

Assessing cooperative environmental governance systems: the cases of the Kogelberg Biosphere reserve and the Olifants-Doorn catchment Management Agency

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Abstract

Against a background of institutional fragmentation and lack of coordination among the respective role players, the notion of co-management of natural resources has emerged in many countries around the world as the most promising institutional prospect for resolving resource conflicts and building partnerships in conservation and management between local actors and government authorities. In South Africa, like elsewhere, the fragmentation and lack of coordination among the various executing agencies represent a significant hurdle and a barrier to successfully integrated environmental governance. Following international trends, and supported by the constitutional vision of cooperative governance and the transformation agenda of the government – which created an openness to new and alternative service-delivery mechanisms – innovative new networked regional and community-based natural resource governance systems emerged in the late 1990s.

These new forms of cooperative management of natural resources, and in particular the role of networks and partnerships, have led to a new and growing general interest in evaluating cooperative environmental governance systems. Following a broadly institutionalist approach, which is useful for studying situations of governance where policy formulation and implementation involve a wide range of actors, a diagnostic tool was developed to facilitate opportunities for organisational and social learning. The perceived usefulness of having such a tool was put to the test by applying it to two case studies in the Western Cape, namely the Kogelberg Biosphere Reserve and the Olifants-Doorn Catchment Management Agency. In this article the characteristics of two evolving environmental governance systems are mapped, using the framework to assess

and refine its usefulness in contributing to our knowledge and understanding of building social capital and institutional capacity in decentralised and networked governance settings.

Keywords: cooperative environmental management, decentralisation, environmental governance, institutional capacity, institutional fragmentation, network analysis, networks, social capital

1 INTRODUCTION

The complexity and magnitude of today's challenges for natural resource management require not only a common focus, but also cooperation among many different sectors to make the best of resources and expertise. In South Africa, like elsewhere, institutional fragmentation and lack of coordination among the various executing agencies represent a significant hurdle and a barrier to successfully integrated environmental governance. It is against this background that the notion of co-management of natural resources has emerged in many countries around the world as the most promising institutional prospect for resolving resource conflicts and building partnerships in conservation and management between local actors and government authorities (Zachrisson 2004: 3).

South Africa has followed international trends, and consequently innovative new networked regional and community-based natural resource governance systems emerged in the late 1990s; *Working for Water*, one of the government's flagship programmes, was the first to be initiated in 1995. The establishment of the first *biosphere reserve* dates back only to 1998, while the first of the water catchment management agencies (CMAs) was created seven years after being legislatively mandated in 1998. Some other initiatives, such as *Cape Action Plan for People and Environment (CAPE)*, *CoastCare*, *LandCare*, *Working on Fire* and *Working for Wetlands*, were initiated only in the past five years. The combined approach of government decentralisation and a devolution of responsibility for natural resources to local communities was generally informed by an approach advocated by the United Nations 1992 Rio Earth Summit (Müller 2007a: 45). The transformation agenda of the new government also created a window of opportunity to consider and experiment with alternative service delivery mechanisms for public action. It was also clear that there was a unique opportunity to align and mobilise the variety of approaches and capabilities of the executing agencies towards achieving the vision of cooperative governance created by the 1996 constitution of South Africa.

These new forms of cooperative management of natural resources, and in particular the role of networks and partnerships, have led to a new and growing general interest in evaluating cooperation and collaboration (Saglie 2006: 14).

Because of the perceived usefulness of having a tool to identify, describe and compare the characteristics of environmental governance systems in a systematic manner, an assessment framework was developed by Müller (2007b: 18–32). In this article the framework is applied to two case studies – the Kogelberg Biosphere Reserve and the Olifants-Doorn Catchment Management Agency – to determine its usefulness in contributing to our knowledge and understanding in this regard.

2 GOVERNANCE, SOCIAL CAPITAL AND INSTITUTIONAL CAPACITY

The shift towards the cooperative management of natural resources coincided with the increasing use of the term ‘governance’ instead of ‘government’ internationally, to signify that the emphasis is on what Salamon (2002: 8) argues is perhaps the central reality of public problem solving for the foreseeable future, namely its collaborative nature and its reliance on a wide array of third parties in addition to government to address public problems and pursue public purposes. Furthermore, the governance approach, according to Saglie (2006: 12), looks beyond the formal structures and instead focuses on the actors participating both inside and outside the formal allocation of power. In this regard the institutionalist framework is, in Rydin’s (2006: 17) opinion, particularly useful for studying situations of governance where policy formulation and implementation involve a wide range of actors.

The core of the institutionalist perspective is the insight that organisational arrangements on their own do not provide an adequate explanation of dynamics and outcomes. A key feature of institutionalism is that insights will be revealed by looking at the combination of the formal and informal, the explicit and implicit aspects of how organisations work (sometimes referred to as the *cultural dimensions*). The core of an institutionalist analysis is comprised of two elements: firstly, network analysis, where organisational arrangements are mapped to understand how the linkages between actors are created; and secondly, an attention to the cultural dimensions, i.e. the norms, values, routines and everyday working practices whereby the actors involved behave and construct their roles (ibid: 15–20).

The concepts of social capital and institutional capacity are central in the institutionalist approach. According to Rydin (ibid: 15) these two concepts are slightly different yet overlapping ways of conceptualising the nature and operation of networks. *Social capital* is understood here as being constituted by dense networks of relationships between actors based on trust, mutuality (meaning recognition of mutual interdependence and hence interests in common) and reciprocity (meaning a relationship whereby the behaviour of another actor can occur in the justified belief of other actors behaving in a certain way). The institutional capacity model, on the

other hand, is typically multidimensional, comprised of three or four types of capital or resources: intellectual/knowledge resources; social/relational resources, political/mobilisation capacity and sometimes material capital (ibid: 20–27).

Müller (2004: 410) argues that there is no single blueprint or model for achieving cooperation that will suffice for all problems and contexts. The challenge is to get the mix right: combinations of approach(es) and governance mode(s) will have to fit the type of problem, work within the constraints and opportunities offered by the existing organisational landscape/capacity, and take the local political, social, economic and cultural contexts into consideration, and adapt and innovate within that space. In these circumstances complexity and uncertainty may be central to network structures and relatively difficult to document, predict and model.

These new forms of cooperative management of natural resources, and in particular the role of networks and partnerships, have led to a new and growing general interest in evaluating cooperation and collaboration (Saglie 2006: 14). Because of the perceived usefulness of having a tool to identify, describe and compare the characteristics of environmental governance systems in a systematic manner, an assessment framework was developed (see Table 1 below), drawing primarily on the work of Peters (1998: 295–311), Nelson and Weschler (1998: 565–576), the Organisation for Economic Cooperation and Development (OECD) Policy Brief (2002) and Margerum and Born (2000: 5–21).

Table 1: Framework for the assessment of environmental governance structures (adapted from Müller 2007b)

Criteria	Description
Scope	The set of concerns which is addressed through the coordination arrangements, regardless of whether they are environmental policies or management activities
Position	The stakeholders and role players involved in the coordination activities, and their roles in the setting (e.g. agency, user group, coordinator, etc.)
Boundary	How specific individuals and stakeholders enter or leave those positions (e.g. whether by means of appointment, nomination or election)
Authority	The coordination activities (i.e. information exchange or conflict resolution) in which position holders can or cannot participate, as well as the constraints on autonomy and/or individual action and the basis of power (e.g. law, plan, administrative policy or informal agreement)
Information and knowledge management	The types, forms, timing and processes of information exchange among the different position holders (e.g. shared database, monthly meetings or electronic networks)

Decision making	The position holders' procedure for making collective decisions and resolving conflicts (e.g. by means of general consensus or voting procedures)
Pluriformity	The extent to which the networks are integrated, in so far as this will influence their likelihood of producing effective coordination (such as their level of integration determining whether they can be treated as a single organisation, or need to be treated as semi-autonomous organisations)
Interdependence	The extent of interdependence between the different entities making up the network, in so far as this influences styles of interaction and relationships (e.g. loosely coupled or closely interconnected), which in turn influences their likelihood of producing effective coordination
Formality	The level of formality, in so far as this influences their likelihood of producing effective coordination
Instruments	The nature of the instruments used (i.e. planning, formal regulations or contracts) as this influences their likelihood of producing effective coordination
Leadership	The presence of clear government commitment and leadership at the highest level, effectively communicated to the various sectors of government machinery and across levels of government
Institutional readiness	The degree to which jurisdictions are aware of, and primed for, engaging each other in collaborative governance of the different entities in terms of the level of citizen and community interest and involvement the availability of existing institutions and organisations for regional governance the degree of practical experience in formal and informal cross-sectional coordination and cooperation the level of knowledge and appreciation of the missions, goals and objectives of the other participants
Redundancy	This occurs where overlap is an outcome of cooperative arrangements with two or more organisations performing the same task
Incoherence	This arises where cooperative arrangements are characterised by policies with the same clients, who have different goals and requirements
Lacunae	These are marked by a failure of the cooperative arrangements, because of the absence of any organisation performing a necessary task

The examples of networked cooperative governance models referred to in the *Introduction* above are relatively new in the field of natural resource management

for South Africa. The systems are, therefore, still evolving and present us with a window of opportunity for studying and learning from both our successes and failures. In the next section the tool will be applied to map the characteristics of the cooperative governance systems in the two selected case studies, to judge its potential usefulness in facilitating both organisational and social learning.

3. APPLICATION OF ASSESSMENT FRAMEWORK

The framework was applied to the *Olifants-Doorn Catchment Management Agency and the Kogelberg Biosphere Reserve*. The evaluation is primarily a qualitative judgment based on the literature reviewed – the *Proposal for the Establishment of the Olifants-Doorn Catchment Management Agency (DWAF 2005)* and the *Draft Strategic Management Framework (SMF) for the Kogelberg Biosphere Reserve (2006)* are the primary source documents for the two case studies respectively – and interviews with key individuals involved in both systems (to fill in some gaps to determine the usefulness of the framework). As the two governance structures are still evolving – the Olifants-Doorn Catchment Management Agency, for example, had not yet been formally established at the time of writing – it is not possible yet to describe and analyse the governance systems in terms of all the criteria of the assessment framework.

The Olifants-Doorn Catchment Management Agency¹

- The **scope** of the CMA is determined by law: the National Water Act (Act 36 of 1998) makes provision for the establishment of a Catchment Management Authority (CMA) in the Olifants-Doorn Water Management Area (WMA) – one of 19 WMAs in South Africa. The CMA is a unique legal entity and it may have a wide range of potential duties, powers and functions relating to the ‘*protection, use, development, conservation, management and control of water resources*’ (RSA 1998).
- **Position and boundary:** the CMA is governed by a *Governing Board* consisting of between 9 to 15 members appointed to their positions by the Minister of Water Affairs and Forestry (DWAF) on the formal recommendations of an Advisory Committee set up by DWAF specifically for this purpose. The board must be representative of stakeholders (water user groups, other water interest groups and various local and national government organs)² in the Olifants-Doorn WMA; the stakeholders put forward nominations to the minister who decides which individuals to appoint, taking into consideration the need for expertise,

balance of social, economic and ecological interests, as well as issues of gender, race and community representation.

- The delegation of functions to the CMA is outlined in the National Water Act (1998) and its **authority** in terms of powers and duties is set out in Schedule 3 of the Act. When it begins operating, the CMA will automatically have certain inherent powers and initial functions which the act gives to it. These ‘initial’ functions revolve around the water resources strategy, institutional coordination, cooperative governance, stakeholder communication and administrative activities. All other powers, duties and functions of a CMA will be transferred to it by the minister over a period of time (\pm 10 years) in staged phases (three phases are foreseen in the proposal); the rate at which this is done will be dependent on the available capacity and resources until the CMA has developed into a fully-fledged water management institution or ‘responsible authority’, which will be largely financed through the collection of water use charges. Apart from the income generated from water use charges, the Olifants-Doorn CMA will also obtain (and will be largely dependent on obtaining) seed funding from DWAF during the establishment phase of the CMA.
- **Information and knowledge management:** it would seem that adequate attention was devoted (during the Olifants-Doorn multi-stakeholder process (MSP)) to the establishment of the CMA to address the communication needs and vehicles of communication to reach the stakeholders, taking the characteristics of the audience into account (i.e. newsletters, pamphlets, meetings/workshops, newspaper articles and radio were identified as the priority communication media over some more technically sophisticated media such as television or the internet). All official documentation was also made available on DWAF’s website. The CMA, once established, will also require the necessary information systems to be able to operate effectively. These include basic management support systems such as internet access, e-mail, billing, debtors, asset management, databases, etc. Due to the great diversity of information that is relevant to its operation, and the nature of its geographical distribution, the CMA will require a sophisticated GIS (Geographical Information System). The initial development and implementation of such a system will have to be provided by DWAF, if the CMA is to start playing a meaningful role in its area of jurisdiction (DWAF 2005b: 64).
- As the governing board hasn’t been established yet, the procedures which will be adopted for making collective **decisions** and resolving conflicts are unclear at this point. However, in the letter and spirit of the law, as stated in the preamble of

the National Water Act, 1996 (Act 96 of 1998), in which the need is recognised *‘for the integrated management of all aspects of water resources and, where appropriate, the delegation of management functions to regional or catchment level so to enable everyone to participate’*, one could expect that a consensus-seeking cooperative decision-making approach will be adopted. The multi-stakeholder process (2001–2003) leading up to the adoption of the proposal document also involved an extensive process of stakeholder consultation and public involvement to ensure local participation.

- It has been proposed that the Olifants-Doorn CMA organisationally implement a decentralised network model with a committee approach supported by extensive outsourcing of operational functions to emerging service providers, existing non-governmental organisations (NGOs) and community-based organisations (CBOs), water users associations (WUAs), the district and local municipalities and consultants. The CMA, with a small staff component of 5 to 26 people, will concentrate on the managerial and administrative functions related to integrated water resource management (WRM). A Catchment Management Committee will be established, which is representative of all stakeholders, and will further ensure the continued involvement of stakeholders, thus promoting cooperative governance and a participatory approach in all matters pertaining to water resource management (DWAF 2005b: 55–58). In terms of the **pluriformity** criterion, one can only speculate on the extent to which the network will be integrated: on the one hand, the fact that the CMA does not see itself getting involved in the operating side might strengthen its strategic focus and role in promoting cooperative governance; on the other hand, it is acknowledged that the Olifants-Doorn CMA’s biggest challenge will be to ensure and maintain cooperative governance between itself and the numerous institutions that, in one way or another, are involved in water matters in its WMA.
- Again, in terms of the **interdependence** (i.e. loosely coupled or closely interconnected) between the different entities making up the network, which could influence the likelihood of producing effective coordination, they would have specific delegated or outsourced functions. It could be argued, therefore, that they are not all that interdependent and that effective coordination could be relatively easily achieved by a CMA focusing on effective strategic integration.
- Although the CMA will have to develop its own operating policies and procedures once it starts functioning, the national legislative framework, water resources management strategies and DWAF’s guidelines provide a level of **formality** which should enhance the likelihood of producing effective coordination.

- An important **instrument** towards integrated water resource management will be the development – by the governing board of the CMA – of a catchment management strategy for the Olifants-Doorn WMA as one of its initial functions. The CMA will be supported by DWAF, which has developed a situation assessment called the *internal strategic perspective* to aid this process.
- Because the Olifants-Doorn governing board has not yet been established, **leadership** has been provided by DWAF, both on the strategic level (by the national vision and policy for WRM), but also at the catchment level (by the professional commitment of the public administration technocrats who were responsible for activating, orchestrating and modulating the multi-stakeholder process leading up to the establishment of the CMA). During the MSP attention was also given to building leadership capacity through programmes geared to equip persons from historically disadvantaged backgrounds with the skills to enable them to participate meaningfully in integrated water resource management issues.
- The question of **institutional readiness** is interesting, because the CMA is a new entity: the observation that the Olifants-Doorn multi-stakeholder process required a lot of time, as well as human and financial resources, might facilitate the achievement of collaborative governance in the long term, as it raises the level of citizen and community interest and involvement. Practical experience in formal and informal cross-sectional coordination and cooperation builds trust between the stakeholders and increases the knowledge and appreciation of integrated water resources management (IWRM) and the interests of other participants.
- It is too early to comment on the issues of **redundancy, incoherence** or **lacunae** in so far as they impact on cooperative arrangements for integrated water resources management in the Olifants-Doorn WMA, but major problems are not foreseen.

The Kogelberg Biosphere Reserve (KBR)³

The Kogelberg Biosphere Reserve (KBR), South Africa's first biosphere reserve, was registered with UNESCO in 1998 under its Man and the Biosphere (MAB) programme after an eight-year establishment process. The KBR covers a land area of some 103 629 ha and includes a marine portion of 24 500 ha.

- The KBR is a voluntary association between the local community, statutory authorities, land owners and local businesses. Apart from the general guideline

that the KBR (SMF 2006: 17) must align itself with the primary functions of biosphere reserves as defined by UNESCO (biodiversity conservation, developmental and research/logistic), the **scope** is determined by a shared vision and mission between stakeholders to enable them to work together and collectively add value. A vision and mission statement have been put forward in the SMF (2006: 12–16) towards attaining this. The proposed mission is that the *Kogelberg Biosphere Reserve is to be managed in accordance with UNESCO's MAB programme. The entity managing the KBR is a partnership between different stakeholders who are working together to establish Kogelberg as a model of sustainable development* (SMF 2006: 16).

- After its establishment the KBR was managed by a management committee consisting of 35 representative stakeholders.⁴ In 2002 the management committee was dissolved and replaced by the *Kogelberg Biosphere Reserve Company* (KBRC) – a Section 21 ‘not-for-profit’ company – as it was thought that such an entity would facilitate improved management of the KBR. The KBRC is steered by a board of directors (3 to 8 directors) to manage the biosphere reserve in terms of the requirements of the MAB programme. The first board of directors was appointed by the management committee after a public nomination process. The representivity of the company’s directors, however, is widely questioned and it is suggested in the SMF that when the current interim board is replaced, attention should be given to ensuring that the new board is representative of the local communities as well as key statutory authorities active in the area (SMF 2006: 38–41). It is not clear at this point how the directors will be appointed (elected by members?) in future, nor how decision making will take place.
- Biosphere reserves currently have no specific legal basis in South Africa, but possible options are emerging for strengthening the legal status of KBR (e.g. the provincial government in the Western Cape is in the process of developing enabling legislation for biosphere reserves), which could provide a level of **authority** to enhance the likelihood of producing effective coordination by binding biosphere reserve partners to agreements reached through the signing of Memoranda of Understanding (MoUs) and Service Level Agreements (SLAs) (SMF 2006: 5–6).
- **Information and knowledge management:** it has been proposed in the management plan (SMF 2006: 17–35) that, as part of the KBRC’s strategic management goal to raise general awareness of the KBR and build a broad-based understanding of the MAB programme, it should develop a knowledge-management system and host, and maintain a ‘one-stop’ database for the KBR,

as well as develop and maintain KBR communication, education and outreach strategies.

- It has been proposed that the KBRC organisationally seek to maintain a small, cost-effective and innovative entity to manage the KBR, which focuses on carrying out the primary functions of a biosphere reserve and leverages support for its activities through effective partnerships with other government agencies, the private sector and civil society. The challenge the KBRC faces in terms of the **pluriformity** criterion is to ensure the implementation of the KBR management plan by way of building and formalising partnerships through MOUs and SLAs between the KBRC and suitable implementation agents (SMF 2006: 5–6, 41).
- In terms of the **interdependence** criterion it can be observed that the different entities making up the KBR ‘community’, as it is now, are loosely coupled; if they are not linked more tightly through the SMF, MoUs and SLAs, this could negatively influence the likelihood of producing effective coordination.
- The current legal and operational ‘**informality**’ of the biosphere reserve, with a focus on sustaining cooperative governance relationships across the different agencies and institutions operating in the KBR and actively promoting the enforcement and implementation of current enabling legislation and policies, will continue in the short and medium term as a result of the uncertain legal status of biosphere reserves in South Africa. The signing of MoUs and SLAs, as foreseen in the SMF, could formalise relationships and positively influence the likelihood of producing effective coordination (SMF 2006: 37).
- The strategic management framework (SMF), once finalised, will be an important **instrument** towards achieving the integrated management of the KBR. The SMF will be comprised of, firstly, a *strategic plan* to broadly define the strategic direction that the company should take in moving forward; secondly, a *management plan* with specific details on how the company is going to undertake its core business activities over the medium term (three years); and thirdly, a *corporate plan* specifying the actions required to restructure the KBRC institutionally and make it an effective management agent. In addition to the signing of MoUs and SLAs with partners, an overarching performance measurement, review and reporting system is to be developed to monitor and review the progress of the KBRC in meeting the targets set by the management plan (SMF 2006: 2).
- To date the KBRC has not met the challenge of building effective partnerships between KBR stakeholders: there is as yet no broad-based community support

for a voluntary association between different interests groups, who are meant to subscribe to similar objectives, aspire to a common vision and share similar values.⁵ The KBRC failed to provide effective **leadership** after its establishment in 2002 in the absence of a plan to guide its activities, there are no secure sources of funding, and there is inadequate administrative and technical support to the board of directors. In the absence of the KBRC demonstrating its presence in the area, a more vocal and prominent environmental interest group, the Kogelberg Biosphere Association (KOBIO) has assumed the role of representing the KBR's interests. This group primarily performs an advocacy role, which can compromise the KBR's partnership-building requirements. By 2004 the KBRC was, for all practical purposes, considered an operational failure and had to be revived at the end of 2004 through the establishment of a technical committee comprised of representatives from provincial and local government, as well as representatives from the KBR's core (CapeNature), buffer and transition areas to support the KBRC directors. The technical committee secured funding in 2005 to appoint consultants to develop the *strategic management framework* (SMF 2006: 1, 38).

- Factors complicating management of the KBR (which relate to the question of **institutional readiness**) include the complex legal framework, the overlapping jurisdictions between various statutory authorities, the poor delivery capacity of local government, and a politically unstable climate (SMF 2006: 6).
- Issues of **redundancy, incoherence** or **lacunae** in so far as they impact on cooperative arrangements for integrated environmental management of the KBR have been identified as the lack of clarity and poor coordination across national, provincial and local governance agencies within the KBR as a result of overlapping legal mandates; and the operational relationship between new legally constituted co-management structures (such as the Catchment Management Agency in terms of the National Water Act and the Fire Protection Association in terms of the Veld and Forest Fire Act) and the KBR structures, which need clarification (SMF 2006: 37).

A summary of the assessment is presented below in Table 2:

Table 2: Comparison between the Olifants-Doorn Catchment Management Agency and the Kogelberg Biosphere Reserve

Criteria	CMA	Biosphere
Scope	Specific legislative mandate, confined to water resources management	Broad UNESCO guidelines, KBR vision and mission
Position	Representativeness of stakeholders, and mandated by law and regulated by government	Issue of non-representativeness because of greater role ambiguity and fluidness of stakeholders
Boundary	Nominated by stakeholders, appointed by minister / governing board / water management institution	First board chosen by ManCom after public nomination process: future board of directors elected by members after public nomination process, open membership?
Authority	Exercised in terms of legislation, delegated / assigned functions or contractual arrangement	KBRC decisions implemented by implementing partner institutions formalised through MOUs and SLAs
Information	Communication strategy during MSPs included newsletters, pamphlets, meetings/workshops, newspaper articles and radio. Information shared through catchment forums and other water management institutions; basic management support systems and GIS to be developed	A knowledge-management system and a 'one-stop' database for the KBR proposed in SMF as well as communication, education and outreach strategies to raise awareness of KBR; SMF develop through a process of stakeholder consultation
Decision making	Sufficient consensus during establishment process	Majority of votes of those present?
Pluriformity	Decentralised network model tightly coupled by specific delegated or outsourced functions by the CMA	A loosely coupled network of autonomous organisations could be tightened up through SMF, MOUs and SLAs

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Interdependence	Low if particular WUAs and catchment committee are delegated /assigned / contracted (for) particular functions?	High if the effectiveness of management depends on the voluntary cooperation and buy-in of a few executing authorities
Formality	High	Low
Instruments Incentives	Legislative power, water resources strategy, contracts, levies; catchment management strategy to be developed as one of initial functions	Provincial planning frameworks, strategic management framework, MOUs, SLAs, incentives, future enabling provincial legislation?
Leadership	Strategic by DWAF through vision and policy for WRM; at catchment level through initiation and facilitation of MSP; capacity building programmes to enable meaningful participation in integrated water resource management issues	KBRC failed to build effective partnerships between KBR stakeholders; absence of a strategic plan, lack of funding, and inadequate administrative and technical support; interest group (KOBIO) has assumed leadership role
Institutional readiness	High: stakeholder participation, some existing institutions but new CMA have to be established, some practical experience, and knowledge and appreciation of other participants' missions developed during MSP	Low: complex legal framework, the overlapping jurisdictions between various statutory authorities, the poor delivery capacity of local government, and a politically unstable climate
Redundancy	Low because networked entities will have specific delegated or outsourced functions?	High: overlapping legal mandates between government agencies in KBR; relationships with other new legally mandated co-management structures
Incoherence	Low: process nationally driven, national and local, water resources strategies, mandate confined to water resources	Possible: operational relationships between KBRC and other new legally mandated co-management structures as well as existing government agencies

Lacunae	Low	Probability high: unfunded mandates constrain implementation through existing agencies, lack of capacity and resources limit contracting out
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4 CONCLUSION

The emergence in South Africa over the past decade of new cooperative environmental governance systems at regional or local level is an exciting development that has followed international trends. These structures normally take the form of decentralised sets of formal and informal agreements among diverse stakeholders in networks and partnerships. These new forms of cooperative management of natural resources have led to a new and growing general interest in evaluating cooperation and collaboration. However, analysing and assessing networks and partnerships with their range of structural possibilities with the different elements held together by ties of authority, exchange relations and/or common interest-based coalitions could pose a major challenge. In these organisational networks the degree of influence, as exercised across a wide range of actors, is relatively difficult to document, predict and model. In other words, the complexity and uncertainty so central to network structures could make analyses and comparison very difficult, if not impossible.

In pursuing this challenge the research reported in this article set out to assess the potential usefulness of a tool developed on the basis of a review of the theoretical literature on institutional fragmentation, integration, collaboration and cooperation. The tool consists of an assessment framework with a set of 15 criteria which could be used to identify, describe and compare the characteristics of environmental governance systems in a systematic manner. In this research application the tool is tested by applying it to two case studies in the Western Cape: the *Olifants-Doorn Catchment Management Agency (CMA)* and the *Kogelberg Biosphere Reserve (KBR)*. The evaluation is primarily a qualitative judgment based on a study of documents as the primary source, and interviews with key individuals in both systems to fill in some gaps.

The obvious limitation of this research is that both kinds of cooperative governance systems in the case studies are new to South Africa and as such are still evolving. Some of the observations therefore are based on how the stakeholders see the future evolving according to the planning documents, and are not a reflection of current or past reality. However, the sensitivity of the tool seems to be illustrated by the clarity with which the nature of the two cooperative systems has been captured: the establishment of the CMA is directed from the centre by means of a well-designed

and tightly managed process of stakeholder consultation, mandated and regulated by law and confined to water resources management. The governance structure consists of a representative board with formal appointment procedures, and its authority and functions are formally exercised in terms of legislation. The CMA is a new institution, but it may delegate or outsource functions utilising a network model. Leadership is provided at the strategic level by DWAF's water resource management vision and policy, and at catchment level through a multi-stakeholder process which achieved high participation, empowerment and buy-in. With a high degree of institutional readiness, serious problems of overlap, policy incoherence or major gaps are not foreseen.

The KBR, on the other hand, can be characterised as a loosely coupled self-organising system in which citizen and interest-group involvement played a major role in its establishment, with the facilitation of, and support by, the provincial and national governments. Its scope is defined within the broad UNESCO guidelines and the KBR's own vision and mission statements, but it is currently without a specific legal basis. Its governance structure has evolved from a management committee to a not-for-profit company (KBRC) and, although the first board of directors was appointed after a public nomination process, future membership and processes are unclear. The representivity of the board is also widely questioned. The KBRC sees itself as a small, cost-effective 'linking-pin' entity whose decisions are implemented by a network of loosely coupled autonomous partner institutions through MOUs and SLAs. The leadership of the KBRC failed to build effective partnerships between KBR stakeholders, which opened up the space for interest groups (KOBIO) to 'capture' or assume leadership roles. By 2004 the KBRC was, for all practical purposes, considered an operational failure and had to be revived at the end of 2004 through the establishment of a technical advisory committee to support the board. The degree of institutional readiness for collaboration could be described as problematic: a complex legal framework with overlapping jurisdictions and unfunded mandates between various statutory authorities and other new legally mandated co-management structures, the lack of capacity and resources limit contracting out, poor delivery capacity of local government and a politically unstable climate.

It seems reasonable to conclude that the assessment tool proved useful, at least, at the initial 'mapping' step of any attempt towards evaluating cooperative systems. The tool may also point to the specific informal dimensions beyond the formal which need to be investigated to get an adequate explanation of the dynamics and outcomes. We might, for example, be interested in how the relationships of trust, reciprocity and mutuality, or the leadership role of key individuals, both potential key success factors in the two case studies (captured in the concept of social capital)

may be helpful in explaining the effectiveness of the institutional arrangements for natural resource management. These norms, values, routines and everyday working practices (or *cultural dimensions*, in the language of social capital), whereby the actors involved behave and construct their roles, are beyond the reach of the assessment tool and will have to be revealed through interviews, document analysis and non-participant observation of the working of the network. We know that no one set of institutional arrangements can solve all types of collective problems: to be effective, institutions need to be designed in ways that satisfy particular types of problems. There is a growing body of evidence that suggests that social capital could have an enormous effect on natural resource management and even the effectiveness and functioning of governments. These emerging governance structures could therefore offer an exciting window of opportunity for social and organisational learning at this point in time in post-apartheid South Africa's development, given the country's context and history

NOTES

1. This section is primarily based on the *Proposal for the Establishment of the Olifants-Doorn Catchment Management Agency*, Department of Water Affairs and Forestry. It will be referred to as DWAFF 2005b.
2. In general, membership consists of the following categories: farmers' associations, poor farmer organisations, local authorities (B municipalities), district municipalities (C municipalities), industry and business, water user associations, conservation and environmental organisations, community action committees, ratepayers' associations, reconstruction and development forums, organised labour, nature conservation organisations, the Working for Water Programme, the Department of Planning, Local Government and Housing: Provincial Administrations of the Northern and the Western Cape, the Department of Agriculture: Provincial Administrations of the Northern & Western Cape, and DWAFF (Northern and Western Cape).
3. This section is primarily based on the *Draft Strategic Management Framework for the Kogelberg Biosphere Reserve* (SMF), a discussion document prepared by consultants (iKapa Enviroplan) for the Kogelberg Reserve Company (KBRC) in 2006. It will be referenced as SMF 2006.
4. The KBR 'community' includes the following stakeholder groups: (1) residents, community-based organisations, local businesses and the owners or occupiers of land, especially farmers (as major land owners), HDCs and fishermen; (2) visitors and investors; (3) statutory authorities, of which CapeNature, South African National Biodiversity Institute (SANBI), DWAFF, South African Forestry Company (Safcol), other provincial and national departments, and the local authorities that have jurisdiction in the KBR, namely the City of Cape Town, Overberg District Municipality, Overstrand Municipality and Theewaterskloof Municipality are the most important and (4) civil society and research institutions (KOBIO, WWF, Botanical Society, CAPE, UCT, SU, UWC).

5. For a historical analyses of the collapse of the KBRC and interest group dynamics, see Hyman's 2006 thesis 'How a powerful minority has exploited UNESCO Biosphere Reserve status: a case study of the Kogelberg Biosphere Reserve, South Africa'.

REFERENCES

- Department of Water Affairs and Forestry. 2005a. *Olifants/Doorn Water Management area – Olifants/Doorn internal strategic perspective*, Version 1. Report PWMA17/000/00/0305.
- _____. 2005b. *Proposal for the establishment of the Olifants-Doorn Catchment Management Agency*.
- Draft strategic management framework for the Kogelberg Biosphere Reserve (SMF). 2006. *Discussion document*. iKapa enviroplan for the directors of the Kogelberg Reserve Company.
- DWAF see Department of Water Affairs and Forestry.
- Hyman, M.G. 2006. How a powerful minority has exploited UNESCO biosphere reserve status: a case study of the Kogelberg Biosphere Reserve, South Africa. Unpublished thesis. Paris: The Paris Institute of Political Studies.
- Margerum, R.D. and S.T. Born. 2000. A co-ordination diagnostic for improving integrated environmental management. *Journal of Environmental Planning and Management* 43(1): 5–21.
- Müller, K. 2004. Sustainable development: the question of integration and coordination. *Journal of Public Administration* 39(3): 398–410.
- _____. 2007a. Organisational innovation: some emerging environmental governance models in South Africa. *Politeia* 36(1): 45–59.
- _____. 2007b. A framework for assessing environmental governance structures. *Journal of Public Administration* 42(1): 18–32.
- Nelson, L.S. and L.F. Weschler. 1998. Institutional readiness for integrated watershed management: the case of the Maumee River. *The Social Science Journal* 35(5): 565–576.
- OECD see Organisation for Economic Cooperation and Development
- Organisation for Economic Co-operation and Development policy brief. 2002. *Improving policy coherence and integration for sustainable development: a checklist*. http://www.oecd.org/publications/Pol_brief (accessed on 16 February 2006).
- O'Toole, L.J. Jr. 1997. Implementing public innovations in network settings. *Administration & Society* 29(2): 115–138.
- Peters, B.G. 1998. Managing horizontal government: the politics of coordination. *Public Administration* 76(2): 295–311.
- Republic of South Africa. 1996. *Constitution of the Republic of South Africa*, 1996. Act 108 of 1996. Pretoria: Government Printer.

Republic of South Africa. 1998. *National Water Act, 1998 (Act 36 of 1998)*. Pretoria: Government Printer.

RSA see Republic of South Africa.

Rydin, Y. 2006. Institutions and networks: the search for conceptual research tools. In *Networks and Institutions in Natural Resource Management*, ed. Y. Rydin and E. Falleth, 15–33. Cheltenham: Edward Elgar.

Salamon, L.M. 2002. The new governance and the tools of public action: an introduction. In *The tools of government – A guide to the new governance*, ed. L.M. Salamon. New York: Oxford University Press.

Saglie, I. 2006. Fragmented institutions: the problem facing natural resource management. In *Networks and institutions in natural resource management*, eds. Y. Rydin and E. Falleth, 15–33. Cheltenham: Edward Elgar.

SMF see draft strategic management framework.

Zachrisson, A. 2004. Co-management of natural resources. Paradigm shifts, key concepts and cases. *Mountain Mistra Programme Report No 1*. Umeå: Sweden.