

**Documenting and Evaluating
the Waimea Water Augmentation
Committee Process for
Stage One of the Feasibility Study**

By Ann Winstanley (ESR)



Programme Manager

Alistair Sheat

Author

Peer reviewer

Ann Winstanley

Jan Gregor

A project funded through Envirolink (funded by the Foundation for Research, Science and Technology (FRST)) and carried out by the Institute of Environmental Science and Research Ltd (ESR), Christchurch, August 2007.

DISCLAIMER

This report or document ("the Report") is given by the Institute of Environmental Science and Research Limited ("ESR") solely for the benefit of the Waimea Water Augmentation Committee.

Neither ESR nor any of its employees makes any warranty, express or implied, or assumes any legal liability or responsibility for use of the Report or its contents by any other person or organisation.

CONTENTS

Executive Summary 1

	Purpose of the Report	1
	Introduction and Background	1
	Key Findings	2
1.	Purpose and outcomes of the report	3
2.	How the project evolved	3
3.	Methods and evaluative criteria	4
4.	Structure of this report	5
5.	Environmental, social and theoretical contexts	7
5.1	Understanding the Waimea water resources	7
5.2	Exploring the wider social contexts of water augmentation initiatives	7
5.3	Theoretical contextualisation	8
6.	Deciding the committee structure and formalised processes (2004-2007)	11
6.1	Setting up the Waimea Water Augmentation Committee	11
6.2	Formal Processes and time line	12
7.	Findings from interviews	13
7.1	'Content and process' - inclusiveness, difference and deliberation.	14
7.2	Council-committee interaction	16
7.3	Committee-community interaction	17
7.4	Luck, geography (and scale)	20
7.5	Individual views and attitudes - sustainability, sense of place and goodwill (commitment)	21
7.6	What could have been done better?	23
8.	Evaluation summary and discussion	25
8.1	Project delivery	25
8.2	Genuine and sustained involvement of iwi	26
8.3	Recognition of interrelationships between environmental, economic, cultural and social outcomes	27
8.4	Transparency of information and appropriate opportunities for the public to engage	28

8.5	Sustaining a forward momentum towards acceptable outcomes.	29
8.6	Future Issues	30
Appendix One:	Interview items (semi-structured interviews)	34
Appendix Two:	Raw data from public meeting evaluation (19 th December, 2005)	35
Appendix Three:	Stakeholder Mapping (Winstanley et al, 2005).	37

Executive Summary

Purpose of the Report

The purposes of documenting and evaluating the social history and processes undertaken by the Waimea Water Augmentation Committee's endeavour to find a long-term solution to ongoing water shortages in the Waimea Basin are to:

- Provide an historical account for future reference.
- Evaluate the effectiveness of the committee processes using multiple criteria based on the current situation, aims of the holistic Feasibility Study, and prior research that identified the need for committee-council-community interaction in both defining the problem and in finding solutions.

The intended outcomes include:

- Improved understanding of interrelated factors that contribute to the success of a council-community long-term project that can inform future projects.
- Learning that can be more widely disseminated within New Zealand.

Introduction and Background

The Waimea Water Augmentation Committee and ESR researchers have worked together in relation to the water augmentation Feasibility Project (2004-2007) so ESR was well placed to use information already gathered and analysed and to complement this material with supplementary interviews of committee members. The researchers have used their understanding of the water shortage situation in the Waimea, theoretical concepts relevant to this situation, and the aims of the Feasibility Study to develop the evaluated criteria for this report.

The water shortages in Waimea and the proposed storage solution is placed in a wider national context, recognising that initiatives and processes for addressing reliability of supply across different sectors are being undertaken in other regions of New Zealand.

The methods employed included past observations and analysis of meetings, document assessment and interviews with members of the committee and others. The evaluative criteria developed reflect a combination of analytical, theoretical and situational elements.

Key Findings

- Water shortages in the Waimea region can be defined in terms of a 'wicked problem' characterised by identifiable components.
- Including diverse interests on the Committee was a key factor in enabling environmental, economic, cultural and social factors to be taken into consideration.
- Personal characteristics of committee members interact with formal and institutional processes - success cannot be attributed to either one or the other.
- Community engagement and feedback is provided for and taken into account.
- Iwi engagement is seen as essential while it is recognised that consistent engagement is difficult because of resourcing constraints.
- Positive experiences of council-committee interaction contribute to the time commitment made by committee members as well as meeting the aims and objectives of the Feasibility Project.
- Future issues relating to the next stage of the Feasibility Study are more complex and will require ongoing commitment and council-committee-community interaction. Ongoing evaluation could provide useful information, ultimately linking process with outcomes.

1. Purpose and outcomes of the report

This documentation and evaluation

- Provides a historical record of the social processes employed by the Waimea Water Augmentation Committee (WWAC) tasked with finding a long-term solution to ongoing water shortages in the Waimea Basin.¹
- Evaluates the effectiveness of these processes using multiple criteria based on the framing of water scarcity as a 'wicked problem'; the aims of the Feasibility Study to carry out a holistic study that takes account of environmental, economic, cultural and social factors; and, the need for committee-council-community interaction in both defining the problem and in finding solutions.

This report focuses on the social and interactive processes that contribute to achieving solutions to water shortages that are acceptable to key stakeholders and the community at large, and attempts to delineate key social elements and processes that characterise the ways in which the committee and its individual members work.

The intended outcomes include:

- A better understanding of interrelated factors that contribute to the success (social and political acceptability) of a council-community long-term project.
- A potential 'template' for continued practice as well as informing future council-community projects.
- A learning opportunity for other councils embarked on similar projects.
- Information for government agencies such as MAF, MfE and MED, in the context of the Water Programme of Action.

2. How the project evolved

Interaction between WWAC, Tasman District Council (TDC) and ESR has been ongoing since late 2003. Dialogue was initiated through the coming together of two research projects - ESR's *Sustainable Development - The Human Dimension* programme funded by FRST, and WWAC's *Feasibility Study into Water Augmentation* - the Feasibility Study. A memorandum of understanding was established between ESR, WWAC and TDC in which it was agreed that ESR would contribute to the Feasibility Study through exploring and documenting community activities and values of freshwater in the Waimea, as well as more general water management options. For ESR, involvement met their broader

¹ Water augmentation refers to the aim of making more water available.

research objectives of (i) improving participation of multiple agencies, communities and Māori in decision-making on water allocation; and (ii) evaluating existing and different methods of participation.

Through this relationship, the ESR Integrated Research for Sustainability (IRfS) team attended a number of committee meetings, public meetings, and had access to relevant documents and reports, and information gained through these activities has provided the observational and secondary data for this report. This background knowledge has been supplemented through individual interviews. One of the perceived advantages of having ESR researchers carry out this project is that they are 'outsiders', based in Christchurch with no identifiable 'stake' in the outcomes of the Feasibility Study or in this documentation and evaluation. At the same time Ann Winstanley (the Tasman case study leader, and Envirolink project leader) has a long family connection to Nelson so is familiar with the area which helps to embed the research activities.

3. Methods and evaluative criteria

The evaluative criteria were determined through identifying the objectives of the Feasibility Study; exploring committee members' perceptions of the process to date and their visions for the future; and through the literature review carried out for the Human Dimension Programme (environmental and productive sustainability, Māori participation in RMA processes; and the rationales and methods for participatory decision-making relating to natural resources). Two key ideas emerging from the literature included likening the need to find solutions to water scarcity to a 'wicked problem', and a seminal article by Heberlein (1967) who argues for multi-dimensional 'fixes' to problems. Both these ideas are outlined in section 5.3. The evaluative criteria listed below reflect a combination of analytical, theoretical and situational elements.

- Project delivery;
- Providing solutions that included technological, structural and cognitive components;
- Genuine and sustained involvement of iwi;
- Recognition of interrelationships between environmental, economic, cultural and social outcomes;
- Transparency of information and process for the public; and,
- Sustaining a forward momentum towards acceptable outcomes.

These headings will be used to shape the concluding evaluation and discussion.

The methods of data collection included:

- Interviews carried out with each member of the WWAC, TDC staff, project manager for Tonkin & Taylor (See Appendix One for interview schedule);
- Electronic survey: Members of the Lee-Wairoa Valley liaison group were sent an electronic survey, but only one member of the group returned the survey;
- Observations of WWAC and public meetings;
- Assessment of documents: Performance Validation Programme, February 2007 (project audit for the fund manager of the SFF); public newsletters; the 'Have Your Say' survey, the ESR report, 2005; and,
- Reference to relevant literature where appropriate.

4. *Structure of this report*

The report is structured along the lines of 'story-telling' employing a historical ethnographic approach, because it comprises two components - historical documentation and evaluation. This approach blends chronology, the use of documents, and interviews, and, in particular, focuses on context, group and individual views and actions and their interrelationships.² The report The U.S.A. NOAA Coastal Services Center describes the goal of ethnography as obtaining an in-depth understanding of the history, practices, values, tradition and circumstances of the individuals, groups and surrounding natural resources being studied. Using multiple methodologies, such as secondary data, historical research, observation and interviewing, ethnographic research is focused on interaction among and within groups.³

Section 5 describes the context in which the activities of the WWAC occur. This will be divided into three sections: (i) understanding the Waimea water resources, (ii) exploring the wider social contexts of water augmentation initiatives, and (iii) theoretical contextualisation of the water issues in the Waimea. Including the theoretical concepts in this section attempts to build a bridge between real situations and appropriate theory to demonstrate how theory can actually contribute to improved understanding.

Section 6 describes the establishment of the WWAC and the formal process activities in which the committee has engaged from late 2003-June 2007.

² In this sense it differs from the Sustainable Farming Fund (SFF) Audit report which focuses on the Feasibility Study project management and meeting objectives, and from the technical reports provided by the consultants [Tonkin and Taylor], and from a report that could have used the formal minutes of committee meetings to provide an historical account of the progress and decision-making of the committee.

³ www.csc.noaa.gov/mpass/tools_ethnography.html (accessed 19/07/07)

Section 7 is the key 'story-telling' component drawing predominantly on the interviews with committee members. Important themes are presented, which are the focus of interviewees' stories and of the evaluation criteria. These themes are: (i) inclusiveness and difference relevant to both 'content' and process of committee interaction, (ii) council-committee interaction, (iii) community-committee interactions, (iv) scale and geography, and, (v) individual characteristics of committee members. This section pulls together the interrelationships between individuals and groups and how these fashion and influence the ways the committee carries out its tasks and activities. The final component of this section discusses committee members' ideas about what could have been done better.

Section 8 returns to the evaluative criteria outlined above, drawing on preceding material to provide a summary statement under each of the criteria headings.

5. Environmental, social and theoretical contexts

5.1 Understanding the Waimea water resources

The principal source of water for irrigation, domestic, urban and industrial supply is groundwater. Irrigation allocation forms 85% of the water use in the Waimea Plains with the rest used for urban, industrial and private domestic supplies. The three major aquifers under the Waimea Plains are predominantly recharged by the Wairoa, Waimea and Wai-iti Rivers. Rainfall also contributes to recharge. The main rivers lose a substantial amount of flow to the aquifers in the summer, and during drought conditions the flows in the downstream reaches of the Waimea and Wai-iti Rivers reach very low levels and sometimes they go dry.

Recent droughts (2000, 2001) highlighted the low security of these water supplies where severe restrictions were applied to maintain flows in the river and to prevent seawater intrusion along the coastal margins. Groundwater/river modelling work shows the water resource to be over allocated by 22% for a 1:10 year drought security (Lincoln Environmental et al, 2003).

Knowledge of the groundwater resources and recharge patterns is essential for water resource management and allocation in particular. Without this knowledge, water allocation on a case by case basis under the Resource Management Act 1991, can deplete surface water and/or aquifers, and degrade lowland rivers and streams. Additionally, incomplete information about environmental and ecological requirements can result in inadequate river flow regimes. However, councils need sufficient resources to fund the necessary science, and many councils struggle to gain adequate information about their water resources. TDC, in comparison with some other regional and unitary councils, has good knowledge of its surface and groundwater resources.

In summary, new information - or new knowledge - has enabled a better understanding of the water resources in the Waimea Basin. This has highlighted the consequences of increasing drought, resulting in rationing for productive growers and households.

5.2 Exploring the wider social contexts of water augmentation initiatives

Exploring options for water augmentation through storage is not just occurring in Tasman, but also in other areas of New Zealand, such as Marlborough, Waikato, Canterbury and Otago. For example, stage three of the Canterbury Strategic Water Study has involved establishing a regional reference group tasked with developing a sustainability framework through which to evaluate regional options for water storage. While there are strong economic drivers for reliable water supplies for irrigation⁴, water shortages also impact on urban supplies (drinking water, household and industry use) and the environment (river flows, ecology and impacts on coastal estuaries). As mentioned previously, recent enhanced groundwater/river modelling work carried out by TDC shows the water resource to be over allocated by 22% (~ 600 l/s of the allocation of 2700 l/s) for a 1:10 year drought security (Lincoln Environmental et al, 2003). Recurrent droughts (present and future) pose significant threats for productive irrigation and urban water supply use, and for aesthetic, community, recreational, environmental and iwi values. The water supply issue has prompted a holistic study into the feasibility for water augmentation (through water storage) for the area - an option which contrasts with a regulatory focus on more severe and frequent rationing

5.3 Theoretical contextualisation

The complexity of the impacts of regional water shortages and identifying potential solutions can be seen as 'wicked problems' (Shum, 1997). These have certain characteristics identified below:

- **Problems with definition**

There is often contention about the fact as to whether 'true' water shortages exist because different people define the problem in different ways. For example, water shortages can be defined as:

- Inadequate science knowledge about the interaction between surface and groundwater resources;
- Administrative mismanagement;
- Resulting from climate change;
- Inadequate conservation measures;
- Increasing abstractive demand for irrigation and/or residential development;

⁴ Reliable good quality water supply is required to meet export requirements for rural producers and processing plants. Irrigation-based production provides employment opportunities as well as contributing to regional economic growth (see Doak et al, 2004, Harris et al, 2006).

- Inefficient use of water (mismatches between what is being produced for the soils and climate; inappropriate irrigation infrastructure; inadequate knowledge about water quantity required for specific crops).

These variable definitions of the problem, then, have implications for perceived solutions.

- **Actions result in better or worse solutions, not right or wrong ones**

As can be seen by the multiple definitions above, the perceived solutions can be equally as diverse. For example, water augmentation and storage are commonly sought solutions to over-allocation, and maintaining reliability of supply for irrigators. Others have argued for more regulatory approaches to land-use or water pricing to drive water use down and increase irrigation efficacy. Solutions are fraught with equity issues pertaining to costs and benefits for different groups, and relative impact of regulatory approaches. Equity issues are part of the 'wicked problem' characteristic outlined below.

- **There are usually strong moral, political or professional dimensions**

The political acceptability of proposed solutions impacts on what is done. Additionally, political dimensions can create tensions between council staff and councillors that can be difficult to manage (see section 7b).

The moral or ethical dimension is underpinned by different world views and how these are translated into proposed solutions. Adger et al (2003:1098) state that:

... environmental decisions do not only have to arbitrate between the substantially different values of actors regarding desirable environmental and other outcomes: they also need to strike a balance between values that are based on formally different ethical premises.

For example, Adger et al suggest, nature conservation can be an instrumental value or a value in itself irrespective of how conservation might serve human needs or wants. Similarly, Māori concepts such as *mauri* and *wairua* of natural resources, such as rivers, do not lend themselves to quantifiable instrumental valuation, nor, as some authors claim, to inclusion in current natural resource policies and practices. Tutua-Nathan (in Hayward, 2003) states that:

In general, the maintaining and promotion of the *mauri* of natural, physical, and spiritual taonga requires the use of both physical and spiritual management. The concepts of *tapu* and *rahui* are based on a Māori spiritual belief system that is still practised today. The acceptance by statutory decision-makers of a Māori environmental management and

decision-making process is difficult to understand, when resource management decision-makers may have little or no understanding of a Māori cultural belief system.

For another perspective on 'wicked problems', Heberlein (in Field et al, 1974) argues that 'fixing' losses resulting from drought, for example, requires technological, structural and cognitive components to solutions. Simply expressed, a technological fix is about engineering solutions to modify the environment, a structural fix focuses on the institutional and social settings in which water use occurs (for example allocation and efficiency mechanisms), and the cognitive fix is about education and transfer of information. Both the structural and cognitive fixes are aimed at modifying behaviour. McCool and Guthrie (2001), also, argue that messy natural resource management situations arise out of the need to recognise "both biophysical and social processes at larger spatial scales and longer time-frames" (309) that are not amenable to cause and effect explanations.

As well as informing the evaluative criteria, the theoretical concepts and ideas outlined in this section will also be referred to in sections 7 and 8 (interview findings and evaluation summary and discussion respectively).

6. Deciding the committee structure and formalised processes (2004-2007)

6.1 Setting up the Waimea Water Augmentation Committee

The Waimea Water Users Group, which preceded the WWAC, consisted of elected representatives from each of the water user groups associated with the different 'water zones' (related to the aquifers from which irrigators abstract water) on the Waimea Plains. The water users committee provided a mechanism for dialogue between the TDC and the irrigators on the plains, for example the "Dry Weather Task Force" which makes decisions about rationing for the water users.

When the decision was made to explore water augmentation options (end of 2003), the WWAC was set up and included members of the Water Users Committee; TDC councillors and staff, representatives from Nelson City Council Fish and Game, Iwi, and the Department of Conservation (DoC). The committee was tasked with finding long-term solutions to the Waimea water problems. The committee could apply for funding from the SFF administered by MAF, because it comprised largely of water users from the farming sector.

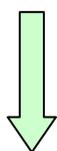
A successful application paved the way for the committee to embark on a holistic Feasibility Study, which included funding from the SFF, water users, TDC and Fish and Game. The four main components of stage one included:

1. Analysis of water demand and availability;
2. Identification of site storage options, and water delivery methods and costs;
3. Environmental assessment and economic analysis of scenarios with and without augmentation; and,
4. Water allocation for optimisation of water use, and environmental and community benefits, and funding.

Joseph Thomas (TDC) was the project manager for WWAC, and the principal consultants for stage one were Tonkin and Taylor, who also subcontracted out components of the work. Identification of community uses and values of water and management options was undertaken by ESR, as part of an independently FRST-funded research programme, with the findings feeding into the feasibility study. Further community input was provided through the WWAC and the TDC 'Have Your Say' survey.

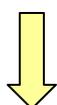
6.2 Formal Processes and time line

January 2004



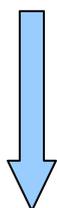
SFF application
Preparation of brief for consultants
(RFP)

July 2004



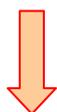
Evaluate proposals and award
contract

October 2004



Water availability analysis,
Assessment of site options, delivery methods, costs
Economic & environmental analysis
Water allocation

December 2005



Complete project components, complete
final reports, Presentations of findings
of study

June 2007

The formal project work began in January 2004 with two major tasks.

1. The first task was to write an application for a project grant to the MAF SFF. One of the conditions of SFF funding is that the project is led by a 'community' group. The community group was described as a community group representing principally the irrigation water users, Fish and Game, Department of Conservation, and local iwi representing environmental interests, and councillors and council staff with knowledge of the water resources and experience in water resource management, planning and infrastructural development planning (SFF Application, 2004). Successful funding was depended on co-funding which was provided by

TDC, water users, and Fish and Game. The request for SFF funding was successful.

2. The next major task was the preparation of the stage one request for proposals for consultants. The proposals were assessed by WWAC, and two consultants were asked to provide presentations to the committee. Tonkin and Taylor was the successful applicant.

Since July 2004, the committee has met regularly, either monthly or every two months, depending on the need for input into the project and/or to make decisions in relation to consultant and/or other reporting. For example, the committee developed a matrix for assessing the feasibility of the 18 storage options initially identified by Tonkin and Taylor. These options were narrowed down to three, based on technical, geological and economic information. Of these three, the upper Lee site was identified as the preferred option, and all further investigations were, and will be focused on this site.

TDC, WWAC and ESR were also signatories to a Memorandum of Understanding in which ESR undertook to carry out a survey of community uses and values of water and perceptions of water management options in light of recent droughts. This work was independent of both WWAC and the consultants, but designed to add to the committee's understanding of community values and uses of water and management options. This was completed in March 2005 and the report is available on TDC's website

(www.tdc.govt.nz/index.php?WaterforWaimeaESRReport).

The Cultural Impact Assessment (CIA), carried out by Dean Walker on behalf of the Nelson- and Motueka- Integrated Resource Management Advisory Komitis (NIRMAK and MIRMAK), was also presented to the committee. The recommendations in the CIA were discussed by the committee and where possible and appropriate recommendations have been incorporated into resultant project work.

The committee has also produced a community newsletter, *Water in the Waimea Basin*, every six months, and held a number of public meetings. A mail-out survey was conducted in 2007, and this indicated community support for the project (see section 9, committee-community interaction).

Stage one of the Feasibility Study is complete with the results outlined in the June, 2007 issue of the newsletter, presented at a number of council and public meetings, with the full report now available on the TDC website.

Additionally, the Performance Validation Programme report (Sutherland, 2007) which looks at the project background, objectives, milestones, organisation, reporting, dissemination of information and financial management, concluded

with the following statement: "The project is an excellent model of what can be achieved with the right structure, people and processes in place" (12).

The Performance Validation Report reflects the constructive working relationship between the committee and the consultants, which has required ongoing reporting and feedback on objectives, milestones and budgets, with the consultants also managing numerous sub-contracts.

As well as the formal processes outlined above, a better understanding of the factors that contribute to a successful project process involves understanding how the committee works together and what makes this interaction productive in terms of keeping the forward momentum of finding a long-term solution to the Waimea water scarcity. These factors, which include personal characteristics and experiences, interact with the formal meeting structure, procedures and records. An understanding of the relationship between personal characteristics and experiences and the progress of the project is gained through individual interviews with committee members.

7. Findings from interviews

Two key interrelated factors that - in the committee's view - have enabled a constructive process are:

- A common goal of wanting more water in the river (for environmental and ecological reasons; for drinking water supply and industry needs; and for irrigation requirements).
- Committee membership that represents diverse interests with individuals who can articulate their interests and listen to others.

These factors represent individual characteristics and behaviours, as well as group processes and decision-making.

7.1 'Content and process' - inclusiveness, difference and deliberation.

Given the multiple interests that need to be taken into account in water resource decision-making, there are advantages to having those interests represented on decision-making groups or committees, rather than having a narrow range of decision-makers, and relying on the RMA process to 'take care of' consultation. The identified need for environmental, recreational and iwi

gains, as well as more reliable water quantity (and quality), does indicate what interests should be represented on the committee. Having a common goal was seen by committee members as contributing to committee cohesion, despite the different interests held by individuals. The following quotes from committee members reflect the importance of the diverse composition of the committee.

We all understand the situation we're in and we all understand that to solve the problem we all have to work together.

There is a diversity of interests sitting round the table, and all have a requirement for water; no one group takes precedence.

We are a diverse group of people that are working well together - give and take.

No matter what views are held, we are working together for the same purpose; it's easier to work with iwi, F & G, DoC - if we don't work with them we'll fight them and the winners are the lawyers!

Any chance of success has to be an inclusive process.

Diversity of interests or views was seen as a positive attribute of the committee, but diversity does not necessarily engender constructive dialogue and/or the ability to reach agreement. All committee members articulated particular *processes* they thought were important success factors:

- **Willingness to listen and to learn**

They demonstrated that they valued our input - being able to raise issues face to face is positive from an iwi perspective.

- **Dealing with times of feeling uncomfortable**

Inclusiveness involves risks to all parties, and that's sometimes uncomfortable, but the outcome is you get high level agreement and you deal with the detail later.

- **Not shirking the difficult debates**

... if there were [contentious issues] everyone was sitting round the table to debate it.

Ironing things out and accepting - no negotiation (trade-offs)

While the interviews did not cover discussion of different forms of communication and problem solving, it could be claimed that the interaction

between WWAC members resembles that of deliberation rather than consensus, as defined by van der Kerkhof (2006). The author argues that a "serious drawback of the consensus-building approach is that it seems to be based on the assumption that the participants in a dialogue process ... are aware of the different positions of the other stakeholders that are involved in the process" (282), whereas "deliberation refers to a process of argumentation and communication in which the participants engage into an open process in which they exchange opinions and viewpoints, weigh and balance arguments, and offer reflections and associations" (282).⁵ Related to deliberation are opportunities for learning. Being able to articulate what has been learned engenders a better understanding of different positions as well as enabling modification of existing knowledge, and is an important part of a deliberative process. The following quotes demonstrate the importance of learning as part of the project process.

The things that I have personally learned are more of a technical nature, to do with engineering, hydrology, environment, iwi - learned a lot about iwi issues I didn't know before.

It's useful to get those sorts of people on board because you can understand where other people are coming from and you can see why they have that view and you tend to find some sort of moderation as a result.

Returning to the concept of wicked problems, it is clear that a deliberative process is more suited to problem definition or definitions, and consequent solutions. The key point is that while the committee agrees on the what the problem is - lack of water in the river (and consequently in the aquifers), the debate needs to explore and tackle all the consequences of water scarcity, otherwise the solution may not meet the variety of long-term needs of water users, whether irrigators, residents, 'recreationalists' or ecologists.

7.2 Council-committee interaction

Particular qualities of council-committee interaction were identified as factors contributing to an effective process, particularly the ability of Joseph Thomas as project manager.

Joseph managed the project well on WWAC's behalf, and the quality of information was very good.

Joseph as project manager is part of the success.

However, this was not a 'one-way street':

⁵ See also Leeuwis, 2000.

The committee makes it work - makes the project manager want to support it and do a good job.

The consultants identified council staff, Joseph Thomas and Peter Thompson, as providing "excellent technical backing".

An attitudinal approach of facilitation rather than regulation on the part of council staff and councillors was identified as a factor contributing to effective council-committee interaction, and engagement with the community.

TDC work with, rather than dominate - they facilitate.

I think it's quite good that TDC does use a consultation process. The [dry weather] task force is fantastic - we've been meeting every Tuesday and it just puts things in perspective, rather than everything being prescriptive and defined by rules and regulations you can say, well hang on, this is the situation, and until Tuesday no-one's going to irrigate anyway and it might rain on Thursday, so there's quite a lot of mutual respect by doing things that way.

The committee is led by water users but it doesn't feel like that - the members have a natural collaborative relationship, and all the council people involved want to work with the community so there is no conflict point.

The quality of council-committee interaction is also built on constructive relationships between council staff and councillors on the committee. In section 2 it was pointed out that there can be tensions between the political - or electoral - roles of councillors and the roles and responsibilities of council staff, but there is no evidence of any disruptive tensions in the WWAC committee. This is likely to result from councillors having portfolios of responsibilities (eg water management) in which their interests and their political positioning are not at odds with each other. That TDC is a relatively small unitary council may also be another enabling factor, although Ericksen et al suggest that popularist (politically acceptable) policies has informed earlier TDC planning, and some of those interviewed in the ESR research thought that storage was a more politically acceptable solution than other measures that are likely to raise conflicting equity issues.

A drawback of having a number of TDC (councillors and staff) on the committee is that in public meetings, people can focus on what the council is doing or not doing, rather than engaging with the WWAC and its roles and responsibilities.

7.3 Committee-community interaction

The aims of the committee were to keep the public informed of the study and its outcomes, as well as to better understand the views and values of the public. Several members of the committee attended the workshops run by ESR in which core values of participants were recorded, followed by a small group exercise to explore different water management options (including a storage dam) and to ascertain the extent to which each management option met the core values of the whole group. Committee members participating in both workshops (for water users and interested groups/individuals) found learning about the different values and perspectives valuable.

The one thing I have learned - is the disparity of views, they're further apart than I realised. I knew there was a difference, but the extent ... the chasm is huge and I suppose it's part of that urban-rural divide but there's other things as well.

I was aware that there is a perceived - a difference of perceptions, but that is something we've probably not thought a lot about before, I mean I'm conscious of it, but don't pay a lot of attention to it; this has exposed it - it's useful information.

Everyone wants to see the water but, the value they place on why they want the water seems to vary - that was the interesting part of how we proceed from here.

The committee has held a number of public meetings, some of which have been more successful than others. 'Success' in this sense relates to the ability of participants to talk about their concerns and to know that there will be mechanisms put in place to address their concerns, as long as these are clearly the responsibility of WWAC. The two workshops where problems arose included the Pigeon Valley workshop and a workshop for Lee and Wairoa valley residents. These three areas represented the three most likely storage dam sites out of the 18 possible sites identified by Tonkin and Taylor. Pigeon Valley residents were concerned about land acquisition, the risks associated with dam break, and the impact of the dam and associated risks on property values. The Pigeon Valley site, after more intensive investigation that included a cost-benefit analysis, was seen as less viable than the other two sites.

The first Brightwater public meeting was, to some extent, 'highjacked' by one individual's concerns relating to resource consenting issues. While other participants' questions were heard and addressed, some could not participate to their satisfaction. The possibility of public meetings being dominated by

particular interests or particular individuals has been well documented (Cheyne and Comrie 2002a, 2002b). However, most of the public meetings held by WWAC have been well received and constructive. Factors that have contributed to the usefulness of these meetings include:

- Accessibility to information that is largely readily understood.
- Combined presentations from WWAC members and consultants and others such as members of the ESR research team.
- Time for questions, answers and discussion built into the timing of presentations.
- Holding the meetings at locally accessible venues.

An ESR evaluation of a council-committee public meeting (December, 2005) on water management demonstrated that 74.5% of participants were pleased with the information provided, while 25.5 were either neutral or negative; and 73.5% were positive about the process (ability to discuss), while 26.5% were either neutral or negative (See Appendix Two for the raw data and comments made by participants).

One of the barriers identified in literature pertaining to public participation is a 'deficit model' of the public (Einsiedel, 2000). A deficit model is based on perceptions of the public as uninformed, unable to understand the issue or the information presented, and therefore unable to contribute constructively to decision-making. There does not appear to be any evidence of holding a 'deficit model' by the committee as a group or by individuals within the group. For example, a committee member's summary of success factors included recognition that (a) *water is a public good, (b) people are interested in, and will be affected by decision-making, and (c) people are well-informed.* At the same time, the questions from the public in the 'Have Your Say' survey indicate the need for ongoing public access to information and the communication strategy is a response to that need.

Committee members have demonstrated their commitment to community involvement through the provision of available information, access to any of the committee members (contact details are provided in each newsletter), and opportunities for face-to-face meetings (through public meetings and the formation of the Lee-Wairoa community liaison group). They articulate positive outcomes of having an open and transparent process, as illustrated in the following quotes.

... a key for planning for water - and you can say that in planning for anything - is a really good community engagement process, where the community feels brought into the process. I think that's absolutely critical.

It's that whole aspect of community consultation which is easy to say, not so easy to do, but when you do it well there's huge benefits, and everybody involved is a lot happier. If you do it badly there's a lot of grief - sometimes over some quite silly things.

It appears that the round of public meetings following completion of stage one have provided the committee with support for proceeding with storage building considerations (objective of the Feasibility Study).

The Lee-Wairoa valleys liaison group was set up in 2006 following a recommendation in the ESR report, based on the need to recognise that these residents occupied a unique position in relation to others affected by a water storage dam in one or other catchment. One of the roles of the liaison group is to provide a conduit for information exchange between WWAC and other residents in the valleys. As stated earlier, only one member of the liaison group responded to the questionnaire sent out for this report so the information provided here cannot be seen as a reflection of the whole group.

The respondent saw the liaison group mechanism as a good way convey information with clear explanations of that information, and that friends and immediate neighbours had requested information. However, providing information to the group was sometimes slow and had to be chased up. While the liaison group asked to provide input into the '*Have Your Say*' household survey, this did not eventuate because of time constraints. The respondent expressed some scepticism about whether consultation was taken seriously, and raised the concept of the dam being a *fait accompli* based on irrigator need. Scepticism also related to the perceived lack of opportunities for the community to express - consider - alternative water management options. However, the ESR workshops (February 2004) did ask participants to document and evaluate, in terms of core values, other water management options, and the question section of the '*Have Your Say*' survey reflected similar community concerns such as the use of private storage e.g. rainwater tanks and dams; piping water from other catchments; recycling storm water and grey water; education for efficient water use (irrigation, water saving household appliances, conservation); and negotiated water rights (allocation). It is worth noting that when workshop participants evaluated water management options in terms of meeting core values, a storage dam, such as that proposed in the feasibility study, was the most effective in meeting core values.

There are communication initiatives to be carried out by WWAC that include information about the costs and benefits of the proposed storage dam compared to piping water from another catchment, and also for water users to address public perceptions relating to efficiency measures.

Finally, the challenges ahead identified by the liaison group respondent include: conveying detailed information to the wider community, and the impact of people's perceptions of alternatives on the resource consenting process.

Other mechanisms for providing information to the community (and subsequently opportunities to talk to WWAC) include the six-monthly newsletter and information and reports posted on the TDC website. Methods for evaluating the effectiveness of these mechanisms have not been employed for this report.

7.4 Luck, geography (and scale)

The relative scale of the Waimea Plains compared to Canterbury, for example, was seen as a factor contributing to the success of the Feasibility Study to date.

We are lucky in that the region has a lot of potential (and preferable) sites for storage.

In the Waimea, the scale and availability of water appears to have a significant impact on the ability of decision-making groups to achieve better coherence between strategic planning and locally acceptable solutions to water scarcity (and unreliability).

The other important scale issue relates to social networks which can contribute to dissemination of information and likelihood of personal contact. The water users on the committee have been described as "all leading successful businesses", so in that context the committee members come into contact with many other people in the area. Personal views on 'sustainability' also inform their farming and business interests, as well as their (voluntary) work on the WWAC. The following section focuses more on the individual factors that contribute to how the group works together and with the community.

7.5 Individual views and attitudes - sustainability, sense of place and goodwill (commitment)

While there are numerous debates about the multiple meanings of sustainability (see Memon and Skelton, 2006), a simple question asking committee members if they held a personal view of sustainability elicited quite similar responses. These can be summarised as the need to protect the river and its eco-systems; guardianship of the land for present and future generations; interrelationships between economic viability, environmental benefits and community involvement;

the use of science-informed 'green' practices; and a balance between regulation and innovation in which versatility and difference are important.

The river is not sustainable as it is - going dry, risks of salt water intrusion with bigger tides, need a functioning eco-system.

Long-term economic viability, environmental benefits, community involvement.

We don't own the land - we are leasing it from the people of New Zealand - do we want to be doing this for the next 100 years? (referring to land use and practices).

No-one owns the water - feel this very strongly in N.Z.

Need to agree on a vision and go for it - begin with 100 years out then plan how to get there 50 years, 20 years, 5 years.

Have to be greener than organics - lot of carbon production goes into organics. Greenness has to be based on science and knowledge of eco-systems, for example, I support the iwi values of preserving wetlands.

[Sustainability is a] *balance between regulation and innovation, and both versatility and difference are important.*

Closely connected to the talk around sustainability was discussion around 'sense of place' - connectedness to the Waimea - and/or recognition that they engage in a number of different activities, such as fishing, walking, swimming, boating.

My family have been farming here for 160 years.

I've lived in the Nelson area all my life - growing in the Waimea for 20 years

We have a long family connection with Tasman area, though the family has been in this area since 1963. We go kayaking, walking, swimming.

For recreation I go sea fishing, walking in the bush.

As a family - we've always been in the rivers - as a kid and now I take my kids.

As a family we swim in the river too.

Tucker et al (2006) carried out a study on the impact of place attachment, sense of place and place dependence on people's likelihood to undertake river protection behaviours. Their analysis of the Hawkesbury-Nepean case study (Australia) indicates that; "people who have a high association with the river

system, have greater identity with leisure activities at rivers generally, value rivers generally and are more likely to find greater place meaning with the Hawkesbury-Nepean" (24). They also state that the combination of place identity and knowledge and/or use of the river system are more likely to lead to pro-active solutions to threats to the health of the river system. The importance of local knowledge, social connections, and subjective experience has also been identified as a key factor in individual evaluations of water storage options in the Canterbury region (Winstanley et al, forthcoming). In this sense, it could be argued that committee members do not see water augmentation as benefiting just the irrigators, but as having much wider benefits. The value that committee members place on having representation from DoC, Fish and Game, and iwi is also indicative of 'big picture' thinking and interest.

We need to understand the whole underpinned by assumption that this will result in a better result overall.

We are putting the big picture first.

The WWAC committee members are not your average water users, they're open to other interests.

Different stakeholders have their own interests but they also know the community; they have an in-built sensitivity to local issues - both community and natural and built environment.

Need to be able to see the big picture, I'm both an irrigator and a fisherman. The rivers are part of the community and the future.

A recurring theme throughout the interviews with WWAC members was recognition of the goodwill expressed by committee members in terms of time and commitment to the process, and goodwill on the part of TDC in terms of administrative support, technical information and project management. At a public meeting (26th June, 2007) one of the irrigators spontaneously thanked members of the committee for their time and effort.

There's a lot of goodwill on the part of the committee with in-kind contributions.

The quote below sums up the themes of this section - sustainability, sense of place and goodwill (commitment) all of which underpin the committee members' individual contributions to the project process.

There are some very good advocates for environmental protection and yet they're irrigators, you've got fishermen who are irrigators, and I think there's a general goodwill there. No-one wants the river to go dry - I don't think there's

anyone who's so pro-development that they would not recognise environmental factors.

7.6 What could have been done better?

There were two dominant themes relating to what committee members thought could have been done better. These were (i) consistent iwi involvement - "*Iwi involvement has been patchy at times*" - and (ii) *taking the community with us.*

- **Consistent iwi involvement**

Iwi involvement was initiated very early in the process which was viewed positively by the iwi representative and was attributed to both the learning about the consequences of the lack of early iwi engagement in the Wai-iti Kainui dam process, as well as the willingness of committee members to engage face-to-face.

Working together - communication is important.

Additionally, the iwi representative identified the provision for a CIA in the feasibility study as a "*good way to get ownership and communication.*"

While iwi representation at committee meetings was not consistent, it was recognised that the members of the Nelson- and Motueka- Integrated Resource Advisory Komitis who have a mandate to speak on behalf of the different iwi in the Nelson and Motueka areas, have many varied responsibilities and commitments. The difficulties of resourcing consistent iwi participation in committees such as WWAC has been well documented in the iwi participation in resource management literature (PCE, 1998, Heywood, 2003) For example, Tutua-Nathan (in Heywood, 2003) states that;

The requirement to consult with iwi authorities or tangata whenua has placed an expectation or imposition on Māori that they are in a position to participate with planners, developers and consultants. In reality, very few iwi and hapū may be able to respond to the demands placed on them by outside organisations without some form of financial assistance.

However, the inclusive nature of the WWAC committee structure has meant that the iwi representative has found the process a positive one: "*If you want a model - this is it.*"

This is encouraging feedback especially in light of the 1998 Parliamentary Commission for the Environment report which states:

...For tangata whenua and councils to make real progress with the increasingly urgent necessities of sustainable environmental management, new ways are needed to work productively together, to sort out the critical questions of communication and practical collaboration, and build systems that focus on te taiao⁶ and on what we can achieve.

- **Taking the community with them**

I don't think we took the community with us (based on questions in the survey) - needed information in the public domain earlier - brief and bullet points, the communication strategy is late.

Other comments included the ability of providing forums for including other interests, the possible need for corporate/legal expertise, and a question about what role might be played by female representation on the committee.

'Taking the community with them' is something that needs to be seen within the context of the whole study as well as the opportunities and budgets available. Several 'formal' mechanisms have been employed to try to do this (public meetings, newsletters, survey, ESR's research brief), and there are the informal mechanisms which involve individual actions and interactions, such as a chat between an irrigator and an ardent kayaker, talking with friends and neighbours. As stated earlier, informal interaction and exchange are enabled through the relatively small geographic scale of the Waimea basin.

Finally, the issue of including other interests that have not been represented is a difficult one to solve. In terms of participative democracy, stakeholder identification and analyses such as employed in the ESR research is one way of ensuring that those with an identifiable 'stake' in the issue - and its solution - are in some way included in consultation activities (see Appendix Three for a brief outline of the stakeholder mapping used by the ESR researchers). In terms of representative democracy, a postal or phone survey method is often used to seek information from a number of households, with information usually categorised according to certain demographic variables. Both participative and representative democracy methods have been employed in the Feasibility Study, and future community engagement can be well-informed by the *combined* learning.

8. Evaluation summary and discussion

As stated earlier (in section 3) the evaluation criteria were selected because of their ability to reflect analytical (prior ESR research in Tasman), theoretical and situational elements. Discussion under each of the following headings will

⁶ Te Taiao: The environment

refer to these components and link them where appropriate. The evaluative criteria are:

- Project delivery
- Providing solutions that included technological, structural and cognitive components
- Genuine and sustained involvement of iwi
- Recognition of interrelationships between environmental, economic, cultural and social outcomes
- Transparency of information and process for the public
- Sustaining a forward momentum towards acceptable outcomes

8.1 Project delivery

The principal objectives of the feasibility study - *to enhance water availability for both consumptive and environmental, community and aesthetic benefits downstream, and to provide the community with the necessary information to make an informed decision on proceeding with storage building considerations* have been met for this first stage.

The four main components of stage one have been completed.⁷ Contributing to completion is the constructive relationship between the consultants and the committee and ongoing opportunities for public engagement with the process to date. The SFF Performance Validation Programme report (Sutherland, 2007:11) summarises the formal processes of project delivery, stating that it is "An extremely well-run project, both at the committee and project management level and has also had a contractor [Tonkin and Taylor] that has maintained momentum of the project through the links and relationship they had developed to deliver the project objectives."

- The ability to provide solutions that include technological, structural and cognitive components.

WWAC was tasked with finding long-term solutions to the problem of water scarcity in the Waimea Basin. Using Heberlein's framework of technological, structural and cognitive 'fixes', the committee process used so far has identified a technical solution - a storage dam. Structural components to the solution 'package' include proposed variations to the Transition Resource Management Plan which the TDC has discussed with the water users and which have been agreed to in principle, and the Dry Weather Task Force, consisting of

⁷ Analysis of water demand and availability; identification of site storage options, and water delivery methods and costs; environmental assessment and economic analysis of scenarios with and without augmentation; and water allocation for optimisation of water use, and environmental and community benefits, and funding.

council staff and water users, who collectively make decisions about water rationing that may be required. The cognitive fix relates to education and motivation for behaviour changes. The 'communication' strategy developed as a result of the '*Have Your Say*' survey demonstrates that WWAC is committed to educational activities.

Assuming the technological challenges of building a storage dam in the upper Lee catchment are met, the structural or institutional, challenges ahead relate to the following issues identified by committee members and by water users and the most recent public meeting (26th June, 2007):

- Ownership of the dam (public and/or private ownership)
- How it is paid for and by whom (who benefits, who pays)
- Governance issues (what governance structure is put in place)
- Resource consenting process
- The status of WWAC as a decision-making group

Meeting the cognitive challenges of finding a long-term solution will depend on the extent to which WWAC and the TDC deal with alternative water management mechanisms identified by the community, as well as the learning associated with further communication initiatives. There appears to be a consistent message from the community that other conservation policies and measures need to be put into place alongside building a storage dam, thus reinforcing Heberlein's claim that effective long-term solutions to water scarcity need to include a variety of 'fixes'.

8.2 Genuine and sustained involvement of iwi

According to the iwi representative there is genuine involvement and recognition of iwi values and needs, demonstrated, for example, by early engagement, considered discussion with iwi members on the CIA. This assessment is based on observing and listening, being aware of how people communicate with each other, their integrity and tikanga (the quality of interaction underpinned by values).

Consistent involvement of iwi, for example, attending the WWAC meetings, has been identified as missing by most of the committee, but acknowledged as resulting from the iwi representative having multiple responsibilities, and that there are only a few with a mandate to speak on behalf of those iwi represented in the Nelson- and Motueka- Integrated Resource Advisory Komitis. As the Feasibility Study moves into stage two there will be ongoing engagement with iwi, especially in relation to a detailed CIA and the extent to which

recommendations already identified are incorporated into this second stage of the project.⁸

8.3 Recognition of interrelationships between environmental, economic, cultural and social outcomes

This ability is a major strength of the committee given its membership. The opportunity and ability to engage in early and ongoing discussion and debate appears to be invaluable in enabling win-win solutions compared to trade-offs. For example, Sally Marx who managed the project for Tonkin and Taylor stated that it was very helpful to have representatives from Fish and Game, DoC and iwi on the committee. For those committee members representing environmental and recreational interests, there are tensions relating to the need to manage their organisational mandate and responsibilities, and take the needs of other water users into account without incurring criticism from their employers and/or stakeholders, as this quote from an environmental representative on a Canterbury group illustrates:

And that's been a real problem for some of the people like me - I had made my council aware I was on the group but when they heard the outcomes they weren't happy, that didn't look good on me and some other people who have been involved are suffering the same kind of scrutiny really.

An interesting point of difference between the Canterbury Reference Group and WWAC is that those in the Canterbury Reference Group consistently referred to economic and environmental interests as opposing sides and early discussion included questions about differential weighting and trade-offs (Winstanley et al, forthcoming), whereas WWAC has consistently aimed to accommodate environmental, economic, social and cultural needs in a non-hierarchical way. It may be that different kinds of decision-making emerge depending on whether the decision-makers can keep environmental, economic, social and cultural needs and values in creative and constructive tension with each other or employ a trade-off approach that may focus attention more on mechanisms for making or justifying trade-offs than seeking solutions.⁹

There is, however, an identifiable New Zealand-wide discourse around the (public good) economic benefits of irrigation which has led to some scepticism of stated aims to concurrently improve environmental outcomes (Bailey, 2007, Winstanley et al, 2006), with members of the public seeing the promotion of irrigation-associated benefits disguising disregard for the natural environment.

⁸ The Cultural Impact Assessment already completed relates to both the Wairoa and Lee catchments.

⁹ These are untested research hypotheses and should be read in that context.

At the same time, the local and regional economic benefits of a reliable water supply for irrigation have been well articulated by the water users and in the recent report by Harris et al, 2006, *The Opuha Dam: An ex-post study of its impacts on the provincial economy and community*. Furthermore, a number of people have articulated irrigation schemes as an effective way to get environmental gains or benefits, given that conditions imposed on these through the RMA are likely to be more stringent than those imposed on an individual case by case basis (ESR Capability Fund project interviews).

8.4 Transparency of information and appropriate opportunities for the public to engage

Information has been made available to the public through: (i) six-monthly newsletters, (ii) reports and information on the TDC web-site, (iii) the formation of the Lee-Wairoa liaison group; (iv) public meetings; (v) the *'Have Your Say'* community survey (with 434 responses); and (vi) informal interaction between members of the committee and members of the public. ESR's research provided another avenue for public participation through individual interviews, focus groups, family survey and two workshops. The CIA provided specific input from iwi. There have also been a number of articles in the *Nelson Mail* and the Richmond local 'rag'.

The interviews with committee members indicate that effective committee-community interaction is a valued and necessary component of the process. This does not mean that members of the public necessarily see communication in the same way; there is some scepticism about the ability of the public to have a genuine effect on decision-making, and the ways in which information is presented may not be 'accessible' to all members of the public. The ESR Human Dimension and Capability Fund research has demonstrated that barriers include technical language and/or terms used; too little or too much information; and not identifying how the public's response will be captured (documented) and addressed.

The ESR research team's analytical work in progress (Human Dimension and Capability Fund Projects) also suggests that where decision-making groups sit in relation to agencies or organisations (eg local government) 'above' them and to communities of interest 'below' them has some impact on where their energies are directed. The analysis to date suggests that WWAC (with strong council membership) is more likely to engage with the community than is the Canterbury Reference group which is focused on trying to influence those above (mayoral forum and steering group). It may be that TDC's status as a unitary council with strong council membership on WWAC, combined with the relative small scale of the Waimea area, are powerful drivers of efforts to engage with the community

and to encourage the community to engage with them.¹⁰ How this is done in the future will impact on the final decision-making and the resource consenting process outcome.

Managing complex interrelationships between diverse needs and values, according to some writers, is better achieved through 'allowing' conflicts to emerge and explicitly inform processes aimed at finding solutions to problems (Stratford et al, 2003; Leeuwis, 2000). In an article about participation for sustainable rural development, Leeuwis (2000) suggests that three fundamental conditions must be met before conflict situations can be changed to ones in which solutions can be found: "(a) there must be a divergence of interests"; (b) stakeholders must feel mutually interdependent in solving a problematic situation; and (c) the key players must be able to communicate with each other. It appears that these three pre-conditions have been met in relation to the intra-committee processes, and a number of the other council-committee-community interactions also recognise divergence (for example, increased awareness of differences within the community after the ESR workshops); mutual interdependence (the common goal to improve water quantity and quality for environmental and human benefits); and opportunities for communication (for example, committee meetings, public meetings, newsletters, information on the website, survey, ESR research, CIA, accessibility of committee members).

8.5 Sustaining a forward momentum towards acceptable outcomes.

Several committee members said that they would have liked to get to the storage dam solution more quickly, but that they also realised there was a process to go through and that there is a necessary relationship between process and outcomes.

*We need a long-term process ... and we have to go through it.
The process of inclusion ultimately speeds up the end.*

The committee members were able to articulate their personal visions of the outcomes, for example,

The outcome should be that we can enhance the area (Lee Valley) so it is a regional asset, and will fix environmental issues relating to the river.

Providing water rather than rationing will have flow-on effects - economically and for employment.

¹⁰ These are very preliminary possibilities emerging from the research and more work is required before these ideas can be used or quoted.

The ultimate outcome, I hope, is a water storage facility which will solve our needs for 50-100 years and we won't have to look at water as being an issue in that time.

Stage one of the Feasibility Study has been completed, information from the five reports compiled by the consultants has been presented in public meetings and in the newsletter. Copies of the reports are also available in the public library and on the TDC website.

8.6 Future Issues

As the public becomes more familiar with the study and its outcomes on an ongoing basis, attention shifts to the issues that will need to be addressed in the future, as outlined above. Two mechanisms will ensure the ongoing evaluation of the social processes employed by WWAC for stage two of the Feasibility Study. The first is to follow the project through to, and including, the resource consenting process. The second is to determine evaluative questions relating to major future objectives, for example, evaluating the effectiveness of the proposed communication strategy in light of what the committee hopes it will achieve. McCool and Guthrie (2001) in their description of outcomes of their research on successful public participation in messy situations, state that: "While clearly implementation ("Stuff's gotta happen") is axiomatic to planning, factors other than interventions in the ongoing unfolding of events surely lead to evaluations of success" (321). To date, the committee appears to be on a trajectory that will deliver a long-term and acceptable solution to a "wicked problem" that has affected council, growers and households, as well as in-stream and out-of stream values and uses in the Waimea Basin for a considerable time.

References

Adger W.N., K. Brown, J. Fairbrass (2003) *Governance for sustainability: Towards a 'thick' analysis of environmental decision-making*, *Environment and Planning A*, vol. 35, pp1095-1110.

Bailey Luke (2007) *Reading between the lines: Identifying and assessing the 'equity issues' relating to a large irrigation scheme in Canterbury*, University of Canterbury Social Science Summer Research Studentship project for ESR.

Cheyne C., and Comrie M., (2002a), 'Enhanced legitimacy for local authority decision making: Challenges, setbacks and innovation', *Policy and Politics* 30 (4) pp 469-482.

(2002b), *Involving citizens in local government - expanding the use of deliberative processes*, in Drage, J., (Ed), *Empowering communities?: Representation and participation in New Zealand's local government*, Wellington: Victoria University Press.

Doak M., Parminter I., Horgan G., Monk R., Elliot G., (2004), *The economic value of irrigation in New Zealand*, MAF Technical Paper No 04/01, Wellington: Ministry of Agriculture and Forestry

Einsiedel, E., 2000, "Understanding 'publics' in the public understanding of science" in *Between Understanding and Trust: The Public, Science and Technology*, Amsterdam: Harwood Academic.

Ericksen Neil, Philip Berke, Janet Crawford, Jennifer Dixon (2003) *Planning for Sustainability [New Zealand under the RMA]* Hamilton: International Global Change Institute, University of Waikato

Harris Simon, Geoffrey Butcher, Willie Smith (2006), *The Opuha Dam: An ex-post study of its impacts on the local economy and community*, Report for the Aoraki Development Trust, the Ministry of Economic Development, and Federated Farmers.

Hayward Janine (Ed) (2003) *Local Government and the Treaty of Waitangi*, Auckland: Oxford University Press.

Heberlein Thomas (1974) The three fixes: technological, cognitive, and structural, in Field D.R., J.C. Barron, B.F. Long (Eds), *Water and Community Development: Social and Economic Perspectives*, Ann Arbor, Michigan: Ann Arbor Science.

Leeuwis Cees (2000) Reconceptualising participation for sustainable rural development: Towards a negotiation approach in *Development and Change*, Vol 31, pp 931-959.

Lincoln Environmental, AGFirst, MWH (2003) Tasman Regional Water Study, Report No 4487/4, Prepared for Tasman Regional Water Augmentation Committee

McCool Stephen F., Kathleen Guthrie (2001) Mapping the dimensions of successful public participation in messy natural resources management situations, *Society and natural Resources*, Vol. 14, pp 309-323

Memon Ali, Peter Skelton (2006) *Institutional Arrangements to Allocate Groundwater Resources in New Zealand: A Way Forward*, Canterbury: Environmental Management Group, Lincoln University.

Parliamentary Commission for the Environment (1998) *Kaitiakitanga and Local Government: Tangata Whenua Participation in Environmental Management*, Wellington: Office of the Parliamentary Commissioner for the Environment.

Parliamentary Commission for the Environment (2004), *Growing for Good, Intensive farming, sustainability and New Zealand's environment*, Wellington: Office of the Parliamentary Commissioner for the Environment.

Shum Simon Buckingham (1997) *Representing hard-to-formalise, contextualised, multidisciplinary, organisational knowledge*, AAAI Spring Symposium on Artificial Intelligence in Knowledge Management (March 24-26th) Stanford University: AAAI Press.

Stratford E., D. Armstrong, M. Jaskolski (2003) relational spaces and the geopolitics of community participation in two Tasmanian local governments: a case for agonistic pluralism? in *Transactions of the Institute of British Geographers*, Vol 28, pp 461-472.

Sutherland R.D. (2007) Performance Validation Programme for Feasibility Studies into Water Augmentation for the Waimea Plains, report for the Fund Manager, Sustainable Farming Fund.

Tutua-Nathan (2003) Kaitiakitanga: A commentary on the Resource Management Act 1991, in Hayward Janine (Ed) *Local Government and the Treaty of Waitangi*, Auckland: Oxford University Press.

Van der Kerkhof (2006) Making a difference: On the constraints of consensus building and the relevance of deliberation in stakeholder dialogues, in *Policy Science*, vol. 39, pp 279-299.

Winstanley Ann, Virginia Baker, Jeff Foote, Jan Gregor, Wendy Gregory, Maria Hepi, Gerald Midgley (2005) *Water in the Waimea Basin: Community Values and Water Management Options*, Report to the Waimea Water Augmentation Committee and the Tasman District Council.

Winstanley Ann, Miria Lange, David Wood (2006) *Analysis and implications (for community consultation) of a sample of submissions on Environment Canterbury's draft Natural Regional Resource Plan (NRRP)*, Christchurch: Internal ESR Report.

Appendix One: Interview items (semi-structured interviews)

- History of committee formation.
- Personal philosophy/views of sustainability.
- What has made the committee process work well?
- What could have been done better?
- What learning has emerged for individuals/group?
- What outcomes are anticipated?
- What are the future challenges?

**Appendix Two: Raw data from public meeting evaluation
(19th December, 2005)**

To what extent do you agree or disagree that the public meeting has helped you to ...

1. Gain a better idea about different kinds of water management and their merits and disadvantages

Strongly agree	Agree	Neutral	Disagree	Strongly disagree	N/A
	11	5	1		

2. Learn more about issues surrounding water management

Strongly agree	Agree	Neutral	Disagree	Strongly disagree	N/A
3	10	2	2		

3. Think through how water management could be improved

Strongly agree	Agree	Neutral	Disagree	Strongly disagree	N/A
2	12	2	1		

4. Put forward ideas for discussion

Strongly agree	Agree	Neutral	Disagree	Strongly disagree	N/A
1	12	4			

5. Discussion was free and open

Strongly agree	Agree	Neutral	Disagree	Strongly disagree	N/A
1	11	3	2		

Comments

Was able to understand where council is at this time water assessment.

In the general meeting several important aspects of water allocation and rationing were raised. The separate water zone meeting at the end was the first zone meeting I have been to where there are 2, and at times, 3 council officers and at least 1 councillor present.

Giving information - getting user buy-in into responsible water usage. Put a face to the TDC compliance staff in a positive way.

Outlined current situation and knowledge. Gave users an opportunity to have their say.

To hear reactions of community to actions and theories of council.

Background information to water restriction regime.

Good explanation of the situation (drought) and provided opportunities for public to indicate future water restriction preferences.

As a new user, it gave me some good background.

Good to see the TDC keeping users informed and giving them an opportunity to have their say. Everyone is aware of problems and knows what to expect if drought continues.

More encouragement of a 1 to 1 approach for solving problems which could be individual in nature - A public meeting is not the forum for discussing their problems and a better direction as to whom to approach could have been given.

Information and knowledge is needed to make decisions and as a private landowner I do not consider I have enough info to make decisions for the community.

A well-run meeting, not too long, information presented at the right level of data.

This was one of the best public meetings I've attended. The speakers had clear topics and kept to them in a concise way and on time. It was ably chaired. A meeting that covers that much ground in 1 1/2 hours is excellent. Well done.

Appendix Three: Stakeholder Mapping (Winstanley et al, 2005).

This mapping exercise included committee members and researchers identifying where stakeholders best 'fitted' into the overlapping circles within the context of the Feasibility study. This mapping exercise provided a method for identifying and prioritising who, or what groups the research team should talk with, although the aim was to include as many stakeholders or stakeholder groups as possible within budget and time constraints.

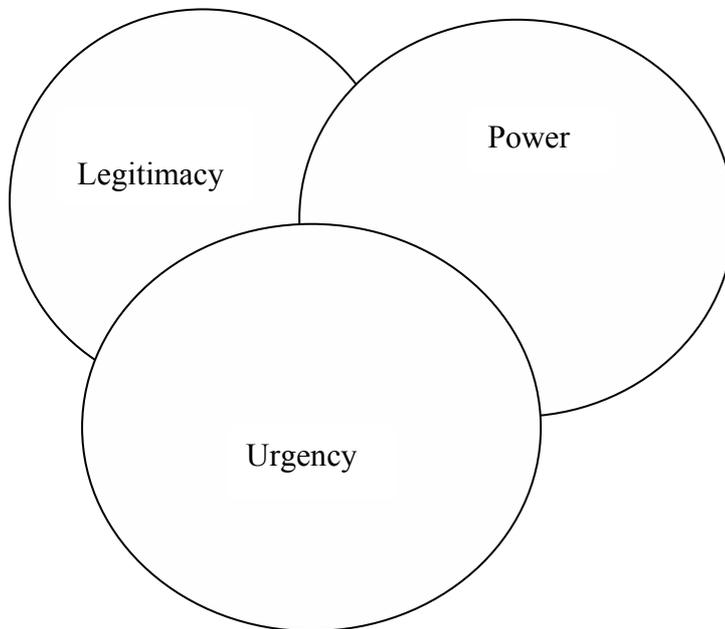


Fig 1: Stakeholder mapping from Mitchell et al, 1997