment Management Forums, and a number of conservancies and local businesses. From DUCT's perspective, while interactions with these actors are based on multiple purposes, the ultimate aim is to promote purposeful dialogue

through coordinated intervention actions and improved societal knowledge and awareness.

The DUCT's efforts in promoting purposeful dialogue through coordinated action are reflected in several of its collaborative arrangements. In a sense, the reason for DUCT's existence is that there has not been effective coordination specifically in the domain of championing river health in the region. For that reason, DUCT has been creating opportunities for different actors in the sector to participate in purposeful dialogue. The Catchment Management Forum (CMF) has perhaps been the most useful platform for building such dialogue. This forum facilitates face-to-face contacts and affords actors opportunities to engage in purposeful dialogue that serves their common goals. Ongoing dialogue processes within the forum have been used to bring on board professional expertise as well as to raise funding for different projects. As a result of well-focused technical discussions, for example, DUCT has written proposals for the CMF that have received funding, thereby saving them much needed financial and time resources. Similarly, DUCT and A Rocha, an international Christian environmental NGO, have through two-way discussions been able to collaborate on working on a particular stretch of the uMsunduzi. This dialogue process was initiated following proposals for DUCT to take over the daily management and responsibility of the Living Msunduzi Waterways Project. Subsequently, a four man working team from DUCT has for some time now been working one day in a week on the project. This has resulted in A Rocha spending more time on awareness raising and education, which is their core competency.

Other similar collaborative arrangements designed to foster coordinated action have involved the KwaZulu-Natal Canoe Union, Hansa Powerade Dusi Canoe Marathon, Richard Clacey and 15 other families concerned about the state of the Dorpspruit (a tributary of the uMsunduzi), and a number of business and light industries working through the Barnsley Road Conservancy, Wildlife Society of South Africa, Wildlands Conservation Trust, International Clean-Up the World Campaign, and various local communities in the Nagle/Inanda Valley mainly through their tribal chiefs.

From the onset, DUCT faced scepticism as to whether it could make any difference to what were perceived as significant river health issues. This was compounded by mistrust as to whether the relatively new CoP could be committed enough to last beyond its initial portrayal of inspiration and enthusiasm. Branding emerged as an important focus and tactic for achieving the goals of improving society's knowledge and awareness of the CoP intent and actions. Over time, DUCT has used branding as a means of establishing a consistent identity so that members of society can recognise its works and thereby offer their ongoing support. This has been a conscious effort aimed at harnessing the positive reinforcement potential of the various dialogue outcomes – i.e. society perceives a change in the status of the resource and, based on their understanding of the origins of this change to assign legitimacy. Building the DUCT brand has involved not only a visual identity, but a set of operating principles that collectively make up the image of DUCT:

- A balanced message (portraying both the positive and negative images of the status of the resource);
- A predominantly non-confrontational, problem-solving approach aimed at understanding the issues and actors involved;
- Professional, informed and competent actions and general conduct;

- A ‘hands-on’ CoP that is not just a talk shop but is willing and able to take action; and
- Persistent, with a reputation for never giving up

Annual events such as the Duzi Canoe Marathon have provided an important focus for intensified dialogue with key stakeholders. The high media profile of the Duzi is an opportunity to raise awareness about the status of the resource, and at the same time to market DUCT as a CoP concerned with improving that status. A targeted clean-up operation on the marathon route also demonstrates DUCT’s ability to mobilize its members and partners for coordinated action. The results of this action bring noticeable benefits to Duzi paddlers and spectators, and to the image of the event and region, thus enhancing the perceived legitimacy of DUCT. The resulting positive image of DUCT provides additional resources, e.g. in 2007 DUCT was invited to be one of the official charities of the Duzi Canoe Marathon.

The DUCT example is particularly instructive in that it illustrates how common property resources typically connect CoPs with a network of other social actors that share an interest in the common property resource. This can happen if that interest is explicit or latent. Such a network therefore consists of multiple, connected and interdependent players linked by the dynamic patterns of resource supply and demand over time and space. In this network, the need for purposeful dialogue and the resultant mutual re-adjustment between agents is driven by uncertainty (Isaacs, 1994) as well as the desire for legitimacy. As the DUCT example shows, common property resources entail interdependency and thus an ongoing need for purposeful dialogue to build legitimacy. The uncertainty inherent in the nature of the connectedness among society, a CoP and common property resource leads to emergent issues that are characteristic of a coupled social-ecological system in which mismatches between supply and demand provide opportunities for purposeful dialogue. Thus, the DUCT example is important in demonstrating how a CoP’s legitimate engagement with a common property resource is sustained through its connectedness with society.

3.3.3 The Kat River Valley study

The Kat River example dealt with participatory practice broadly and was not set up specifically for the purpose of interpretation using the model shown in Figure 1. As a result the Kat report does not contain a narrative account of civil society or of CoP dialogue efforts but is rather a guide for practitioners, based on the learning from interaction with the Kat community and enriched by experiences in other catchments. However, the Kat guidelines provide recommendations to practitioners within the context of issues around civil (local) level participation with the eventual aim of good governance and management of river resources. The Kat report material therefore broadly lends itself to analysis using the conceptual framework (Fig. 1).

Much emphasis of this work is on generating a civil society CoP in relation to water resources. The practitioner’s responsibility is said to be “to help participating stakeholders to become knowledgeable about catchment issues and to build well-organised groups who can sustain the IWRM work when the project comes to an end.” As per Wenger (2004), a CoP is an organised group, with shared interests, norms and artefacts and competencies that align with their shared interest and actions.

Chapter 5 of the 1233/1/03 Kat report places much emphasis on the nature of the CoP and the conditions necessary to form and sustain a durable CoP - and the role of the practitioner in this process. For example, one section describes how in the formation of a CoP, interests and values may not be common at the start and that commonality among members of the new CoP must be facilitated and sought through consensus processes or vision-building. This suggests that in some cases, the formation of a CoP is desirable, but that it may not always emerge voluntarily.

Confounding this process may be a growing but in many cases still weak levels of South African civic participation in matters concerning water management, as well as the tendency for people (users) and river services to appear disconnected along the length of a river. The report states that "if team members understand the bigger picture, they will contribute more effectively." In the terminology of Figure 1, in the early stages of CoP formation and beyond, dialogue must be directed towards exploring and defining the CoP's shared water-resource related interest, and building and aligning competencies, social capital (including 'training' and 'capacity building' and 'trust' as mentioned in the Kat report) and experiences to that defined basket of interests. In a sense, the practitioner/researcher group represents one type of CoP which stimulates and facilitates the formation of a civil society CoP around water resource issues in a way that promotes legitimacy of the new CoP and its actions. Thus much of the Kat River project material highlights risks to legitimacy as CoPs are challenged to form and demonstrate sufficient coherence and shared interest as a group (especially once the practitioner's role comes to an end) so as to secure ongoing legitimacy in the eyes of society.

One of the key factors for success is the ability (competence) of the CoP and its confidence to manage their internal dialogue as well as dialogue with others who share an interest in the water resource (see p. 157-158 of Kat Report 1233/1/03). This has significant implications in terms of how resources are allocated to such projects. The Kat report emphasises that a large proportion of resources should be invested initially in the formation, competence and confidence building of the CoP, and initially less on technical progress. In terms of the conceptual model (Fig. 1), such an investment strategy would more likely secure longer term legitimacy for the CoP as it is more likely to be durable in terms of its existence and actions, for long enough to demonstrate success and therefore instil confidence and secure legitimacy.

The Kat material provides much detail about mechanisms whereby to strengthen civil society participation in a CoP (both in terms of competence and confidence, both of which will have an influence on how dialogue is managed.). In this way, the Kat material is complementary to the broad framework presented in Figure 1. The framework provides the motivation for dialogue (i.e. legitimacy) and the broad areas where a CoP can enhance its legitimacy through dialogue, while the Kat material provides rich details around how this can be done, especially given the situation in South Africa where civic mindedness and participation in a community of practice for improved natural resource governance requires thoughtful investment and facilitation.

While the Kat material highlights challenges and recommendations in relation to stimulating the formation of a CoP, the approach suggested by the framework represented in Fig. 1 adds understanding in that it exposes the fundamental variables that will determine the CoP's overall legitimacy including, but also over and above,

the CoP's own competence and experience only. It shows why and that unless the CoP is able to connect its own state and purpose with perceptions of the state of the resource, the distribution of benefits from the resource and the state of societal values, it will not be durable. The framework therefore provides the motivation for and target variables for being purposeful within but also outside of a CoP's operations. This view and emphasis on legitimacy as a fundamental goal for CoPs may assist practitioners in locating and connecting mechanisms for dialogue and participation with aspects of legitimacy and in doing so strengthen understanding of the larger system and being purposeful about dialogue and actions that will enhance CoP legitimacy. It shows that public participation is not an end goal in itself, but a means to create opportunity for dialogue and connectedness that sustains legitimacy over the longer term.

3.3.4 The Okhombe catchment study

The Okhombe experience shows that a significant challenge in the land rehabilitation project was to create a system by which to generate information that would demonstrate the extent to which rehabilitation attempts have been successful. For this reason, the Okhombe project embarked on setting up a community-based monitoring system (the Okhombe Monitoring Group, or OMG, comprised of 24 representatives from the six sub-wards in Okhombe) to determine the effect of rehabilitation on reducing soil erosion and run-off and increasing water quantity and vegetation cover in previously degraded areas (Everson et al., 2007).

In terms of the framework, actors in this project (starting initially with the research team and then involving the Okhombe community) identified an issue around "B", i.e. the lack of credibility and evidence for a desirable change in the state of the common property resource, and benefits from it. Associated with this was the need to establish a community of practice with emphasis on monitoring (i.e. the OMG) to monitor change and create awareness of results (and credibility of the results) of the change in benefits arising from a change/improvement in the state of the resource for the Okhombe community as a whole. Community perceptions of soil erosion and rehabilitation in conserving water were made more explicit throughout the project. In this way, participants sought to establish whether people felt a sense of dissonance between the state of the common property resource, the state and distribution of benefits from the resource and the values and preferences held by society. This process showed an awareness of the impact of soil erosion on land and implications for agricultural and grazing. Dongas threatened infrastructure and also made access to schools and shops more difficult.

The process of eliciting perceptions and awareness brought the disconnect between the state of the resource and what people desire from the resource to the foreground. This is an important step in terms of securing societal legitimacy for the need to establish a monitoring community of practice and their actions on behalf of the community. As the authors of the report say "The sustainable management of Okhombe is dependent on the ability of the community to recognise and define problems and to generate and implement solutions in an ongoing, dynamic manner." The project shows that dialogue was also extended from addressing rehabilitation and monitoring of rehabilitation effects only to a more fundamental cause-effect-response

approach, recognising that overgrazing is a major contributor to erosion. A rotational grazing system was instituted by the Okhombe community, illustrating the need to adjust societal norms and behaviours in order to improve the state of the system. Thus, suggestions for improvement of communal range management would further promote legitimacy of the action group by a broadened awareness of the issue and cause-and-effect relationships relating to the issue. (This relates to "A" in the framework).

The main focus of the Okhombe monitoring project was to develop a community-based monitoring system that could be implemented by the OMG, many of whom have little formal education. Thus monitoring techniques, although based on science, had to be adjusted to be easily communicable to the monitoring community. Also, interpretation of results had to be straightforward, requiring little manipulation of the data collected. In addition to data collection, the OMG received training on data analysis interpretation and presentation, using Microsoft Excel. This skills development resulted in greater understanding of the concepts of soil erosion and the relevance of monitoring. This demonstrates the importance of developing the appropriate level of competence as the OMG CoP learnt how to monitor, prepare and portray results for creating awareness of the effects of their actions on the state of the resource and the associated distribution of benefits to society. For example a detailed scientific approach to monitoring would probably not have led to social acceptance of the process or the techniques. By using a more simplified version of monitoring and of organising results, the OMG could demonstrate competence and understanding and doing monitoring and presentation of results. In this way, the OMG promotes legitimacy for its actions and for their existence as a community of practice acting on behalf of the larger Okhombe community.

The Okhombe report refers to an initiative by the Maloti Drakensberg Transfrontier project to develop a strategy for the payment of environmental services (PES) in the region. Thus there will be potential to promote effective management of the common property resource within an understanding that the resource extends beyond the Okhombe community and area. Awareness of this would create opportunities for further broadening the community awareness of the impact of their actions on a much broader catchment, and their monitoring, analysis and presentation skills would assist them in promoting awareness of their actions, and legitimacy of their actions and institutions, not only as assigned by the Okhombe society but by the larger catchment society.

The approach suggested by our framework (Fig. 1) shows that in the Okhombe example, one can recognise and appreciate that the initiative was not about donga reclamation *per se*. It shows that donga reclamation and the associated monitoring are societal actions or behaviours that depend upon variables in a larger system, i.e. the issue, the solution to the issue and the mission of the CoP in relation to the issue, being assigned legitimacy. It highlights the importance of social purpose and the imperative of legitimacy and how such goals can be promoted through purposeful (i.e. structured) dialogue. Because the alignment between the state of the resource, the state of distribution of benefits from the resource, the state of societal values and norms and the state of the CoP tend to be dynamic over space and time, the overall goal, namely securing and sustaining legitimacy, has to be reordered and re-negotiated in an ongoing way. This requires purposefulness in terms of dialogue and

action. Purposefulness in turn requires a structured approach that connects goals (in this case legitimacy), actions and actors. The unique contribution of the framework is that it provides a structured way of directing purpose in a system in which the variables remain dynamic, causing issues to appear intractable at times.

3.4 Reflection, learning and dialogue

The work reported on here promotes the importance of learning about legitimacy as related to the dynamically connected aspects described by the framework (Fig. 1). Because of the dynamic connectedness between variables and the importance of thinking about the system as a whole, some thoughtfulness and purposefulness is required when applying the framework to an example. We suggest that collaborative reflection (and the associated dialogue) is a helpful mechanism for creating an insightful interpretation from applying the framework to an example.

Dialogue (verbal as well as written expressions) is the process we use to make our tacit and explicit thoughts and learning accessible for scrutiny, thus allowing for mutual adjustment and group learning (Isaacs, 1994; Nonanka, 2004). Nonaka (2004) proposes a model (Figure 3) whereby knowledge is created through conversion between tacit and explicit knowledge, resulting in four modes of knowledge conversion. Reflection (also known as a consideration or musing) is an important and slower-pace aspect of these knowledge conversions, as reflection (which could be tacit or explicit) is the cognitive process whereby we thoughtfully assess/consider the validity of ideas against current beliefs, norms and knowledge. In order to reflect together meaningfully, dialogue should be structured and directed around a set of core ideas that represent the shared interest of a community of practice as well as society in the wider sense. The core ideas are converted between the four knowledge modes so that knowledge and ideas can be socially tested for credibility and legitimacy.

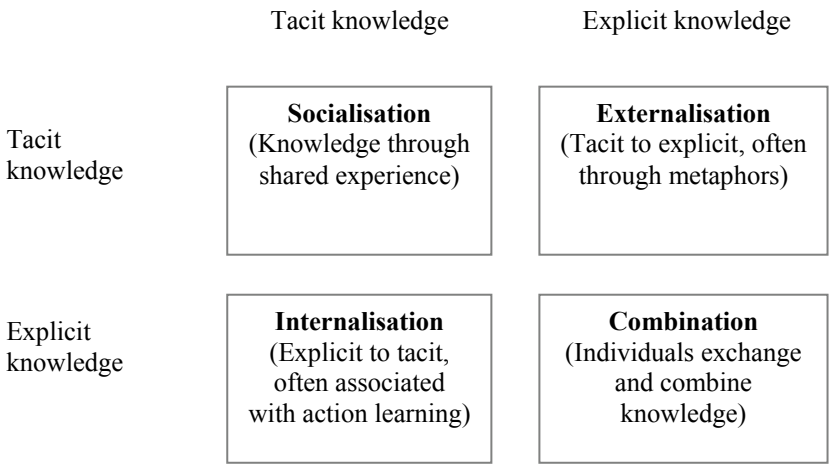

Figure 3. *Nonaka's four modes of knowledge conversion as ways of creating knowledge (Adapted from Nonaka, 2004; p. 172-173). Reflection plays an important role in these conversions as it leads dialogue that is more thoughtful and structured.*

Reflection, as a means of stimulating learning, can happen in various forms and to varying degrees of depth. To be reflective is to slow down one's habitual thoughts to interrogate assumptions and actions more deeply to seek alternative ways of thinking about a problem and devising a response or action. The idea of learning loops, first used by Argyris and Schon (1996) is a useful way to think about degrees of reflection, learning and the kind of change brought about by the learning process. With single-loop learning, people tweak existing practice without significantly changing their vision, objectives, norms and values. The behaviour change constitutes 'more of the same but better'. In double loop learning, reflection and learning changes underlying insights and principles and participants learn about the assumptions that underlie goals and actions. Triple loop learning takes place when underlying principles are questioned to the extent that it can lead to the redesigning of norms and values that underlie the governing learning system (Groot and Maarleveld, 2000). Bainbridge et al (2000) offer the following interpretation:

- *Single loop learning* poses "how" questions. How can we deal with the problem we face? How can we avoid the mistakes we are making? This implies learning about rules and regulations to achieve set goals.

- *Double loop learning* focuses on "why" questions. The organisational culture and facilitation continuously encourages the questioning of existing practices, rules, procedures and regulation. It seeks to expand collective knowledge and understanding by learning about the assumptions and goals behind existing routines, practices, theories and policies.

- *Triple loop learning* articulated the deeper underlying "why" questions related to will and being. It focuses on underlying paradigms, norms and values that frame and legitimate the purpose and objectives of knowledge, policies, technologies and practice. As such it is revolutionary rather than evolutionary or incremental, acknowledging and dealing with conflicts when essential underlying principles come under discussion.

All three kinds of learning are appropriate but depending on the situation, one kind of learning may be more apt than another. However, given the complexity of river resource management and the need to use it as a vehicle for nation-building, we are encouraged to not always focus on single-loop or reactive learning. In reactive learning, thinking is driven by existing mental models and actions are governed by established habits. Deeper levels of learning create an enhanced awareness of an issue but also an awareness of the larger system in which an issue or problem is embedded. Increasingly authors are arguing that change processes tend to be superficial because "they don't generate the depth of understanding and commitment required to sustain change in truly demanding circumstances." (Senge et al., 2005). A response to this has been a move towards encouraging deeper learning that promotes creative, generative ideas about the future rather than sticking to a model of change that relies on 'perfect rationality' in decision-making. Authors also suggest that reflection and deeper learning require a place to 'retreat' to, implying the need for a time investment in the reflection and learning process.

4. **LESSONS FOR CIVIL SOCIETY ENGAGEMENT IN WATER RESOURCES MANAGEMENT**

4.1 Usefulness of the conceptual model

This work started out asking the question as to why dialogue commonly appeared to be ineffective in instances where civil society CoP engaged in attempts to stimulate co-operative decisions and initiatives around river resource allocation and use. We did not attempt to answer this question directly, but instead we considered two CoP situations and devised a model that describes a social-ecological system, with the main variables being the CoP that strives to attain and maintain legitimacy, norms and values in society and the common property resource. Dynamic connectedness between these variables is key and the purpose of dialogue is to secure the connectedness in an ongoing way by seeking to align CoP actions, the state of the resource, the state of allocation and distribution of benefits and the state of societal values.

Therefore the model offers a systems-oriented approach that allows a civil society CoP, government agencies, researchers and research funders to move beyond observed symptoms (i.e. 'this dialogue is not effective') to interrogate aspects that will expose underlying causes of ineffective dialogue and lack of legitimacy. Detailed material such as that generated by the Kat project (and certainly others with a similar goal) can provide additional detail that can enrich the conceptual framework provided. But in essence the framework offers a fundamental approach to questions about the effectiveness of civil society participation in natural resource management and provides a firm basis for purposefulness in dialogue and desired outcomes of dialogue as described by our interpretation of Figure 1.

In this report, we demonstrate that the model is useful when applied across diverse contexts. The DUCT and SRIB studies were set up roughly to provide material that would be useful for analysis using the model (Fig. 1) and so the material from these examples were amenable to interrogation using the model. The guidelines for writing a story (Appendix 1) proved to be very useful for applying the framework yet sufficiently open-ended and flexible for a CoP using these guidelines to design a response that reflects their identity and ownership of their history and experiences. The Okhombe example also responded well to interrogation by the model and we were able to show that the Okhombe story, in the context of Fig.1, focussed on the importance of capacity to gather and communicate credible and valid information about changes in the state of the resource in response to rehabilitation efforts. This in turn would strengthen the legitimacy of the Okhombe Monitoring Group. The Kat material was more difficult in terms of applying the model because these reports were developed to serve as a guide to practitioners and were not direct accounts of or by the place-based CoPs. However, some points of emphasis in this material, for example the importance of developing CoPs, provided an opportunity to use the model and to draw lessons. Perhaps a lesson in this is that history and chronology (thus stories, minutes and narratives are helpful methods) are key aspects to gathering material suitable for applying the model. The reason for this is that legitimacy is secured and strengthened or weakened over time, so that events and stories (historical accounts) in the life of the CoP lend themselves well to a model seeking to expose lessons about legitimacy and dialogue.

One might question the use of only four examples in illustrating the usefulness of the model. In this context, a large sample size is not as important as the interpretive usefulness of the model across contexts. Thus, what we aimed to show was how the model can be used across diverse contexts and how diverse examples can enrich the lessons we gain from the use of the model. Thus, the examples here are not intended to represent samples of a larger population for the purposes of extrapolation. Rather, but what the various analyses illustrate is how the model works in terms of understanding social-ecological systems. Diverse examples also add to the model in ways we did not envisage when the model was designed. As mentioned, a weakness in the model is also exposed in that it cannot be used to analyse all examples equally well and that examples that are prepared in narrative-type form lend themselves better to analysis by the model.

In methodological terms, the approach used was deliberately nomothemic (Babbie, 2004), meaning that we sought to generate a general and primarily theory-based understanding of the system that encompasses the connectedness among society, CoP and common property resource. It is not our intention to understand each example fully, but to understand them to the extent that we are able to use them to illustrate the more general patterns of connectedness as described by the framework represented by Fig. 1.

4.2 Policy and governance implications

The experience of this project has exposed a number of aspects relevant to the regulation of river resource governance from the perspective of the national regulating agency (DWAF) and in future probably also from the perspective of Catchment Management Agencies. Natural resource governance in the South African context calls for creating space for civil society organisations to operate independently but in synchronicity (alignment) with government agencies whose goals they share. In the context of our 'legitimacy' focus, it is important to recognise that government plays a role in directly assigning legitimacy and illegitimacy to groups, often inadvertently; by the way they empower their participation – e.g. recognising their leadership, informing them about government actions, involving them in meetings, assisting or hindering their resource management efforts. This also helps to indirectly assign legitimacy to groups by influencing the perceptions of society re the group's legitimacy. In this way, government can also become purposeful in recognising and mediating its influence on perceived legitimacy on other levels of governance. If DWAF, for example, is not explicitly aware of the role they play in this they could confer false legitimacy on groups that do not represent their stated constituencies at all.

So DWAF needs develop or strengthen the sensitivity to the influence they have on the legitimacy of CoP and other groups in the resource governance process, simply by virtue of being a legitimate national body of governance and regulation that represents society and that acts wisely on society's behalf. Government may also consider developing a method to assess the legitimacy of the groups they work with – e.g. the WUA proposal process 'checklist' tries to identify proxies for legitimacy – race and gender representation being the most obvious one. But they also need to have 'process' criteria that interrogate the nature of public participation, for example to

recognise the difference between empowered, learning-oriented participation and 'head-counts' as an indicator of sound participation (Manzungu, date; Van Wyk et al., 2006; Breen, 2006). This would bear some implications also for how initiatives are funded by government, with a need initially to focus attention on empowering participation and not only on the technical products, as the Kat River experience also points out. Another approach would be that DWAF needs to support stakeholder organisations to understand the issue of legitimacy and how they can enhance their legitimacy and accountability – and that in doing so they are more likely to get what they want – from government, and from other stakeholder groups.

The significance of the approaches mentioned here is that civil society is likely to invest voluntary energy into resource decision-making processes and institutions (including CoPs) which they perceive to be legitimate. Legitimacy is not the only factor affecting civil society behaviour but it is an important one (see Ajzen, 1991) and one which motivates action and behavioural self-regulation. In addition, common property systems of governance typically do not perform well when command-and-control or market regulating mechanisms are dominant. Instead, they perform better in response to institutions which can secure and retain legitimacy as a way of directing behaviour and building social capital and connectedness. South African Water Policy strives to promote devolved decision-making and as little heavy state intervention as possible. The work reported on here illustrates the importance of legitimacy in promoting local action or support for local action in relation to resource use and the role of dialogue in that process. Thus attention to issues of legitimacy as described by the conceptual model is a way of identifying areas to strengthen coherent local action, with the aspiration being that government is less of a command-and-control regulator and more an agency that stimulates an enabling environment for effective local action around common property natural resources.

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APPENDIX A

This is an example (the DUCT example) of the brief to CoPs to describe a variety of attributes and experiences relating to the role of dialogue in achieving collective goals for improved state of the common property resource. This work constituted a substantial time and reflection investment and so the DUCT and SRIB were contracted by the project to produce the required documentation.

BRIEF FOR DOCUMENTING THE DUCT CASE STUDY

13 November 2007

Purpose

The purpose of documenting the DUCT case study is twofold:

- to create an opportunity to reflect in a structured way on the organisation's experiences over time, successes, failures and challenges, in such a way that the product will be useful to DUCT as a learning and reference tool;

- to contribute to a broader understanding of how 'structured communication processes' (dialogue) linking societal actors facilitates comprehension of, analysis, and response to environmental issues.

Content of first draft document

The research team does not wish to be prescriptive about structure and content, so you can choose how you would like to structure the writing/output. However, here are some key words, phrases and questions reflecting what may be useful pointers. Please add to them as you like:

- How does DUCT define and communicate its image (brand) and role?
- Tell us how you have engaged and aligned with other organizations to achieve results
- What have been the 'barriers' to achieving alignment?
- How have you sustained engagement for future results, or what have been frustrations for sustaining engagement?
- What have you learned and what advice would you give to someone setting out on the journey you have travelled?
- What has made DUCT effective or ineffective?
- What were/are some of the most influential events in the life of DUCT?
- What has changed your lives and the organisation's course?
- How did you get to where we are today?
- What have been ups and downs for you and how did you navigate, respond and adapt to the organisation's successes and challenges?

- What were your coping strategies during these times? How have they helped you respond? Why? When did they not work well. Why?
- Who were the heroes and villains during these times?
- Why were they heroes and villains?
- Tell us about the part communication has played in determining success and failure?
- Tell us about how you have organized and structured communication and engagement with other organisations and individuals.
- In retrospect of your experiences, what would you do differently?
- What were important issues in the past, what are the most pressing issues currently for the organisation and what may be the major issues you envisage for the future?
- In what broad direction are you headed as an organisation?

If you want you can start with an introduction section describing DUCT's origins, DUCT's purpose or mission and how it perceives its role.