

## Pourakino Catchment – AgResearch project

### Summary

The Pourakino Catchment in Southland has a proud history of having a proactive farmer-led catchment group, the Pourakino Catchment Conservation Trust, that has been operating for ten years. In 2023, AgResearch researchers, Robyn Dynes and Helen Percy, with assistance from Thriving Southland, initiated a relationship with the Pourakino catchment group, to explore how researchers can better work with farming communities to address complex issues such as water quality.

AgResearch was keen to use an ‘action research’ approach to work *with* members of the catchment group to identify and explore the issues that mattered to the group, and collectively identify some of the actions and activities needed, rather than come in with pre-determined ideas as to what research was required.

This approach takes time because it means developing relationships first, and then developing an understanding of what had been done to date, what were some of the values, attitudes and beliefs that were important, as well as the outcomes that community members were looking for in the future.

Through interviews with 12 farms in the catchment we found that:

- Interviewees expressed a strong sense of place and link to the physical environment
- Interviewees expressed a clear view that farmers in the catchment were – mostly – ‘doing the right thing’ for the environment
- Most interviewees were able to articulate on-farm practice change that they had undertaken to mitigate environmental impacts (in particular winter grazing practices and riparian planting)
- Interviewees could articulate the challenges facing the catchment
- Many could articulate a vision for the catchment – often based on healthy waterways, and the recreational opportunities that healthy waterways can provide.

This suggests that, individually and collectively, that some of ‘precursors of change’ (attitudes, beliefs and values) are already in place. The ability to articulate challenges, opportunities and vision for the future (even if they weren’t all the same), and well as the things that are being put in place to get there, was impressive.

However, what also emerged was, in general, a need for more systemic approach to implementing and measuring change to address catchment challenges. Systemic means ‘in relation to the whole system’ (which is different from systematic which refers to being well-organised), and this type of approach is more necessary when there is no obvious solution to an issue.

Not surprisingly, given the focus of the catchment group and preliminary discussions, water quality, and specifically managing sediment and E coli, emerged as two key areas of challenge that could be tackled within the catchment, although certainly other challenges and opportunities were discussed. For some, action was considered to be on a wider catchment scale as well as individual farm level, others were considering a wider perspective, for example biodiversity, markets, linking with other organisations etc.

*“Well, the challenge is identifying where our problems were – are really in this catchment and trying to – I mean, we’ve all being doing something, but how do we measure it? And I don’t know how we measure some of the things we’ve been doing... I mean the best thing we’ve probably – you can’t measure is the just communicating between one another.”*

So we recommend the following:

1. Complex issues like this means there isn’t a clear solution (or research) so it’s more about experimenting and trying out some ideas.
  2. But linked to that it is about measuring and monitoring change with everything you do – whether it is specific water quality monitoring, or capturing feedback from events and those participating in the group.
  3. Focus on the short, mid and long term outcomes, and the activities – what you do – follows on from there.
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## Background and introduction

During February 2024, AgResearch researchers Robyn Dynes and Helen Percy interviewed representatives from 12 farms in the Pourakino Catchment to explore challenges and opportunities for the catchment, and the role of the Catchment Group and other organisations in supporting these challenges and opportunities. Interviewees represented current members of the Catchment Group, as well as other farmers within the Catchment.

This followed a workshop organized with the Pourakino Catchment Conservation Trust at the Fairfax Hall on 11 October 2023 that developed a timeline for the group's activities to date, and identified and prioritized issues facing the catchment (potentially where research could contribute to).

This document summarises the key themes that emerged, particularly from the interviews.

## Why were we doing this

1. To be able to work with/ build an on-going relationship with the Pourakino Catchment, we (AgResearch) wanted to take the time to understand the different perspectives and needs within the Catchment (whether for research or otherwise).
2. For the catchment group: by exploring where the catchment group has come from, and where they want to go in the future, the group has a case for engagement with future funding agencies, regional councils and sector and industry agencies, and can help pinpoint where to put its efforts and attention (including research projects).
3. From a social research perspective, we are interested in exploring different approaches to thinking about practice change – especially around collective approaches to complex problems (like water quality), and the roles that different groups or organisations can play. This understanding has broader implications around the future adoption of innovation and policy as well the role of catchment groups in bringing about change on the ground.

## What we found

### *Summary*

- Interviewees expressed a strong sense of place and link to the physical environment
- Interviewees expressed a clear view that farmers in the catchment were – mostly – ‘doing the right thing’ for the environment
- Most interviewees were able to articulate on-farm practice change that they had undertaken to mitigate environmental impacts (in particular winter grazing practices and riparian planting)
- Interviewees could articulate the challenges facing the catchment
- Many could articulate a vision for the catchment – often based on healthy waterways, and the recreational opportunities that healthy waterways can provide.
- A strong feeling of empathy came through, particularly for neighbours in the catchment, and for example the sheep farmers who have had low returns in recent years.

The following is a summary of themes from the interviews. More detail is available on request.

### *Support for the Catchment Group*

- The Catchment Group is seen as a positive platform for sharing knowledge, learning from each other, and driving collective action, as one farmer states "If we can sort of solve it for one it might solve it for all of us in different ways." There is the sense that while there is not always agreement within the community, that there is still the underlying goals and responsibility to protect the catchment.
- The group plays a valuable role in linking between different farming sectors (especially sheep beef and dairy, which may not otherwise interact).
- It also has an important social role to help keep the community together.
- There is a role for the group in demonstrating and supporting best practice.
- On the whole, the catchment group is viewed as a positive community. There were reflections on how bringing the right people together initially to establish the group set the tone of collaboration and respect, which now has a positive overall effect on engagement and new initiatives being undertaken.
- However, many interviewees acknowledged the challenges of keeping people engaged with the group on an on-going basis, as well as not being able to reach some farmers in the catchment.

- There was also a perception that farmers who were not engaged, either in the catchment group or otherwise, were not keeping up with best practice on-farm.

*“I think for the catchment yeah, it [the Catchment Group] is very positive and if we can use it as a story to try get more people involved, I know no catchment’s probably got 100% buy-in from every farmer attending these events and knowing what’s going on in the Catchment Groups...we can try get that story out a bit more and try get a few more people involved.”*

*“Every catchment has a big spectrum of where everyone’s at. Some of it’s just different stages of the journey and it’s – they possibly will never be on that journey and I guess that’s one of the – that fits in both challenge and opportunity; it’s a challenge of a catchment of how do you get engagement from these people but it is an opportunity too because even if they take one step, that’s a step of improvement.”*

*“And then obviously the social side of it, you know, looking after the people, you know, making sure that they are healthy and strong and that connection. Yeah, and just building the relationships within the community. You know, the varied amounts, because not everybody connects with everybody now.”*

*“The guys who are – involved in the catchment are definitely going down that path [of good on-farm practice] because you’ve got a broad spectrum of sheep and beef and dairy guys... but it’s potentially the guys that we’re not seeing at the meetings that may not be following the best practice.”*

#### *What else is needed to support the Catchment?*

- Systemic monitoring to demonstrate the impacts of efforts not only the biophysical changes (in water quality) but also the changes in things like attitudes, relationships etc. This would help address a frustration felt by a few as not being able to see tangible progress.

*“I mean, we’ve all being doing something, but how do we measure it? And I don’t know how we measure some of the things we’ve been doing... I mean the best thing we’ve probably [done] – [but] you can’t measure is the just communicating between one another.”*

*“So we can say there’s E. coli in the Omutu but what sort of E. coli? And then if we know what sort it is, where is it? And then, okay, at what level can we do something about it to make it not a problem, right? Or mitigate it anyway. So unless you have that definitive sort of benchmarking to know exactly what it is and then where it is, it’s just like throwing money at a bloody table top and hoping you might get it in the right hole.”*

- Continuing to work collaboratively with other organisations (although some varying opinions about the roles and value of different organisations).

### *Changing attitudes and behaviours*

The diversity of farming systems (dairy, sheep/beef) within the catchment is viewed as an opportunity to explore different solutions. A range of practices is seen as valuable in the long term, such as riparian planting which will yield longer-term benefits even though these will take some time to manifest.

Diversification might also include concepts such as being part of a broader ecological system rather than a singular farm, which is where a diversity of different practices may be useful.

*“I think there was a hope for a bit of a stage that we would just be able to fix all our problems by just doing good farming practices. I think the – a hard moment came when we realised that it had to be more than that. It had to be shifts from that. And I think the Pourakino’s probably more understanding of that now than what they ever have been. Ten years ago it was very much, “How can I get in front of the game?” It’s now, “How can I be part of the game”, and that’s quite a change in the way they’re looking at things... Yeah, they’re not wanting to get in front of the game, they want to be part of the game which is a bit different.”*

Good practice is something that farmers in the catchment seem passionate about. There is both the perception that ‘good practice’ is something that farmers are able to provide (some without governmental policy or oversight), and the expectation that they are doing their part and that this places impetus on the next farmer to do the same – a kind of communal peer pressure. Several farmers indicated the aim to do the "right thing" and be seen as doing so, even if it makes farming more difficult (e.g. leaving critical source areas unfenced).

*“You know, the neighbour down there might go and dig a pond and it’s not my responsibility, that’s Environment Southland’s responsibility to make sure it’s done right. So you know, if you could see something that was a problem you’d say, “Hey look, you know maybe you should consider that”, but we wouldn’t be the regulator or didn’t see ourselves as that role.”*

*“Just by looking over the fence you can see –different ways like –there’s a farmer down the road who just – who direct drills his swedes now. And you think, “Wow, that’s a pretty good”... So there are, yeah, wintering practices, crop practices that are, you know, definitely changing.”*

*“Yeah, it’s – it’s both starting to happen now and I’m seeing more – the value of the conversations is probably more productive rather than a, “How can I get out of this?” It’s more, “Okay, what’s my role in being a part of this”.*

### *Networks, relationships and roles*

Many of the farmers interviewed relied more on their own practical experience, local discussion groups, and trusted neighbours for information and advice, rather than external agencies.

While these farmer groups are a place to discuss different mitigation strategies and other issues affecting the farm, they do not see themselves as enforcers for particular policies – although they do note the subtle effects of peer influence.

*“It’s hard because it’s not really our place to be telling each other what to do, it’s other organisations like say Thriving Southland supporting those positive conversations. And Dairy NZ and Fonterra, those stakeholders kind of, you know, pushing that agenda if – the right agenda hopefully...” “And to be perfectly honest, everybody that sits in that room, is doing it right make no bones about it... The ones that don’t sit in on them, are the ones... That’s because they’ve just been watching it though...”*

Some spoke very positively about the relationship between the local Rūnanga and the Catchment Group.

Despite issues surrounding guidance, regulation, and incentives (or the lack thereof) government and regulatory bodies (e.g., Environment Southland) were (sometimes) seen as valuable, providing support, guidance, and advice, rather than just enforcement and regulation. However, there is a desire for more collaboration and a balance between regulation and practical, on-farm solutions. Industry organizations (e.g., Dairy NZ, Beef and Lamb) provide education, training, and promoting best practices, though some farmers feel they don't always take full advantage of these resources. Thriving Southland was referred to positively in terms of environmental and catchment support.

*“Thriving Southland have been pretty good from an environmental and Catchment Group stuff. They’ve probably been of more influence and help to us than anybody...”*

Farmers held a perception that research organizations (e.g., AgResearch) need to shift from telling farmers ‘what to do’ to truly listening and understanding the farmers' needs and perspectives, and providing more practical, evidence-based guidance.

There was a strongly expressed need for processors to take a more active role in incentivizing and supporting farmers to meet new environmental and social requirements. Sheep farmers pointed to the disparity between different agricultural sectors in terms of sustainability efforts and incentives. The dairy sector appears to be more advanced in integrating environmental considerations into its operations, driven by processor initiatives. By contrast, the sheep and beef sectors focus primarily on basic animal health and compliance, with fewer incentives for environmental practices.

## What does this mean?

- Change – particularly change in practice to address complex environmental issues, for example water quality, requires changes in individual and collective mindsets

- Systems thinking approaches<sup>1</sup> make use of an ‘ice-berg’ model to demonstrate that the greatest leverage of change is at the bottom of the iceberg (the part we don’t see) that is not always apparent, and includes understanding the mental models or worldviews.
- Our interviews have helped to reveal some of the bottom layers of the iceberg within the group, which is the first part of envisioning future change (Figure 1).
- Having a shared view/ direction of the future is another step towards collective change. We’ve put some of the concepts expressed in the interviews into a framework<sup>2</sup> to help show what the future – both of the catchment (figure 2), and also of the wider agri-food system (figure 3) – looks like. It would be great to sense check this further with the group.
- Understanding connections, relationships and roles is also important, this includes how knowledge and information is sourced, and the role of research organisations as being part of the solution (not only the ‘provider of knowledge’).

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<sup>1</sup> Meadows, D.H. (2008). Thinking in Systems. Chelsea Green Publishing Company. (see also <https://donellameadows.org/donella-meadows-legacy/>)

<sup>2</sup> Sharpe, B., A. Hodgson, G. Leicester, A. Lyon, and I. Fazey. 2016. Three horizons: a pathways practice for transformation. *Ecology and Society* 21(2):47. <http://dx.doi.org/10.5751/ES-08388-210247>



Figure 1: Example of the use of the ‘ice-berg’ model to show some of the world views from the interviews. The right-hand side is not completed, as this would be something that the group could completed as part of a planning exercise.

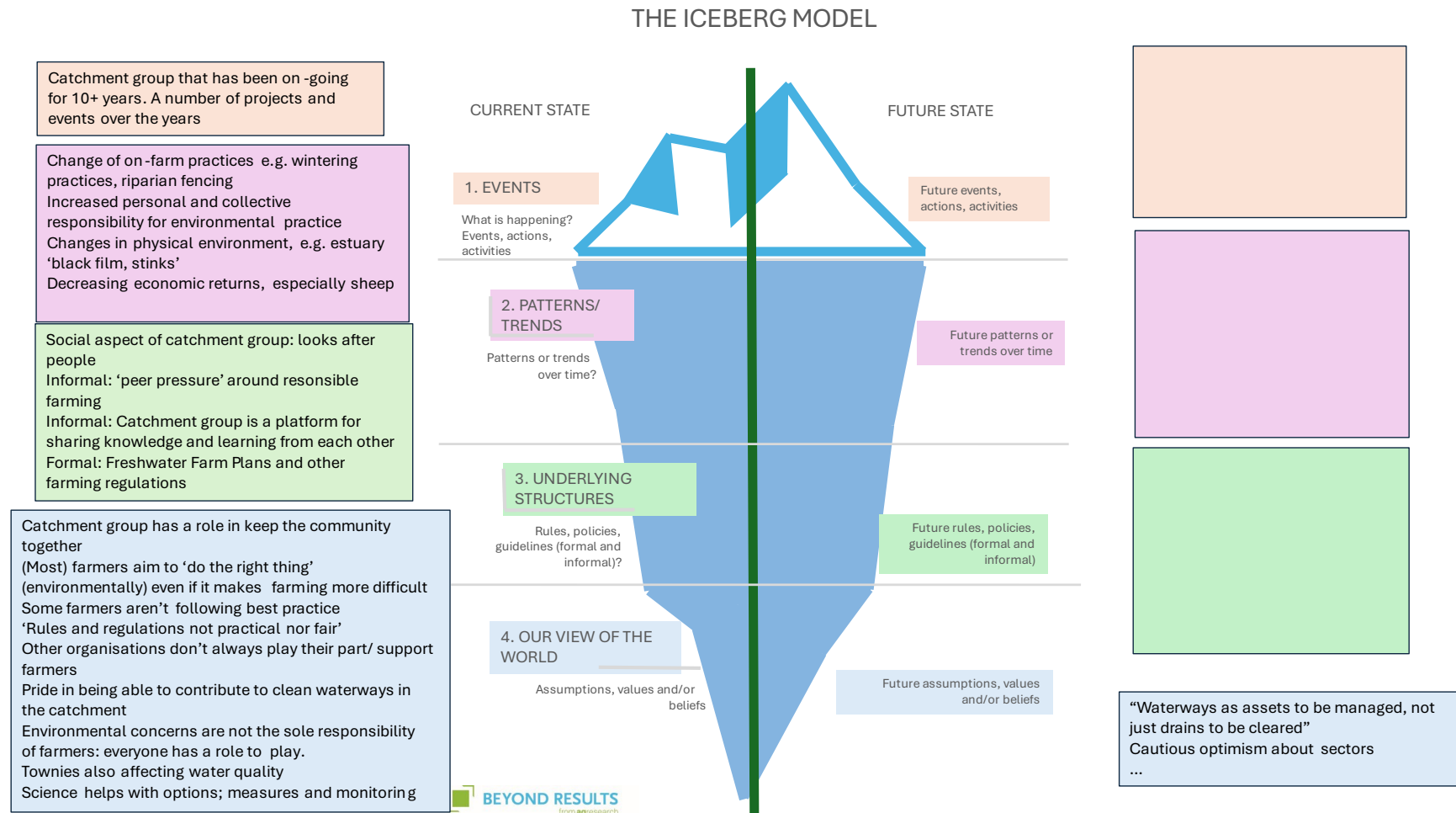


Figure 2: Summarized perspectives from interviews as to what the future ‘looks like’ for the catchment and some of the things the catchment group is doing/ has done towards that future.

### Pourakino Catchment level

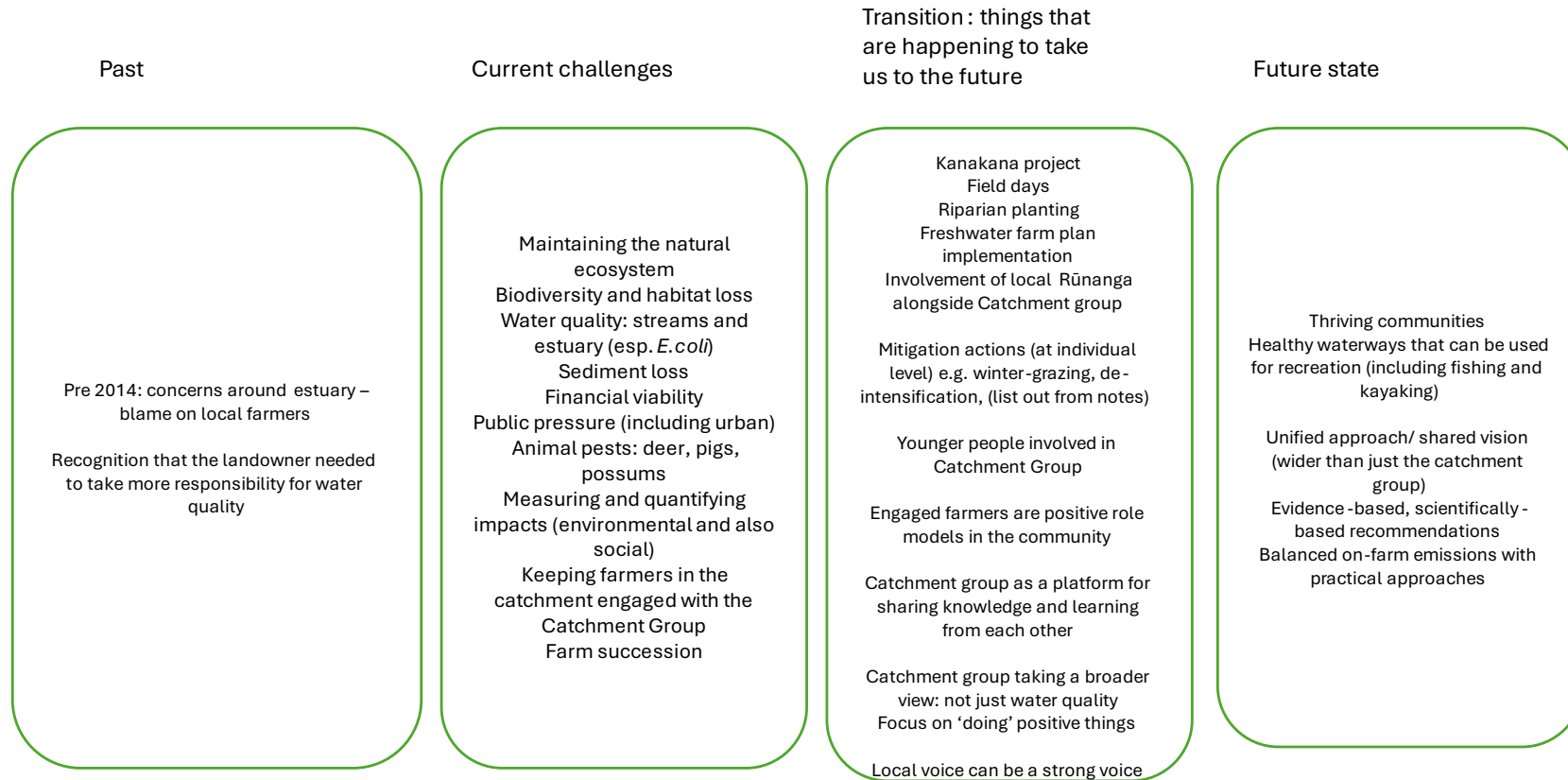
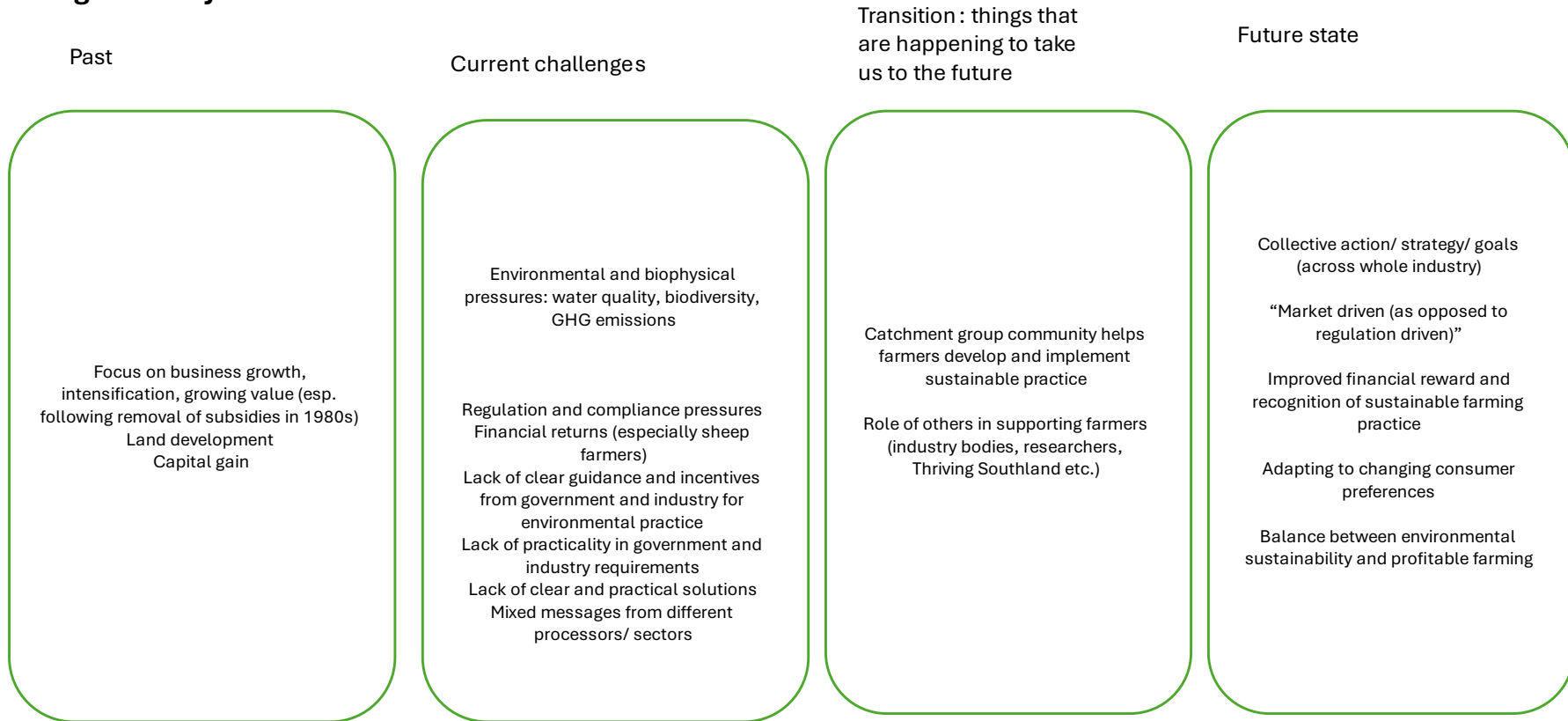


Figure 3: Summarized perspectives from interviews as to what the future ‘looks like’ for the NZ agri-food systems and some of the things might move us towards that future

### NZ agri-food system level



## So what? Next steps

- Opportunity for AgResearch Invermay based water quality scientists (and others e.g. Justin Kitto and Thriving Southland), to start the ball rolling with presentation/ Q&A session on E coli and water quality with specific application for this catchment, with the intent of on-going shared research.
- AgResearch continues to play a brokering role to provide a link to the Pourakino in specific research or information areas (*E. coli*, GE etc.).
- The work presented here can be picked up by the catchment group to use for strategic planning and other applications, e.g. for future funding. Robyn and Helen are happy to work through this with the group, for example completing the diagrams here and helping with questions about future focus. Also, picking up on the baselining and on-going monitoring of tangible change in the Catchment group : put this into a Theory of Change (like a programme logic) – which combines both biophysical and KASA (Knowledge, Attitudes, Skills, and Aspirations) which are considered a precursor to practice change. This is something that other catchment groups have expressed an interest in, so we are keen to try it out.

## Acknowledgements

Thank you very much to the Pourakino community, especially to everyone participated in the interviews and generously shared your time, your ideas, and your hospitality. Thank you also to Rachael Halder and Richard Kyte at Thriving Southland for your guidance.

Many thanks to our AgResearch colleagues, Steve Cantwell and Roxanne Henwood for help with the interview preparation and analysis, and to Anna Edwards to assistance with the initial workshop.

Funding for this work was through the [T-Platform](#) (MBIE Strategic Science Investment Fund).

Helen Percy and Robyn Dynes  
July 2024