



GUIDELINES FOR FACILITATING
COOPERATIVE AND ADAPTIVE MANAGEMENT
OF FRESHWATER ECOSYSTEMS

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This publication targets those responsible for the management and conservation of freshwater ecosystems. The guidelines herein acknowledge the general complexity of freshwater ecosystem management. This complexity, and the associated unpredictability, is not only a characteristic of natural systems. It is also acutely associated with the realities of the multi-stakeholder environment and overlapping organisational mandates. This demands participative sense-making, effective coordination and multi-dimensional cooperation. These guidelines suggest practical steps for someone interested in facilitating useful change towards a purposeful learning and adaptation process to achieve this.

The contents of the document emanate from a project jointly funded by the Water Research Commission and the World Wildlife Fund South Africa the outcome of which is captured in the 2009 report “*A reflective assessment process for promoting multi-agency cooperation: Towards achieving cross-sector policy objectives for conserving freshwater ecosystems*” by DJ Roux, K Murray, L Hill, HC Biggs, CM Breen, A Driver, E Kistin, M Levendal, KH Rogers, and H Roux (WRC Report No. TT 420/09).

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BASIC PREMISES

“Successful co-management is a knowledge partnership.” Berkes (2009)

Water resources management is characterised by complex problems, considerable uncertainties, limited predictability, the need for integration across disciplines, and the need for coordination and cooperation between agencies with overlapping mandates. There are multiple stakeholders and their expectations can be diverse and guided by different mental models based on different knowledge forms. Under these circumstances, management cannot be a search for the optimal solution for one problem. It should rather be an ongoing learning and negotiation process where a high priority is given to participative sense-making and adaptation.

Cooperation is unavoidable for effective management in this kind of environment. It is also multi-dimensional. It should occur vertically in hierarchical management structures, from policy to line-function and from local and regional to national levels. Horizontally it should happen across different knowledge forms and across sectors. The benefits of knowledge sharing and greater legitimacy of decisions are primary advantages. However, cooperation does not come easily, particularly in its early stages.

Basic premises are therefore that purposeful learning and adaptation with relevant learning partners is essential for effective management and conservation of freshwater ecosystems. This in turn demands a significant degree of not only coordination but effective cooperation between such partners.

The reflective assessment scorecard described below is one tool that has been developed for reflecting on the degree of horizontal cooperation between line-function practitioners.

THE NATURE OF COOPERATION

Cooperation involves parties actively working together for mutual benefit. Organisational identities remain distinct with active and respectful negotiations occurring within professional boundaries and cultural practices. **Coordination**, on the other hand, occurs when parties do little more than inform each other of their activities. The process is more important than their relationship.

Cooperation involves deliberate interaction driven by a common purpose. The degree of empathy is much higher than for coordination because each realises the other has something to offer. Solutions are explored by careful co-examination of relevant facts. Typically, coordination is a natural precursor for cooperation. Equivalently, if cooperation is a desirable outcome, then getting the mechanics of coordination in place is a sensible first step.

Effective cooperation develops over time and relies heavily on “learning-through-participation”, a concept closely related to learning networks and communities of practice.

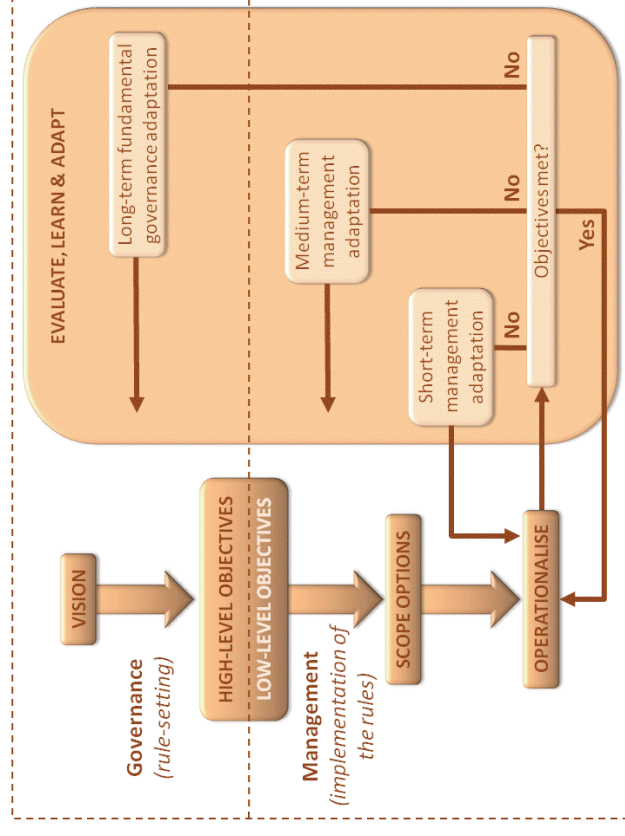
A **community of practice** is a group that emerges naturally, organising itself. They share a passion and meet regularly and informally to learn and practice how to do things better. Identity is defined by the task (e.g. fishing or photography) and the specific area of knowledge (e.g. yellowfish or underwater photography). The community typically develops relationships that enable very effective knowledge sharing and problem solving. It is not merely a community of interest – they actually practice something and accumulate considerable practical knowledge (i.e. depth) over time. One of the primary implications for management is that such self-organising communities don’t take kindly to command and control. They need nurturing and sensitive persuasion.

ADAPTIVE MANAGEMENT

The true nature of adaptive management

Adaptive management should be driven by a common vision of the future and have associated high- and low-level objectives. Management options should be considered and the outcomes predicted. A strategy is chosen based on the best available information and made operational.

What makes management truly adaptive is the existence of well-functioning feedback loops that change the way things are done when things don't work out as expected. It is this that makes adaptive management so appropriate for dealing with the unpredictability of complex social-ecological systems.



Adaptive management and cooperation

The management of freshwater ecosystems is typically cross-sectoral, necessarily requiring “co-management”. Therefore visions and the associated objectives driving adaptive management can be cross-sectoral (i.e. inter-organisational). Good examples are the shared goal (in effect the vision) and cross-sector policy objectives for conserving South Africa’s inland water biodiversity (Roux et al., 2006). However, adaptive management should also operate within the organisations (i.e. be intra-organisational). This management has its own organisational visions and objectives.

Cooperation should ideally be manifest in both contexts. It is relevant in the development of the vision and objectives (as was the case with the above cross-sector policy objectives), the scoping of management options and when making these operational. However, it is particularly relevant when reflecting on whether or not objectives are met, during the associated learning and especially during the subsequent adaptation to address shortcomings.

In effect, adaptive management without cooperation lacks legitimacy. Equivalently, co-management without the learning by doing that is characteristic of adaptive management cannot develop the joint abilities to deal with emerging problems (Berkes, 2009).

The need for cooperation can easily be taken for granted. Accordingly, to avoid this, cooperation itself can be made an explicit high-level objective. This will raise its relevance in the consciousness of those with responsibilities for management of freshwater ecosystems and hence encourage deliberate efforts to promote it.

LEARNING AND COOPERATION

Co-learning based on frequent face-to-face communication is a particular kind of learning that strengthens cooperation. Indeed, cooperation also facilitates such co-learning. A number of learning ideals contribute to appropriate attitudes and expectations:

- **Be empathetic**, i.e. nurture a culture founded on respect of other frames of reference and knowledge forms.
- **Practice social knowledge sharing**, i.e. facilitate freely interactive sharing, inquiry, debate and negotiation of new information between learners and those with relevant knowledge.
- **Learn by doing**, i.e. ensure that knowledge is also created through hands-on practical experience.
- **Be patient**, i.e. ensure that adequate time is allowed for absorbing appropriate knowledge and that the expectations during the learning process, of all concerned, are realistic.
- **Experiment**, i.e. completely embrace (allow, plan for, and learn from) provisional or exploratory initiatives that are not necessarily guaranteed to succeed or produce short-term desirable results.
- **Be positively persistent**, i.e. ensure that learners have determined yet positive and enthusiastic attitudes to acquiring new knowledge.

Social-ecological systems, as well as organisations, are **complex systems**. Complex does not mean complicated. An engine is complicated. It is also predictable, at least by those who put it together. A complex system has particular properties that make it *inherently* unpredictable. Being able to recognise a system as complex allows one to better understand that system at least to the extent that one understands why, in a general sense it is the way it is. It is the unpredictability of such systems that has fundamental implications for their management.

The following ideals acknowledge complexity and should also underpin adaptive management.

- **Persuade sensitively**, i.e. acknowledge that self-organising natural and human systems are of such a nature that they cannot function optimally within formal command and control management approaches. Communities of practice are typically such self-organising systems.
- **Be up close and personal**, i.e. acknowledge that interpersonal relationships are core drivers of social behaviours and so strive to make such relationships the focus of learning-related management actions.
- **Expect the unexpected**, i.e. create and maintain an ever-present mindset of expecting to be surprised. Complex systems are fundamentally different from non-complex systems. Acknowledgement of uncertainty is therefore a critical pre-requisite for dealing with complex systems.

ISSUES TO KEEP IN MIND

Everyone must perceive net benefits

Individuals will only cooperate willingly when they think the benefits outweigh the inevitable costs.

Identify the favourable benefits

The benefits of cooperation range from personal to organisational and can appear at various stages in the overall cooperation process.

Some people can be motivated by the benefits of improved individual reputations, respect and pride. Organisational benefits are slightly more complicated. Government agencies do not typically derive benefits directly from the natural resource but rather from perceptions of those benefits to others. They are therefore less tangible. Benefits can include an improved ability to discharge mandates through pooled financial and knowledge resources, better access to information, the production of joint strategies, and gains in efficiency by eliminating duplicated work.

Minimise the costs

Don't just expect cooperation to happen. Like any relationship between people, partners need to work to make it work, i.e. there are costs. These include direct financial costs (like subsistence and travel, venue hire, etc.), the aggravation of managerial resistance (e.g. getting permission to participate), and opportunity costs (what will individuals not be able to do because they are now cooperating?).

Everyone should be assured of fair play

An important component contributing to cooperation is that individuals are assured of a level playing field.

Establish rules

Individuals tend to behave selfishly if not held accountable for their actions. So have frequent meetings and share information transparently on individual actions. Implicit rules will tend to emerge. If necessary, develop explicit rules in the form of actions captured in minutes of meetings or in more formal documented procedures. Rules give participants the confidence to invest their time and energy in cooperation by providing some level of certainty that others will do so as well.

To be effective rules must be appropriate to local conditions, be considered legitimate by all, be enforced consistently, and be subject to change by those imposing them.

Practice co-learning

The face-to-face communication implicit in co-learning contributes to the development and maintenance of cooperation by increasing levels of trust. Group solidarity is also improved and individuals are more likely to keep promises to cooperate (partly because rules are established). Participants with significant knowledge depth who contribute meaningfully can raise the benefits perceived by others and simultaneously raise their own status in the relationship.

Bridging organisations – catalysing and facilitating

In the initial stages of cooperation there may not be an obvious champion who can facilitate and build a cooperative culture. In this case an external 'bridging organisation' may be required.

Bridging organisations provide a forum for the interaction of different forms of knowledge and coordinate tasks that enable cooperation (Hahn et al., 2006). They catalyse and facilitate. Tasks may include accessing resources, responding to opportunities, providing leadership, creating a common vision, networking, bringing together different actors, building social capital, facilitating social learning, building trust, and resolving conflict.

If natural leadership and facilitation of some aspects of cooperation emerge within the cooperating organisations then this should be nurtured. However, some tasks, like conflict resolution and generally acting as an 'honest broker', may be more appropriately undertaken by an external bridging organisation.

REFLECTIVE ASSESSMENT FOR FACILITATING COOPERATION

The achievement of adaptive management objectives aimed at improving the state of our freshwater ecosystems is often so heavily dependent on cooperation among organisations that reflection specifically on the cooperation itself is necessary. Indeed, social learning is about jointly doing and jointly reflecting.

A spreadsheet-based scorecard is available for this purpose. The overall process should:

- Facilitate reflective assessment on the level of cooperation between individuals and organisations;
- Identify governance and management shortcomings relating to cooperation;
- Motivate participants to do something about the shortcomings; and
- Maintain and enhance cooperation-related aspects that are working.

Scorecards are traditionally used to assess management effectiveness. Examples include the **Balanced Scorecard** (measuring business performance), the **Parks in Peril Site Consolidation Scorecard** (developed by the Nature Conservancy) and the **Management Effectiveness Tracking Tool** (World Bank, World Wildlife Fund).

However the scorecard referred to in this booklet is different. It facilitates reflection on the degree to which the organisations enable cooperation and the degree to which cooperation actually occurs.

The scorecard spreadsheet can be downloaded from the WRC web site by running a search for TT 404 Scorecard on the WRC home page (www.wrc.org.za).

The scorecard specifically can facilitate:

- Structured face-to-face dialogue between organisations;
- Identification of specific weaknesses (that should be addressed);
- Identification of specific strengths (which can be used as a basis for addressing weaknesses); and
- The development of a coherent message that people at lower levels can communicate to upper levels.

Cooperation, being an explicit objective, is intimately associated with the practice of adaptive management. However, the use of the scorecard in a reflective assessment workshop, while also requiring cooperation, finds its natural place within the 'Evaluate and Learn' stage. Responding to the reflective assessment workshop is about using the feedback loops and adapting. This too is ideally done cooperatively.

The assessment workshop

Preparation – adapt the scorecard

The scorecard contains a default series of diagnostic questions arranged in four categories for addressing: where we are now (context), where we want to be (planning), what information is being collected and how we are going about it (monitoring), and how we go about making a difference (management). Each question has four criteria for scoring the responses. These are aimed at those line function staff with hands-on responsibility for managing and conserving freshwater ecosystems. Everyone should be comfortable with the questions and criteria before the assessment workshop. They can be modified or added to adapt them to the specific participating organisations.

Running the workshop – reflect and assess data

In the workshop, with the spreadsheet displayed for all to see, the criteria are read for each issue. Scores chosen by the organisational representatives are openly captured and used to encourage open and frank assessment and reflection by all. The scores are not intended to be used by their managers to assess performance. General comments that expand on or explain the chosen scores can also be captured.

After reflection and capture of all the individual scores, the spreadsheet is used to display basic statistics, including the similarity between organisations, as well as lists of issues of concern and strengths. These all facilitate further reflection on the overall situation for either the individual organisations or all organisations together.

Responding to the assessment

Create and nurture cooperation

If the degree of co-learning or cooperation is an issue of concern then the above 'ISSUES TO KEEP IN MIND' should guide actions after the workshop. Acknowledge that only one missing factor can jeopardise everything.

Target responses at appropriate levels

Use the issues of concern to develop a compelling message. Clearly establish at which management or governance level the message should be targeted.

If the issue may require re-considering fundamental principles or high-level objectives (typically at governance level) then it is likely to be a very time-consuming process. Representations would typically rely heavily on emphasising the cross-sector policy objectives and this should be done explicitly in the context of the policy mandate of the targeted organisations.

If an issue of concern is associated with low-level objectives or possibly rethinking likely outcomes of selected management options, the process can still be fairly lengthy and will need to follow appropriate procedures.

If the issue requires changes to the way the current plan is being implemented then the process may be much quicker.

What to say and do

- **Respond cooperatively and purposefully.** Ensure that whatever actions are taken in response to the reflective assessment, they are done so cooperatively with other organisations (when appropriate) and purposefully (i.e. with a specific objective in mind).
- **Communicate by example.** If possible simply change the way you do things, even in small ways. This demonstrates commitment to your fellow workers in your own organisation and in those you cooperate with. This raises the assurance in their minds that you will play the game fairly.
- **Speak their language.** Bear in mind that people at different governance and management levels can have quite different criteria for defining an issue as being of concern. Middle management might be concerned about budgets. Senior management might be concerned about being seen to implement policy. Politicians may be concerned about being popular.
- **Choose the right mechanism.** Change at different levels typically occurs in different ways. Identify the appropriate mechanism. Make timely submissions in an appropriate format.
- **Be positively persistent.** Always be positive and persistent in your efforts to pursue your beliefs. Appreciate that there may be considerable delays. Keep trying. Nudge and influence the system whenever possible. Appreciate even the smallest advance.

RECOMMENDED READING

Adaptive management: SANParks (2008). *A framework for developing and implementing management plans for South African national parks*. Available online: http://www.sanparks.org/parks/kruger/conservation/scientific/key_issues/

Bridging organisations: Hahn T, Olsson P, Folke C and Johansson K (2006). Trust-building, Knowledge Generation and Organizational Innovations: The Role of a Bridging Organization for Adaptive Co-management of a Wetland Landscape around Kristianstad, Sweden. *Human Ecology* **34**: 573-592.

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