



Manaaki Whenua  
Landcare Research

# **The Orari, Temuka, Opihi, Pareora (OTOP) Project – social community assessment phase 3 – Draft ZIPA**

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# **The Orari, Temuka, Opihi, Pareora (OTOP) Project – social community assessment phase 3 – Draft ZIPA**

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# Contents

Summary .....	v
1 Introduction .....	1
2 Methods .....	1
3 Assessment of the ZIPA.....	2
3.1 Strengths .....	2
3.2 Weaknesses .....	6
3.3 Opportunities.....	10
3.4 Threats .....	14
3.5 Prioritisation: Where would you invest?.....	17
4 Discussion.....	19
5 Conclusions and recommendations .....	23
6 References .....	24
Annex 1: The draft ZIPA: Zone-Wide Recommendations.....	27
Annex 2: Interview questions .....	30



## Summary

As part of the Canterbury Water Management Strategy (CWMS), the Orari, Temuka, Opihi and Pareora (OTOP) Zone committee will provide recommendations on regulatory and non-regulatory measures as an addendum to the zone implementation programme that has been developed. This report has been prepared by Manaaki Whenua – Landcare Research, at the request of Environment Canterbury, to better understand the social implications of the proposed Zone Implementation Plan Addendum (ZIPA) for the OTOPI zone.

We conducted the assessment through a series of semi-structured interviews with a range of stakeholders in the zone identified as likely to be affected by the ZIPA. The interviews were conducted in March and April 2018 and included farmers, agricultural consultants, catchment group coordinators, recreational water users, Māori representatives and district council representatives. The interview approach was based on an analysis of the perceived Strengths, Weaknesses, Opportunities and Threats (SWOT) presented by the proposed ZIPA. Questions also covered who was likely to be affected by the proposed Addendum and where participants would choose to invest their resources for the good of the Zone. This assessment follows on from two previous desktop assessments conducted in the zone – Kalaugher & Wright (2016) and Kalaugher & Walsh (2017) – and seeks to supplement these reports by providing a more direct community voice.

### Who will be affected?

It was generally agreed that the proposed ZIPA represented a necessary step forward in protecting the environment and if it were fully implemented, the whole community would benefit from improvements in river flows, water quality, and biodiversity. In particular, recreational water users and Māori representatives saw potential positive benefits.

Agricultural representatives and farmers voiced concerns about the way farmers would be affected. In general, plan changes would limit future use of farmland, and the impacts of the ZIPA would come on top of Canterbury Plan Change 5. There was disagreement among interviewees as to the extent and severity of the effects of the ZIPA on farmers. Most interviewees took the view that only small number of farmers in specific areas or situations would be seriously affected. These were farmers in nutrient hotspots, farmers with wells on their properties identified as drinking water sources; farmers affected by changes in flow regimes; and farmers who wished to grow plantation forests on their upland slopes.

### SWOT analysis

A key strength of the ZIPA was the strong support among all those interviewed regarding its intent, aims and principals. A few interviewees felt the ZIPA lacked urgency and should have provided more environmental protection. Interviewees considered the policy aligned with an increasing demand, particularly overseas, for environmentally sound products and production systems from agriculture. The policy aligned with continued growth in tourism and community recreation. The requirement in the ZIPA for farm environmental plans was

a key strength, offering farmers a degree of certainty and sufficient time to implement their plans. Industry organisations were already moving to support farmers.

One major threat identified by interviewees was the absence of mechanisms to motivate farmers to implement farm environment plans in a timely manner. The 10-year water quality targets were regarded by some as too distant and would allow people to avoid taking action. Another major threat was the potential for components of the ZIPA to be modified or discarded during the plan change process. A related threat was that councils would not have the commitment, power or resources to implement the policy. Some interviewees were concerned that a lack of awareness across the community might result in hostile reactions as awareness of the consequences for agriculture becomes more widespread.

## **Recommendations**

Given the SWOT analysis we recommend Environment Canterbury:

***Collaborate with farmer support organisations:*** Work closely with industry support organisations to identify information and knowledge gaps, develop farm management tools and programmes, and create communication networks and resources. Identify and work with farmers likely to be most negatively affected by changes in flow regimes.

***Set intermediate water quality goals:*** Consider setting intermediate water quality targets to offset the weakness of distant ten-year targets. Intermediate targets would promote change while still allowing farmers time to adjust their practices. Intermediate targets would also allow progress to be tracked and adjustments made accordingly.

***Build on the work of catchment groups:*** Continue to support and potentially better coordinate, catchment groups (e.g. through a "mountains to sea" project) to take advantage of the practical knowledge and commitment of these groups.

***Monitor progress:*** Consider ways to communicate information on water quality in rural and urban areas to the public. Consider ways to improve coordination of data being collected by farmers and community groups (e.g. through citizen science initiatives).

***Support tourism development:*** Review ways to support potential new tourism ventures to take advantage of the commercial opportunities these offer.

***Clarify the role of hearings in the policy process.*** Openly discuss the role of the zone committee in relation to environment hearings to clarify, and if possible minimise, the threat of changes being made to the ZIPA as a result of hearings.

***Streamline community engagement processes:*** Consider a more streamlined approach to selecting issues for discussion with the zone committee and the wider community.

***Seek resourcing for implementation, monitoring and continued regulation:*** One of the main perceived threats to the ZIPA was the potential for it to fail because councils would not have the commitment, power or resources to implement and enforce it. This issue may require further consideration at a political level.



## **1 Introduction**

- To provide a qualitative assessment of the potential implications of the proposed ZIPA for the OTOP community. In particular, who is likely to be most negatively affected through the recommendations, and who is likely to benefit
- To consider some of the contextual interactions between social and economic conditions in OTOP zone that will affect the outcome of these water management scenarios for the community.
- To identify opportunities that may arise from the recommendations and potentially, ways to capitalise on these.

## **2 Methods**

This report has been prepared at the request of Environment Canterbury to better understand the social implications of the proposed Zone Implementation Plan Addendum (ZIPA) for the OTOP zone. While the draft ZIPA is a non-statutory document, Environment Canterbury (ECan) will be drafting a statutory plan change to implement the recommendations within it.

We conducted the assessment through a series of semi-structured interviews with stakeholders in the zone. As far as possible within the scope of the project, we covered the range of stakeholders likely to be affected by the ZIPA. Twenty-two interviews were conducted in March and April 2018 and included farmers, agricultural consultants, catchment group coordinators, recreational water users, Māori representatives, and district council representatives.

In order to discuss the contents of the ZIPA more easily with interviewees, we prepared a summary of the contents of the Addendum to share. This summary (see annex 1) formed the basis of our interview questions.

The interview approach was based on an analysis of the perceived Strengths, Weaknesses, Opportunities and Threats (SWOT) presented by the draft ZIPA. SWOT analysis, developed in the 1960s, is a widely used analytical tool to support the preparation of strategic plans. It is primarily used to identify and describe the key internal and external factors that will influence strategic success and must therefore be incorporated in the planning process. This framework has been used by policy makers to develop strategies that ensure a good alignment between internal and external factors in resource management plans (Kurttila et al. 2000; Diamantopoulou & Voudouris 2008; Gallego 2011). The most common way to present all the listed factors identified in the SWOT analysis is by means of a matrix (see table 1).

Additional questions addressed who was likely to be affected by the proposed changes, as well as asking participants to identify where they would choose to invest resources for the good of the zone (see Annex 2).

In total, 21 formal interviews were conducted, including 19 in person and 2 by phone, and comments from an additional participant were also noted by phone. These were coded using the qualitative analysis software package NVIVO ©.

**Table 1: SWOT Analysis of the ZIPA**

	<i>Helpful</i>	<i>Harmful</i>
<b>Internal</b>	<b>Strengths</b> What design elements in this policy make it particularly effective?	<b>Weaknesses</b> What design elements in this policy detract from its effectiveness?
<b>External</b>	<b>Opportunities</b> What opportunities can you identify that have the potential to contribute to the success of this policy?	<b>Threats</b> What threats can you identify that have the potential to derail the effectiveness of this policy?

### 3 Assessment of the ZIPA

#### 3.1 Strengths

We defined ‘strength’ as some aspect of the ZIPA that was viewed by an interviewee as being effective in contributing to the objectives of the ZIPA. Consequently, we classified two types of statements made by the participants as strengths of the ZIPA. The first were statements we interpreted as being favourable about achieving the objectives of the ZIPA, or the processes used in the formulation of the ZIPA. For example, some interviewees expressed unfavourable opinions about the objectives of the ZIPA or the consequences of successfully achieving them. In other words, these interviewees disagreed with the objectives of the ZIPA but believed the ZIPA could be effective in achieving them. This implies the relevant aspect is a strength because it contributes to achieving the objectives of the ZIPA, even though the interviewee disliked the objective or the consequence.

We classified the strengths of the ZIPA into four categories:

- General strengths: refer to the intent and objectives of the ZIPA in relation to improving the environment, water quality, and biodiversity.
- Agricultural strengths: the anticipated effects of the ZIPA on changing farming practices and reducing nutrient pollution.
- Industry strengths: the anticipated effects of the ZIPA on reducing pollution from manufacturing.
- Regional and local government strengths, particularly in relation to the consultative process.

#### General strengths

It was generally agreed that the proposed ZIPA represented a necessary step forward in protecting the environment and if it were fully implemented, the whole community would benefit from improvements in river flows, water quality, and biodiversity. In particular,

recreational water users and Māori representatives saw potential positive benefits from the ZIPA.

A key strength of the draft ZIPA was the strong support among all those interviewed in regard to its overall intent, aims, and principals. The aims were considered realistic and the ZIPA itself a good step in the right direction:

I think one of the strengths of the plan is that it's a real change of direction, which is good, and even if it doesn't get us all the way ... a lot of the outcomes are pretty ambitious and its good targets and all the rest of it.... Then the next plan hopefully can build on this rather than being a whole change of direction again.

I think this is the best change, the best beginning that we've ever had.

I think there's a lot of common sense in there.

Overall, I'm broadly happy with it. I think the parts where I'm most positive about, are more the general capping of allocation, capping mainstream loads – the real 'hold the line' and 'start improving' stuff.

In addition, appreciation was expressed for the way some key elements were integrated:

They now recognise and understand that upper catchments are crucial for water supply, for protecting biodiversity and just maintaining water quality and water health. So, I think they've come around to realising that.

"The zone committee recognise and acknowledge the work of the local community ...to develop the Orari River Catchment Management Strategy, and fully supports its ongoing implementation as part of this" ....we really love the way that this OTOP draft ZIPA wants to put this one into action.

I'm quite positive about the changes that are the cultural changes in terms of acknowledgment of historical and cultural sites, and the rock art and that sort of thing. I mean that's got prominence and that's great.

Other strengths were that interviewees believed that, if effective, the ZIPA would stop further degradation of the environment, would result in cleaner rivers, would provide greater protection to biodiversity and may protect cultural sites:

"Where the limits are already being met, there should be no deterioration." This is one of our favourite parts.

The actual targets for swimmability and mahinga kai gathering and all that are actually quite – if we can hit them we'll have bloody good rivers and creeks and streams and groundwater.

I think particularly around some of the biodiversity stuff, some awesome stuff in there around biodiversity... So, I think that kind of thing is excellent.

Well if we're going to stop the further pulling out of anything that looks anything like a tree or a bush, then we've achieved something. If we're going to stop infrastructure going through and wiping out these, that's huge.

Important strengths identified by some interviewees were the provisions in the ZIPA in relation to low flows and stream depletion from groundwater extraction:

Well, cap existing surface water and groundwater current – cap it, yeah. These are mostly over-allocated, I'd agree.... Well, I think this stuff's a great start, you know, put more restrictions on and somehow look after those minimum flows.

## **Agriculture**

Another strength identified by some interviewees was that the ZIPA would raise awareness and changing farming practices:

The areas which have a high cost irrigation scheme... they potentially may need to reduce the intensification of their farming system to accommodate these levels...

It goes back to the awareness thing; if you don't know it's there, you can't do anything about it, or you don't have to do anything about it. But when farmers realise they've got a problem they're pretty keen to normally sort it out, and I'm sure that'll be ongoing and hopefully they'll come out with some answers and if not, there'll have to be a change of farming practice.

The reality is... with the amount of water available and nutrients or anything else, that will limit to a certain extent what's able to be done on land on the plains too, and that's just the reality of it.

For many interviewees, the requirement in the ZIPA for farm environmental plans was a key tool for reducing nutrient leaching and protecting biodiversity. Such plans offered farmers a degree of certainty and the 10-year time frame on water quality standards was seen by some as giving farmers sufficient time to implement their plans. Farm environment plans would also build on the efforts of those who are already contributing to improving the environment through community and catchment groups:

I'm a big advocate of them [farm environmental plans]... it isn't whether you need them or not, it's actually making people stop and think about what they're doing. That's the biggest outcome I see, is they can be used for a number of purposes going forward. But the biggest thing is the exercise of doing them [the plans].

Farm plans, as long as they're adhered to and work well should help bringing everything down to a level which is acceptable.

They provide some sort of certainty for farmers and so that's what we would be looking for through this is some certainty, so that farmers know where the boundaries are and they can then make their decisions based on that. So I think that that's really great.

Because it gives people [time] to adjust... you kind of reduce the capital value and you kind of ease that exit out. But it also give[s] people the time to adapt and find the technologies and different ways of farming that might be able to get them to a point where they can still operate a profitable business in that same land use...

Important strengths identified by some interviewees were the provisions in the ZIPA for storing water on farms and obtaining out-of-catchment water:

The good part to that was that if they bring [out-of-catchment] water in... that they do away with the water bores. Therefore, the surface water is taken away and the water bores taken away, so hopefully the rivers have a chance of recovering.

I think some of the stuff that's already happening, like the water storage, is the way forward. So when there is rain or water that we do store it.

Encouraging/prioritising community schemes was also seen as a strength of the ZIPA:

Going forward there is a real benefit to being part of a community scheme, as... indicated [in the ZIPA] they are prioritised over individual surface and groundwater sources. So, when you've got a community scheme you can possibly allow the nutrient losses to be reallocated between scheme members, which has some merit, and provides flexibility between farms and their differing systems.

Appreciation was also expressed for the fact that both urban and rural issues were addressed:

I think it's about really getting the urban areas to understand their actual footprint, because this goes back to the process. Dairy farmers actually do understand their footprint, or they've got a feeling of their footprint... they've got to understand it's not just about dairy farming.... It's about all of us... towns like Timaru aren't doing enough from an urban perspective.... We talk about improving their environment, and, instantly, it goes to, "Oh, we'll get rid of the dairy farmers". That's not really owning the problem.

This [the ZIPA] and the land and water regional plan as a whole will help with that, absolutely, because it has certainly focussed attention on urban stormwater. Definitely.

## **Industry**

The provisions in the ZIPA in relation to industry were strengths for some interviewees:

Industrial activities to adopt the BPO for the treatment disposal of discharges; it's good to see something in there but BPO, depends how you interpret it.

It probably provides, from a manufacturing point of view... some clarity over where things sit.... This probably formalises what [is] there now and where they need to get to... quite a good driver for investing in improvements.

...we've advocated for that... one of the recommendations in that strategy – strategic plan – is that gravel extractors and river engineers and council all work together.

## **Local and regional councils**

For many interviewees, the consultation process employed in developing the ZIPA was a strength:

And I've got to commend them, they've been very consultative with public meetings, numerous public meetings. They've supplied a lot of information. There's a lot of technical expertise presented at some of these meetings.

The zone committee and ECan people have been good to work with. I think the process in general of having these meetings and having the public there is great for transparency.

But in terms of the process, I don't see how they could've done it any better, really.

I think it's been a good process, I think it's been a necessary process.

The opportunity to provide feedback and the fact that it was taken up was also appreciated:

One key feedback I provided was... originally, they weren't considering upper catchments. And I hammered on that and hammered on that, and they got to recognise and understand that upper catchments are crucial for water supply, for protecting biodiversity and just maintaining water quality and water health.

...some of the stuff here has been taken out of something I wrote way back... some of those figures, are very similar to the ones which I previously published.... So, they have taken those things on board, which is good.

There was also a general feeling that this kind of consultation process contributed to building bridges across different sectors of the community by building understanding of different perspectives:

There was a resistance, which I see slowly people are becoming a little more, not comfortable, but they're no longer scared of it as they were. Scared, I think, is only because you don't understand... There's far more openness now and a willingness to learn.

### **3.2 Weaknesses**

Interviewees identified a number of weaknesses in the ZIPA, that is, elements in the design of the ZIPA that they believed would detract from its effectiveness. At a general level, some interviewees thought the ZIPA lacked urgency and should have provided greater coverage to protect more of the environment.

#### **General weaknesses**

The key general weakness identified was a lack of both detail and urgency in the ZIPA. Many interviewees were concerned that the plan would not be enforced:

But, the fear that I have is that the rules that they are dreaming up, or they have dreamt up, are not policed.

The ideals of this are wonderful, and the goals are wonderful, but make sure that it really happens. Because, at the moment, just putting it out there as a document of a philosophy and a direction to move in, is good, but it depends on the good will of all the landholders, doesn't it, to do it.... So, it's got to be enforceable, I feel.

Some parts of it are not very specific... how are you going to turn [the ZIPA] into a planning language that achieves the purpose of what you're actually trying to seek?

To a large degree, I think the public at large is relying on these documents to provide that message, when I think it's a wee bit short in terms of detail as to how that message is going to be delivered to the water users.

It does come through, but we get a sense of there's no urgency in this. It's not urgent, it's not pushing things through. Because we're in crisis point here as far as biodiversity goes.

Several interviewees felt the Plan did not go far enough and there was a need for a greater coverage of the environment:

So, our view is to protect all wetland that is there now, and just fence it and keep the animals off.

It's piecemeal. They're trying to appease different sections of the community.... should be ecologically sustainable waterways for the benefit of the whole ecology of the water.... they need to go further than just swimmable.... So, overall, it's a process that is a step in the right direction but for us it's not urgent and it doesn't go far enough.

...to me drinkable has to be the absolute lowest level, because if you're swimming in the water you're going to drink it.... If you're not going to drink the water when you go for a swim how can you put your kids in because they're going to drink it?

...we can sit around for six years and put everything in place that we think's going to solve the world, and climate is going to muck the whole lot up. Two or three times I've brought up at OTOP about climate change, I would like some presentations on climate change. But it's not been forthcoming. To me... it sounds like water storage would be our best weapon. But that in itself worries me, because that's more water coming out of the rivers.

The smaller catchment streams should be recognised. Some are dry during summer months and some receive the water in the winter months but they still receive nutrients and sediments and they end up downstream. And I don't think... this programme considers soils enough either. That is a big issue.

## **Agriculture**

For many interviewees, the long time frame in the ZIPA for implementing farm environmental plans was a key weakness in regard to reducing nutrient leaching and protecting biodiversity. Some interviewees felt the 10-year time frame on water quality standards was too distant farmers would delay taking action:

There is a bit of a concern I suppose that farmers may not have the immediate motivation to improve water quality because they've got the GMP by 2020 to meet, whereas the water quality goals won't be assessed until ten years after the plan is operative.

They had ten-year targets [...] but we think we need to go shorter-term so there's measurable.... if there's a 10-year target, people can go, "Oh, we'll leave it for 5 years before we do anything". Whereas, if there's a 3-year target, well, we've got to start now.

Because if we just put a big goal out in the future and don't have milestones to meet in the short term, well the long-term goal is not going to happen, is it?...

Agricultural representatives and farmers voiced concerns about the way farmers would be affected. In general, plan changes would limit future use of farmland, and the impacts of the ZIPA would come on top of the changes already being brought by the broader Canterbury Plan Change 5. There was, however, considerable disagreement as to the extent and severity of the effects of the ZIPA on farmers. Most interviewees took the view

that only small number of farmers would be seriously affected. The ZIPA would affect farmers particularly in the following four specific areas or situations:

- 1 Farmers in areas identified as nutrient hotspots who may be required to go beyond GMP in future.

It'll be site-specific. So that Orari catchment, potentially yes. It will cause significant issues for people. You know, if you're talking 40–50% reduction in nitrogen loss, then that's just not really feasible without some pretty substantial land use change or cutting edge type of technology.

- 2 Farmers with wells on their properties identified as drinking water sources would be subject to additional restrictions.

...drinking water, that is one that's taken a lot by surprise and we're directly impacted ourselves, simply because the drinking water is zoned, protection zones in the area that people weren't aware of.... aware of a property which has been given a land use consent with some hugely restrictive conditions ...and they're looking at the proposed rules and their biggest problem is they're that vague, they don't know whether it's actually going to have no impact to them at all, or whether they're shutting down....The biggest thing is, they need to be able to justify the actions they take and be upfront about what they are actually doing.

- 3 Farmers who wished to grow plantation forests on their upland slopes. This is often a retirement plan for farmers.

- 4 Farmers who would be affected by new low-flow regimes and/or revisions in assessments of the connectivity between ground and surface water.

Reliability of water for irrigation in the tributaries will be seriously affected to the point where in some cases it will become totally uneconomic.... It will increase from 400 to 550l/sec, but it's a lot worse than that. At the moment half our take is below the measuring point so in actual fact when we go on restriction to 400, right up to that day there's... 93 I think has been taken below that. So in actual fact the true minimum flow presently is about 307, plus 93 makes it 400 l/sec...

But I think the guys who are going to get smashed around a bit are any irrigators who are going to be connected where they previously weren't connected to rivers and streams, and they haven't got access to alternative water, I think they'll be the major ones.

In some cases, there was serious concern about the flow-on effects for some small communities if the proposed changes in flow regime are implemented:

The strong businesses, the increased school roles, a vibrant community. Irrigation was what drove social change in Fairlie. Nobody wants to lose what we have now got.

Some interviewees felt the lack of compensation for farmers or cost-sharing arrangements was a weakness in achieving change, particularly where they were servicing high levels of debt, e.g. after investing in high cost irrigation schemes:

There's no compensation in any of this for a capital loss of value, income stream loss, whatever it might be; whether it be farming or whatever it might be. It might be a service business that loses.... So it doesn't get away from the fact that we still need to



make a difference, and we still need to move forward. I think it's just about who's sharing the cost of that.

Some interviewees were concerned that the ZIPA would encourage counter-productive behaviour:

They want to supplement water and they're looking at different options. But that would mean increased intensification, more development.

The allocation in the ZIPA at the moment still needs heaps of work. Currently there's a clause in there about it'll be based on last 5 years flow metered use and then your allocation would be dragged from that point back to what you've actually used. Now the problem with that is it doesn't encourage people to go onto a [irrigation] scheme because... if you go onto a scheme you stop using your allocation... either you continue to pump out of your groundwater just to keep your allocation, or you use both and put too much water on, or you say, "If there's a new scheme coming through I'm not going to go onto it because there's no incentive because I'm going to lose the risk management ability I've got by switching between two".

There's all this stuff around diverse pastures in terms of reducing nitrogen... using fodder beet, standing cows off, you know, like we talked about earlier in terms of where you actually put your winter feed; all of those things, yeah, absolutely. But... because we're using OVERSEER as the yardstick, unfortunately, unless those things get allowed in there... It doesn't actually help you in terms of the model, you know.

Many believed the grandparenting of water and nutrient rights implicit in the ZIPA (and in Plan Change 5) was a weakness:

My biggest disagreement is really this whole grandfathering policy. I totally disagree with that. It creates false competition... the biggest polluters should clean at their own cost really, because it's the cost of doing business.

The thing that probably worries me the most through this is the idea, for lack of a better word, grand-parenting, it's looking at existing land use, not potential of the land or its assimilative capacity.

## **Local and regional councils**

Some interviewees were particularly concerned about the adequacy, timeliness and support for interpreting the information used in developing the ZIPA:

Dividing the community ... differing views, but there was a huge lack of clear information, to discuss, and a lot of it was technical information... especially around water quality and impact on land use.... but the data was very slow to come and then when it did come it came with very little guidance.

If it can be proven ecology- wise that a better flow in the summer months is really going to help the fisheries or the environment we're going to probably have to suck it up, but it's going to have to be pretty convincing. From our experience, and my experience of living on the river for 40 years, I'm going to have to take quite a bit of convincing.

You have to have the information to start with don't you, you have to know what's happening with water quality... there should be more of a faster feedback mechanism to farmers whilst recognising lag times.

...there was information missing and there was a lot of lag time to get information and ...[and] we can't get any expert speakers to actually inform us on anything to discuss.

### **3.3 Opportunities**

Interviewees identified a number of external forces that had the potential to contribute to the success of the ZIPA. For the most part, these opportunities concerned either the potential for the growing demand for tourism and environmentally sound products and services to motivate farmers to change behaviour, or the potential for industry associations to support the implementation of the ZIPA.

#### **General**

Consumer demand for sustainable products and services, including tourism, was a key opportunity for the ZIPA identified by many interviewees:

We're going to develop this South Canterbury brand where we are actually weaving biodiversity through the working landscape. We are looking after our rivers. We're growing all these new crops because we've had to adapt. And we're selling that at a premium because it's hard on us and it's new. And I think there's opportunity there... that kind of thing will be driven by it.

Our consumers are going to demand that. So, yeah, there is going to have to be some innovation to farm the land and make money and be productive. We've got no choice.... So we're going to have to do something with this land. So that innovation will come.

We're not too bad but there's a hell of a lot we could do a whole lot better, and it might secure that reputation a bit more, because if we don't do it then we're going to lose that and then where's our marketability of overseas and stuff for our product?

And in the short-term they may benefit there in terms of market access for produce that we try to export... But, longer term, we have to keep our environment clean. But, it's good we do something and keep it clean and keep it fresh and beautiful, yeah.

...tourism is an ever-increasing part of that local economy as well, and supporting the local community.... So that creates opportunity as well, and with tourism it's beneficial to maintain the environment.... You could effectively look at an individual valley and say, well, this is a unique environment, and if we get together, and we meet these environmental standards and we market our produce out of this region, whether it's a shoulder of lamb, or say a mountain bike track through their farms, there are huge economic opportunities to market local produce and for visitors to experience that local story.

However, it was emphasised that care should be taken to ensure that tourism was really adding value:

...from a lot of what I see in tourism, it generates more jobs but always at the low end, minimum wage end of the scale and there's an environmental impact on that, which I

think has been recognised now, especially in the Mackenzie Country. A lot of it is pure turnover rather than actually value creation.... take Geraldine for example, and that does well out of tourism, but by improving the water quality on the Waihi River that runs through it, that's going to do squat for tourism generally. Whereas, if we dammed the Orari Gorge... creation of a lake would be great...

Many interviewees saw efforts by industry associations to incorporate environmental concerns into their business strategies as providing an important opportunity with respect to raising awareness and facilitating the implementation of the ZIPA. In particular, there was a need to improve support for environmental plans, and follow up support for farmers.

## **Agriculture**

Most interviewees saw great potential for industry associations to support the promotion and implementation of the ZIPA. As well as incorporating the environment into their business strategies, industry bodies were already preparing priorities for working with farmers to implement environmental farm plans. These included developing quality assurance, farm management and monitoring tools for farmers as well as supporting a more strategic, catchment level approach:

we know that there's a big job ahead of us and we need to get better.... But we're going through a process of bringing in the environment to our daily interactions more with farmers. The main thing... we have started doing is to actually work out where the priority areas are... in terms of helping our farmers to meet the legislative requirements (and) environmental priority areas....

So we're kind of already gearing up to better support farmers around having farm environment plans and understand nutrient limits coming and all that kind of stuff.

...going through the industry organisations, Beef & Lamb, Dairy NZ, that helps. There are a whole lot of different networks already set up, using these networks will continue to be an efficient way to get the messages out.

So we're actually developing up a bit of a workshop to help farmers navigate their way through all the different tools that are available. So that what they're doing is actually setting them up to be successful rather than to fail...

What we're also trying...[is] to encourage farmers to come together at catchment, establish what their catchment objectives are... then each farmer is responsible for their little piece of the pie, so their on-farm actions are actually now targeting catchment-scale outcomes. ... that's really exciting, and we see that that's actually where there's opportunities to make real wholesale change, and because it's farmer-driven as well... giving them the freedom to make the choices and the flexibility but the tools and the prompts to make sure that they're asking themselves to right questions.

There'll be some farmers who use some of those natural areas now as important parts of their farm, but I think they need to realise that those have importance outside of activities and they need to be protected and enhanced.

... actually, maybe if we planted these species over here, we might actually be able to create better quality habitat or make an ecological corridor. So it's really helping

farmers just to be a bit more strategic. Yeah, so if it was possible to bring something like that into it then those farm plans become an actually really useful tool.

Interviewees also saw the potential for other industry and service organisations, as well as leading farmers, to raise awareness and demonstrate application of ZIPA principles:

This is such an evolving space, as you know, but partnership farms, the idea of them is to test out solutions to dealing with some of these issues that we're facing in a real-world farm context, and also to use them as a great hub resource for farmers to come and learn from other farmers.

There are some family corporates involved and they are very responsible corporates... so there are farms that are working quite hard in that space and they do provide leadership to the wider community ...there's some large irrigation schemes that are taking a lead on this and so you've also got a reasonable-sized group of farmers that have been well informed by the irrigation scheme.

I think the peer influence is great, and that's another thing DairyNZ is doing... working with our farmer leaders and utilising their enthusiasm and skills and mana... and helping them to upskill and understand the issues, and then they're the ones who can go out there and talk to their neighbours.

Interviewees also saw the potential for the ZIPA to build on the networks, resources, goodwill and activities of community and catchment groups:

Because, at the moment, we have farmers helping us ... We spend hundreds of hours a year up there with people.

I think ideally, it'd be good to have catchment groups doing their monitoring and supported to, as well as [Environment Canterbury], so that they can work together, and collaborate.

Every farmer I've ever dealt with wants to leave their land in a better state. Some have a better idea of how to do that than others, but there's some awesome work that's being done out there... [what we haven't] been doing very well is sharing some of that information around some of that great work that farmers are doing.

And the catchment groups I think are a really good vehicle for getting the locals to come along.... They're much keener to speak and it's a lot more intimate meeting...

But, I'd love to see wild animals there and do pest and predator control, and if we can see more native animals it will be wonderful really, it would be nice. In, practicality it's a hell of a thing to do... but to support the indigenous wildlife here, I'm all for that, definitely, yeah.

I definitely think there's a growing awareness and a number of people that just want to do what's right, but they don't know what's right, and they don't know what to plant, and they don't know where to plant it.

A key area of opportunity that emerged from a number of interviews was the potential for improved management and sharing of data and information, particularly around water quality:

...there's a lot of information, held by Councils in particular. It's apparently restricted but if it can be released it provides a huge resource on the natural environment and that would be good to have that sort of thing included [in farm environment plans].

Lincoln University were rolling out a programme to help groups like ours monitor rivers, and then they pulled it back... they're not helping river protection groups now. Ideally, it'd be good to have catchment groups supported to do their monitoring, as well as ECan, so that they can work together and collaborate. I'm sure there are other river catchment groups out there wanting to water test...

In the 10 years we've been doing it, we've put a monitoring site in and test three monthly by Irricon. They look after that, which is an environmental consultancy... we personally pay for it, and we have a farm just below us that's sharing the cost and the information.

### **Local and regional councils**

The interviewees believed the effectiveness of the ZIPA could be enhanced if local and regional councils used its principles in formulating their plans and regulations, and if environmental management could be incorporated into programmes for repairing, upgrading, and replacing of infrastructure.

So, what we've done with the adaptive management group or the flow and allocation working group is come up with a bit of a compromise on [dry periods]. We've given [Fish and Game] the shoulders to allow better flows then, [and] we can take a bit lower in the summer months when we need it most...

The regional councils really like certainty... we're trying to work on what I would call a truly adaptive consent which monitors and we're trying to make improvement over a period of time, which means that you don't have a limit that you can hit straight away, you know, it will change.... You have to be able to adapt as you find things out.

You only get to do that when that road is being done and so you're taking the opportunity for when there is some work being done to incorporate stormwater treatment into it. Takes a long time, but in the long run it's more cost effective because the treatments are green...

The interviewees also saw an opportunity to increase the effectiveness of the ZIPA where it aligned with other government policies and programmes:

I think that there's certainly an opportunity in relation to our ongoing security of water availability so I think that's, for our consumers, really important where drinking water is the higher priority.

... if we can get that security of take and we have to show water use efficiency then water metering is clearly a really good tool for doing that.

But I suppose at the end of the day, there'll be some interesting things there, because there's also the national policy statement on forestry that's just come in that has some requirements as well. How do they work?

### **3.4 Threats**

Threats are external forces that have the potential to derail the effectiveness of the policy. Generally speaking, interviewees identified two key threats to the ZIPA. One was the absence of mechanisms to motivate farmers to implement farm environment plans in a timely manner. The second key threat to the ZIPA was the potential for any aspect of the ZIPA to be modified or discarded during the plan change process.

#### **General**

A fundamental concern for some interviewees was the potential for the policy to be abandoned if water quality does not actually improve:

I guess for me, the biggest threats or the biggest worries that I have is all of this regulation happens and all of these plans go in place, but they don't actually achieve the environmental outcomes that they're meant to achieve.

One is that it's seen as not driving hard enough and then gets overridden by regulators saying that it hasn't gone far enough to make change happen, then we lose control of it.

I mean, the biggest sort of scariest thing, I think, for farming is once we've gone down this route, if, in a few years' time, things haven't got better in terms of water quality, the only thing regulators can do really is put more regulations on, isn't it?

...how do they actually make this come alive so we get improvement in what we're trying to get improvement in, because it'd be a blooming disaster if we affect a whole lot of people, and we don't get what we want out of this.

Public perception was a key element, and there was a strongly felt need to demonstrate clearly and visibly to the public that change was happening:

I think there's still risks with expanding the irrigated area. I think that the public are always going to be suspicious of that given the experience that we've got. So that's really important that that proof is there that farmers have changed their current farming practices and what they're changing to and on their new areas of irrigation will not impact on water quality.

So the problem we have is public perception is based on what they can see. We can tell people... science is working on these things. Science is working on it. But if there's no meaningful change in 4 or 5 years to the things that they can physically see, then they lose faith in the science because they can't see the science... We have to make a dramatic change the public can see. Now if that's reducing the herd, in the interim, good.... We want to see meaningful change.... That's meaningful change.

It worries me that in 10 years' time if we're not getting where we said we're going to the public, they've got the power and so we could easily end up in a situation that we're not very happy with.

#### **Agriculture**

Some interviewees were worried about hostile reactions and challenges to the policy as awareness of the consequences for agriculture become widespread:

I think there is going to be a huge backlash for the speed at which this is going through....And these are people who really feel they're lagging or are threatened by it.... The ones I meet are just blown away, and I think if this – if they really want this to work, they have to consider their timeframe. Because otherwise you're going to have it all in the courts.

Well, what they don't seem to talk about with all the whole sort of environmental space is, effectively, a nutrient cap is a production cap.... Like I said, I think just the reality of it for people. When that comes to light, I think there'll be more anger.

Others were particularly concerned about the absence of mechanisms to motivate farmers to implement farm environment plans in a timely manner:

I've had it said to me, that people are scoffing at the likelihood of monitoring being able to happen enough to keep the lid on things. I can understand that thinking, because I myself think how the hell are we going to get enough people to be monitoring and I've had that attitude from farmers.... That attitude worries me a bit, because it's almost like we're going to flout it anyway, because no one's going to check us, not going to get caught.

The challenge is that people do it [farm planning] because they have to and then it goes in the drawer. What we want people to be doing is actually seeing it as integral to their farm business, it's not just a farm environment plan, it's a farm plan and it sits alongside their production and everything else.

Well, you've got to look at it properly; if you don't get a smack on the hand sooner or later you just keep on going with what you're doing.... The only way to make a bad farmer good or a bad business in town [good] is slap a few fines on them, they'll soon change, they know they've got to.

Interviewees were concerned that even if farmers were motivated to change practices, they would not know how or what to change:

I've heard quite a few farmers saying, "We don't know what it means, why should this apply to us, this is a big change, how do we actually assess it?"

Education of the process is just so, so important. So farmers know where to start, what to do, and it takes away the fears that they're not going to be able to farm tomorrow. Because I fundamentally believe they will be able to.

To be fair there's still uncertainty as to what that actually means.... It's a hard one to overcome because people will only ever take an interest if they think they're impacted, or if they've got an agenda to push, so yeah.

Particular concerns were also raised around knowledge of cultural issues:

So in their farming processes they may well be digging up sites that are archaeological finds and things like that that they never know anything about. So it's a matter of knowing.

...with the mahinga kai and farm environment management plans... and significant indigenous biodiversity. That's going to be brought into the farm management plan requirements... would farmers know what actually was required?

## Local and regional councils

A key threat to the ZIPA was the potential for key aspects of the ZIPA to be modified or discarded during the plan change process:

So really from our perspective, the proof of the pudding is of how it translated into a policy document. Because obviously there's a long way to go, but from recommendations to something that's actually in a legal planning framework.

...we went to this meeting and she said, "It's really up to the council. The council can change the process. If it feels that there was an economic or a public interest is best done by something else they can change it". So, all the work that people are doing on this can be changed in the swipe of a pen by the local body, whoever it may well be.

I have heard people say, "You do all these community kind of processes with the zone committee and then it goes to the Plan Change process and anything could happen".

...they feel that they have got to satisfy their voting base, and make decisions that will satisfy their voting base...

I think the fact that there's been so much buy-in up till now and collaboration, if that isn't upheld then they're going to have a hell of a marketing problem.... But I think there's a real danger that if we don't keep that tight then there'll be a real backlash because people have invested quite a bit in it.

Another key threat to the ZIPA was a concern among interviewees that councils do not have the commitment, power or resources to implement the policy:

If they're following the principles that are laid out in here, then they also have to have the teeth... we need to really regulate...

You need to be making sure that [Environment Canterbury] is putting budget aside to make sure they review the consents and actually implement it. Because otherwise it just won't happen...

Regulation – everybody knows [Environment Canterbury] don't have the people to resource this thing.

Finally, interviewees believed that the constant turnover of staff in councils means knowledge and relationships are lost and this could reduce the effectiveness of ZIPA over time:

The trouble with [Environment Canterbury] in particular has been the staff changes. And I used to have great rapport with staff there for a long time, long-standing staff members, but that's changed. And there's new staff and they come and go now and they get switched over and there's restructuring.

It's a criticism but I don't know what you can do about it as the change in staff at Environment Canterbury is that the state turnover of people who meet one-on-one with the farmers. And if that just keeps happening, well the farmer will just say, "Oh we're not going to bother with this person because they've only been here 6 months".

This was linked with the drawn-out nature of the process and several interviewees highlighted the resulting 'consultation' fatigue:



So it's probably that protracted length of time that really kills people. I suppose one of the other things is, and it's not [Environment Canterbury's] fault, but there's been a bit of turnover of staff and that's how you get a bit of disjointed.

I think the other thing that's difficult for us, is that everybody wants a piece of the pie now... and there's so few people on the ground to do the work, (a) that are interested, (b) that have the time, and (c) that have the capacity to read copious amounts and understand scientific reports and hydraulic stuff and geological.... that meeting yesterday... that was nine o'clock in the morning to 5:30 in the afternoon.... I understood that when I took it on, I had no idea that it would still be going on 7 years later, and that would be extension after extension after extension

That's probably my biggest frustration is the length of time for the process, it just goes on and on and on. It's driven me nuts, they've already had one extension, now they're looking for another one. I'm thinking, "oh my god". I feel for them, I really do. They're so understaffed it's not funny, but mind you, so is everywhere.

Because we don't have the tools under the Resource Management Act, we have to pull in Consent by Consent and each Consent [holder] has the ability to appeal and go to the Environment Court. And it's just a really chunky way to do things.

Some felt that there was a lack of transparency about what was and wasn't possible, creating an inefficient process:

...ultimately, ECan are going to tackle those main issues.... They could have been upfront and said, "Well, this is why we can't follow up nutrient leaching, they can't police that, because it's too hard, so next best thing is to have a good management practice. We're going to recommend that". ....we didn't need 1½ years of monthly meetings to work that out, really... all these things that were discussed... about 5 or 10 years ago, we went through the same stuff with the local catchment groups... So, from that point of view, we haven't achieved much.

We talk about same things over and over, but the development continues anyway.

However, some interviewees also felt the process was rushed:

So, they're rushing them through, so they're getting them done – don't get me wrong, but the point is the method in which they're doing it is what I call rushed and not thorough enough for me, anyway.

### **3.5 Prioritisation: Where would you invest?**

Interviewees were asked to identify where they would prioritise (unlimited) resources, if they could choose one only issue to address. The following priority areas were identified:

***Biodiversity protection and enhancement:*** This included ecological restoration and pest control, especially in regard to biodiversity remnants and wetlands, and in nutrient hotspot areas. Protecting mahinga kai, spawning and fish passage, and protecting minimum flows in rivers. The importance of limestone areas for biodiversity as well as rock art was also highlighted, and the potential for enhancing biodiversity on farms.

***Improve the health of rivers:*** A number of interviewees said they would focus resources on improving the health of rivers; some suggested rivers should be not only swimmable but drinkable as well. The cyanobacteria *Phormidium*<sup>1</sup> was seen as a significant problem and the need to understanding the cause of, and solutions to this problem, was highlighted by many interviewees. One interviewee said they would focus their resources on fencing stock from all waterways as well as restricting vehicle access to rivers, especially during the nesting season (around September–January). To balance this, public amenities would be improved and easily accessible swimming areas created:

...some picnic tables up and that type of thing, and just a recreation area... it would be good to encourage community connection with rivers

***Water management and allocation:*** Another key priority was improved water management and distribution at zone and sub-regional level. Two interviewees said they would focus resources on monitoring water, as they considered this was key to effective management and currently not sufficiently resourced. This would include real time data management as well as improved groundwater monitoring. Another interviewee said they would focus on better and tougher policing of water use.

Three interviewees said they would focus on bringing in water from other areas, and/or reassessing the distribution of allocated consents throughout Canterbury, particularly where more efficient irrigation practices may have led to 'spare' water. Options suggested included ongoing projects such as the Hunter Downs scheme, and opportunities in the north such as water from Lake Tekapo. One suggestion was to reallocate low cost, already consented river flow water from mid-Canterbury to the south of the river.

***Supporting farmers to improve practices and transition:*** A number of interviewees voiced in different ways the need to support farmers to change and improve their practices, especially around nutrient management. One farmer highlighted the need for research into new farming technologies and practices around nitrate leaching. Those in agricultural industry support roles highlighted the need to work one-on-one with farmers to identify sources and critical pathways, and ensure they are up with the play on both rules and practical options. Other interviewees highlighted the potential need for changes in land use, and one suggested a transition fund to support farmers who needed to change land use or reduce nitrogen.

We're in the transition period, and once we begin to understand the data and what it means for those farming systems, you may get a correction in terms of land values between catchment zones and different soil types. And that's going affect their security value, so say for example they may need to reduce the intensity of their operations. That could affect their ability to service their existing level of debt, and it reduces the value of their assets, because they can't generate the same amount of income from it.

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<sup>1</sup> See <https://www.landcareresearch.co.nz/resources/identification/algae/identification-guide/interpretation/indicator-taxa/poor-streams/phormidium>

***Rural-urban connections:*** The relationship between urban and rural communities was also highlighted as a key issue. One interviewee said they would focus on communication and awareness between rural and urban communities, city councils and district councils working together. They highlighted the opportunity to work with schools, and to get people out onto farms and build relationships. They also emphasised the importance of industrial activities adopting best practices for the disposal of their discharges.

Finally, one interviewee said they would focus on the complex issue of stormwater treatment and how to achieve the aspirational targets set out.

## **4 Discussion**

An overview of the SWOT analysis is provided in Table 2. A key strength of the ZIPA was the strong support among all those interviewed in regard to its' intent, aims and principals. The interviewees believed that, if effective, it would stop further degradation of the environment, would result in cleaner rivers, would provide greater protection to biodiversity and may protect cultural sites. A few interviewees believed the ZIPA lacked urgency and should have provided greater coverage to protect more of the environment, including addressing issues such as climate change.

Interviewees identified farmers, particularly farmers with irrigation, as the group most likely to be directly affected by the ZIPA. There was, however, considerable disagreement as to the extent and severity of the effects of the ZIPA on farmers. Most took the view that only a small number of farmers would be seriously affected. Most interviewees believed the community, including farmers, would benefit from improvements in rivers flows, water quality, and biodiversity.

Interviewees considered the policy aligned with an increasing demand, particularly overseas, for environmentally sound products and production systems from agriculture. The policy aligned with continued growth in tourism and community recreation. Some interviewees thought the effectiveness of the ZIPA would be enhanced if local and regional councils used its principles in formulating plans and regulations and incorporating environmental management in the repairing, upgrading and replacement of public infrastructure.

Interviewees believed the ZIPA could result in reduced nutrient leaching into waterways and improved low flows in rivers through mechanisms such as environmental plans for farms, allowing water storage on farms and by linking groundwater abstraction more clearly with stream depletion.

For many interviewees the requirement in the ZIPA for farm environmental plans was a key strength. Such plans offered farmers a degree of certainty and the 10-year time frame on water quality standards was seen by some as giving farmers sufficient time to implement their plans. Industry organisations were already moving to incorporate environmental concerns into their business strategies and the quality assurance, management, and monitoring tools they were developing for farmers. Industry and service organisations were already working with farmers to raise awareness. Farm environment plans would also

build on the efforts of those who are already contributing to improving the environment through community and catchment groups.

Generally speaking, interviewees identified two key threats to the ZIPA. One was the absence of mechanisms to motivate farmers to implement farm environment plans in a timely manner. The ZIPA does not force behaviour change. Some viewed the ZIPA as lacking in detail about what needs to be achieved including what actions farmers should take. The 10-year water quality targets were regarded by some as too distant and would allow people to avoid taking action. These interviewees suggested that intermediate water quality targets should be incorporated into the ZIPA. However, this measure would not in itself address the threat posed by farmers failing to voluntarily implement farm environment plans.

Some interviewees were concerned that a lack of awareness across community may result in hostile reactions and challenges to the policy as awareness of the consequences for agriculture becomes more widespread. This may be offset to a degree by the communication activities of industry and service organisations.

The second key threat to the ZIPA was the potential for any aspect of the ZIPA to be modified or discarded during the plan change process. A related threat was that councils would not have the commitment, power or resources to implement the policy. These concerns were partly the product of experience with planning processes in the past, and the perceived failure of councils to successfully prosecute consents that had been breached on environmental grounds. Some interviewees observed that the planning process was too slow and cumbersome to adapt to changing circumstances.

**Table 2: Summary of SWOT analysis**

	<b>Helpful</b>	<b>Harmful</b>
<b>Internal</b>	<p><b>Strengths</b></p> <ul style="list-style-type: none"> <li>Intent, aims and principals good</li> <li>Will stop further degradation/improve the environment</li> <li>Will result in cleaner rivers, more swimmable rivers</li> <li>Will provide some biodiversity protection</li> <li>Protects cultural sites</li> <li>Will change people's behaviour</li> <li>Farmers must have farm environment plans, reduce nutrient leaching</li> <li>Allows out-of-catchment water and storage of water on farms</li> <li>Problems with stream depletion from groundwater extraction and low flows addressed</li> <li>Provides certainty for farmers and Industry</li> <li>Long time frame</li> <li>Good consultation process</li> <li>Will restrict contaminated discharges in stormwater</li> </ul>	<p><b>Weaknesses</b></p> <ul style="list-style-type: none"> <li>How to get farmers motivated to implement farm environment plans</li> <li>Lack of detail about what needs to be achieved</li> <li>Policy does not enforce change</li> <li>Ten year targets too distant and people will delay taking action</li> <li>Lack of transparency and detail</li> <li>Grandparenting</li> <li>Evidence that low flows need protection is not convincing</li> <li>Too much focus on agriculture relative to industry and urban areas</li> <li>No compensation for farmers or cost sharing arrangements</li> <li>Needs more urgency and greater coverage to protect the environment</li> <li>Creates signals that will encourage counter-productive behaviour</li> <li>Adequacy and timeliness of information</li> </ul>
<b>External</b>	<p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>Demand for environmentally sound products and production systems</li> <li>Industry bodies incorporating environmental concerns into their business strategies, quality assurance, management and monitoring tools for farmers</li> <li>Growth in tourism</li> <li>Industry bodies preparing priorities for working with farmers</li> <li>Industry and service organisations working with farmers to raise awareness and demonstrate application</li> <li>Build on ongoing work of community and catchment groups</li> <li>Local and regional councils use principles in formulating plans and regulations</li> <li>Incorporating environmental management in the repairing, upgrading and replacement of infrastructure</li> </ul>	<p><b>Threats</b></p> <ul style="list-style-type: none"> <li>Lack of awareness across community may result in hostile reactions and challenges to the policy</li> <li>Water quality does not actually improve</li> <li>Unfavourable reactions as awareness of the consequences for agriculture become widespread</li> <li>Farmers do not change or do not know how to change</li> <li>Principles are modified or discarded during the plan change process</li> <li>Councils do not have the commitment, power or resources to implement the policy</li> <li>Regional councils will standardise policy across zones</li> <li>Constant turnover of council staff means knowledge and relationships lost</li> <li>Inability of councils to successfully prosecute consents</li> </ul>

| Aligns with government policies and programmes

Consultation fatigue: planning process is too slow and cumbersome

## 5 Conclusions and recommendations

**Communication with farmers:** A key issue that was repeatedly highlighted was the need to raise awareness and communicate better with farmers, especially farmers who may be substantially affected such as those in hotspots and in areas where water allocation is likely to change significantly and where a well supplying drinking water is located on their property. There were strong indications that much about the impending changes was still unclear to farmers and that this could potentially become a source of conflict. There was also concern that farmers might not know what was intended with some requirements, for example, for mahinga kai and the locations of culturally significant sites.

Industry support organisations highlighted the need to work one-on-one with farmers to raise awareness and ensure that both the requirements of the ZIPA and the way to achieve them was clear to farmers. Organisations such as DairyNZ, Beef and Lamb, FAR, Fonterra, Irrigation NZ, irrigation schemes and water user groups are already working with farmers to achieve this. We recommend that Environment Canterbury work closely with these organisations to assess gaps, develop suitable information materials and media releases; and ensure that all farmers have access to information and support. This could be achieved, for example, through a working group set up for this purpose.

In particular, it will be important to identify and work specifically with those farmers likely to be most negatively affected by changes in flow regimes. Clear and targeted communication is required to ensure that the degree to which the livelihoods of these farmers will be affected is clear to all parties and steps can be taken to mitigate both economic losses and flow on effects for their communities. Communication at this level would also enable ECan to openly discuss technical details in allocation and consenting procedures that might enable and support collaborative and/or more efficient approaches to managing the water available.

**Set intermediate water quality goals:** A key weakness of the ZIPA identified in this report was the extended time frame and resulting lack of urgency for action. However, the long adjustment period was appreciated by the agricultural sector interviewees. Setting intermediate water quality targets would provide a means to track progress while still allowing farmers time to adjust their practices and for improved practices to provide a result.

**Build on the work of catchment groups:** There is a high level of concern in the OTOP for the environment, particularly rivers, and highly engaged catchment groups are working towards their improvement. These groups represent a key resource and continued support for them will be important for the future of the zone, particularly for maintaining open channels of communication with Environment Canterbury and access to expertise. There is also an opportunity to better coordinate the operation of these groups. For example, the development of a zone-wide project with a "mountains to sea" focus, bringing together and spatially coordinating the efforts and energies of catchment groups and agricultural industry support networks.

**Monitoring of progress:** There is a felt need to improve monitoring of water resources, both quality and quantity. Water allocation monitoring has been highlighted as an area

that requires better resourcing. There is also a clear need to highlight and communicate the water quality improvements required of both rural and urban areas. Sharing of this information, for example through the Environment Canterbury website, would likely increase the sense of transparency for the community. In addition, the continuing efforts by community groups and farmers (including through consultants such as Irricon) to monitor water quality present an opportunity for better coordination of data. A national conversation is developing around the role of citizen science in environmental monitoring (e.g. Landcare Trust 2018) and Environment Canterbury may wish to consider taking up the conversation with other regional councils in order to better understand where such data might fit into the broader picture of water quality monitoring and acceptable measures of progress.

***Support for tourism development:*** Increased tourism has been highlighted as an opportunity that may arise from improved water quality. It is recommended that a review be conducted of potential new tourism opportunities and of support available to new ecotourism and associated ventures. This is currently the domain of the Timaru District Council.

***The current policy process.*** There is considerable concern that the long collaborative process may be in vain if the ZIPA is finalised in an environment court process. There may be a need to openly discuss this issue and/or clarify the role of the zone committee in the plan process, particularly in relation to environment hearings.

***Future policy processes:*** There was a great deal of appreciation for the consultation process itself, and for the efforts of Environment Canterbury staff. However, there are indications that the overall length and heavy time demands of the process have led to collaboration fatigue. The extended time period has also coincided with rapid turnover in Environment Canterbury staff. We recommend that Environment Canterbury look for potential improvements in the efficiency of the process, for example, through a more streamlined approach to selecting issues for discussion with the zone committee and wider public. This could potentially be addressed through a facilitated workshop with the Zone committee.

***Resources for implementation, monitoring and continued regulation:*** One of the main perceived threats to the ZIPA was the potential for it to fail because the regional council would not have the commitment, power or resources to implement and enforce it. This issue may require further consideration at a political level.

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## **Annex 1: The draft ZIPA: Zone-Wide Recommendations**

### **Community drinking water**

- The Regional council and district councils make appropriate provision in their plans and work programmes to achieve *any improvements* required to protect community drinking water supplies as a result of the Stage 2 Inquiry Report of Havelock North.

### **Water allocation**

- Cap existing allocations for surface water and groundwater at current level of abstraction, acknowledging that these are mostly over allocated.
- Seek feedback as to how over allocation should be addressed.
- Prohibit the transfer of any unexercised water permit, and/or of any unused water and any abstraction, other than for community drinking water supplies, where a limit has, or will be, exceeded.
- For any water permit that lapses, is surrendered, or expires and is not renewed, the rate and/or volume is not reallocated.
- The sub-region plan change supports out-of-catchment water being brought into the zone with Papatipu rūnanga actively involved in any decision-making about this. While there is no proposal for new water being brought into the zone at present, it is recommended that the sub region plan change for the Orari-Temuka-Orari-Pareora zone is enabling of new water being brought into the zone, if it becomes available.

Allow:

- The installation of on-farm water storage to maximise efficient use of water and enhance reliability where appropriate. Newly identified stream depleting groundwater abstractions to demonstrate their degree of hydraulic connection and have access to groundwater allocation if they are not deemed to be connected to surface water. This recommendation is intended to reserve an allocation block for groundwater abstractions, where the limits have been capped. Provide for site to site transfers of water but only in circumstances where the transfer is of water that has actually been used during the previous 5 years (based on actual use records), and in accordance with the extent a catchment is over allocated by, includes a surrender of water that matches the extent of over allocation, up to a maximum of 75%.
- The use of irrigation scheme water is to be prioritised over individual surface and groundwater sources.
- Water User Groups are incentivised to reduce allocation in the establishment of environmental flow and allocation regimes. An example of how Water User Groups can be incentivised is in the Orari Catchment whereby abstractors who are not part of a Water User Group are subject to a higher minimum flow restriction regime than those who are part of a Water User Group.
- Environmental flow and allocation regimes are developed for: North Opuha River, South Opuha River, Upper Opihi River, Te Ana Wai River, Temuka River and its tributaries.

## **Water quality**

- Nitrate nitrogen in groundwater, excluding the hot spot areas of Rangitata Orton, Levels Plains, and the Fairlie Basin, shall not exceed 5.65 mg/l as an annual average, which is half the Maximum Acceptable Value of 11.3 mg/l.
- E.coli in groundwater, in 95% of samples, shall not exceed <1 organism per 100 millimetres.
- Nitrate concentrations in surface waterbodies, excluding the hot spot areas of Rangitata Orton, Levels Plains, and the Fairlie Basin, shall not exceed 6.9 mg/l as an annual median.
- In the hot spot areas of Rangitata Orton, Levels Plains, and Ashwick Flat, if nitrate nitrogen in groundwater does not meet 5.65 mg/l as an annual average within 10 years of the sub region plan change for OTOP becoming operative diffuse discharges of nutrients from farming activities, and diffuse and point source discharges from industrial activities, will be required to reduce nitrogen losses beyond Baseline GMP Loss Rates and/or current consented loss rates. Based on current state modelling, this reduction could be in the order of 30–40% (Rangitata Orton) 20–30% (Levels Plains) and 9% (Ashwick Flat).
- Where these limits are currently being met, there shall be no deterioration of that water quality.
- Diffuse discharges of nutrients are capped at current limits, and are reduced over time where required to meet water quality limits in hot spot areas.
- Establish a nitrogen load limit for industrial discharges to achieve water quality outcomes while recognising existing investment.
- Industrial activities to adopt the Best Practicable Option (BPO) for the treatment and disposal of discharges.
- Ground and surface water replenishment schemes such as Managed Aquifer Recharge and/or Targeted Stream Augmentation are enabled to improve freshwater quality across the zone.

## **Farm planning**

- High-risk farming activities require resource consent, operate at Good Management Practice and prepare Farm Environment Plans as required. High-risk farming activities are considered to be farming activities with more than 50 hectares of irrigation, or more than 10% of the area of a property used for intensive winter grazing of cattle, up to a maximum of 100 hectares.
- Low-risk farming activities to be subject to a Management Plan. Low-risk farming activities are those activities that have irrigation or winter grazing below the thresholds for high risk farming activities.

## **Sites of Wāhi Taonga, Wāhi Tapu, Nohoanga, and Tuhituhi Neherā Rock Art Sites**

- The policies and rules of the regional council and district councils recognise and protect sites of wāhi tapu, wāhi taonga, nohoanga, and tuhituhi neherā rock art sites from land and water use activities.
- The policy and rule frameworks of district and regional plans identify and manage potential effects on tuhituhi neherā sites from the taking, use, damming or diversion of water, the discharge of contaminants, and land use activities.

## **Rivers, wetlands and hapua**

- Policies and rules provide for protection of wetlands and hapua, particularly in respect of water and land use activities that may affect their natural character or natural function including existing riparian vegetation on the margins of braided rivers, wetlands and hapua.
- Channel straightening and waterbody realignments are not appropriate unless they result in no net loss of any indigenous biodiversity or habitat in the affected reach.

## **Vegetation**

Regional/district councils:

- Control general clearance of indigenous vegetation where it plays an important role in the health of catchments.
- Control large scale earthworks in rural zones, particularly in the upper catchments.
- Protect identified areas of significant indigenous biodiversity from clearance or other disturbances from land use activities.
- Limit vegetation clearance and manage tenure review process to protect habitat for indigenous species and mahinga kai.
- Support collective actions to reduce losses of contaminants and work on wetland and waterway enhancement, and biodiversity projects.
- Restrict new plantation forestry in all Flow Sensitive Catchments and the Upper Orari.
- Avoid forestry in areas of outstanding natural landscape and significant natural areas.
- Protect and maintain tussock cover by managing land use change in the upper catchments.
- Control erosion with species other than invasive and/or plantation forestry species.
- Control invasive species of trees with regard to forestry.

## **Supporting Change**

Regional council and industry:

- Support farmers' move to Good Management Practices (GMP).
- Prioritise work with farmers to address particular nitrogen, *E. coli*, and sediment hot spots.

## Annex 2: Interview questions

<b>Individual benefits</b>	<p>Looking at the proposed changes, how will you be affected personally?</p> <p>What benefits do you think the Plan will create for you? Why?</p> <p>What would limit the benefits you get?</p>
<b>Individual problems</b>	<p>What problems do you think the Plan will create for you? Why? What could make those problems worse? What could help you overcome those problems?</p>
<b>Specific changes</b>	<p>Go through each of the proposed changes – good idea or a bad idea?</p> <p>Who do you think will be most affected? (why?)</p> <p>What would you change?</p>
<b>Community benefits</b>	<p>Who in the OTOP (or elsewhere) do you think will benefit from these changes (why?)</p> <p>What benefits do you think the Plan will create for people in the Zone? Why?</p> <p>What would help them make the most of those benefits?</p> <p>What would limit the benefits they get?</p>
<b>Community problems</b>	<p>Who will be the most vulnerable? What are the main sources of vulnerability?</p> <p>What problems do you think the Plan will create for people in the zone? Why?</p> <p>What could make those problems worse?</p> <p>What could help them overcome those problems?</p>
<b>Opportunities</b>	<p>Can you think of any opportunities that might arise from these changes? What would be the best way to capitalise on them?</p> <p>What would help you make the most of those benefits?</p>
<b>Threats</b>	<p>In your opinion, what are the main risks to the community from this plan?</p>
<b>Focus</b>	<p>If you could pick one issue to focus on for the OTOP to make sure the future of the zone was as healthy and prosperous as possible, with unlimited resources to focus on/improve that one thing, what would it be?</p>
<b>Process</b>	<p>Do you feel like you had input/were listened to?</p> <p>Do you feel like your needs were taken into account?</p>