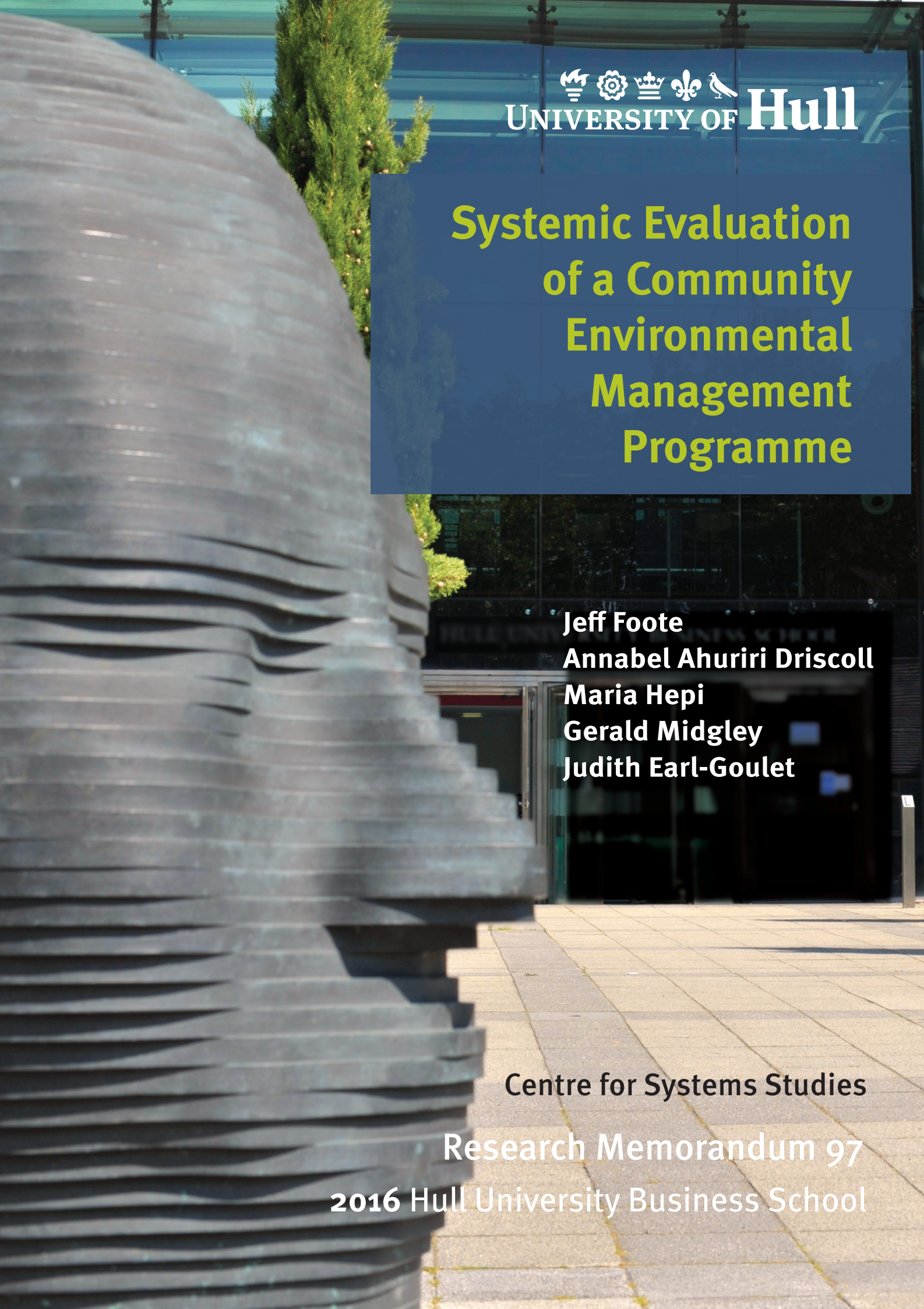

UNIVERSITY OF Hull

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Centre for Systems Studies

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Systemic Evaluation of a Community Environmental Management Programme

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Abstract

Community environmental management (CEM) involves achieving environmental objectives through the facilitation of community partnerships, local dialogues, consultations and participative decision making. This is increasingly seen as a solution to some of the more complex environmental issues facing regulatory authorities. However, little has been written about how CEM programmes should be evaluated, and this is particularly concerning given that the establishment of a causal relationship between community participation and environmental outcomes is not straight forward. Anecdotal evidence suggests that CEM programmes have much potential, but the lack of a robust evidence-base for their effectiveness means that their role in resource management is often not well understood or well integrated with other environmental management tools and processes. This paper reports on a project that developed a novel, systemic CEM evaluation methodology and trialled it in an intervention with a regional council in New Zealand. The methodology has the potential to be adapted for other contexts where there is a need for more robust evidence of the value (or otherwise) of CEM.

Keywords: community environmental management, community operational research, green OR, multi-methodology, problem structuring methods, systemic evaluation.

Introduction

Community environmental management (CEM) is based on notions of participatory practice and aims to bring about both social and environmental outcomes through methods such as community meetings and action planning to enhance the management of natural resources. CEM is increasingly seen as a solution to some of the more complex environmental issues facing regulatory authorities, because the enforcement of externally-imposed regulation often meets with resistance, while engaging people in finding their own solutions is more likely to galvanise community support (Martin, 1991). This approach has been associated with a number of positive outcomes, including increased environmental awareness; community capacity building and empowerment; improved community-government relationships; and sometimes a more equitable distribution of resources (Curtis and Lockwood, 2000; Kellert et al, 2000; Buchy and Race, 2001; McCallum et al, 2007). CEM first gained popularity in the early 1960s and 1970s, amidst growing disillusionment with narrowly-focused mainstream environmental management, which emphasised large-scale, capital-intensive, centrally-planned conservation and development projects (Kellert et al, 2000; Kapoor, 2001). It seeks to invoke traditional local and indigenous cultural and institutional mechanisms for managing and conserving the environment (Kellert et al, 2000).

While CEM is said to have a "compelling and convincing" rationale (Kellert et al, 2000, p.705), experiences of it in practice have been variable. Difficulties in maintaining meaningful community participation, and concern that some CEM programmes have privileged socioeconomic imperatives at the expense of environmental objectives, have led to calls for research and evaluation to critically assess the outcomes of different forms of participation (Kellert et al, 2000; Buchy and Race, 2001; McCallum et al, 2007). However, the evaluation of CEM programmes is notoriously difficult (Bellamy et al, 2001) given the problematic relationship between community participation and environmental outcomes: it is normally impossible to demonstrate a direct, causal impact of management actions on biophysical and social outcomes because so many other contextual factors come into play (Kellert et al, 2000; Buchy and Race, 2001; McCallum et al, 2007; Midgley et al, 2007, 2013). Although CEM programmes promise much (Zanetell and Knuth, 2004), the lack of a robust evidence-base means that their role in resource management is often not well understood or well integrated with other environmental management tools and processes.

The operational research and environmental management agenda (or 'Green OR' agenda, for short) has noted the importance of developing "…OR to make it more relevant to environmental planning and management…" (Midgley and Reynolds, 2004, p.297). Midgley and Ochoa-Arias (2004) treat Green OR as an extension of Community OR, but Ife and Tesoriero (2006, p.89) point out that "both an ecological perspective and a social justice / human rights perspective are necessary for the re-evaluation of the other", adding that these two perspectives are "readily compatible". We agree with Ife and Tesoriero (2006), and take the view that environmental planning and management can be strengthened through the adoption of community development principles, methodologies and methods. In this paper, we present a case study of how OR methods that have traditionally been employed to support social interventions in communities were used to generate a local evidence base for the effectiveness (or otherwise) of a CEM programme in Canterbury, New Zealand. Blending methods from existing systems methodologies, a novel approach to CEM evaluation was developed to encourage learning at individual, group, institutional and multi-agency scales.

This work was carried out as part of a larger research programme that aimed to develop systemic and participative methods to strengthen community involvement in environmental decision making for sustainable development; see Winstanley et al (2005) and Midgley et al (2013) for other aspects of this programme.

The paper is structured into five parts. It begins by describing the role that local government plays in managing natural resources in New Zealand, and how a regional council (Environment Canterbury) has institutionalised CEM in Canterbury in the form of 'resource care'. The paper then sets out a number of methodological challenges to evaluating resource care activities. Encountering these challenges led the research team to develop a new evaluation approach based on a synthesis of principles and methods from Soft Systems Methodology (Checkland and Poulter, 2006) and Developmental Work Research (Engeström, 2005). This systemic CEM evaluation methodology is outlined, and its use in workshops with resource care staff, community stakeholders and Māori (indigenous New Zealanders) is described. Then a more detailed analysis is provided of two major conflicts that impeded resource care work in Canterbury, and we explain how our evaluation methodology supported people in addressing these. The paper concludes by considering the contribution that systemic evaluation has made to the development of CEM in Canterbury, and the potential for adapting the methodology for other contexts where more robust evidence of the value (or otherwise) of CEM is needed.

CEM at Environment Canterbury, New Zealand

Under the Resource Management Act (1991), local government in New Zealand is responsible for the sustainable management of natural resources including water, land and air. Environment Canterbury is one of the largest regional councils in the country, and is specifically charged with achieving "sustainable environment and sustainable communities, for the benefit of people, communities and future generations, at a reasonable level of monetary and personal costs" (Environment Canterbury, 2009). Regional councils are required to prepare policy statements and plans that set out objectives and rules to protect the environment by identifying conditions when an environmental permit is required. In addition to statutory mechanisms, non-statutory tools such as education and CEM are also employed to achieve outcomes (Ministry for the Environment, 2009).

Environment Canterbury's approach to CEM is called 'resource care'. Beginning in 1999, the Resource Care Section (RCS) developed and piloted a community-based approach to help restore local lowland streams. This initiative was known as Living Streams, and it involved land-owners and community members meeting and acting collectively to address stream degradation through activities such as riparian planting and fencing (New Zealand Association of Resource Management, 2002). More recently, attention has shifted to community action in larger catchments to improve environmental indicators such as surface water quality and biodiversity, through provision of information about sustainable land management practices, stream enhancement strategies, and implementation of riparian zone management (Environment Canterbury, 2005). The work of the RCS is necessarily broad, responding to a wide range of environmental concerns. However, despite this range, the aim is consistent: achieving environmental objectives through the facilitation of community partnerships, local dialogues, consultations and participative decision making.

Agreeing on intervention purposes

In mid 2004, researchers from the Institute of Environmental Science and Research (ESR) and representatives from Environment Canterbury met to discuss a potential evaluation of resource care given the increasing need to justify investments in RCS activities. The team was told that the RCS was very popular with both Councillors and their communities, but there were concerns that the resource care processes were poorly integrated with other Environment Canterbury activities – to the extent, in some cases, that they were perceived as undermining the effectiveness of regulatory enforcement. They were seen this way because they supported the self-organisation of local groups regardless of whether those groups complied with or resisted regulation. The project remit included work to enhance the RCS's ability to engage communities in environmental planning and action; and to encourage learning between the RCS and other sections within Environment Canterbury about how they could work together to more effectively achieve environmental outcomes in the community.

Towards the development of a systemic CEM evaluation methodology

Between August 2004 and September 2006, thirty three scoping interviews were conducted with key people in Environment Canterbury and community members, including Māori representatives. Also, from June-November 2005, the research team participated in and observed six resource care meetings. Analysis of the data from these interviews and participant observations highlighted difficulties experienced by the RCS in articulating the rationale for working alongside the community and Māori to produce environmental outcomes, and in clearly communicating the processes for engagement. This was recognised as a barrier to:

- Demonstrating the contribution of resource care activities to the environmental outcomes identified in planning documents;
- Determining the cost/benefit of funding invested in the RCS;
- Communicating to key stakeholders and other parts of Environment Canterbury what exactly is involved in resource care; and
- Identifying opportunities for Environment Canterbury to work more effectively with communities to achieve environmental outcomes.

Bellamy et al (2001, p.408) note that "natural resource management initiatives need to be evaluated as a system that links the objectives and instrumental rationale of the policy or program to actual performance on the ground". Unpacking the programme logic, or making it explicit, provides the basis for evaluation because it describes the relationship between programme inputs, activities, outputs and intended outcomes (Cox, 2000; Fielden et al, 2007). In August 2006, the research team met with the RCS manager to discuss how a systems approach might strengthen the resource care programme logic, given that it would better account for the non-linear, uncertain and possibly contested nature of CEM processes than approaches that assume there is a simple link between the activities of a programme

and environmental outcomes (Bellamy et al, 2001). Embedding evaluation capability within the RCS was seen as critical. Rather than undertake an expert-driven evaluation exercise, it was agreed that the research team would develop and trial a participative evaluation methodology in partnership with the RCS that could be used to foster critical self-reflection about 'what works, what doesn't and why' (Figure 1).

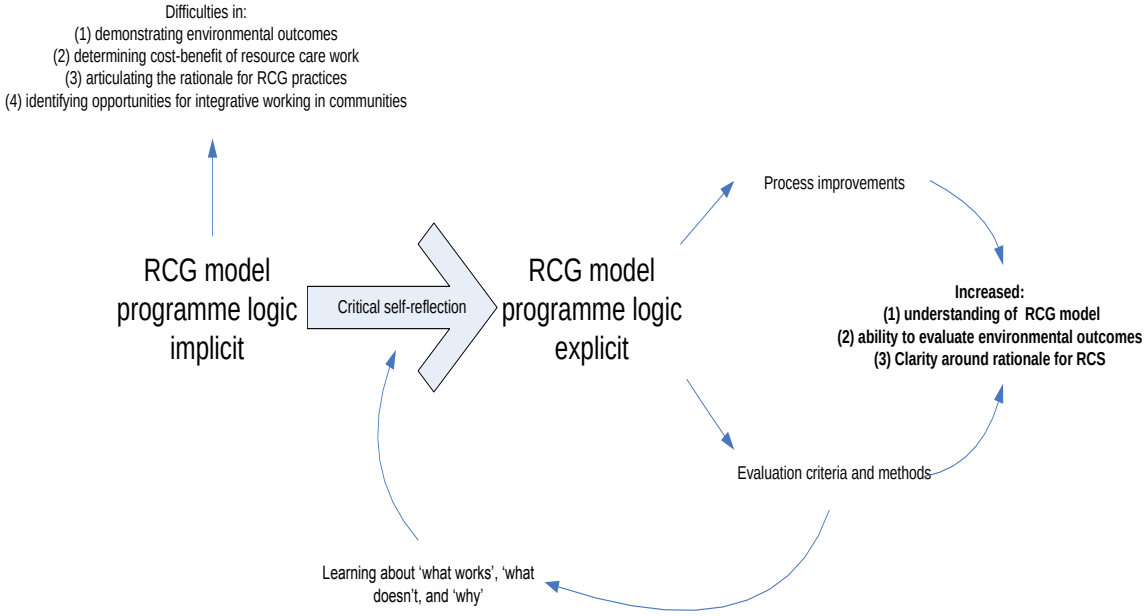

Figure 1: Development of a CEM evaluation methodology

The idea was, by making the thinking (theory) behind the resource care model explicit, the RCS would be in a better position to communicate, and if necessary re-design, aspects of the programme that were uncertain, weak and/or contested. In short, it would lead to process improvements. Additionally, learning about 'what works, what doesn't and why' would help in identifying potential evaluation criteria and methods. Taken together, this process improvement and identification of evaluation criteria would clarify the rationale for resource care and its contribution to environmental outcomes, and consequently increase external understanding (including within other parts of Environment Canterbury) of the work of the RCS, and how investment in it should be justified (or not) in planning. Moving from participative process improvement to the identification of evaluation criteria and measures is consistent with the participatory logic of systemic evaluation as expressed by Boyd et al (2007): only once stakeholders are reasonably confident that the programme being evaluated is doing the right things is it sensible to design metrics to assess performance.

Systemic CEM evaluation methodology

Further analysis of the interviews and participant observations highlighted a number of difficulties in constructing a robust programme logic, including:

- How to deal with multiple perspectives (contestation) about resource care inputs, activities, outputs and intended outcomes.
- How to express the relationships between these, even from a single perspective.
- How to model aspects of the programme logic where the assumptions are uncertain.

To address these methodological challenges, we drew on Midgley's (1990, 1997a,b, 2000) 'creative design of methods' to develop a tailored approach to formulating programme logic that took the complex nature of CEM processes into account. According to Midgley (2000, p.226), the creative design of methods involves:

> "…understanding the situation in which an agent wishes to intervene in terms of a series of interrelated questions, expressing the agent's purposes for intervention. Each purpose might need to be addressed using a different method, or part of a method. The purposes are not necessarily determined as a complete set in advance, but may evolve as events unfold and understandings of the situation develop".

The resulting intervention design brought together principles and/or methods from Soft Systems Methodology (Checkland, 1981, 2001; Checkland and Scholes, 1990; Checkland and Poulter, 2006) and Developmental Work Research (Engeström, 1987, 2000, 2005). Both methodologies have been identified as appropriate for stakeholder evaluations, and are seen as providing a set of ideas and tools which can empower participants to solve future problems (Checkland and Scholes, 1990; Gregory and Jackson, 1992; Kajamaa, 2008; Foote et al, 2009). Individually, these approaches have been widely used to tackle real world problems in a variety of domains (Checkland and Scholes, 1990; Engeström 2005), but the synthesis described in this paper was designed specifically to address the problems faced by the RCS.

Soft Systems Methodology

Soft Systems Methodology (SSM) is "an organised way of tackling perceived problematical (social) situations … it organizes thinking about such situations so that action to bring about improvements can be taken" (Checkland and Poulter, 2006, p.xv). SSM is structured around four core principles, which we determined would support the RCS's critical reflection on 'what works, what doesn't and why':

(1) *Identification of a problematic real-world situation requiring action for improvement*. Specifically, in the context of our project, this involved asking what issues needed to be addressed through evaluation;

(2) *Creation of conceptual models*: "system[s] of activities that could be undertaken by human operators" (Wilson, 2001, p.12). We believed this would be useful for clarifying how the resource care programme logic operates, drawing on resource care staff descriptions of their work;

(3) *Comparison of the conceptual models with how people represent the real-world situation*. This would need to involve comparisons of conceptual models with what is known about how resource care works *in practice*; and

(4) *Structured dialogue about desirable and feasible change*. In our project, we believed that this would enable the identification of potential process improvements. It would also help identify the evaluation criteria and methods needed to judge whether resource care practices are working.

Developmental Work Research

The SSM principles were supplemented with Developmental Work Research (DWR): an approach that addresses practice-based theorising, knowing and change (Engeström, 2005). DWR principles (such as intellectual and emotional confrontation; and searching for conflicts and contradictions that people can learn from) assist people in re-evaluating the perspective they bring to discussions, and these principles provide a rationale for the *active* involvement of community stakeholders and Māori. As 'critical friends', community stakeholders and Māori challenged the perspectives of resource care staff and acted as stimuli for honest reflection on how resource care activities *in practice* contributed to social and environment outcomes.

The systemic CEM evaluation methodology in use with the RCS

The systemic CEM evaluation methodology is set out in Figure 2. This indicates a step-by-step process, but in practice there was considerable overlap and iteration between steps, as is usual with soft (dialogical) systems approaches (Checkland and Scholes, 1990) and problem structuring methods more generally (Rosenhead and Mingers, 2001). Figure 2 includes some of the major feedback loops between steps.

The methodology was trialled in a series of five half-day workshops attended by twelve resource care staff, a Māori representative and six stakeholders, including community groups, central and local government agencies. The workshops aimed to demonstrate a systemic evaluation approach to CEM; develop evaluation criteria and tools to support ongoing learning about resource care activities; and explore any potential improvements to resource care practices. Workshops were held 'off site' to provide resource care staff time and space for reflection and critical thinking, away from day-to-day work distractions. They were designed to be self-documenting through the use of post-it notes and flip-charts, and had an action focus where action planning was an explicit aspect of critical self-reflection (this was not just learning for its own sake).

A worked example

Below, we illustrate the systemic CEM evaluation steps with an example from workshop discussions regarding how the RCS could more effectively support the development of a community action plan to manage environmental issues.

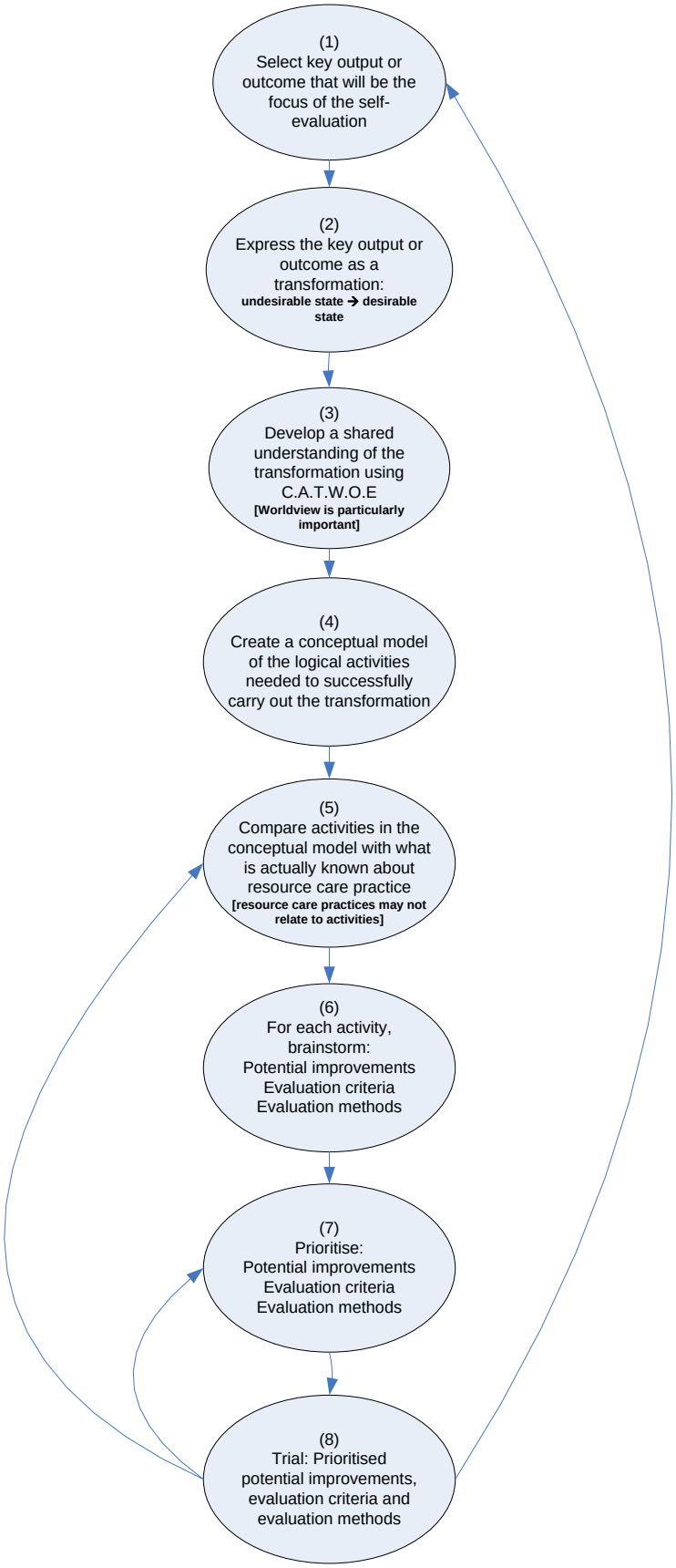

Figure 2: Systemic CEM evaluation methodology

(1) Select the key output or outcome that will be the focus of the self-evaluation.

A workshop was convened, and participants included the RCS staff, community stakeholders (such as Forest and Bird, an environmental non-governmental organisation) and representatives from central and local government agencies (such as the Department of Conservation and Christchurch City Council). The participants were asked to brainstorm positive/desirable outputs and outcomes associated with effective resource care practice. This focus on positive/desirable outputs and outcomes is consistent with the strengths-based philosophy adopted by the RCS, influenced by Appreciative Inquiry (Cooperrider and Srivasta, 1987). Brainstorming produced a number of ideas ranging from the particular to the general, and a nominal card-storming technique (Taket and White, 2000) was used to group 'like ideas' in order to narrow down the evaluation focus.

There was widespread agreement about the centrality of a community action plan to effective resource care practice, so workshop participants decided to focus one part of the systemic evaluation around *the development of a community action plan to manage environmental issues*.

(2) Express the key output or outcome as a transformation.

A transformation "changes some defined input into some defined output" (Checkland, 2001, p.74), and can reflect 'primary tasks' (e.g., community need for environmental education → community need for environmental education met) or be 'issue based' (e.g., resource care workload is unreasonable → resource care workload is manageable). The transformation chosen by the participants can be found in Table 1.

Key Output:	Development of a community action plan to manage environmental issues
Transformation:	Few people understand the environmental 'big picture' → more people understand the environmental 'big picture'.

Table 1: Transformation chosen by the participants

There are many ways that the above outcome could have been worded as a transformation (e.g. need for community action plan → need for community action plan met), but participants favoured the above because of the importance of developing a collective motivation for environmental sustainability.

(3) Develop a shared understanding of the transformation using the CATWOE mnemonic.

The CATWOE mnemonic (CATWOE stands for Customers, Actors, Transformation, Worldview, Owners and Environmental Constraints) provides a methodologically coherent way of dealing with multiple perspectives held by different actors, and it elucidates the

complexity of factors involved in a desired transformation (Checkland, 1981). Using CATWOE can also help to build mutual understanding, thus limiting the amount that people talk past one another (Gregory and Midgley, 2000, 2016). Worldviews were surfaced by asking workshop participants what assumptions made the transformation meaningful.

In contrast to Checkland (1981), who advocates building multiple CATWOEs in order to prevent the premature narrowing of perspectives, the participants worked collaboratively to create a single CATWOE, discussing at length what elements such as 'owners' meant in relation to resource care practice, and debating possible answers. The CATWOE they agreed was:

- *Customers*: Fish and Game, Māori, community members, conservationists, recreationalists, farmers, individual landowners, environment;
- *Actors:* resource care staff, community leaders, other Environment Canterbury staff (e.g. engineers, scientists), government agencies, interest groups, business, Māori, individual landowners, community members;
- *Transformation*: Few people understanding the environmental 'big picture' → more people understanding the environmental 'big picture';
- *Worldview:* The role of Environment Canterbury is to support the community, but 'on tap, not on top';
- *Owners:* Powerful (articulate/loud) actors with a negative view of the community action plan, government agencies, politicians; and
- *Environmental constraints:* Finance, time, lack of information or understanding, willingness of participants to resolve issues, resources (computers, resource care coordinators).

(4) Create a conceptual model of the logical activities needed to successfully carry out the transformation.

SSM advocates the use of conceptual models to describe the systemic relationships between activities that lead to particular outcomes or key outputs. Following Checkland (1981), all the activities *logically necessary* to create a community action plan in an ideal world were brainstormed, expressed with verbs up-front, and placed in relationship to one another (Figure 3).

(5) Comparison and structured debate.

Figure 3 was scrutinised by the workshop participants and examples of each activity in current resource care practices were identified. This gave the RCS and participating stakeholders some confidence that the thinking around the conceptual model was robust and was building on existing resources and activities, rather than inventing from scratch (this was important because there was a worry that, if the required actions required too much by way of resources, implementation would stall). For each activity in the conceptual model the following questions were asked:

- Is the activity being done?

- If not, should the activity be done?
- If yes, how well is the activity being done (and how do we know this)?
- Who is doing it? (The RCS, other parts of Environment Canterbury, central or local government, Māori and/or community stakeholders?)

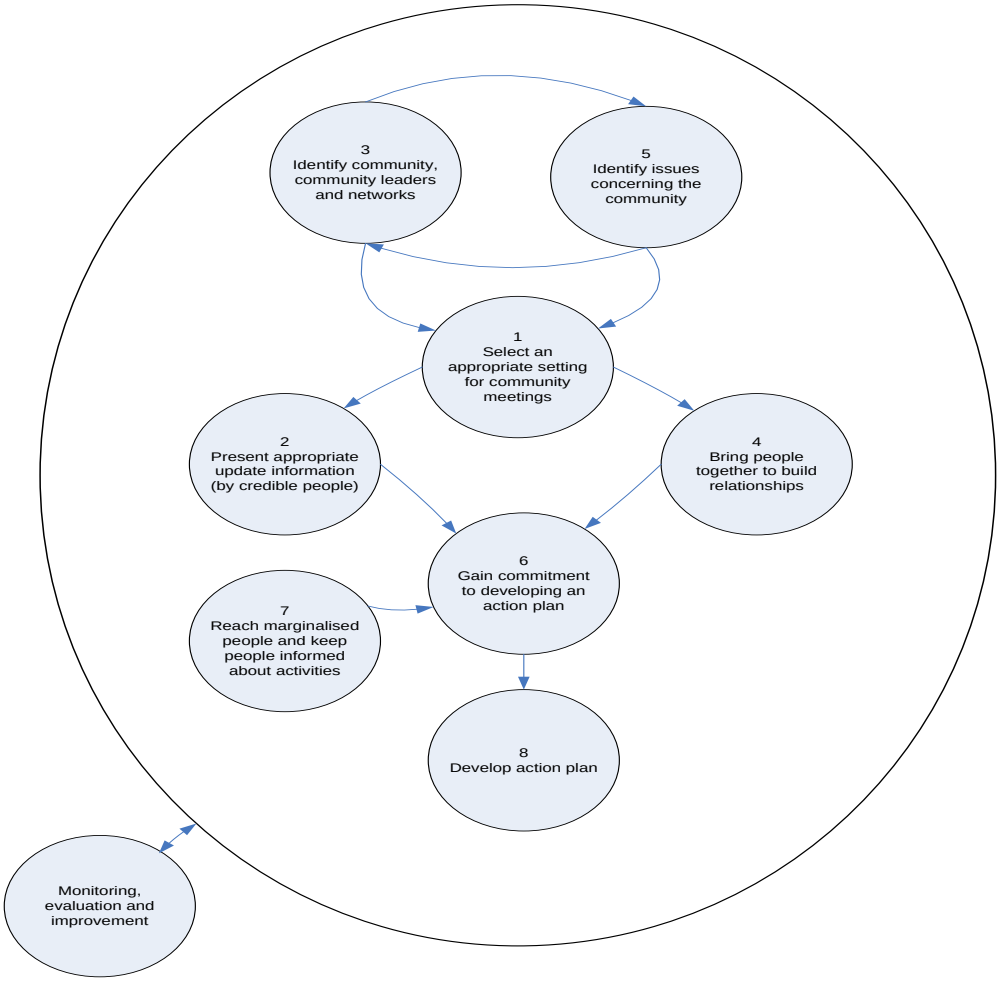

Figure 3: Conceptual model

(6) Brainstorm potential improvements, evaluation criteria and evaluation methods for each activity.

Through interactive discussions between the RCS and stakeholders, a number of potential improvements, evaluation criteria and methods were brainstormed (see Table 2 for an example). Key learnings for the RCS staff centred on the need to clarify resource care purposes, plus the importance of Māori engagement and how to undertake this effectively and meaningfully. These learnings are covered more fully in the next section.

Activity 1	**Possible evaluation criteria**	**Measurement method**	**Audience** (those interested in the evaluation result)
Select an appropriate setting for community meetings	• Check that key people are there • Are meetings the most appropriate mechanism? • Evaluate how good your address list is • Who is missing and why (e.g. women, Māori)? • Demographic data • Positive feeling	• Determine why friends of people are not attending • Ask key community leader • Check registration list • Direct feedback • Ask participants why they are here, how they have found the community meeting • How meeting attendance rates have changed over time • Regional councillors' viewpoints • How long people stay during meeting, after meeting for informal discussion • Address list	• RCS • Regional Councillors (elected Environment Canterbury representatives)

Table 2: Activity 1 - Select an appropriate setting for community meetings

(7) Prioritise potential improvements, evaluation criteria and evaluation methods.

Given the number of potential evaluation criteria and methods brainstormed for each activity, the three most important activities for the "development of a community action plan" were prioritised:

- Activity 2: Present appropriate up to date information (by credible people);
- Activity 5: Identify issues that concern the community; and
- Activity 7: Gain commitment to developing an action plan.

Three of the most promising evaluation criteria within each activity were selected. An example of prioritised evaluation criteria is highlighted in Table 3. The robustness of selected

evaluation criteria and methods relating to prioritised activities was assessed by considering strengths and weaknesses. Workshop participants were then asked to vote for the evaluation criteria they felt best captured the essence of the activity. The strengths/weaknesses assessment and prioritisation of activities and evaluation criteria enabled the workshop participants to determine the most appropriate way of evaluating resource care practices for their contribution to the "development of a community action plan".

In the course of developing evaluation criteria, several measurement methods were designed. The majority of these were based on existing resource care activities, including:

- Compiling meeting attendance registers;
- Recording participant address lists;
- Recording numbers present at meetings;
- Documenting/reporting invitations to other fora;
- Conducting and documenting stream walks; and
- Monitoring of action plans.

(8) Trial prioritised potential improvements, evaluation criteria and evaluation methods.

At the end of the workshops, the research team met with the RCS manager to discuss trialling prioritised evaluation criteria and methods and, more importantly (in terms of the aims of the research project), what was required to embed the evaluation approach. Implementation issues were also discussed, including being careful not to overload programme leaders with additional work. The manager reported on the RCS's satisfaction with the evaluative criteria, noting that evaluation was now designated a core element of resource care practice and had begun to be incorporated into job performance measures and key milestones.

Learning about Two Significant Conflicts

The qualitative modelling of the activities to support the creation of a community environmental plan, although time consuming, led to the identification and exploration of two key conflicts, which reduced the effectiveness of resource care practices. Below, we have used a simplified version of the diagramming conventions of boundary critique (Midgley, 2000, 2016a,b; Yolles, 2001; Foote et al, 2007; Midgley and Pinzón, 2011, 2013) to present the conflicts visually (Figures 4 and 5). Discussion of the two conflicts with RCS staff helped them identify a couple of significant, potential improvements to the resource care model: working more closely with other sections within Environment Canterbury to coordinate activities within communities; and engaging more effectively with Māori.

Activity 2	Prioritised evaluation criteria	Measurement method	Target
Present appropriate up to date information (by credible people).	*Background information regarding the catchment is presented, including Māori perspectives.* Strength: Provides good foundation to build upon and sets the scene and can jog peoples' memory. Weakness: Possibly disengage people because of the amount of information to process prior to meetings.	*Conduct brief overview of catchment history, in consultation with key stakeholders and informants, including Māori.*	*All relevant historical and current developments are summarised and presented.* Strength: Gets everybody up to same speed, puts everyone on level playing field. Weakness: Could take a long time, which could disinterest people and could be an expensive process.
	Group agreement on development of community action plan and schedule for presentation of topics to inform this. Strength: People buy-in and evidence of moving forward, acceptance of process and need to act.	*Ask meeting attendees for agreement on community action plan goal and related presentation of topics.*	*Topics reach 'saturation point' and cover all relevant views and issues according to stakeholders and meeting attendees.* Strength: Covers all bases. Weakness: If you wait for saturation point you may have lost a significant part of the community because it gets too drawn out.
	Coordinator briefs speaker and assesses their presentation prior to the meeting. Strengths: Ensures consistent approach and relevant to community, speakers know what they should present on (this should only be for guest speakers), speakers should be talked to, it is not about seeing their presentation beforehand, and speakers are given 'key messages' that community want to know about. Weaknesses: Chance that the resource care coordinator could 'vet' the presenters to what information they want out in the community, not always possible because of time constraints for resource care coordinators and speakers.	*Resource care coordinators document briefing and assessment process.*	*All speakers are briefed and all presentations reviewed prior to each resource care group meeting.* Strength: Reduces the extent of the challenge, helps cement the group. Weakness: Speakers being offended at having to give presentation over before their presentation. May not have enough time.

Table 3: Prioritised activity and evaluation criteria

For what purpose should the RCS be working?

The first conflict was between the RCS and other parts of Environment Canterbury, and it was about the purpose of resource care. This conflict, or entrenched disagreement, is depicted in Figure 4, where tension arises from the clash of two values. The first value (promoted by the regulatory sections of Environment Canterbury) focuses on the importance of the activities that support 'stream care', such as riparian planting. The second value (dominant within the RCS) focuses on relationship building between resource care staff and community stakeholders, as well as within affected communities, and expands the scope of resource care activities to include non-environmental outcomes identified by the community as important (e.g. road safety across river bridges, rather than just water quality issues). Water quality is, however, a common concern, and is a focus for tension because of the different frames (above) that the RCS and other parts of Environment Canterbury use.

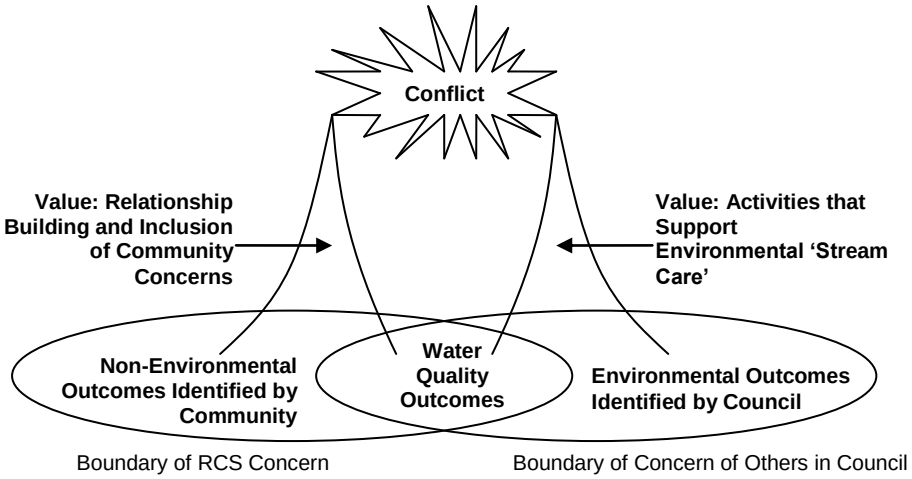

Figure 4: Tension over purpose

Conflicts are often stabilised rather than resolved, and Midgley's (1992, 1994, 2000, 2016a,b) view is that this is often achieved by either the ritual marginalisation of people and/or issues, or mutual stigmatisation and strategic battles that never actually lead to a definitive outcome. The result in either case is likely to be a dismissive attitude towards alternative perspectives, leading to mutual distrust which makes constructive dialogue difficult. Because the RCS had the support of councillors, they were not exactly marginalised, but seemed to be in a dynamic of mutual stigmatisation with their colleagues in other sections of the organisation. We found evidence of this dynamic with 'typifications' (Loseke, 1999), or stereotyped descriptions, of the RCS staff as the "tea and biscuits brigade". In contrast, enforcement sections were referred to by the RCS as "the Police". Despite this tension between the 'community development' and 'enforcement' frames, the need for the RCS to work closely with other Environment Canterbury sections remained, especially as the RCS regularly drew on wider Environment Canterbury resources (e.g. scientific data and expertise).

The workshops helped to focus the RCS's thinking on its relationship with its parent organisation, and stimulated action planning for an Environment Canterbury-wide workshop

on integrated catchment management. However, because the research team was unable to facilitate the attendance of non-RCS staff before the end of the project, the opportunity to generate wider institutional change was not realised. Nevertheless, follow up communication with the RCS pointed to significant individual and group learning within it about what it could do on its own to build bridges with other parts of the organisation. This included giving a presentation to Environment Canterbury politicians and staff about resource care principles and processes, and how CEM helps achieve wider organisational outcomes.

The original logic of our intervention (and consequently our systemic CEM evaluation methodology) was that more robust evidence about the value of resource care would influence the enforcement sections in Environment Canterbury. This was certainly the belief of management, who had asked us to focus on the evaluation of the RCS. It remains to be seen, once implementation of the evaluation measures has progressed further, whether this is sufficient to stimulate the engagement of other parts of Environment Canterbury. If it is, then the opportunity for wider institutional change may be reopened.

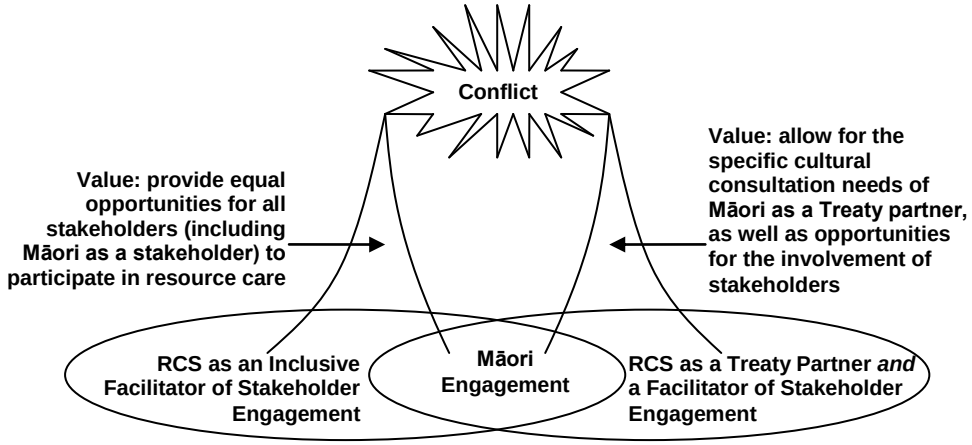

Figure 5: Tension over the involvement of Māori

The involvement of Māori

The second conflict, or tension, that became a significant focus for RCS learning arose from competing understandings of Māori involvement in resource care processes: some people saw Māori as a Treaty of Waitangi partner, while others viewed Māori as a stakeholder group (Figure 5). The Treaty of Waitangi was signed by the British Crown and Māori in 1840, and it recognised the right of the Crown to govern, guaranteed Māori control with respect to their traditional economic and other resources, and established the principle that Māori have the same rights as British citizens (Durie, 2001). The Resource Management Act (1991) sets out Treaty obligations and requires "environmental managers and planners to take account of Māori values, culture and traditions and encourage Māori participation in decision making" (Memon and Perkins, 2000, p.21). However, in resource management, 'taking account' of Māori is often reduced to treating them as passive respondents rather than genuine partners (Durie, 1998). This is consistent with Māori being viewed as one amongst many stakeholder groups, with no more right to active participation than others.

As resource care activities are non-statutory, there is no imperative on the RCS to recognise the rights of Māori, except in the capacity of land owner. Matunga (2000, p.37) notes that the "reinclusion of the Treaty into contemporary environmental planning is a major challenge". A government report on Māori and the Resource Management Act (1991) noted that:

> "Successful council-Māori relationships cannot be based solely on strict adherence to legislative requirements. They require councils to appreciate both the role of tangata whenua [people of the land] in their community, and the value their extensive local knowledge can add to achieving positive community outcomes" (Te Puni Kōkiri, 2006, p.7).

However, some RCS staff feared that explicitly acknowledging the Treaty, and specifically the Treaty partner status of Māori, would compromise their interactions with non-Māori stakeholders, such as farmers, irrigators, kayakers and birdwatchers. Their concern was that this could potentially upset people whose understanding of and commitment to the Treaty was limited. In response to these concerns, the RCS had adopted a 'one size fits all' approach, which subsequently resulted in low levels of Māori participation: because Māori expected to be consulted as a Treaty partner with the right to determine *how* they would be involved, they were less inclined to participate when they were regarded as 'just another stakeholder'. Workshop discussion (with Māori involved) focused attention on how to improve Māori participation. Initiatives included *kanohi ki te kanohi* (face to face) meetings at an agreed time and venue; holding resource care meetings and events at *marae* (traditional meeting houses); and raising awareness amongst non-Māori that Māori involvement is not merely an issue of meeting statutory obligations, but is important because non-involvement would result in the RCS ignoring significant local knowledge about resource care.

Conclusion

This paper has presented a systemic evaluation methodology to support the development of a community environmental management (CEM) programme in Canterbury, New Zealand. The methodology was developed in response to local need, and also because there is a lack of appropriate existing evaluation approaches in the literature (Bellamy et al, 2001). By synthesising principles and methods from Soft Systems Methodology and Developmental Work Research, the research team and the Resource Care Section (RCS) of Environment Canterbury developed and trialled an approach that identified useful process improvements and defined evaluation criteria and measures.

The systemic evaluation approach has moved the RCS towards the production of a more robust evidence base for resource care practice, as well as stronger relationships with important groups within and outside Environment Canterbury. It has done so by:

- Making the rationale and theory behind resource care activities, processes and methods explicit, helping the RCS to communicate 'what resource care is' to community, Māori and other sections within Environment Canterbury;
- Supporting the RCS in thinking through how the relationship of their resource care model with planning and regulation mechanisms ought to be developed into the future;

- Encouraging an emerging evaluation culture within RCS through greater awareness and appreciation for the need for evaluation;
- Raising awareness in the RCS of how to improve Māori involvement; and
- Providing a discipline, measures and mechanisms to enable the value (or otherwise) of resource care to be made more transparent, which will support Environment Canterbury in justifying or reviewing its investment in the RCS in relation to delivering council outcomes.

Although positive outcomes derived from the application of a methodology in just one case study are insufficient to warrant a claim that the methodology is widely applicable (Checkland, 1981; Midgley et al, 2013), a systemic CEM evaluation approach (such as the one presented in this paper) is arguably more useful than methodologies which assume that environmental outcome measures will be unproblematic and uncontested. It is hard to establish a causal connection between the activities of a CEM programme and environmental outcomes (Bellamy et al, 2001), so stakeholder involvement in agreeing on programme logic, evaluation criteria and measures is useful in establishing the credibility (or legitimacy) of the evidence produced through an evaluation. The task now is to test this systemic CEM evaluation methodology more widely, and explore the strengths and weaknesses of each test to build a more extensive evidence base for its utility.

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