

## WATER QUALITY GOVERNANCE

### **The Collaborative Governance model: Implementation of the Canterbury Water Management Strategy in New Zealand**

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This case study will cover a description of the **Collaborative Governance Model** used in the region of Canterbury, New Zealand, an outline of the **regional and national context**, an example of where the model has **implemented national freshwater policy direction**, and discussion on some of the **lessons learnt** including outcomes, challenges and requisites to make it work.

#### *Water quality context*

#### *Regional Context*

In New Zealand, Regional Councils (16 across the country) are responsible for the allocation of water, the management of discharges and control of land-use for water quality purposes. District or city councils are responsible for land-use planning and the provision of drinking water, wastewater and stormwater infrastructure.

The region of Canterbury contains 70% of New Zealand's irrigated land, 65% of the nation's hydroelectricity storage capacity, an extensive groundwater system, highly prized coastal lagoons, lowland waterways valued for cultural and recreational use, and world renowned braided river systems.

In the early to mid- 2000's, public concerns about deteriorating water quality, reduced reliability of water supply for irrigation, and dis-satisfaction with the adversarial approach to water management became widespread. The community at large had reached breaking point due to over-allocated water resources pressure from droughts, and degrading water quality. Moreover, the community were entrenched in an adversarial 'lose-lose' approach to conflict. For example, in one catchment alone the community spent \$10Million (NZ) fighting itself over a water storage proposal, which ended with a deeply unsatisfying outcome for all involved.

The Canterbury Water Management Strategy (CWMS)<sup>1</sup> was developed over the years 2007-2009 to provide a framework for a collaborative approach to water management and with targets across all the interests in water. The expected outcomes from the innovation were improved water management outcomes across the economic, cultural, social and environmental well-beings and a change to a community-led collaborative approach to decision making.

#### *National Policy Context*

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<sup>1</sup> See <http://ecan.govt.nz/get-involved/canterburywater/about-strategy/Pages/understanding-s.aspx>.

Point source pollution in New Zealand has been largely addressed, but systems for managing diffuse pollution (mainly from agricultural practices) have not been well developed and rapid land-use change has outpaced any policy response. In some catchments, degraded water quality has been the result of decades of activity and ineffectual policy.

Central government sponsored a national Land and Water Forum (LAWF) involving a wide range of stakeholders to develop recommendations for improved freshwater management. LAWF's work was pivotal in central government issuing the National Policy Statement for Freshwater Management<sup>2</sup> (NPS-FM) in 2011 and amending it in 2014, in recognition of the national significance of freshwater and to improve its management. The NPS-FM provides direction about how local authorities should carry out their responsibilities under the Resource Management Act 1991 for managing freshwater (including rivers, lakes, and groundwater). It directs regional councils to set objectives for the state their communities want for their water bodies, and to set catchment-based water quality and water quantity (flows)'limits' to meet these objectives. Councils have until 2025 to fully comply with setting objectives and limits (not achieving the objectives by this date). The NPS-FM also sets 'national bottom lines' for water quality (defined for a number of attributes) and states that overall water quality within a region must be maintained or improved.

#### *Collaborative Governance Model*

The Canterbury Water Management Strategy (CWMS) is a new paradigm for water management in Canterbury. It has 3 key features:

- Delivering environmental, economic, cultural and social outcomes together (“parallel development”)
- A shift from effects-based management of individual consents to integrated management of Catchments
- A collaborative governance framework where ‘local people plan locally’

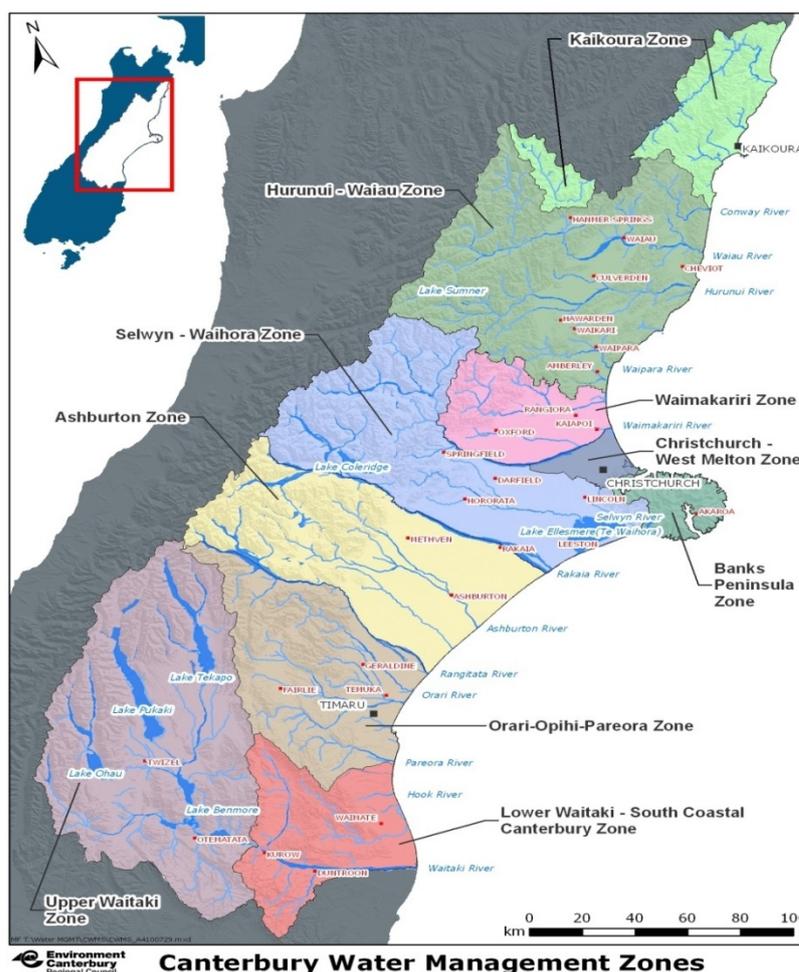
The strategy is a partnership between the regional council, district councils, and the Māori (indigenous) tribal authority in Canterbury (Ngāi Tahu). The region is divided into 10 zones and each zone has a committee which includes: four-eight local people from a range of interests in water, representatives from district and regional councils, and representatives from the local rūnanga (Māori sub-tribe).

Each Zone (see Figure 1) relates to a ‘community catchment’. Boundaries are based on a combination of hydrology, administrative boundaries, and communities of interest.

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<sup>2</sup> See [www.mfe.govt.nz/fresh-water/national-policy-statement/about-nps](http://www.mfe.govt.nz/fresh-water/national-policy-statement/about-nps).

Figure 1.



*Targets*

Each committee is tasked with developing solutions to deliver on the 10 targets<sup>3</sup> of the strategy. The targets cover all the interests in water and all must be delivered together:

1. *Ecosystem, health & biodiversity.* Protecting and restoring systems such as streams, wetlands, and river mouths.
2. *Braided river natural character.* Maintaining the braided character of Canterbury’s braided rivers and the habitat associated with them.
3. *Kaitiakitanga.* Exercising kaitiakitanga (guardianship and protection of freshwater ecosystems) through indigenous people’s role in decision making and achieving environmental outcomes that deliver on cultural values.

<sup>3</sup> <http://ecan.govt.nz/get-involved/canterburywater/targets/Pages/Default.aspx>.

4. *Drinking water.* Maintaining drinking water quality and implementing actions to address compromised drinking water quality.
5. *Recreational & amenity opportunities.* Maintaining the diversity and quality of water-based recreational opportunities.
6. *Water-use efficiency.* Moving to best practice water use for all irrigation (irrigation efficiency) and industrial use in Canterbury.
7. *Irrigated land area.* Increasing the irrigated area and the reliability of irrigation supply.
8. *Energy security & efficiency.* Maintaining the security of hydro electricity supply and reducing the energy used per hectare of irrigation.
9. *Indicators of regional & national economies.* Increasing Canterbury's contribution to national GDP from water use.
10. *Environmental limits.* Setting environmental flows and catchment load limits across each zone that deliver on all the above targets.

The targets are interdependent e.g. environmental flows affect natural character of braided rivers, and there is inherent tension in the targets e.g. increasing irrigated land and improving ecosystem health and biodiversity. The committees' role is to develop Zone Implementation Programmes (ZIPs) which contain solutions to resolve these tensions and achieve the targets. These solutions are framed as recommendations and address both statutory (e.g. environmental limits) and non-statutory (e.g. on the ground actions) actions.

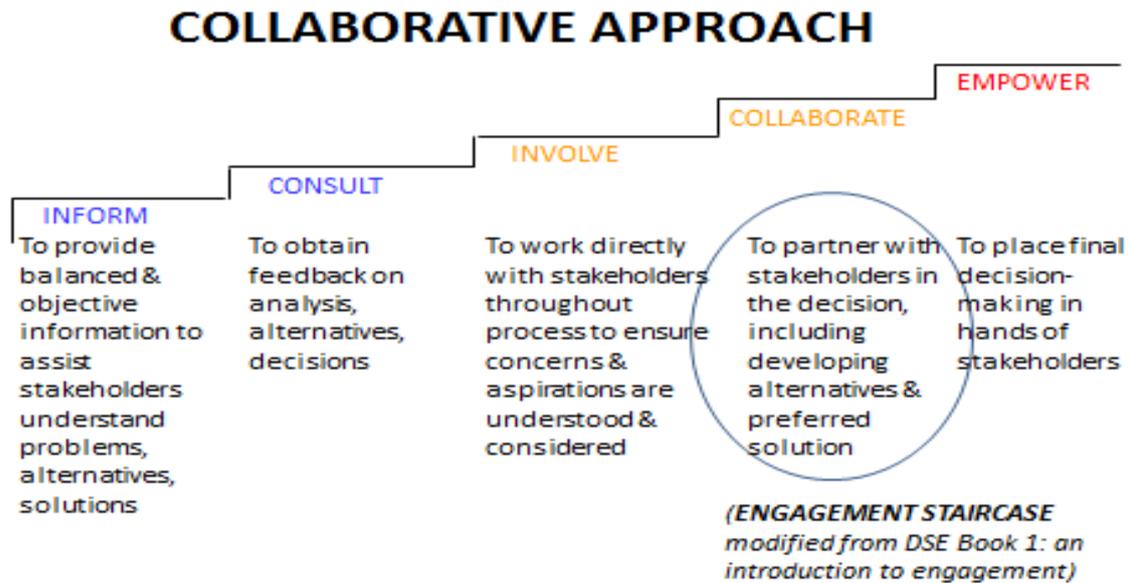
### *Collaboration*

The committees operate at the '*Collaborate*' step on the engagement staircase (see Figure 2). They develop preferred solutions and recommend these to councils. Each committee operates in a consensus seeking manner. The governors of the Canterbury Regional Council have agreed that if Zone Committees reach consensus then the council will adopt their recommendations to use for plan drafting and work programmes.

The committees are supported by facilitation, planning, and technical staff to help them understand issues and develop potential solutions.

The committees in turn '*Involve*' their local communities in their deliberations and decision making. This takes the form of field trips, workshops, and one-on-one meetings. This ensures that robust solutions are developed that are 'bought' into by the community.

Figure 2



**Committee decision-making is by consensus:  
collaboration amongst committee members & strong engagement critical**

### *The Outputs of the Collaborative Process*

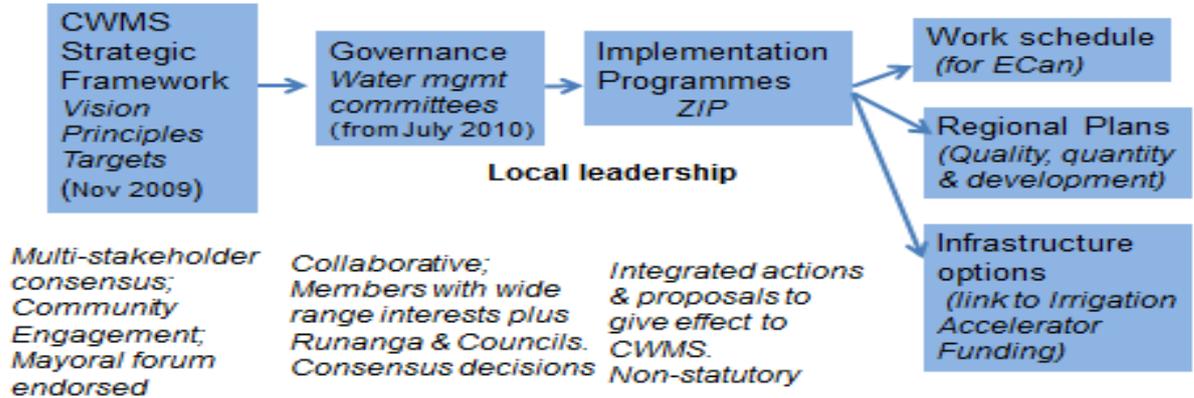
Once committees have developed their Implementation Programmes, and these have been received by all councils (Canterbury Regional Council and district/city councils), they are given effect to through any one or a combination of the following three pathways:

- Regional plans under the New Zealand Resource Management Act (1991) are developed to give effect to statutory recommendations e.g. catchment load limits for water quality.
- Agency work programmes give effect to non-statutory recommendations e.g. stream restoration, or irrigation efficiency programmes.
- Infrastructure work programmes and matching government funding can give effect to recommendations related to infrastructure and restoration.

Implementation of CWMS is given effect through all three of the above pathways. The key outputs of the CWMS, through the collaborative process, is presented in Figure 3.

Figure 3

## CWMS – key elements



### *Funding and Legislative support*

The CWMS committees are funded by the Canterbury Regional Council and District Councils through rate funding (general regional taxes). Rates are based on the capital value of properties. The most substantial public expenditure is the supporting staff who provide facilitation, science, hydrology, planning, biodiversity, cultural and infrastructure advice. Many other parties also provide information and assistance to the CWMS committees – including government science agencies, primary sector and environmental advocacy groups, government departments, universities, irrigation schemes and development entities. The time from agencies is funded by themselves. Central government provides some funding for large restoration projects and to assist with feasibility assessments for large infrastructure, matching funding where committees have developed consensus solutions.

The CWMS was developed as a community-led initiative and was not required by legislation. Subsequent to finalising the Strategy in 2009, the CWMS itself is now recognised in statutory documents produced by the Regional Council and local Councils. For example, the Canterbury Regional Policy Statement (2013) contains objectives and policies which reflect the CWMS, amongst other resource management policies for the region. In addition, recommendations made to Council by zone committees for specific planning provisions have been implemented through plan changes to the Canterbury Land and Water Regional Plan (2015).

The CWMS Committees are set up under the Local Government Act (2002), and subject to the same rules as Councils relating to official information and meeting requirements, for example all meetings are open to the public.

### **Example: Setting water quality limits and interface with national policy**

The Upper Waitaki Zone (see figure 1) comprises a large upland basin dominated hydrologically by glacier fed lakes. A hydro-electricity scheme built between the 1920s and the 1970s constructed a number of dams and canals forming artificial lakes in river valleys, and raising the level of some existing natural lakes. The principal industries in the zone are pastoral farming, aquaculture, electricity generation and tourism. The Upper Waitaki Zone Committee was established in late 2010<sup>4</sup> and comprises farmers, fishermen, a representative from the Energy Company, rūnanga, a local irrigation company and council representatives.

In late 2013, the committee began a process to set water quality limits that would meet the targets of the CWMS and the direction set in the National Policy Statement (NPS-FM). The subsequent regional plan will likely be the first in New Zealand to be fully compliant with the 2014 amendments to the NPS-FM. It is worth noting that the CWMS was completed in 2009 and incorporates environmental limits and compulsory values (consistent with CWMS targets) *before* national policy direction was given.

The committee began the process by confirming the ‘outcomes’ it was trying to achieve under the CWMS e.g. ‘*Protecting the high quality year-round recreation value of Lake Benmore*’ and ‘*Providing for small blocks of irrigation on extensive properties*’. These outcomes then drove the rest of the process and kept it focused on real world things that mattered to the community while also lining up with national policy direction. For example delivering on the national values of ecosystem health, recreation, and irrigation, along with national policy direction to maintain water quality.

While the committee identified the key issues or tensions that needed resolving, staff began to build the science necessary to support collaborative decision making. This phase also operated through the collaborative ethos and model. In an isolated high country area such as the Upper Waitaki, initial information on nutrient losses from farming activities was based on science work undertaken on the Canterbury Plains. Also, the farming community was very distrustful of a distant regional council. To overcome both of these barriers, through the Zone Committee, a Land Information Group (LIG) was set up to be *involved* in helping provide information to feed into the process. This ensured the community trusted the information and were committed to the process. Information such as ground-truthed nutrient loss estimates from farming systems, current areas of irrigation, and future aspirational development were developed through the LIG. The Catchment Land Use for Environmental Sustainability (CLUES) model was then used to model nutrient transport through the catchment and into Lake Benmore (the receiving environment for all water and nutrients generated in the Upper Waitaki catchment), using the losses from ‘land-use’ which were calibrated with the actual stream and lake water quality monitoring results.

The Zone Committee then hosted a series of community workshops in the catchment in the winter of 2014. These workshops included an assessment of the current state of the Zone and of a number of ‘scenarios’ against the outcomes. These scenarios covered future possibilities such as all the consented development being fully realised or all the available water allocated for irrigation being used for intensive land-use. The technical team (with expertise in economics, cultural values, social science, water quality and ecology) then assessed both the current state and these scenarios against the community outcomes. The community workshops were hosted by the Zone Committee and involved community members being presented the science, and then making a community assessment of how acceptable the predicted impact of each scenario was, against the outcomes. For example, the technical assessment indicated that any further development (that resulted in an increase in nitrogen loss) beyond what was consented in the Ahuriri Arm of Lake Benmore, would risk the lake moving from an oligotrophic state to a mesotrophic state. The community considered this to be unacceptable.

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<sup>4</sup> See <http://ecan.govt.nz/get-involved/canterburywater/committees/upper-waitaki/Pages/Default.aspx>.

Once all the scenario assessments and community workshops were complete, the Zone Committee had a wealth of technical and community information to inform their solution seeking. Over the next period the committee worked to reach consensus on where to set catchment limits for nitrogen– the limits decision was to stick with the status quo (consented load) in one area and to allow more development in another. Together this would maintain the lake in an acceptable (oligotrophic) water quality state and provide for economic growth. The catchment nutrient limits include separate limits for agriculture, aquaculture, and community wastewater. Following limit setting, the committee still needed to resolve how to manage to these limits, in the absence of a national framework. To do this they formed a Nitrogen Allocation Working Group (NAWG). This group involved leaders in the productive community who had been involved in the process and they were given a very clear purpose, objectives and timeframe to report back to the Zone Committee. Over the summer months of December to March 2014/2015 the group met fortnightly and developed their own consensus position on managing to limits. This included ‘grand parenting’ current land-use at ‘good management practice’ and then using a ‘modified equal’ method of nutrient allocation where there was room for intensification. This solution arrived at sought to make the best use of the headroom by allowing intensification on the most productive land and in an equitable way which meant all of the community had access to the nitrogen headroom.

A Zone Implementation Programme<sup>5</sup> (ZIP) made up of zone committee recommendations and rationale brought everything together. This programme included recommendations for limits based on maintaining the trophic state of Lake Benmore, ‘catchment loads’ for all activities, the method of allocating the load, methods to incentivise biodiversity protection (e.g. an easier resource consent pathway for development that is accompanied by biodiversity protection), non-statutory actions such as an education campaign for visitors, a rehabilitation programme on a degraded stream, and an integrated monitoring framework for the zone to track progress and to share data. The community process not only helped the committee to decide where to set limits and how to manage to limits, but also other actions (e.g. stream rehabilitation and an education campaign) needed to achieve the outcomes.

Once the ZIP was received by the Canterbury Regional Council (see figure 3), plan drafting and work programme development began. Plan Change 5 Waitaki<sup>6</sup> to the Canterbury Land and Water Regional Plan was notified on the 13<sup>th</sup> of February 2016. It is the vehicle which sets water quality limits in the Upper Waitaki and gives effect to the Zone Committee process and the National Policy Statement. The Plan Change:

- Requires all resource use to be at ‘Good Management Practice’<sup>7</sup>, to minimise nitrogen loss rates;
- Requires resource users to produce (independently audited) management plans which demonstrate the good practices that are being used;
- Requires resource consent for higher intensity activities and permits lower risk ones, and provides headroom where it is available;
- Allows nutrient user groups to operate;
- Provides an easier consent pathway for development that is accompanied by biodiversity conservation; and
- Uses in-stream limits at key node points to provide early warning triggers to protect the lakes.

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<sup>5</sup> See <http://ecan.govt.nz/publications/Council/uw-zip-addendum-0715.pdf>.

<sup>6</sup> See [www.ecan.govt.nz/our-responsibilities/regional-plans/regional-plans-under-development/v5/Pages/Default.asp](http://www.ecan.govt.nz/our-responsibilities/regional-plans/regional-plans-under-development/v5/Pages/Default.asp).

<sup>7</sup> See <http://ecan.govt.nz/get-involved/mgmproject/Pages/Default.aspx>.

In parallel to plan development, the Canterbury Regional Council established a new Zone Team, made up of various regional council operational functions to deliver the on-the-ground actions recommended by the committee. By the summer of 2016 actions underway include: the gaps analysis for the integrated monitoring framework, the first season of a 'Love your Lakes' campaign for visitors to the Upper Waitaki, and the development of an action plan for the rehabilitation of the degraded stream.

The Collaborative Governance Model not only resolved how to set limits and other actions to deliver on the CWMS targets, but also facilitated delivering on the national policy direction.

### **Lessons learned**

During the implementation of the CWMS, from 2010 to current (2016), a number of valuable lessons have been learnt about what can be achieved through a collaborative governance model, about limitations and challenges, and process lessons about how to make it work and what requisites are needed.

#### *Outcomes*

Consensus through collaborative governance paves the way for action. In one water management zone, the committee developed an alternative water storage option to the one that had produced protests in the streets. In another zone, a committee attracted hundreds of thousands of dollars of government funding into a restoration project for a highly prized lagoon. Another zone has initiated a customary food gathering project in an area where there has been historic indifference towards Maori. Committees have also proven that they can develop creative solutions e.g. innovative ways to manage groundwater and surface water limits to achieve outcomes for habitat. There is a direct relationship between the quality of consensus and deep long-lasting solutions.

One of the most tangible outcomes is community ownership of solutions. For example, in one zone via the Zone Committee, the community have agreed to extend the base over which local taxes are collected, to support the maintenance of a key water infrastructure asset, now that the wide benefits provided by this asset are more clearly understood. In another, the community have taken ownership of lagoon augmentation as part of the local solution and they (not council) are working to figure out how to design and pay for it. When people are part of developing solutions, they are invested in seeing them come to fruition.

One of the key drivers behind the CWMS was disenfranchisement with the water management decision-making and governance. A significant outcome is the direct involvement of approximately 120 people in 10 water governance committees. A great number more of the community are engaged directly by the committees, e.g. a committee involving 70 wider community members in workshops to develop solutions. The success of the collaborative approach is now spilling over in to other sectors, such as public transport governance. Six of the ten Zone Committees have now been through a rigorous process and reached consensus on water quality and water quantity limits for their zone. There is widespread agreement that there is no going back and collaboration is the only way forward; the paradigm has changed.

An outcome most frequently quoted by participants is the personal development of their own skills and knowledge, and appreciation for alternative views. Additionally, the relationships and social capital built has enabled progress to be made on issues that have been stuck for years that are outside of the CWMS e.g. dealing with gravel aggradation in a river. By bringing people together to solve problems, the sum is greater than the total of the parts.

## *Challenges*

The speed of implementation and delivery is a significant challenge. Inherently, collaborative processes move at the 'speed of trust'. However we have operated in an environment of a 'need for speed'. Partly this is to make the most of special legislation (Environment Canterbury Act 2010, which temporarily provides the Council with certain powers that it does not otherwise have to address issues relevant to the efficient, effective, and sustainable management of fresh water in the Canterbury region) and partly due to a widespread desire to 'get on with it'. Having target dates to complete recommendations, while stressful and challenging to collaboration, has provided a real incentive to be in the collaborative process or be left behind, and it has disempowered deliberate stalling tactics.

A flip-side to the speed of the collaborative process is frustration with the time to fully realise solutions. In some cases this is because of legacy issues, where freshwater rehabilitation will take decades. In other cases, the delivery of infrastructure solutions takes longer than the delivery of statutory plans and limits. These solutions include multi-functional infrastructure that can deliver, for example, improved irrigation reliability, improved river flows, and in some cases direct interventions to mitigate the effects of diffuse pollution. In all cases, committees want their solutions delivered faster. Another challenge has been the transition of fully giving effect to community solutions, while resource consenting carries on. Resource consent applications are still required to be processed while the community are developing integrated solutions. In some situations, these applications that are processed during the collaborative phase, could compromise the community solution.

There is variable capacity of community members to understand and assimilate information that includes complex biophysical, cultural, social and economic data. Also, community members have to dedicate considerable time to the collaborative process (time commitment can vary from a minimum of at least half a day a month to fortnightly meetings and workshops, with pre-reading). Added to this, committee members are often exposing themselves to their community by fronting difficult conversations and solutions.

A challenge in all participatory processes is how to involve stakeholders and individuals who are not part of the highly-engaged core, yet will be impacted by the decisions. The lack of involvement may be a conscious choice by some (who believe an adversarial process may benefit them more) or because of a belief they do not need to be involved. Getting the balance right of when to move up and down the engagement staircase and 'how' to involve 'who', is a constant learning process.

### *Requisites to make the instrument work*

Clarity about which level of engagement the promoter and the participants are expecting is needed from the outset. Nothing kills motivation like parallel processes. In the Canterbury example, a strategic framework (the CWMS) was already in place before the collaborative governance model was implemented. This set out the principles, targets, and methodology 'up-front' and removed doubt over scope, process, and what was trying to be achieved.

Commitment and clarity from governors on the lines of decision making must be crystal clear. If 'cheery picking' of solutions occurs, then disenfranchisement will follow. The CWMS lead agency (Canterbury Regional Council) has delegated significant power to the zone committees by agreeing to endorse all of the committees' recommendations where these are the consensus of the committee and have been developed with strong stakeholder and community engagement.

There is a need for absolute transparency with information and process. This includes having difficult conversations in sessions that are open to the public and making all technical information freely available.

The wider community need to be able to know when, where, why and how, certain decisions were made and traceability is important.

The issue of scale is critical to get right. There is the need to be very clear about the scale of operation e.g. hydrological, social, and administrative. There is no magic scale and it needs to be nuanced to local conditions and to what will work. If the choice of scale creates one-off issues, then deal with the issues rather than discarding a scale which works for the majority of activity. For example the setting of water quality in Upper Waitaki (the lakes) affects the water quality of the Lower Waitaki (the river). Instead of discarding a scale which worked, we inserted an outcome in the Upper Waitaki process to 'protect water quality delivered to the Waitaki River'.

Resourcing needs to be matched to the step and nature of engagement. To implement a collaborative governance model, particular staff are needed. They need to be able to deal with ambiguity, to think and work across disciplines, to be flexible with working hours, be committed to developing resolutions but not transposing their own ideas ('knowledge brokers'), and be committed to the collaborative paradigm. There is the need to be prepared to 'hold a space' for stakeholders who may not be well resourced or articulate. The promoter of a collaborative model needs to facilitate engagement, not just engagement for the organised and powerful. Resourcing needs to be flexible to flow to the activity and phase e.g. facilitation, technical work, planning, and implementation.