Structured Decision Making for Freshwater Futures

Natasha Berkett[1], **Nick Cradock-Henry**[2]

[1]Cawthron Institute: Natasha.berkett@cawthron.org.nz

[2]Landcare Research: CradockHenryN@landcareresearch.co.nz

Introduction

In line with recent recommendations from the Land and Water Forum (2012) and MfE (2013) collaborative approaches are being widely promoted in New Zealand as a promising approach to resolving conflict over the management of freshwater resources.

In 2012 the Hawke's Bay Regional Council (the Council) convened a collaborative stakeholder group to recommend allocation limits and water quality targets for the Greater Heretaunga and Ahuriri catchment plan change. The key drivers for the plan change are a requirement for the Council to give effect to the National Policy Statement for Freshwater Management and the expiry of a large number of water permits in the Greater Heretaunga and Ahuriri catchments from 2015 onwards. The collaborative process, referred to locally as the TANK process, is designed around 'Structured Decision Making' (SDM) (Gregory et al, 2012). If successful, i.e. consensus is achieved, the TANK process could provide a model for future collaborative planning processes.

This paper is in two parts. First, it provides an overview of some key criteria related to the design and structure of collaborative processes, from the perspective of researchers and practitioners involved in the project. The second part of the paper discusses design considerations from the participants' perspectives and presents some preliminary results of an evaluation of the TANK process. These early findings are the first part of a longitudinal assessment of the TANK process, outcomes and outputs. By discussing the collaborative process from both perspectives, the paper provides an insight that will hopefully be useful to designers of future collaborative processes.

Freshwater Futures – Heretaunga Catchment: Key Design Criteria

There are a number of design challenges associated with collaborative processes reported in the literature, and many of these have also been encountered as part of the TANK process (Bryson et al 2012). Ultimately the design of the process may play a part in whether or not consensus is reached around the objectives for the Greater Heretaunga and Ahuriri plan change. It is not possible for us to detail all aspects of the design of the TANK process in this paper; therefore we limit our comment to three key criteria: the mandate for the process, the recruitment of appropriate stakeholders, and the mandate of individuals.

Mandate for the Process

The mandate for the TANK process comes from the Council's "good faith undertaking to implement the elements of any consensus outcome agreed by the TANK group, if one emerges, which it has the power to implement, and to promote the implementation of the elements which require Regional Planning Committee endorsement."[1] This mandate is documented in the TANK terms of reference (TOR) and is based on a recommendation passed by Council resolution in August 2012.

[1] Greater Heretaunga and Ahuriri Collaborative Stakeholder Group Terms of Reference.

During TANK meetings we have observed a degree of debate amongst participants with regard to how their participation will influence key outcomes. In keeping with SDM, TANK participants have been involved in small group and homework exercises to identify the values, objectives, performance measures and management variables for the Greater Heretaunga and Ahuriri catchments. Variations to the Hawke's Bay Regional Resource Management Plan (RRMP) must give effect to the Regional Policy Statement (RPS) which has also recently been amended (RPS Change 5, notified in November 2012). Through the RPS Change 5, Council has proposed primary and secondary values for the Greater Heretaunga catchment, although these are subject to the outcomes of hearings scheduled for April 2013. Thus the TANK process and the RPS Change 5 process are occurring in parallel and it remains to be seen how the RPS process will affect the outcomes of the TANK process. This highlights that collaborative processes do not occur in isolation and other processes can affect the outcome. Whilst some overlap with other processes may be difficult to avoid, we would recommend that councils strategically plan the timing of collaborative processes in order to ensure that consensus outcomes can be faithfully implemented.

Recruitment of Appropriate Stakeholders

Another challenge in co-ordinating and running a collaborative process is stakeholder recruitment. Most of the TANK participants were recruited directly by the Council, although some "snowballing", whereby participants suggested other people, did occur. Three councillors were included in the TANK process to advocate for the Council's statutory responsibilities and the interests of the Hawke's Bay community at large. During the first meeting participants were asked "who is not here" and it was noted that females and youth were not well-represented and that kayaker and bather representatives were absent. Following the first meeting representatives from the District Health Board, Friends of Ahuriri and the Napier branch of Forest and Bird were approached to join the TANK process, as were additional Maori representatives. Representatives of two key stakeholder organisations were recruited but have thus far attended only one or two meetings (respectively) and their continued absence could make it difficult to reach a durable consensus.

A related recruitment challenge is whether local interests are best represented by local members of national organisations, or are they better represented by experienced political lobbyists employed by those organisations, who may not necessarily reside in the region. This issue has played out in the TANK process following a request from a local representative of a national organisation for a non-resident executive officer of that organisation to attend TANK meetings. Recent changes to the structure of key stakeholder organisations (such as DoC) might mean that designers of collaborative processes will face this question more often in the future.

An additional challenge that we have observed that has application to future collaborative processes is when to involve technical/ science expertise. In the TANK process, as with other recent collaborative processes, technical/science experts are not participants but are brought in to inform the process at key times. The costs of having technical/ science representatives attend every meeting need to be weighed against the difficulties for those same people when they are asked to provide input without the benefit of understanding the wider discussion and context for the objectives, management variables and performance measures that participants have identified as being important. In our view collaborative processes are a key opportunity for improved interface between science and policy development and careful thought needs to be given as to how best to achieve this at the beginning of the process.

Mandate for individuals

The third design challenge highlighted in this paper is the issue of individual mandate. The original TOR indicated that after the second meeting, participants would be required to declare whether they were there as individuals, or as representatives of a wider community, group, industry or sector. The original intent was to encourage participants to network with the wider community. It quickly became clear however, that for some participants, the question of mandate would be problematic: it would be difficult, for example, for an individual dairy farmer to speak on behalf of the other farmers in a catchment. The issue was addressed by inserting the following words into the TOR:

> "The members of the TANK group have, in the main, been nominated by their respective sector or group to be their mandated representative. Where members have not been given the mandate of their sector or group, they will participate as individuals and are expected to also convey ideas and perspectives from their wider networks. In meeting three, each member will declare whether they are mandated representatives or not. At the end of the process, each member will declare whether they can support the proposed agreement and promote it to their organisations and networks (see definition of consensus below). Members will also be asked, at that point, whether their organisations (where relevant) would formally endorse the consensus agreement."

Through the six meetings held to date TANK participants have generally spoken from their personal experiences and perspectives. We consider that mandate is likely to be an issue only at the end of the process when members decide whether they personally, and their organisations, will endorse a set or recommendations.

The three key design criteria discussed above have been identified by researchers and practitioners involved in the TANK of the process. However, it is important to consider not only the perspectives of those involved in designing and facilitating such processes, but also the perceptions and experience of participants. Participants' satisfaction with, and confidence in, the collaborative process will also have an important bearing on whether or not consensus is reached, and may determine whether collaborative processes are adopted more widely in the future. The second part of this report draws on the perspectives of participants themselves, in order to evaluate the TANK process so far. While there are limitations to this sort of evaluation (Cullen et al. 2010), soliciting information from participants as part of the process can provide important insights into the strengths and weaknesses of collaborative processes, their effectiveness in achieving desired outcomes and aspects of design that might have otherwise been overlooked.

Evaluation of the TANK process

The evaluation of the TANK process is longitudinal in nature, i.e. it addresses the process and outcomes at several points in time: soon after the process began, approximately half-way through, and at the end of the formal series of meetings (*Figure 1*). The aim of the evaluation is to assess participants' changes in attitude, social learning, and overall satisfaction with the process (Lubell et al. 2007). The evaluation will also help facilitate best-practice, identify potential pitfalls in advance, and contribute to the discussion on the application of collaborative processes for natural resource management. The methodology aims to evaluate not only the outcomes of the TANK process, which can include more than just reaching consensus, but also the way the process was conducted.

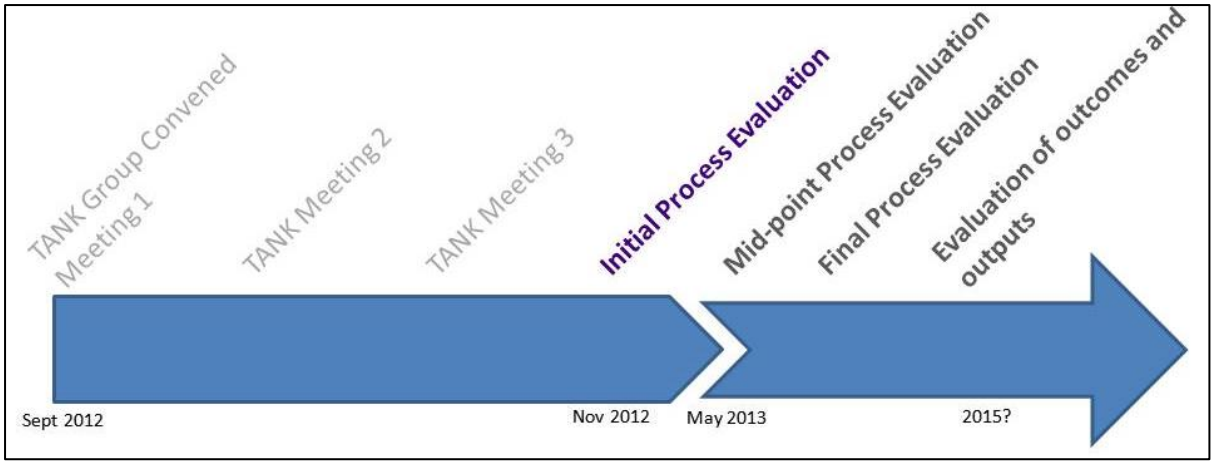

Figure 1 Timeline showing the TANK evaluation process. Results are from the Initial Process Evaluation (November 2012) and valid for that time only.

The criteria chosen to evaluate both the collaborative process and the outcome were based on a review on evaluations conducted elsewhere (Frame et al. 2004, Cullen et al. 2010, Morton et al. 2012). Other studies to assess the success of collaborative processes relied on stakeholder ratings derived from surveys (Innes and Booher 1999, Frame et al. 2004). The TANK evaluation also makes use of surveys, but includes feedback forms provided after every meeting, stakeholder interviews, and detailed observation. Here we report only on survey results.

The first survey – the Initial Process Evaluation – was administered electronically in November 2012 following the third meeting with stakeholders, and the results are reported in this paper. The survey was administered to 24 of the 32 TANK participants, comprising those participants who attended the first meeting, at which the TOR were introduced and debated, and at least one other of the first three meetings. The survey consisted of three separate sections, and was designed to take no more than 20 minutes to complete.

The first section comprised questions to evaluate 14 different process criteria that have been identified elsewhere as being important for a successful collaborative process (Frame et al. 2004, Cullen et al. 2010, Morton et al. 2012). For each question respondents indicated their level of agreement with a statement using a five-point Likert scale. Outcome criteria were not tested for in the initial survey, but will be as part of the final evaluation.

The second section of the survey provided an unordered set of statements related to the collaborative process. Respondents were asked to select and rank what they considered to be the ten most important criteria for successful collaborative decision-making. Sample criteria statements included: having an independent facilitator or mediator, clear terms of reference and having an urgent issue to address that provides an incentive to reach agreement.

The final section of the survey was a series of open-ended questions to assess stakeholder perceptions of the strengths and weaknesses of the process. A coding system was used to categorise survey responses and to calculate the frequency of each type of response. Results from the final section are not included here, except where responses provide additional insight into the survey findings.

Survey Results

Responses were collected from 18 individuals, a response rate of 62%. Responses were received from participants representing all the key sectors (agriculture/ horticulture/ viticulture; commercial/ industrial; environment; council or government; tangata whenua). Responses were received during November 2012 and are therefore the perspectives of the participants on the TANK process and outcomes as of that date.

The following section provides a brief summary of the results, and identifies some aspects of the TANK process to be explored in more detail as the process advances. As of November 2012 participants' observations regarding the outcome of the process were purely speculative, as consensus recommendations have not yet been attempted.

The results from the survey with respect to the management and design of the process are shown in *Table 1*. Average percentages for each process criterion were calculated using the percent for positive responses for all questionnaire statements associated with that particular criterion. As many as three statements were used to test the level of agreement for different criterion statements.

An important criterion for a successful collaborative process is a high degree of support for the process. This is evidenced in the level of agreement with the 'purpose and incentives' criterion statements. When asked whether or not they agreed or disagreed with the following statement: "Collaborative decision making is a step in the right direction for water management in Hawke's Bay", 90% of respondents strongly agreed/agreed. The statement – "I am fully committed to the collaborative decision-making process" – also received a high level of support from respondents (87%). There was also widespread agreement (93%) that freshwater management in the TANK catchments was a significant concern, requiring a timely resolution. "The timetable is tight but expiring consents force the time available to be short", said one respondent. The clear incentive for collaboration, and the agreement by council to consider the recommendations of the TANK group, together with independent facilitation and a process of principled negotiation in which participants feel they are being heard, also ranked highly.

With each successive meeting, participants have been expressing greater confidence and higher degrees of satisfaction with the process, including the way it is being organised and facilitated. Respondents were generally supportive of the way the TANK process was being managed and coordinated at the time of the survey (76%) and understood the criteria of both accountability and adherence to clear ground rules (70 % and 63% respectively). As noted earlier in this paper, a key design aspect is access to high-quality scientific information to support decision making. The provision of this information can place high demands on council resources, and must be factored in to the design of the collaborative process from the start. This evaluation was conducted near the beginning of the process, yet concerns were raised even then about the availability of robust and accessible scientific information to support decision-making. As one respondent stated, there is "not enough time to understand the hydrology and fill in science gaps" and another, "[the] process for receiving *quality* catchment water information is very unclear and looks like already we won't get enough time/opportunity/support to really delve into the science [*sic*]". It will be important to assess whether these concerns continue to be voiced in subsequent surveys. The initial steps of the methodology were focused on the range of values held by participants and other stakeholders. Subsequently, i.e. after the first survey, presentations have been made to the TANK group by HBRC science staff, and a number of reports have been made available. Additional science is required and will be commissioned as part of the process, but it is important to consider in advance the resources that may be needed, and when.

Criterion	%	Description
Principled negotiation and respect	93	The process operates according to the conditions of principled negotiation including mutual respect, trust and understanding.
Purpose and incentives	90	The purpose is driven by a shared purpose and provides incentives for participation and for working towards consensus in the collaborative process.
Independent facilitation	80	The process uses an independent facilitator throughout the process.
Effective process management	76	The collaborative process is managed and coordinated effectively and in a neutral manner.
Accountability	70	The process and its participants are accountable to the broader public and their own constituencies.
Clear ground rules	63	As the process is initiated, a comprehensive procedural framework is established that includes clear terms of reference, operating procedures, schedule, and protocols.
High-quality information	62	The process incorporates high-quality information into decision making.
Self-design	61	The parties involved work together to design the process to suit the needs of the TANK collaborative stakeholder group and other stakeholders.
Voluntary participation and commitment	54	Affected or interested stakeholders participate voluntarily and are committed to the process.
Commitment to implementation and monitoring	54	The process and final agreement include commitments to implementation and monitoring.
Equal opportunity and resources	50	The process provides for equal and balanced opportunity for effective participation of all interested/affected stakeholders.
Inclusive representation	49	Majority/All parties with a significant interest in the Greater Heretaunga plan change, related issues, relevant outcomes are involved through the process.
Flexible, adaptive, creative	27	Flexibility is designed into the process to allow for adaptation and creativity in problem solving.
Time limits	27	Realistic deadlines and milestones are established and managed throughout the process.

Table 1. Process criteria and level of agreement. Note the percentage figure represents the average of up to three statements gauging support for individual criterion.

A criterion for which there was a lower level of agreement was inclusive representation. The value of 49% for inclusive representation is an average across three criterion statements, which had marked variations. For example, “tangata whenua interests and values are sufficiently represented” (67%), “all appropriate interests are represented in the stakeholder group” (47%), “there is equal representation of different stakeholders in the group” (32%). Additional stakeholders were recruited to the TANK group within the first three meetings to try to broaden the diversity of participants, but beyond meeting three there has been an attempt to restrict membership in order to promote trust and build social capital among participants, who have got to know one another over the course of the meetings. A restriction on new members joining the group after meeting three should also ensure that all participants (ideally) will be basing their recommendations at the end of the process on the same information, as they will have been involved for most, or all, of the time it has been running.

The process criteria with the lowest agreement (27%) were to do with having realistic time limits and a degree of flexibility within the process to accommodate additional time, if needed. Unrealistically short time lines was also the most frequently cited weakness in the open-ended responses. However, since the first survey the process is now likely to be extended by at least six more meetings and we expect criteria related to time limits to score much higher in the second survey. Internationally, the average

length of time to reach consensus recommendations through a collaborative process is four years (Morton et al. 2012). Choosing a collaborative process is by no means a 'quick fix', but can have benefits in generating social capital that go beyond the stakeholder group, and the original process itself.

Design Criteria for Success

A key consideration for designers of collaborative processes is to incorporate design criteria that will enable a successful outcome. Figure 2 shows the 12 most highly ranked design criteria that participants identified as being important in the second section of the survey.

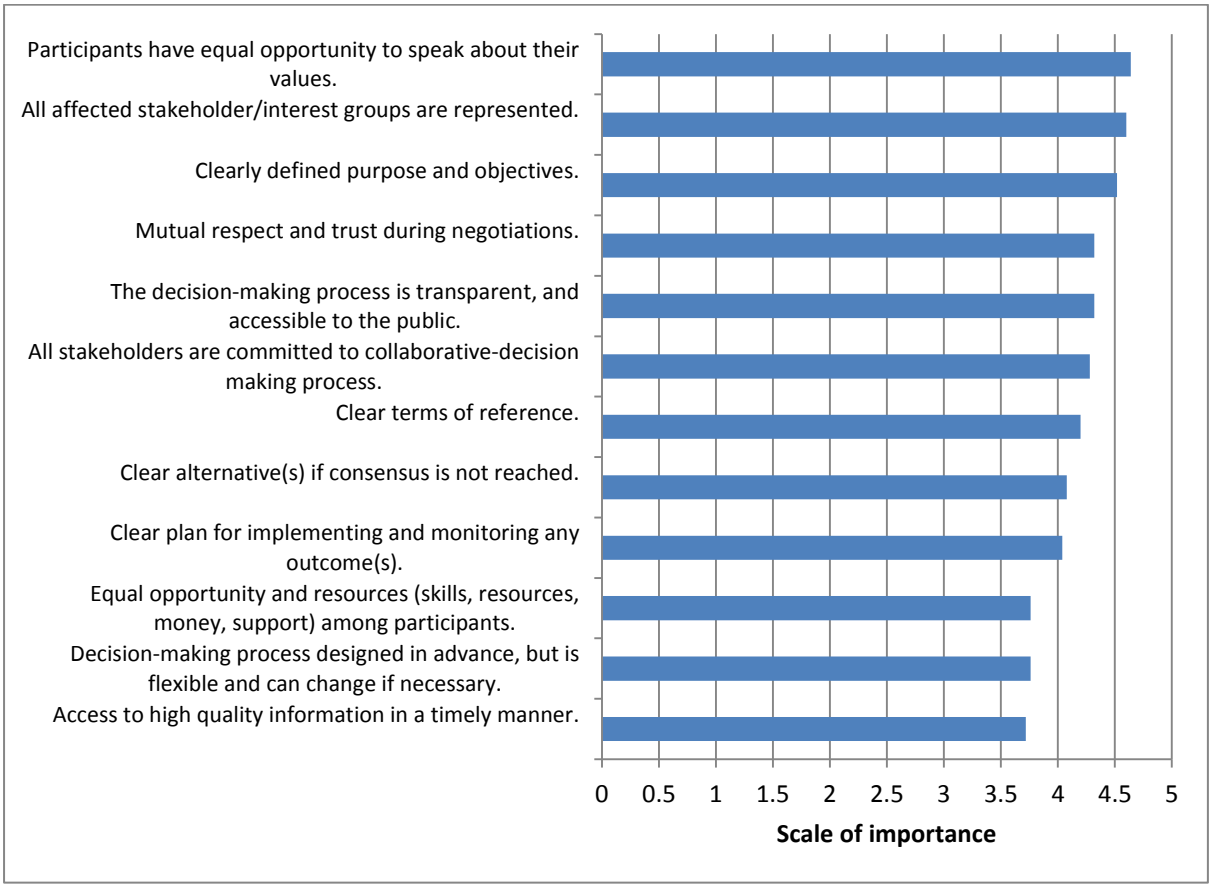

Figure 2. Comparative importance of design criteria for success in the TANK land use process.

The most important criterion, according to stakeholders, was that "participants have equal opportunity to speak about their values". As part of the TANK process, a field-day was held after the survey, between meeting four and five, during which all stakeholders had the opportunity to present and speak to their values in a real-world setting. As noted above, importance was also placed on equal representation ("all affected stakeholder/interest groups are represented"). Equal representation is a significant challenge for any collaborative process, as the potential range of affected parties is almost limitless. In some cases, affected parties might be identified but be unwilling or unable to participate. The TANK process has addressed this in part by ensuring that individuals are aware of their responsibility to communicate with wider industry, community and sectoral groups, and by ensuring the group is diverse as possible, while still remaining a workable size.

A number of respondents indicated that it was difficult to rank the criteria, as *all* were considered important to achieving a successful outcome. As one respondent stated, "I have not ranked each

criteria against each other because by far the majority are fundamentally important for effective collaborative decision making". This comment indicates that collaborative planning is a complex process requiring fulfillment of a large range of criteria in order to achieve success. It is important to note that, although the process has not yet resulted in a final plan recommendation, it has been successful so far in building social capital and trust among participants.

Conclusion

Collaborative processes for freshwater management have emerged as a popular planning tool with many alleged benefits relative to alternative planning models. There is agreement among advocates and critics alike that careful evaluation of collaborative planning is required to assess the merits of such processes and to develop best practice guidelines. This paper describes and applies a decision-making framework and evaluation methodology based on the TANK process underway in Hawke's Bay. The findings show that there is a wide degree of support for the collaborative process amongst participants which is consistent with other much larger surveys of stakeholders engaged in collaborative decision-making and planning processes elsewhere (Morton et al. 2012). The Hawke's Bay case study also provides important insights into best practice management of collaborative planning. The case study experience shows the importance of allowing sufficient time to build trust and social capital among participants; to ensure the delivery of science to support decision-making by stakeholders; and the value of engaging as a group, outside the deliberation room. Consideration of these and other design criteria outlined can help ensure all key stakeholders remain engaged in a collectively driven process.

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