

Farming with Native Biodiversity

Rauropi Māori me ahuwahenua

We believe farming can help Aotearoa New Zealand's natural environment thrive. And this is essential to us all thriving.

Our goal is to develop training and resources that will equip farm advisors and farmers with the skills and confidence needed to implement their own solutions. We aim to provide practical and clear information on how to improve the biodiversity on their farms and make it viable for their unique pastoral farm system.

Success for us means that people looking for ecological advice can find the right resources they need for their situations. They will be confident in how to take meaningful actions to improve biodiversity.



Let us fill you in
on the plan...

The next few slides
cover the project's
key strategic info...



What is biodiversity?



Ecology

Ecology is the study of the relationships between living organisms (such as plants, birds, fish, insects, and fungi) and the physical environment in which they live (such as streams, hills, farmland and forests). Ecology includes both native and exotic species (as well as humans).



Ecosystem

An ecosystem is a community of living organisms and their interactions with the environment. An ecosystem might be a pond, stream, paddocks, forest or farm.



Biodiversity

Biodiversity translates simply to "biological diversity", or the diversity of living things in an area. Biodiversity is both the variety of species in an area and the amount of genetic variation within each species in an area. A higher diversity of ecosystems in an area contributes to higher biodiversity.

To enhance biodiversity on farms, we ideally want to increase variation at all three of these scales: genetic variation within species on the farm, the total number of species on the farm, and the diversity of ecosystems on the farm. In this pilot, we focus on native biodiversity, which are species that occur naturally in New Zealand.

This means the species either evolved here or arrived without the help of humans. The pilot is supporting the management, restoration and enhancement of native species with healthy, genetically diverse populations.



Why do we need biodiversity?

People need a healthy environment to provide food, water and air - the essentials of life. These are called ecosystem services.

These ecosystem services also benefit farms; for example, by reducing nutrient and sediment run-off and providing shade and shelter. These services are provided when an ecosystem has all the parts it needs to function. Without living things, the natural ecosystem will stop functioning altogether. On the other hand, increasing the diversity of species in an ecosystem will make that ecosystem more robust in the event of change.



Why is native biodiversity important on farms?

Sustaining and enhancing native biodiversity can provide a wide range of benefits to a farm, both direct and indirect.

Direct benefits include providing pollination for crops, enhancing water quality, and reducing soil erosion. Biodiversity also improves the aesthetic values of the farm, for example with more tui and bellbirds calling and flowering native plants like kōwhai. Indirect benefits of looking after biodiversity include easing regulatory pressures and enhancing market access.



Where can farming help biodiversity?

Declining biodiversity is a global crisis. When ecosystems collapse because biodiversity is gone, they no longer provide clean air, water and food. Native biodiversity in Aotearoa is no different, and it needs help. How can farming help?

Farmers know their farms best, and they should decide how to manage pests and planting operations on their own land.

Farming and native biodiversity can coexist. Our hope is that with better information, farm operations can be carried out in a way that helps biodiversity at the same time as being productive and economically sustainable. For example, when planting is done for erosion, sediment, or nutrient management, it can be planned to support biodiversity as well by providing important food sources and habitats for native species.

What's the Current Situation?

System problems

Key
 Pastoral farm coverage



Pastoral farming occurs across Aotearoa New Zealand and accounts for 50% of land use. Therefore, how pastoral land is farmed is vital for New Zealand's biodiversity. If we can support healthy native biodiversity on farms, it will be a significant step towards a healthier and more resilient environment for all of New Zealand.



Native species are in decline

not just in New Zealand but globally. As a result, the environmental resilience that biodiversity provides is under threat. NZ's threatened or at-risk native species include: 40% of plants, 74% of freshwater fish, 40% of birds and 85% of lizards. Many of our native species are unique to New Zealand. We need to keep them around in the future.

We have a scale problem!
23,000 farms



and not many **farming savvy ecologists** available to give advice




Increased market interest creates financial benefits in having more environmentally resilient farms. As market and climate forces increase, buyers, banks and insurers are looking to support farms that are more environmentally resilient. So financial benefits are emerging for farmers who have more environmentally aligned and resilient farm systems.

Farmers' reality



Takes a lot of time and is \$\$\$\$

Expert advice and ongoing management are costly. Development of farm environment plans can cost \$2,000-10,000+ with additional costs for biodiversity monitoring, planting, weed and pest control, and more. Across 23,000 pastoral farms, this is \$125+ million.



Disconnected information

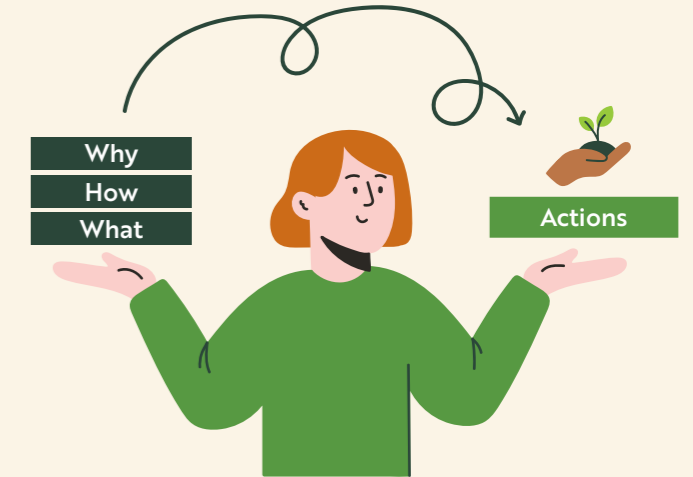
Expert advice and resources are hard to find and digest, and they are not inclusive. Māori aspirations for te mana o te taiao are not widely reflected in existing information. Resources are typically technical and not easily digestible by farmers and farm advisors.



Hard to implement

No clear path to implementation. Biodiversity and ecosystem management take years to embed successfully, mistakes are expensive, expert advice is hard to come by, and there are **big gaps in knowing what path to take.**

Our pillars Ngā pou e whā



Create win-wins for biodiversity and farms

- Farming is a critical lever in protecting biodiversity in NZ because pastoral land is 50% of our land area. However, farming is currently a large contributor to environmental degradation. This means we need farmers on board to protect our remaining biodiversity, which makes human life on earth possible and creates built-in resilience to future changes.
- Farmers have many competing considerations when trying to bring together complex farming and ecological systems.
- Farmers want to know that if they spend time and money, they will get an outcome or a return on their investment. What's in it for them? Farmers need to see benefits from the time and effort put into biodiversity.
- New Zealand's biodiversity is so degraded that it needs to be actively managed, not just left alone. Having farmers who know how to operate with consideration for managing, protecting and restoring native biodiversity on their land is a massive win for native biodiversity.

Sustainable farming becomes the norm

- Protecting and enhancing biodiversity should be a normal part of being a farmer, not something special or an extra task that's done at the end of the day.
- Sustainable farming needs to be widespread so there is a cultural change and this isn't just a fad and bad practices don't return.
- Often initiatives only reach the early adopters, the farmers who are already environmentally conscious or have enough money to invest in biodiversity. We need to reach the other 90% of farmers to create a real system shift.
- Market pressure is an important force to encourage farmers to adopt sustainable practices. As customers increasingly want certified environmentally friendly products, there could be commercial benefits for farmers who can demonstrate being more environmentally friendly.
- A system shift will take a long time and so the benefits may not be seen for a long time. Therefore we need an ongoing, ingrained cultural shift that occurs across the system that supports farms. Expecting farmers to do it on their own won't work. Who is in the network that supports farmers?

Return the pride to farming

- Farmers want to feel that their actions are meaningful and achieve good in the world. They see themselves as stewards of the land and want to leave their farms in a better condition than they got them.
- Returning pride to farming and connecting to nature is hoped to improve mental wellbeing in rural communities, especially for farmers.
- Farming used to be seen as a good occupation, a profession that parents wanted their children to go into, and an industry that was good for New Zealand. Farmers were proud to be in an industry that was respected and good for the country.
- Today, much of this pride in farming has been lost. Farming is sometimes viewed as bad for the environment ("dirty dairy") and in opposition to environmental protection. At the same time, much of our population has moved to urban areas and so people no longer have the social connections to farming that they once had when they lived in rural communities.

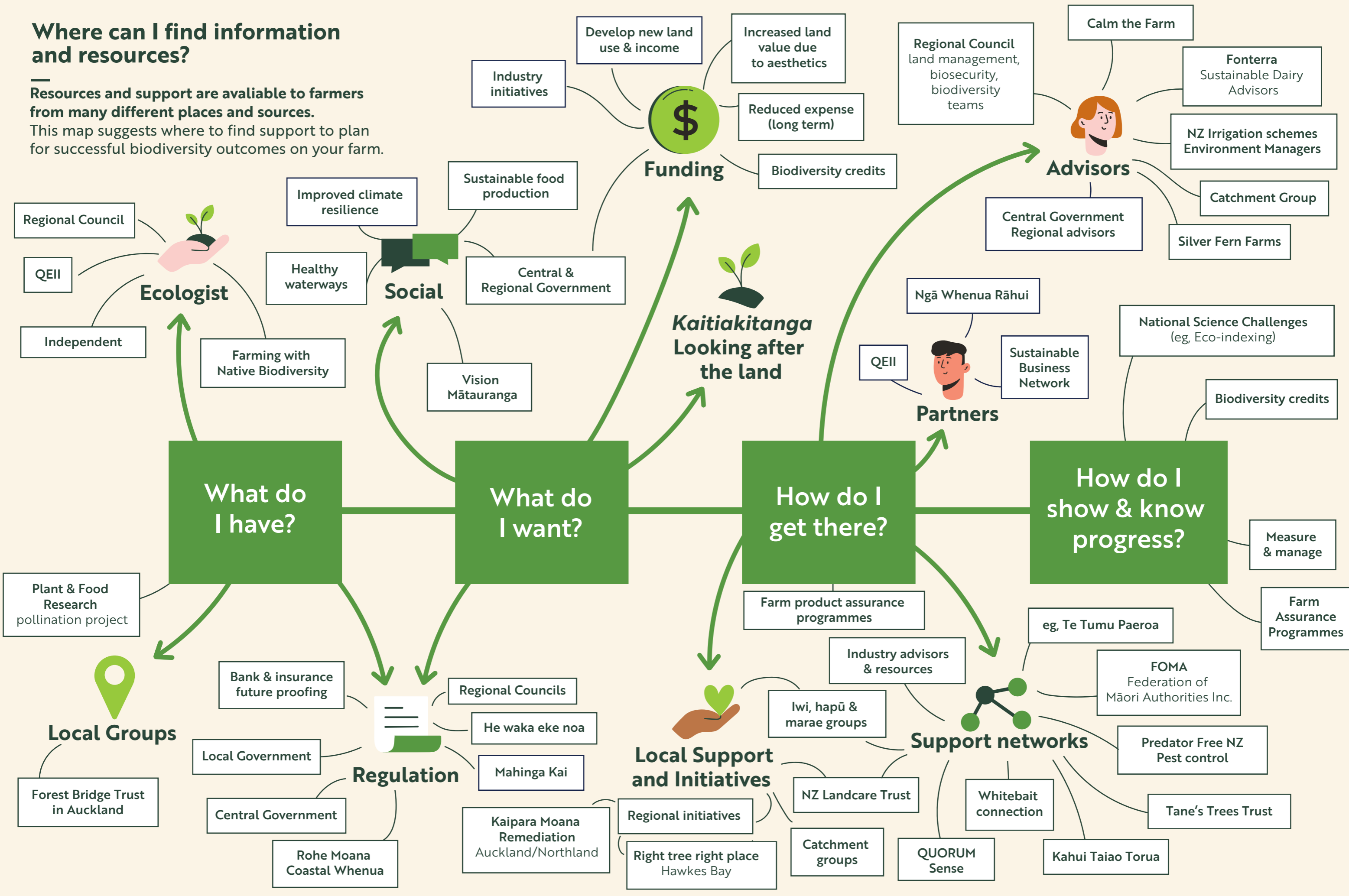
Practical solutions will lead to tangible outcomes

- Farmers are practical and their work is hands-on. They need information that makes sense in a farming system and that can be turned into practice. Boots on the ground will result in real change.
- Farmers want to know that the actions they are taking will have long-term benefits, regardless of any changes in regulations. They need resources that help them take meaningful action towards agreed long-term, local goals.
- Farmers want to know HOW to protect or improve biodiversity on their farms, not vague information about *what* to do (or not to do). They need detailed advice, costs and timeframes tailored to their area and farm.

Where can I find information and resources?

Resources and support are available to farmers from many different places and sources.

This map suggests where to find support to plan for successful biodiversity outcomes on your farm.



Who and what is the pilot project designing resources for?

Farmers

I have a connection to my land and want to look after it. I have a moral obligation to leave the land better than I found it for future generations. For sites or habitats that support nationally threatened species, an ecological assessment must be completed - this feels like a daunting and impossible task. I want to be given reliable advice to help me know how to do the right things, rather than being told what I can or can't do.

My goals for the farm and the land need to be front and centre because my family has farmed this land for years and we know it better than anyone. I want to feel part of something bigger and help my community and country.



Current State



Future Needs



It’s expensive and takes too long to manage biodiversity

Take action. Using clear steps, finding funding and working with knowledgeable partners

Overwhelming, technical, unclear

Ease and simplicity. Clear and simple enough to take action

Information is hard to find, understand, and is too generic

Guide me to the right information with specific, useful recommendations

Information has little practical application

Clear practical application. The region of the country is important. Estimates of resources and time required for specific jobs

I am lacking confidence, I’m not sure how am I doing or where to start. Am I investing in the right places?

Confidence and reassurance to take action, and know I’m investing time in something that will actually work

Scaling issues - with only a handful of ecologists available, how do I find specific advice for my farm or get an ecological assessment if I need one?

Knowledge & ownership. Give me the tools and knowledge I need to make decisions for my land and farm

Unsure of the purpose of biodiversity other than meeting government regulation or personal environmental goals

Understanding of rewards and purpose. Help me know what good looks like and where biodiversity can help my farm

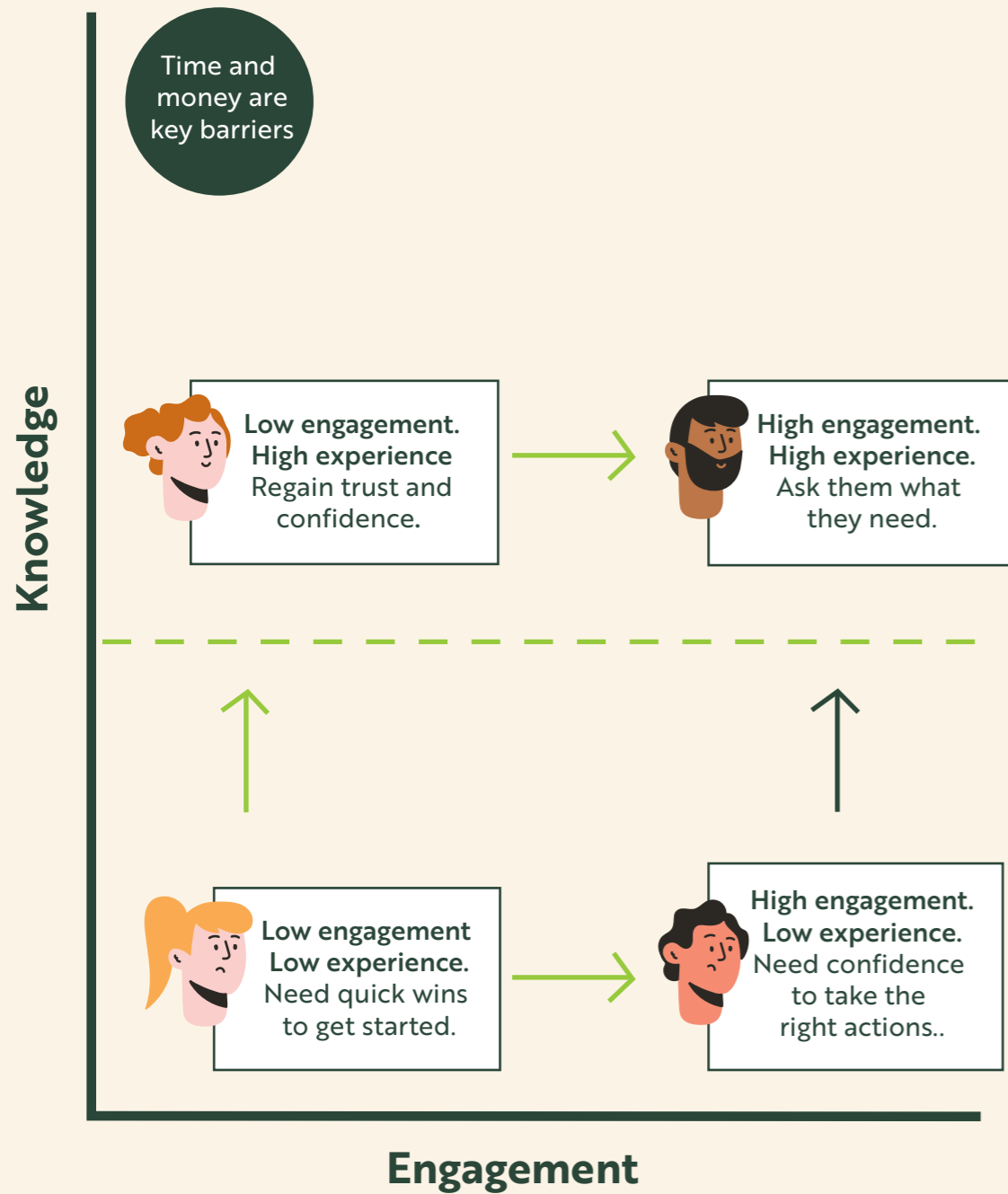

No clear measure for biodiversity

Set standards and show me how to measure against them

User Mindset Matrix

Farmers

Farmers all have a range of experience and engagement in working with native biodiversity. We have summarised four groups based on their barriers to success (summarised here on the right) that need different approaches in order to develop confidence, motivation and skills that lead to taking action and eventually long-term system change.


Low engagement. Low experience.
Need quick wins to get started.

Getting started is the hardest part. A plan makes it easier to start.

Unless there is a financial incentive to do this, it's not worth doing.

I don't understand the regulations and I don't like people telling me what to do with my land.

I'm too busy to worry about biodiversity. It just falls to the bottom of the pile when I have other more important things to worry about.



High engagement. Low experience.
Need confidence to take the right actions.


Now that I'm started, I want to see this completed.

I don't know anything about biodiversity but I know about my land and I'm keen to learn.

I want my farm to look nice because I spend a lot of time outside and I want to feel proud when my neighbours visit.

I want a market premium. I genuinely care about my land but I wouldn't have done anything about biodiversity without this.

Our farm is multi-generational and I want to carry on my farm's legacy for caring for the land.



High engagement. High experience.
Need funding and resources to do more.


People don't understand the scale of the issue - the size of my land and how much effort it takes. I need support.

I'm already fencing off areas because it is the right thing to do and I have a moral obligation.

Where do I get funding for doing the work? Making it easy to apply for funding would really help.

We're already doing lots of biodiversity work and I want to do more. Yes please!

We need long-term support. Send me reminders on when to do things.



Low engagement. High experience.

It was a big effort to restore an area and then a flood came through and it got destroyed. I'm demoralised and unmotivated to try again. A lot of the species recommended don't work in reality.

I did a whole lot of planting a few years ago and then the regulations changed and now I'm going to have to dig them up and start again. I want assurance this time it will last!

I got a planting list, and then found most of the plants would not be available for two years.

I'm reluctant because there was a storm that knocked all my tall trees down and caused a lot of damage. I don't want that to happen again. But I do want the FAP Plus premium.

I'm reluctant because I've had bad advice in the past and spent a lot of money for no results. I'll do it but I want to be sure I'm getting good advice this time.

I went to my local nursery and they told me what to plant but they all died so now I'm hesitant to try again. It cost me thousands.

Who and what is the pilot project designing resources for?

Farm Advisors

I am an independent operator or I work for a company like Fonterra or Silver Fern Farms. I advise farmers on general farm operations or how to meet environmental standards. Mostly I hear from farmers when biodiversity impacts their business or when groups such as the council, community or Iwi want biodiversity protected or improved in my area. I need a basic understanding of biodiversity and ecosystems to facilitate these conversations with farmers and point farmers to the support they need.

I work directly with farmers to improve their farms' environmental footprint. One aspect of this is native biodiversity and how that fits with the rest of the farm. I have a lot of questions and am keen to do this well, but sometimes it is hard to get the detailed answers I need to accurately advise farmers.

“Farmers ask about specific topics like inanga spawning and I don’t know the answers. I know more about nutrient runoff and water quality, not biodiversity.”

“Council support is variable. In some regions it’s great and in others, it’s almost a roadblock.”

“I don’t know the best way to start a positive conversation about biodiversity with farmers.”

“Capacity is my main issue. I just don’t have time to do my own learning and find resources. I need bite-sized chunks.”

“I want to give farmers meaningful recommendations, not just a green tick.”

“I’m not confident I have the right information that will make a meaningful difference for the farm. I only want to give advice I am confident is right.”

Current State



Future Needs



Over capacity and don't have time to do my own learning

Easy to find, bite-sized chunks of information

Not confident to answer farmers' questions and not sure where to go for reliable information

Know where to go to find reliable answers to specific questions

Because biodiversity is not part of the regulations, it is harder to prioritise actions on it with farmers

Knowing how to start the conversation and convey the value of biodiversity. Helping farmers to prioritise biodiversity actions

There is so little biodiversity on this farm, it is hard to know the best actions to make a difference

Knowing the key principles for biodiversity on a farm, e.g. identifying sites where biodiversity improvements can easily be made

I don't know where to get the ecological information to provide the specific recommendations I need for a farm

Know where to go to find reliable answers to specific questions

Deliverables Mahi

FARM PLANNING



Farm Planning

MAY – DECEMBER 2022

Further develop farm plan template

Make the farm plans more visual to make them more accessible and easily used by farmers.

Improve farm plan journey

Look at the wider stakeholder group for how to inform and support farmers to plan and work effectively with biodiversity.

Planning for Māori-owned farms

Weaving in a Māori point of view and considerations for different approaches to farm planning and decision making so that the pilot is useful for Māori-owned farms.

E-LEARNING



Online Learning

Create and test eLearning modules to upskill farm advisors and help highly engaged farmers gain knowledge about managing native biodiversity on farm, from anywhere. These modules will link to additional resources from the pilot and other agencies.

JULY – NOVEMBER 2022

Biodiversity 101 (15 mins)

Create an interactive introduction for farmers and farm advisors who want to learn more about managing native biodiversity within a farm system.

For the low engaged, low experience farmers and advisors who need an overview of native biodiversity working with farming systems.

JULY 2022 - FEBRUARY 2023

Series of eLearning modules

Develop eight 5-10 minute modules aimed at farm advisors outlining the key principles of native biodiversity management within a farm system.

For the highly engaged, low experienced farm advisors needing more resources and knowledge.

LEARNING RESOURCES

Resource development



MAY/JUNE 2022

Stocktake of existing resources

What is good and exists already, how-to guides

JULY – FEBRUARY 2023

Develop a range of resources through different learning mediums

READ: 8 How-to guides

Downloadable PDF and printable resources on specific topics for farm advisors to hand out at catchment sessions, farm visits etc.

LISTEN: Podcasts

WATCH: Visuals and Videos

Connect through sharing case studies and tips on social media.

MEET-UPS: In-person or online sessions

Chance for farmers to learn from each other, chat to an ecologist

FARM PLANNING



Catchment session design and toolkit

Design in-person training that could be included in catchment workshops that farmers already attend. We will also use these sessions to gather feedback on deliverables in development.

JANUARY – APRIL 2023

Training session design

Template for running 1-hour session on biodiversity, including agenda, key topics and activities

Supporting resources and activities (toolkit)

Plug-and-play assets to be used in the training

4 x pilot workshops

Attend and run 4 training sessions to test ideas for training and resources

MAY 2023

Final session plan & toolkit

For people who prefer to learn in person, socially.

BUSINESS PLAN



Business plan and strategy

A critical outcome of this project is a strategy for creating widespread system shift and behavioural change, so this should be seen as a key deliverable, as well as critical to the project's success.

Strategic plan with key visuals

Synthesise existing data into a single document with supporting visuals. Includes summary of problem, pillars, personas, journey map, stakeholder map, roadmaps for deliverables, high level communications plan.

Stakeholder engagement pack

Following workshops/webinars, provide stakeholders with a pack (key visuals) that they can then share with their networks/leaders.

JANUARY - JUNE 2023

Gap analysis reporting

Report on gaps and approaches the pilot has found to be important and need future work. For example, matching farm plans to current funding; developing planning approaches and reporting to support positive outcomes; further growing science communications in areas and media found to be effective in the pilot.

JANUARY - JUNE 2023

Long-term business plan

Determine and write a strategy for ongoing work following the pilot, including key learnings, system shifts and funding requirements.

ASSESS SCOPE

Aspirational goals

Create an online central repository connecting farming and native biodiversity resources from this pilot and other projects.

Branding and visual ID

Develop a unique look and feel that appeals to farmers and stakeholders to grow engagement with the programme and provide visual consistency.

Website design

Design a website hub to house the resources and all key messaging for the programme.

Monitoring

Set up a working group to start developing a biodiversity monitoring tool, so we can start measuring what success looks like.

Long-term plan workshops + webinars

Set up regular networking forums and workshops for people across the system to come together. This is an opportunity to inform stakeholders of the strategy. Run 4 sessions in pilot phase.

Results Dashboard

Set up a personal dashboard where farmers can store their information on biodiversity (e.g., plans, photos, maps and monitoring records) and save resources to read later.

Integration into other tools

Developing an approach to adding biodiversity plans into current GIS-based farm planning software or other tools.

Communications Plan

A) Test delivery pathways (how to reach farmers) with our communications and marketing

B) Test delivery / learning modes for the e-learning and resource development pilot deliverables

1. Farmers and Farm Advisors



Communication objectives

- **Raise engagement** with project and interest in biodiversity
- **Increase trust** in project's motives, expertise and reliability



Key channels

We will first test how to best reach farmers through the following channels to discover how they would like to receive information before testing if they like the information (resources).

- **Catchment groups**
 - Farmers want to learn from each other rather than being talked to or told what to do.
 - They want to understand how what they're doing at the farm level fits into the overall landscape and what others are doing in their community.
 - Farmers want to help other farmers in their community.
- **Farmers talk to their friends and neighbours for information.** How can we get our messages circulating at the pub, in the same way farmers talk about lambing?
 - Events like Field Days, A&P Shows
 - Social media
 - Pop-ups at expos then used at the open day launch
- **Stakeholders' channels**
Pilot campaign to test delivery pathways
 - Test messaging in print publications (Farmer's Weekly, Countrywide Mag, Pulse, rural newspapers), mailouts, e-newsletters, targeted Facebook ads.



Example Key Messaging

Examples of messaging for different audience groups for further exploration and testing:



Low engagement, low experience — need quick wins to get started

- Protecting biodiversity doesn't have to be hard. Here are some simple things you can do to get started.
- Biodiversity is an asset not a liability, and here's why you should protect it.
- What is biodiversity and why is it important?



High engagement, low experience — need confidence to take action

- Here's where to find trustworthy advice and information to help you take action.
- Here's what you need to know to get started on your farm.
- What is biodiversity and why is it important?



Low engagement, high experience — need to (re)gain trust & confidence

- You can trust us to give you information that will work this time.
- It's worth giving it another try. We'll be open and transparent about the risks and how you can manage them.
- Our advice will stand the test of time.



High engagement, high experience — need funding & resources to do more

- Here's where you can find funding to match your farm and your goals.
- Here's more information about the biodiversity assets and/or threats you're most interested in.
- You can go to these people for more in-depth advice and help.



What else we know so far:

- **Messaging needs to be short, sharp, targeted and in bite-sized chunks.**
 - Reach them over their coffee in the morning. Don't use email - they only check once in the morning during their half hour of admin time.
- **Lots of "how to do" and less "why".**
 - Include the why as optional for those who want to know additional information.
- **Emphasise how biodiversity will help farmers with other goals.**
 - Financial, productivity, farm health, social/community benefits etc
- **Providing regional information is important** – what works in Kaitaia may not work in Bluff
- **Farmers feel most comfortable yarning at their kitchen table over a cuppa,** or better yet, out on the quad bike riding around the farm.
- **Building relationships and trust is crucial.**
- **Making business sense of the time and money involved in biodiversity restoration on private land is a barrier for large-scale action.**

2. Project stakeholders



Communication objectives

- **Give partners content and updates to share with their networks**
- **Get partners to share what they're doing with us**
- **Grow new connections amongst partners, farmers and advisors**



Example Key Messaging

- **We need to work together to achieve a system shift. We're a team.**
- **How can we support farmers in this shift, and put the pride back in farming?**
- **This is NZ's responsibility, not just a job for farmers.**

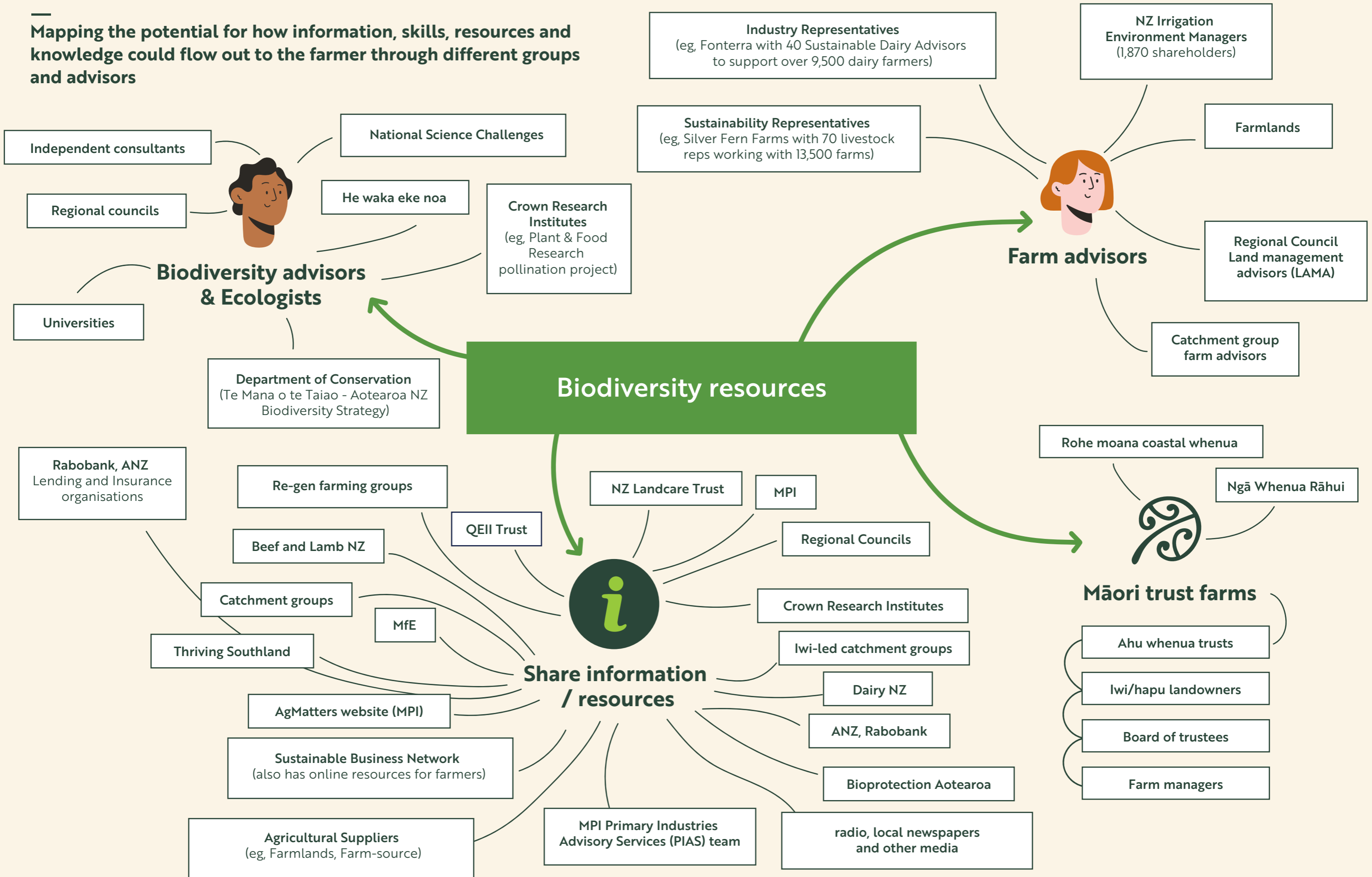


Key channels

- **Website and social media**
- **Stakeholder newsletter**
- **Meet-ups, in-person or webinars**
- **Radio and Podcast**
- **Communication packs** including posters, case studies, social media tiles, downloadable resources etc for them to share

Communications flow

Mapping the potential for how information, skills, resources and knowledge could flow out to the farmer through different groups and advisors



Project set up and funding partners

Pre-pilot: set up and initial funding

New Zealand's Biological Heritage

The pilot was established through investment from the **National Science Challenges New Zealand's Biological Heritage Pathways to Ecosystem Regeneration** team. This investment team aims to build social and ecological resilience by restoring connections between people and nature while understanding and valuing those connections in a non-market way.



On-going funding for the Farming with Native Biodiversity pilot has come from a mix of government and industry partners. The key pilot funding partners are:



Silver Fern Farms

Silver Fern Farms empowers farmers by providing them with a global platform which directly links them to consumer recognition for being careful stewards of their land. The role that farmers play in New Zealanders' aspirations for thriving biodiversity is critical and it's incredibly important that we give them the skills, advice, support and funding to help us all achieve this vision together for a thriving Aotearoa.

silverfernfarms.com/us/en/our-company/sustainability#accordion-1f5cdde386-item-7a16810a55



Living Water

Living Water is a partnership between the Department of Conservation and Fonterra. We're trialling tools, methods and approaches to enable farming, freshwater and healthy ecosystems to thrive side-by-side.

www.livingwater.net.nz

Ministry for Primary Industries
Manatū Ahu Matua



Sustainable Food and Fibre Futures

Te anamata o ngā kai me ngā weuweu toitū
Futures supports problem-solving and innovation in New Zealand's food and fibre sector by co-investing in initiatives that make a positive and lasting difference. We fund a range of projects – from smaller projects that cost less than \$100,000 to multi-million-dollar, multi-year programmes.

www.mpi.govt.nz/funding-rural-support/sustainable-food-fibre-futures/



NZ Landcare trust



The Farming with Native Biodiversity pilot is administered by NZ Landcare Trust. NZ Landcare Trust empowers the communities we live and work in to focus on, and improve, the sustainability of our land and water quality. We partner with farmers, stakeholders, agencies and community catchment and landcare groups to make a tangible difference in the future of New Zealand's waterways and landscapes.

www.landcare.org.nz/

The pilot runs in five phases from November 2021 to June 2023.

Phase	01	02	03	04	05
	16 Dec 2021	Jan-Jun 2022	July-Dec 2022	Jan-Apr 2023	May-Jun 2023
Phases	Set up phase	Discover & learn	Develop & test	Share	Evaluation & reporting
Change step seen	Team & project set up	Learn about the situation for Farmers & Farm Advisors; what is being done currently & what is needed	Develop resources & pilot outputs based on phase 02 work are developed with feedback from user group one	Share outputs & learnings with user groups	Assess pilot impact, wrap up, thank participants, report findings & outcomes

What's next?

Why do we need a long-term project that helps farmers protect native biodiversity?

A key challenge for this work is that many of the benefits of biodiversity flow to communities outside of farms and to New Zealand as a whole, whereas the work to protect biodiversity needs to be done on the farm.

Our ongoing work will focus on this conundrum and answer these questions:



What have we learned that is most useful to farmers to support long-term action that protects native biodiversity on farms? How might we use these learnings in future work to support more farmers to protect native biodiversity on their land?



Who needs to be involved (and where and when) in a longer-term work programme to develop a transformational change that supports farming in New Zealand to be a positive land-use for nature?

Ultimately, we aim to create a value proposition that will make it worth farmers' time and money to invest in biodiversity.

