Stakeholder Strategy Landscape Map

prepared for the
Our Land and Water National Science Challenge

Dr Sharon Adamson
Dr Andrea Knox (Counterbalance Research & Evaluation)
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Contents

Executive summary

The purpose of this project was to assess the alignment of strategic goals and activities of a range of stakeholders with the mission, objectives and key performance indicators of the Our Land and Water (OLW) National Science challenge, to inform their development of tranche 2 research proposals. It consists of a high-level scan and analysis of strategic statements of 53 stakeholder organisations, with 16 of these interviewed in more depth to assess the contribution of their activities with OLW's key performance indicators.

The high-level scan should provide OLW with some confidence that across their range of stakeholders, objectives around improving the quality and optimising the use of land and water, and around using this as the basis to promote the value of New Zealand's land-based production, take a high priority. Many stakeholders also clearly recognise the importance of working with communities. However, relatively few stakeholders self-identify as being involved with or directly contributing to OLW.

When considering key stakeholders' activities in more depth, it is clear that there is significant activity in support of the broad objectives and KPIs of OLW. These activities cover a range of research and development activities, stakeholder and public engagement, policy development, implementation, and funding. There are no clear gaps evident, although consideration should be given to whether more may need to be done around increasing transdisciplinary research in OLW and around activities to increase sector and public engagement. Again, however, relatively little of the activity reported is explicitly carried out or reported as contributing purposefully or directly to OLW's KPIs.

A number of stakeholders provided a clear message to OLW that they would like to see more provocative thought leadership, including taking a more ambitious approach in terms of future focus and better linking of research to implementing that research on the ground.

Introduction

1. The purpose of this project was to assess the alignment of strategic goals and activities of Māori, industry, government and NGO stakeholders with the mission, objectives and KPIs of the Our Land and Water (OLW) National Science Challenge.

2. OLW wish to understand any gaps in stakeholder activities that could reduce the impact of OLW, as well as any activities inconsistent or conflicting with OLW that might act as a barrier to OLW delivering on its KPIs.

3. OLW will use this information, alongside a Research Landscape Map, to inform their development of tranche 2 proposals.

4. The method was to complete a high-level scan of strategic statements of a wide range of stakeholders, assess these for alignment with OLW's mission and themes, and then interview a smaller number of key stakeholders to assess the alignment of their high-level activities with the OLW KPIs.

5. Based on the information gathered, any gaps, risks and challenges to the delivery of OLW objectives were noted, and thoughts raised for consideration by OLW.

Section 1 – High-level scan

Background

6. Based on the scoping document provided by OLW, and discussion with stakeholders, we performed a high-level analysis of publicly available strategic statements for 53 stakeholder organisations to OLW.

7. The purpose of this scan was to identify stakeholders particularly well aligned with the objectives of OLW, who we would interview in more depth about their activities.

8. Where possible, we used published strategies; but where we couldn't find these, we used high level statements of purpose or vision from other documents or from organisations' websites.

9. We assessed relevant statements at a high level against the main OLW mission, as well as the three theme missions, which we pulled from OLW as:

Mission	To enhance primary sector production and productivity while maintaining and improving our land and water quality for future generations
Theme 1	The New Zealand primary sector will sustain higher economic growth through participation in global value chains that are generating new products, services and market segments that are aligned with and validated against stakeholder environmental, social and cultural values
Theme 2	New Zealand land users and regulators will have a menu of tested technologies, new innovative land use options, and land and water use practices that achieve primary production growth targets within community and regulatory limits
Theme 3	Best processes and methods to enact change via an increase in collaborative capacity among individual land and water uses, communities, and iwi. Collaborators will have the social processes, data, tools and capacity to agree and implement co-developed solutions that will produce mutual benefits

10. All of the stakeholder organisations we investigated had a number of areas of alignment with OLW missions and objectives. In order to identify those particularly well aligned, we looked for two main things:
    - Specific mention of OLW; and
    - A view that went beyond a tradeoff/combative view of environment or economy, and demonstrated a more aspirational approach that environment and economy should be mutually reinforcing.

11. The stakeholder organisations we investigated in this round were classified as follows:
    Primary production/processing:

Wakatū	Zespri
Miraka	Silver Fern Farms
Fonterra	Synlait

Other business:

Landcorp	Hancock Natural Resource Group
AgFirst	New Zealand Institute of Primary Industry Management
Irrigation NZ	Business NZ/Sustainable Business Council

Industry good organisations:

NZ Apples & Pears	NZ Wine
Vegetables New Zealand	Forest Owners Association/Woodco
Beef+Lamb NZ	DairyNZ/wider dairy industry
Horticulture NZ	Foundation for Arable Research

Regional Council:

Environment Canterbury	Waikato Regional Council
Envirolink	Hawke's Bay Regional Council
Horizons Regional Council	Bay of Plenty Regional Council
Otago Regional Council	Greater Wellington Regional Council
Environment Southland	Taranaki Regional Council

Māori development:

Te Tumu Paeroa	Federation of Māori Authorities
Ngāi Tahu	Tainui
Poutama Trust	

Not-for-profit:

Fish & Game	Environmental Defence Society
NEXT Foundation	World Wildlife Federation

Crown Research Institute:

Landcare Research	AgResearch
NIWA	Plant & Food Research
ESR	GNS
Scion	

Central government:

Callaghan Innovation *(not technically a CRI, so classified here as central government)*
Ministry for Primary Industries
Ministry for the Environment
Te Puni Kōkiri
New Zealand Trade & Enterprise
Tourism NZ
Ministry of Business, Innovation & Employment
Land Information New Zealand - unable to find strategy information online and no response from strategy managers to repeated requests, so not included

Sector strategic documents

12. In order to assess the high-level strategic alignment of these stakeholders with OLW, we assessed statements of vision, purpose, high level goals, etc. that we could find in publicly available documentation.

13. These were often integrated throughout strategic documents, vision statements, etc., and in many cases not articulated in ways that could be meaningfully and clearly documented.

14. We have listed here the documents/websites that we used gather this information, but we felt it was too unwieldy to attempt to catalogue all relevant strategic statements here. The next section provides summaries of each stakeholder's strategic objectives and mapping, by sector, of the overall alignment of the stakeholders' strategic objectives with OLW's mission and theme objectives.

15. All of the links below were active at the time this project began (September 2017).

	Document(s)
Wakatū	http://www.wakatu.org/sustainability-1/ http://www.wakatu.org/our-past-our-future/#development-innovation
Miraka	https://www.miraka.co.nz/#cmsPage416164
Fonterra	https://www.fonterra.com/content/fonterra/nz/en/what-we-stand-for/our-commitments/our-commitments/_jcr_content/responsivegrid/responsivegrid_cente/responsivegrid/downloadfile/file.res/FOP0070_Fonterra_Book_of_Commitments_BOOK_V21.pdf https://www.fonterra.com/nz/en/what-we-stand-for/trusted-goodness.html , https://view.publitas.com/fonterra/fonterra-annual-review-2017/page/2-3
Zespri	https://www.zespri.com/Documents/Zespri-Sustainability-Brochure.pdf
Silver Fern Farms	http://www.silverfernfarms.com/our-company/our-strategy/ http://www.silverfernfarms.com/our-company/our-beliefs/
Synlait	http://www.synlait.com/site/uploads/2017/09/Synlait-Milk-Limited-FY17-Annual-Report-Investor-Presentation.pdf
Landcorp	http://landcorp.co.nz/environment http://landcorp.co.nz/our-strategies-glance
Hancock Natural Resource Group	http://hancocknaturalresourcegroup.com/sustainability/

NZIPIM	https://12244-console.memberconnex.com/Folder?Action=View%20File&Folder_id=65&File=One%20page%20summary%20of%202015-16%20Strategic%20Plan.pdf
AgFirst	http://www.agfirst.co.nz/environmental/ http://www.agfirst.co.nz/about/
BusinessNZ/Sustainable Business Council	http://www.sbc.org.nz/
Irrigation NZ	http://irrigationnz.co.nz/wp-content/uploads/41570-INZ-Principles-v1.pdf
NZ Apples & Pears	http://www.pipfruitnz.co.nz/Pipfruit_in_NZ/About_Pipfruit_NZ/Organisation_and_Objectives
NZ Wine	https://www.nzwine.com/en/sustainability/
Vegetables New Zealand	https://www.freshvegetables.co.nz/about-us/ https://www.freshvegetables.co.nz/about-us/resource-management/ https://www.freshvegetables.co.nz/about-us/new-zealand-gap/
FOA/Woodco	http://www.nzfoa.org.nz/resources/file-libraries-resources/research-science-technology/574-s-and-i-2015/file http://www.nzfoa.org.nz/images/stories/pdfs/content/strategies/woodcorstadvisorygroup.pdf http://woodco.org.nz/images/stories/pdfs/industry_manifesto_200514.pdf
B+LNZ/Meat Industry Association	http://www.beeflambnz.com/sites/default/files/news-docs/2017-consultation.pdf http://www.beeflambnz.com/knowledge-hub/factsheets/beef-lamb-nz-manifesto
DairyNZ/wider dairy industry	https://www.dairynz.co.nz/media/209786/strategy-for-sustainable-dairy-farming.pdf https://www.dairynz.co.nz/media/3286407/sustainable-dairying-water-accord-2015.pdf https://www.dairynz.co.nz/media/209789/Strategy-for-Sustainable-Dairy-Farming-2013-2020-Background-supplement.pdf
Horticulture NZ	http://www.hortnz.co.nz/our-work/natural-resources/?Sort=Policies http://www.hortnz.co.nz/assets/Natural-Resources-Documents/HortNZ-Nutrient-Allocation-Principles-July-16.pdf http://www.hortnz.co.nz/assets/Natural-Resources-Documents/HortNZ-Fresh-Water-Policy.pdf
FAR	https://www.far.org.nz/assets/files/blog/files//4bde7d9b-2e5f-463c-88c5-5e29fc5f1e2c.pdf
ECan	https://api.ecan.govt.nz/TrimPublicAPI/documents/download/2624514
Waikato Regional Council	https://www.waikatoregion.govt.nz/assets/PageFiles/19184-strategic-direction/5304-Strategic-Direction-DOCUMENT-WEB2.PDF

Envirolink	http://www.envirolink.govt.nz/assets/Uploads/RC-RST-Strategy-June-2016.pdf
HBRC	http://www.hbrc.govt.nz/our-council/policies-plans-strategies/annual-plans/2016-2017/
BOPRC	https://www.boprc.govt.nz/plans-policies-and-resources/key-strategic-issues/ https://www.boprc.govt.nz/media/629416/bay-of-plenty-regional-council-strategic-issues-and-operating-environment-may-2017.docx
GWRC	http://www.gw.govt.nz/long-term-plan/ http://www.gw.govt.nz/assets/Plans--Publications/LTP-2015-25/Accessible-versions/2-Long-Term-Plan-2015-18-Section-1Oct15.pdf
Horizons RC	http://www.horizons.govt.nz/HRC/media/Media/Publication/LTP.pdf?ext=.pdf
Otago RC	http://archive.orc.govt.nz/Documents/Publications/Corporate/Annual%20Plan%202017/Annual%20Plan%202017-18.pdf
Taranaki RC	https://trc.govt.nz/assets/Documents/Plans-policies/LTP2015/LTP15-1full2.pdf
Environment Southland	http://www.es.govt.nz/Document%20Library/Plans,%20policies%20and%20strategies/Annual%20plan/Overview%20documents/2017-18%20Annual%20Plan%20Overview.pdf
FOMA	https://www.foma.org.nz/foma-s-values https://docs.wixstatic.com/ugd/e53368_db7491c8f111471596fde2429e74be84.pdf
Te Tumu Paeroa	https://www.tetumupaeroa.co.nz/about-us/annual-reports/ https://www.tetumupaeroa.co.nz/about-us/our-programmes-and-projects/
Ngāi Tahu	http://ngaitahu.iwi.nz/wp-content/uploads/2013/06/NgaiTahu_20251.pdf
Tainui	http://www.tgh.co.nz/wp-content/uploads/WhakatupurangaWT20501.pdf
Poutama Trust	https://poutama.co.nz/about/
Fish & Game	https://fishandgame.org.nz/about/f-and-g-position-statements/dairy-farming-and-the-environment/ https://fishandgame.org.nz/about/f-and-g-position-statements/water-storage/ https://fishandgame.org.nz/about/f-and-g-position-statements/land-access/
EDS	http://www.eds.org.nz/our-story/purpose/
WWF	http://www.wwf.org.nz/about_us/missions_and_goals/
NEXT Foundation	http://www.nextfoundation.org.nz/about#vision
Landcare Research	http://www.landcareresearch.co.nz/__data/assets/pdf_file/0006/143817/statement-of-corporate-intent-2017-2022.pdf
AgResearch	http://www.agresearch.co.nz/wp-content/uploads/2017/07/AGR80001-Statement-Corporate-Intent-final-June-2017.pdf
NIWA	https://www.niwa.co.nz/sites/niwa.co.nz/files/NIW12992_SCI_2017_web.pdf

Plant & Food Research	http://www.plantandfood.co.nz/file/SCI-2017-18.pdf
ESR	http://www.esr.cri.nz/assets/ABOUT-ESR-CONTENT/Text-and-PDFs/ESR-Statement-of-Corporate-Intent-2017.pdf
GNS	https://www.gns.cri.nz/Home/About-Us/Corporate-Documents/Statement-of-Corporate-Intent
Scion	https://www.scionresearch.com/__data/assets/pdf_file/0005/61358/Scion_SCI_2017.pdf
Callaghan Innovation	https://www.callaghaninnovation.govt.nz/annual-report-2016/our-strategy
MPI	https://www.mpi.govt.nz/about-mpi/our-strategy/ https://www.mpi.govt.nz/news-and-resources/science-and-research/primary-sector-science-roadmap-te-ao-turoa/ www.mpi.govt.nz/dmsdocument/10172-mpi-science-strategy-rautaki-putaiao
MfE	http://www.mfe.govt.nz/about-us/about-ministry http://www.mfe.govt.nz/publications/about-us/generation-now-our-long-term-goals
TPK	https://www.tpk.govt.nz/en/a-matou-mohiotanga/corporate-documents/strategic-intentions-2014---2018
NZTE	https://www.nzte.govt.nz/-/media/NZTE/Downloads/About-us/Briefings-to-incoming-ministers/New-Zealand-Story-Briefing-to-Incoming-Ministers-Jan-2017.pdf https://www.nzte.govt.nz/-/media/NZTE/Downloads/About-us/Statement-of-Intent/Statement-of-Intent-2017-2021.pdf
Tourism NZ	www.tourismnewzealand.com/media/2761/four-year-strategy.docx
MBIE	http://www.mbie.govt.nz/info-services/business/business-growth-agenda http://www.mbie.govt.nz/info-services/business/business-growth-agenda/2017 http://www.mbie.govt.nz/info-services/business/business-growth-agenda/bga-resources/Natural%20Resources.pdf/view

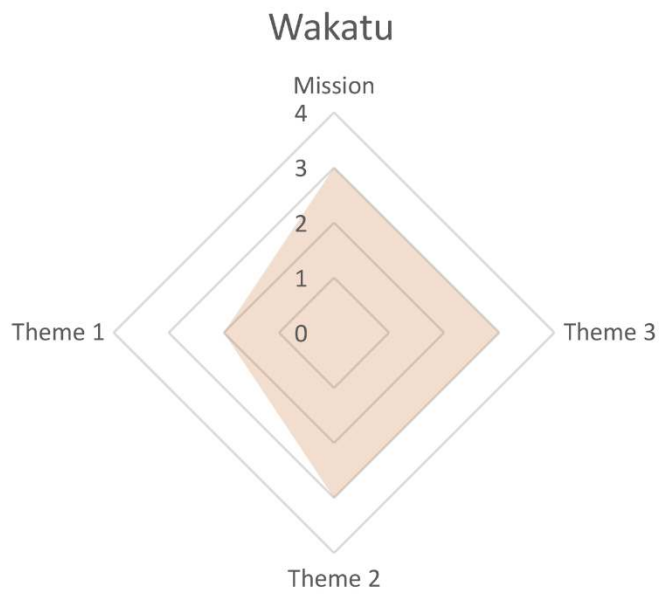
High-level alignment maps

16. To produce these maps, each of the 53 stakeholders' strategic statements were classified on a scale of 1-4 against the OLW mission and three theme missions, as follows:
    4 - direct reference to OLW
    3 - consistent with OLW
    2 - indifferent to OLW
    1 - inconsistent with OLW

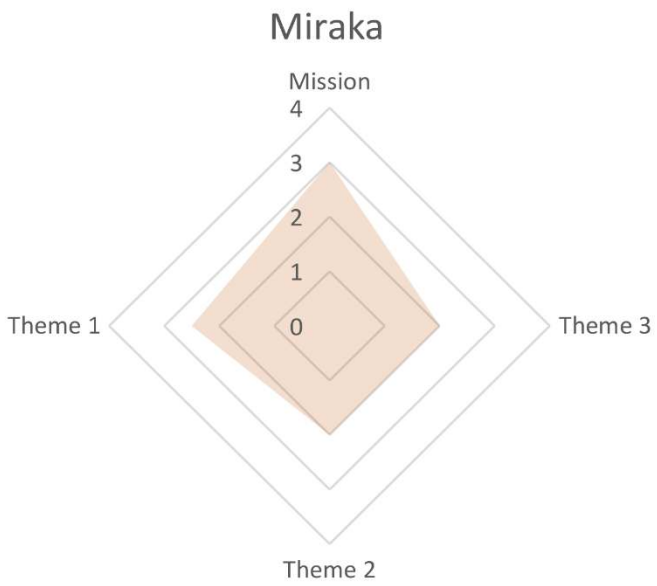
17. This allowed us both to draw some initial conclusions about how the different types of stakeholders were likely to be contributing to OLW, and to identify those stakeholders well aligned.

18. Radar plots and a short narrative summary for each stakeholder are below:

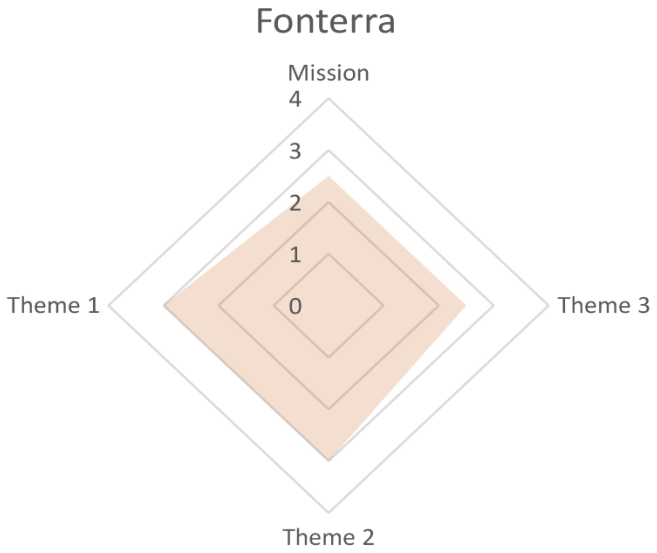
Primary production/processing:



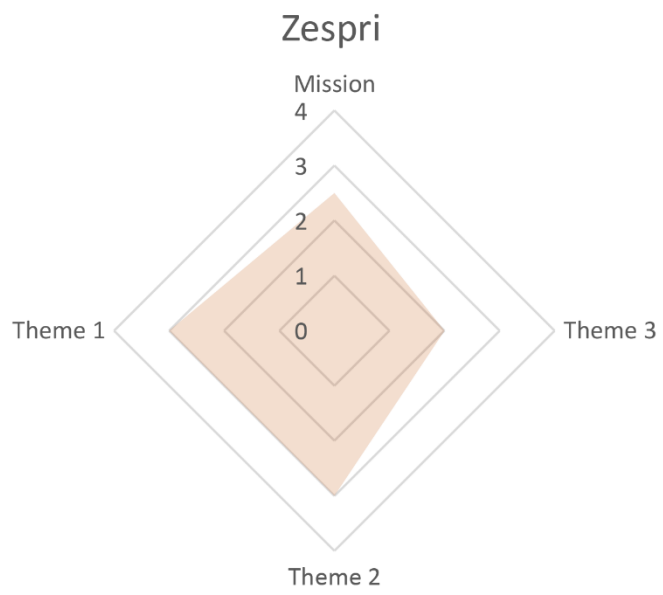
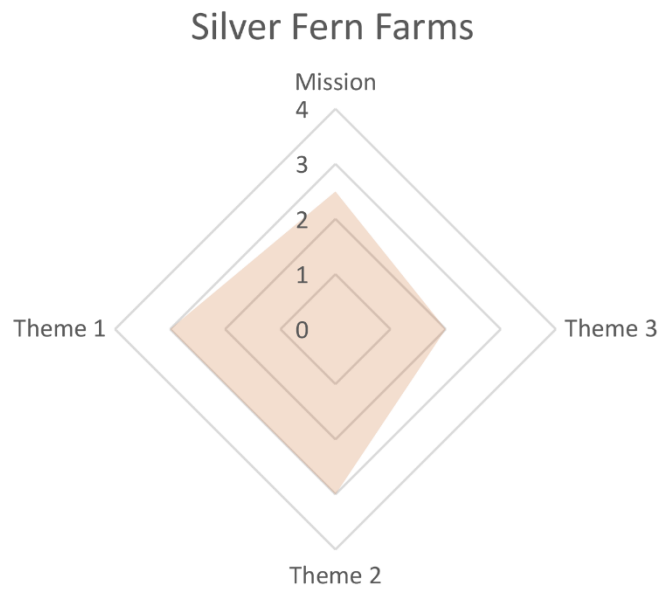
Wakatū:
Broadly consistent with OLW, in taking a holistic view of prosperity of both people and land. Notes that kaitiakitanga becomes a strategy when it is woven into the fabric of the entire organisation's planning and management. Strong focus on high value, spiritually and ethically sound products that society wants; and also on contributing to development of the community.

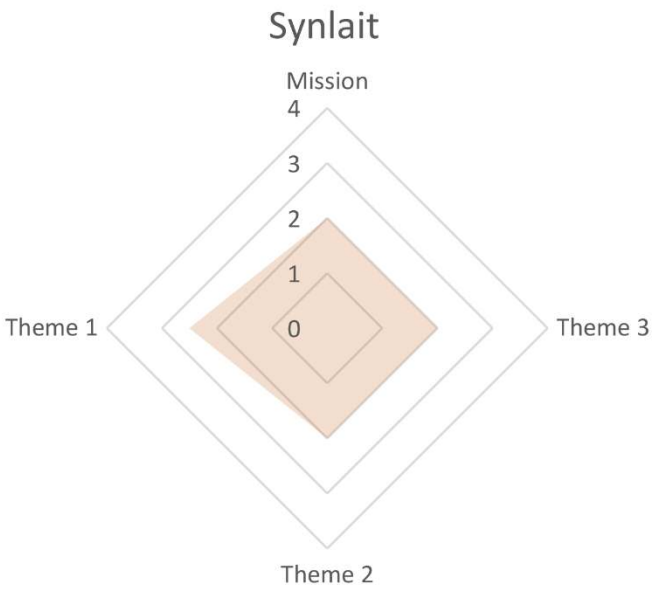


Miraka:
Similarly consistent with OLW in its intergenerational view of business, including a view that the footprint they create does not affect the future. Notes that protecting the environment is of paramount importance to Miraka shareholders. Also notes its participation in the Sustainable Dairying: Water Accord.



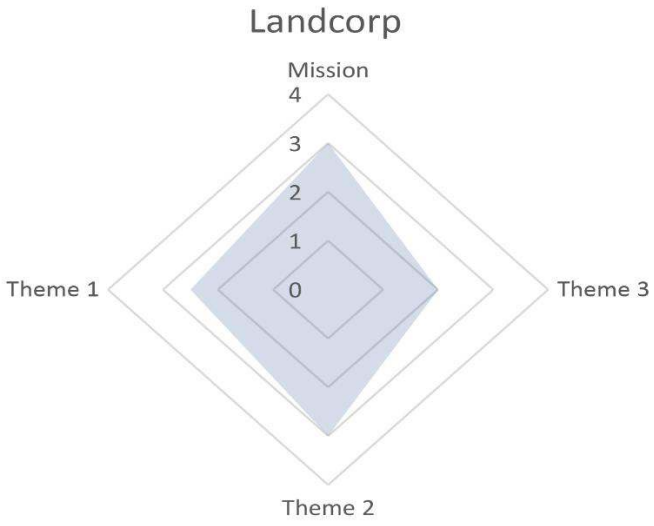
Fonterra:
Broadly consistent with OLW, strong but somewhat defensive focus on portraying the good work they do around the environment. High-level content suggests much of their relevant activity relates to specific commitments such as the Sustainable Dairying: Water Accord.

	**Zespri:** Good conceptual alignment, noting that the quality of the environment is a vital ingredient for their business—while the way food is produced and supplied can have harmful environmental and social impacts. However, the relevant environmental issues to Zespri seem to relate more to pest management, crop wastage, packaging waste and greenhouse gas emissions.
	**Silver Fern Farms:** Strong value chain focus, beginning with the "plate" (consumer needs) and working back on-farm to meet those needs. Their strategy focuses on deriving increased value from premium products, linking plate to pasture.

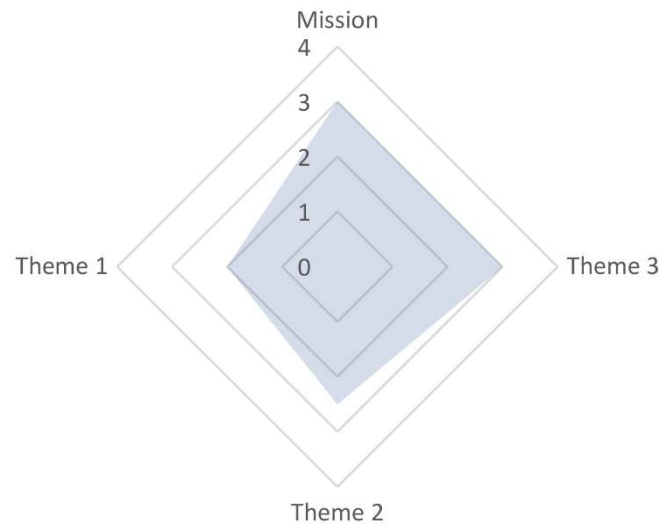


Synlait:
Surprisingly little of relevance in their publicly available strategic content. Their strategic targets focus on performance, innovation, value-add and markets; but do not explicitly draw in environmental objectives.

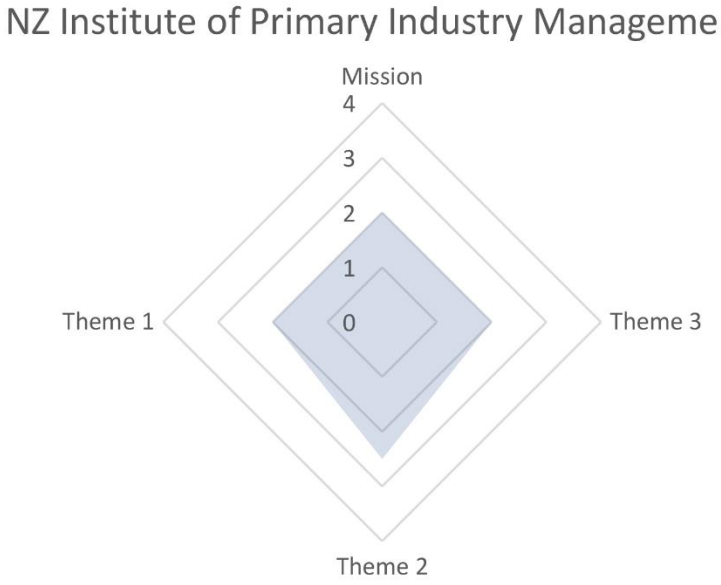
Other business:



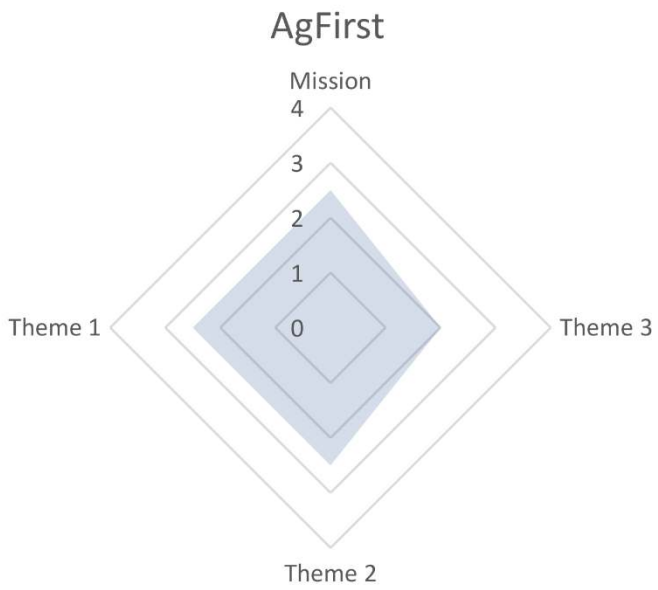
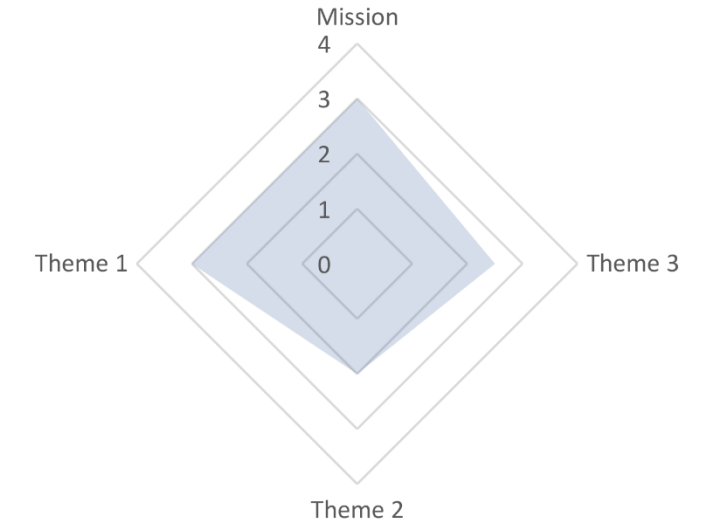
Landcorp:
Strongly aligned with OLW mission. Clearly articulates their view that environmentally sound farming practices create profitable farms, and that rejuvenation and productivity work hand-in-hand. Success of farms is measured for both profitability and environmental performance. Seeks out science and technology to support environmentally smart farming.

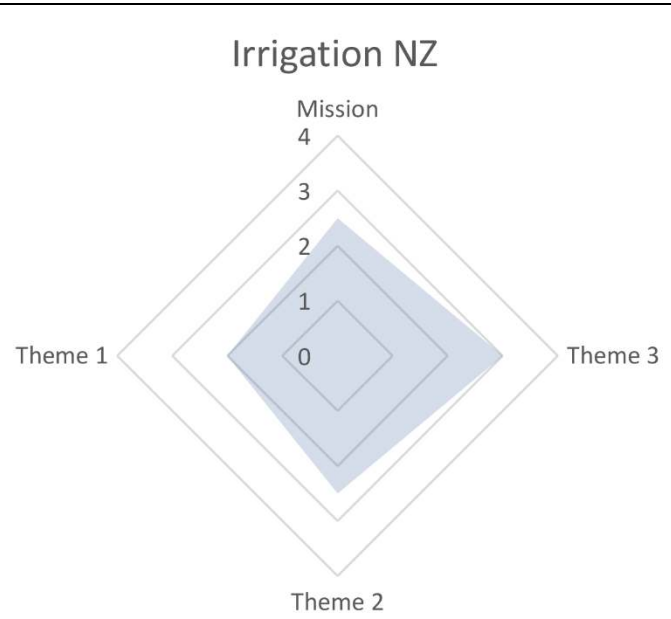
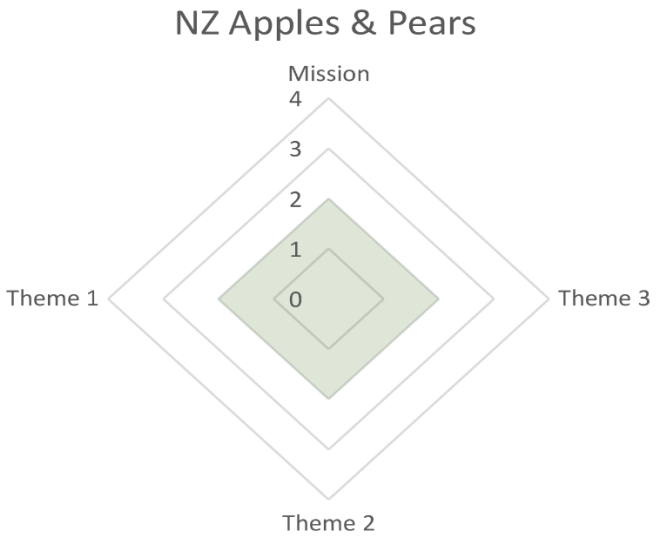


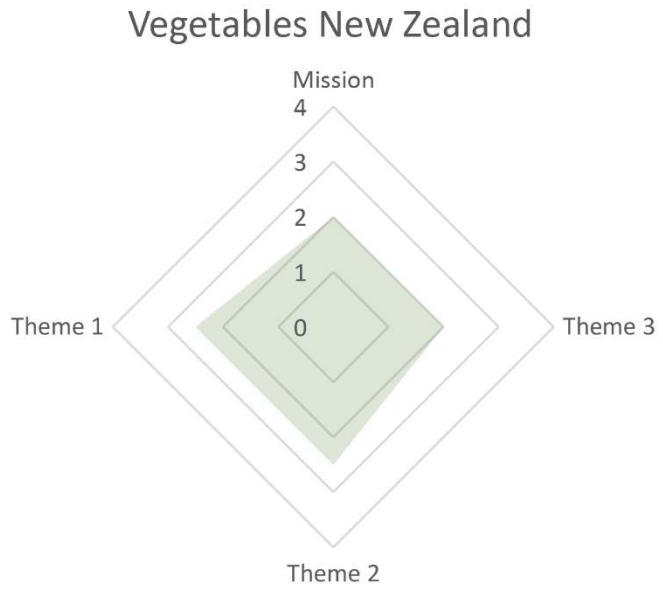
Hancock Natural Resource Group:
Good general recognition that value can be derived from sustainability performance, and that sustainability performance includes enhancement—not just mitigation or maintenance—of natural resources. Also notes a commitment to working with communities.

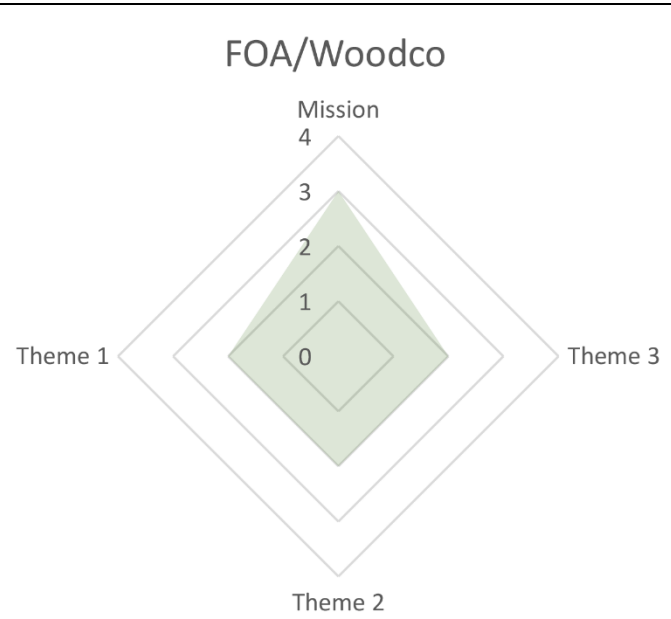
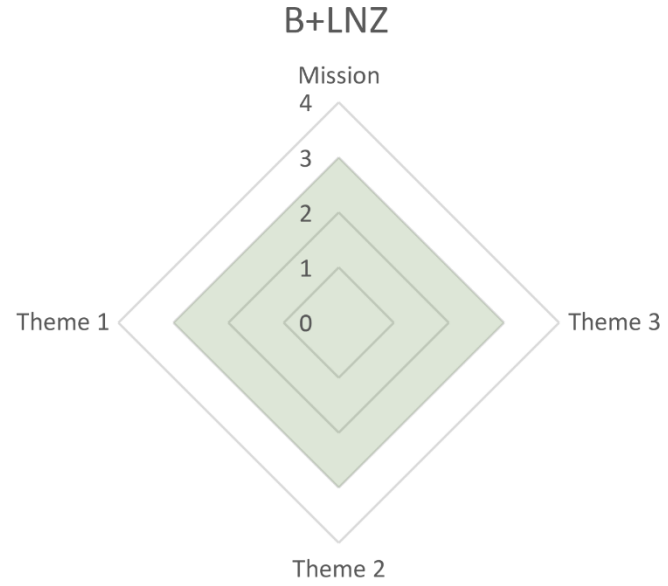


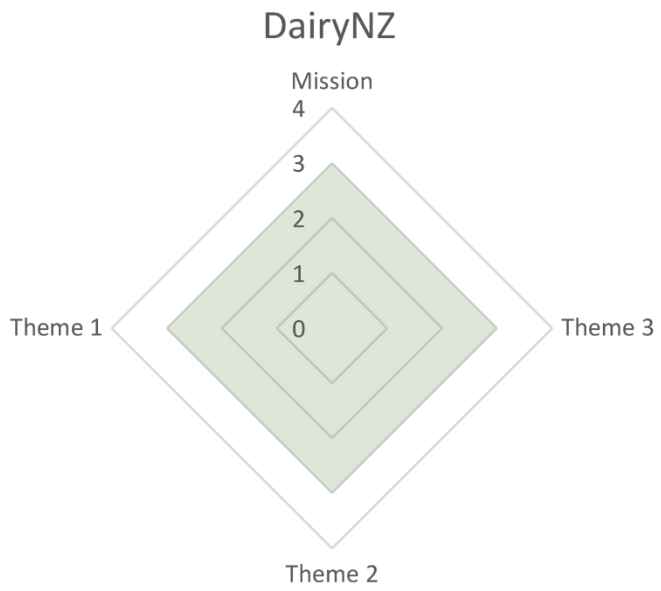
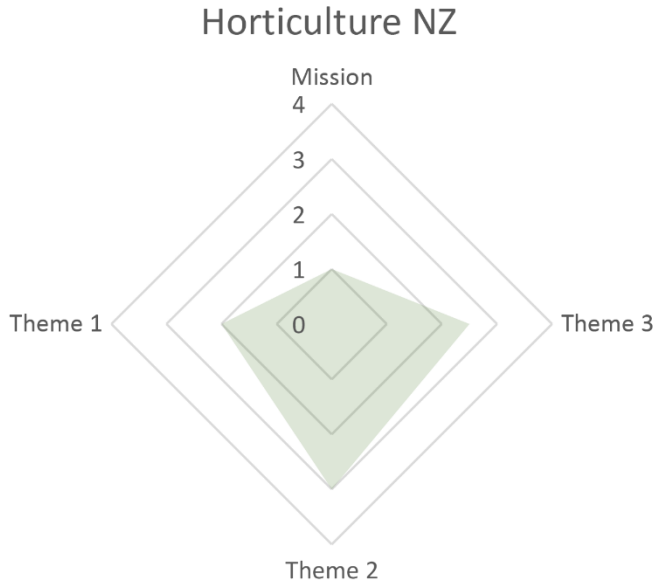
NZIPIM:
OLW mission and themes are not directly related to NZIPIM high-level priorities, which are more around general management and career development within the primary industries. They do express a general interest in innovation and working together on difficult, sector-wide or cross-sector issues.

	**AgFirst:** Not inconsistent, but not explicitly supporting the aspirational OLW objectives. They focus on provision of advice to farming and agribusiness clients that may include sustainable business practices and setting up sustainable farm and orchard systems.
	**Business NZ/Sustainable Business Council:** Broadly supporting the notion that business can only succeed in the long term when people live within the limits of the planet, and recognising the value from promoting sustainability within business. Little detail and no clear links to use of good science, tools for concrete decision making, etc., however.

<table>
<tr>
<td> 
</td>
<td>Irrigation NZ:
Generally consistent with OLW in a pragmatic way, recognising the importance of meeting both community and farm level needs and social contracts. Objectives are relatively straightforward and pragmatic, around allowing water usage and ensuring its quality is maintained.</td>
</tr>
<tr>
<td colspan="2">Industry good organisations:</td>
</tr>
<tr>
<td> 
</td>
<td>NZ Apples & Pears:
No clear indication that OLW priorities are of relevance. They are focused on international marketing and competitive advantage, but no specific mention of gaining value from environmental attributes.</td>
</tr>
</table>

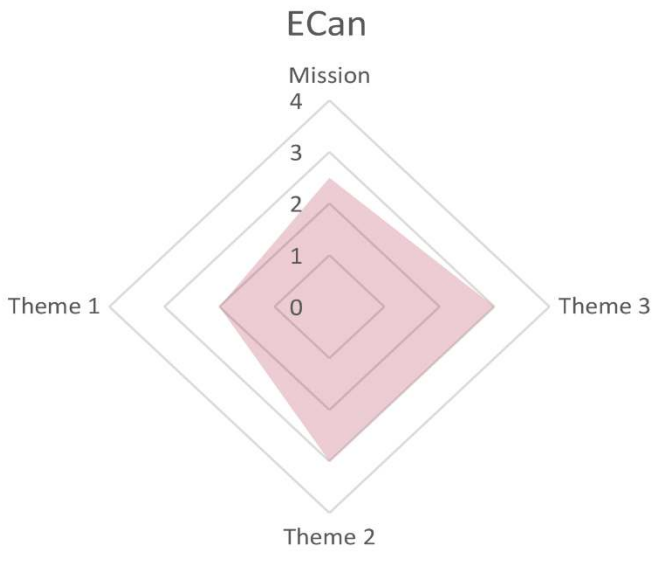
	**NZ Wine:** Clear alignment, with specific mention of enhancing natural resources (not just remediating or maintaining). Also notes the importance of taking a value chain approach toward sustainability.
	**Vegetables New Zealand:** Relatively little of relevance in high-level statements, just talks broadly about taking a detailed involvement in natural resource management planning processes as part of their national environment policy. Regulatory focus, mentioning grower awareness of the Resource Management Act specifically. Environmental concerns mentioned appear to be largely about pesticides.

	**Forest Owners Association/Woodco:** Somewhat different perspective from most other primary industry groups, as the impacts of forests on land and water are quite different from those of other primary industries. Strategic statements bill forestry as win-win for economy and environment, but overall take a somewhat adversarial position as seeing forestry in competition with other land uses.
	**Beef+Lamb NZ:** Clear alignment with the meat industry manifesto position that good environmental management is a key part of the value proposition of their products and their unique brand in overseas markets. Strong overall alignment with OLW objectives.

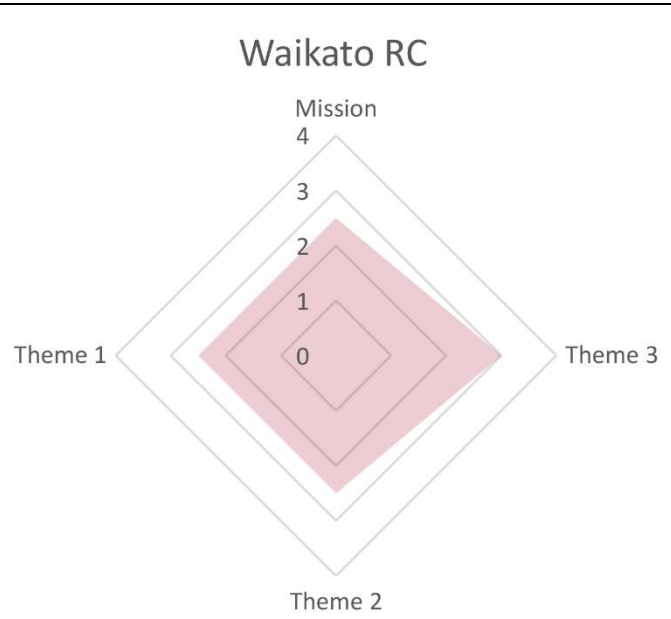
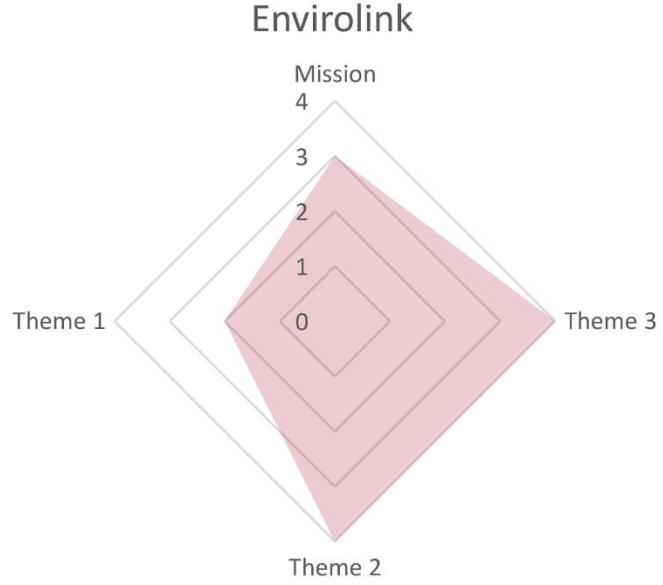
	**DairyNZ/wider dairy industry:** Strong, broad alignment with OLS, recognising both 'competitiveness' and 'responsibility' aspects of dairy production and that these are mutually reinforcing. Supports research into new tools and technologies and understands the brand and reputation aspects of good sustainable practice. Notes the dairy industry wants to do more than is required by law.
	**Horticulture NZ:** Publicly available documents convey an extremely defensive position, which does not appear strongly consistent with the aspirational aspects of OLW—maintaining industry status quo as a defensive priority, rather than proactive movement toward win-win scenarios.

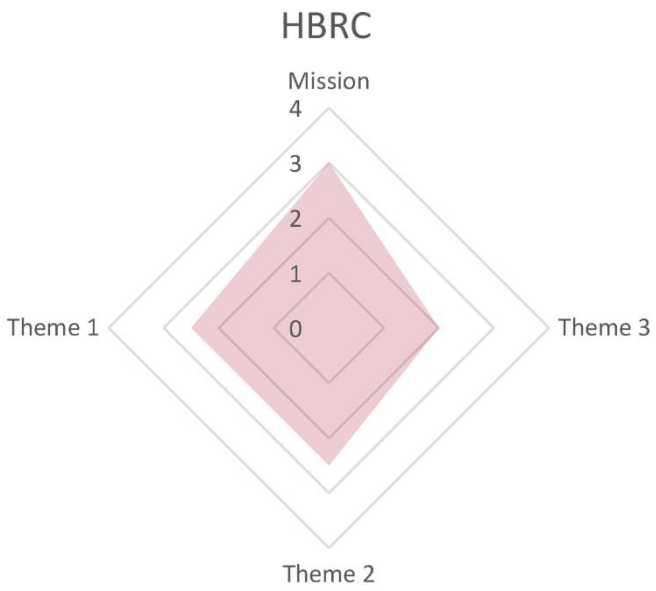
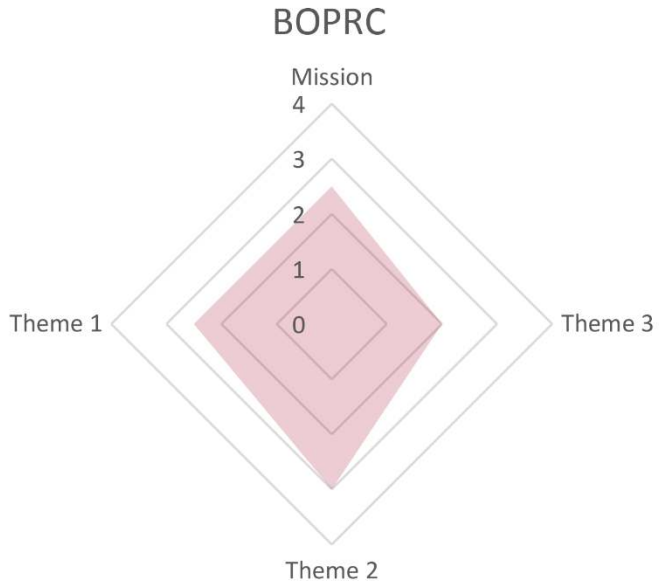
Foundation for Arable Research:
Appears to be generally aligned with treating environmental quality and productivity as synergistic goals, though collaborative effort appears mostly limited to research-business partnerships and export relationships. Relatively little detail is available.

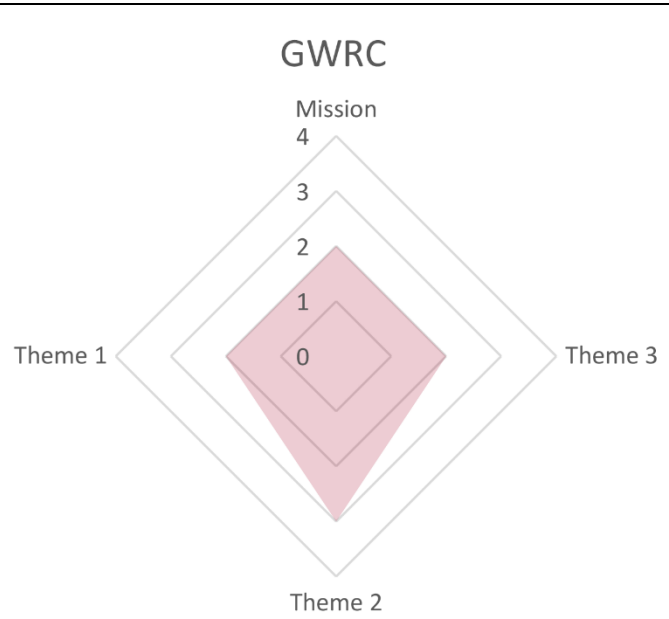
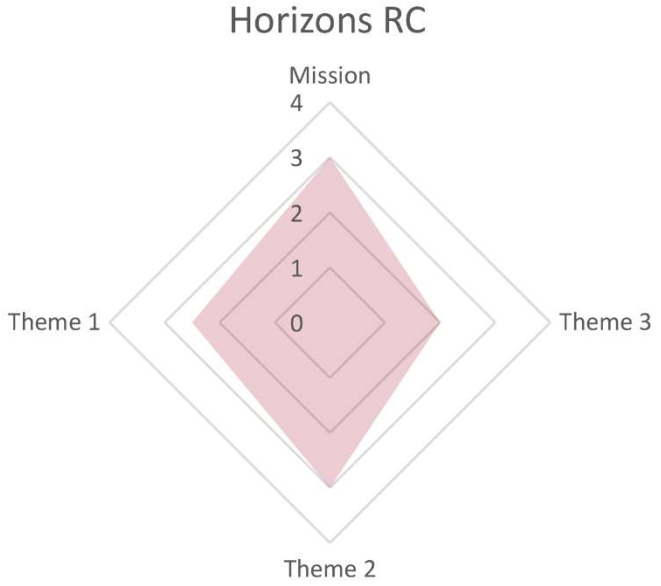
Regional council:

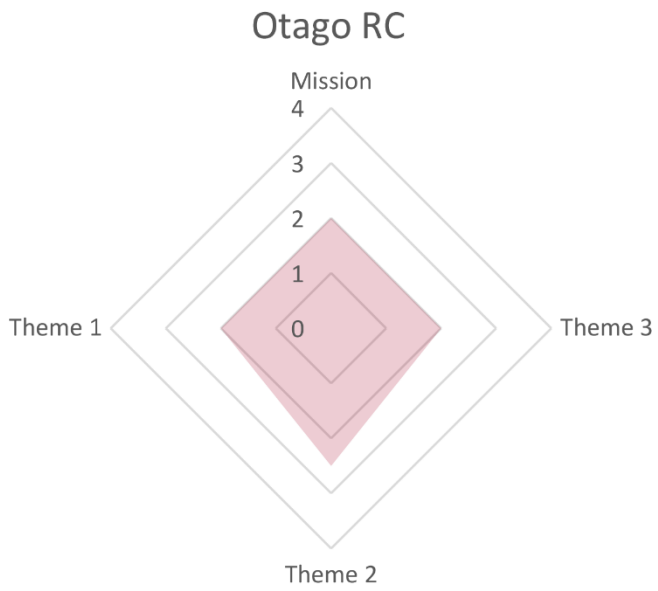
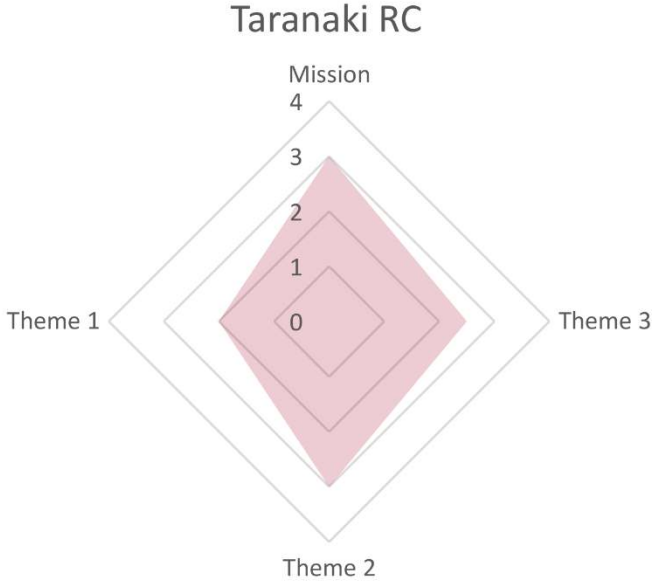


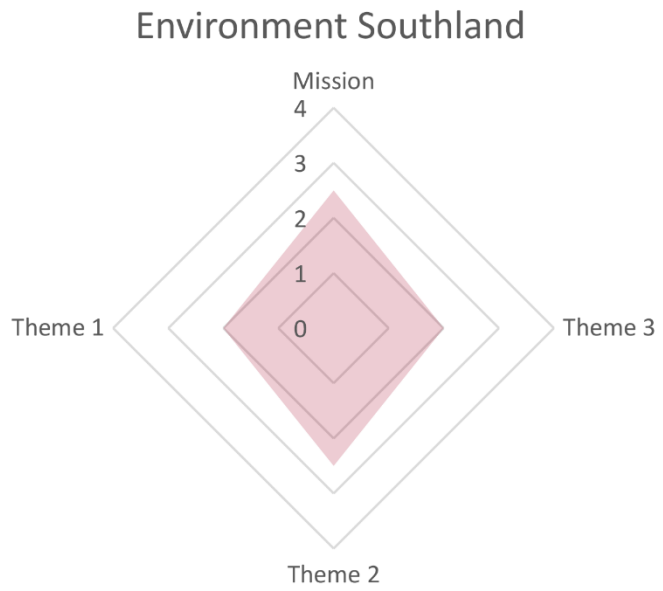
Environment Canterbury:
Good focus on water quality and availability and land, as well as improving use of tools in decision making. Some key initiatives mentioned such as the Canterbury Water Management Strategy and Farm Environment Plan Assurance Programme.

	**Waikato Regional Council:** Broadly consistent with OLW objectives, acknowledging the importance of environment, economy and community. Good focus on community engagement.
	**Envirolink/Regional Council RS&T Strategy:** Strong alignment, including explicit involvement with OLW. Expresses a desire for Councils to shift from being end-users to being partners of government and research. Includes mention of the importance of incorporating Mātauranga Māori.

	**Hawke's Bay Regional Council:** Issues of relevance to OLW do not appear to be at the forefront of issues important to HBRC. Apparent focus on budgetary pressures, and on community resilience to adverse events.
	**Bay of Plenty Regional Council:** Not inconsistent. Refers to the benefits of a 'clean, green image' and access to technology and user-friendly tools for decision making. Does not appear strongly contributing however.

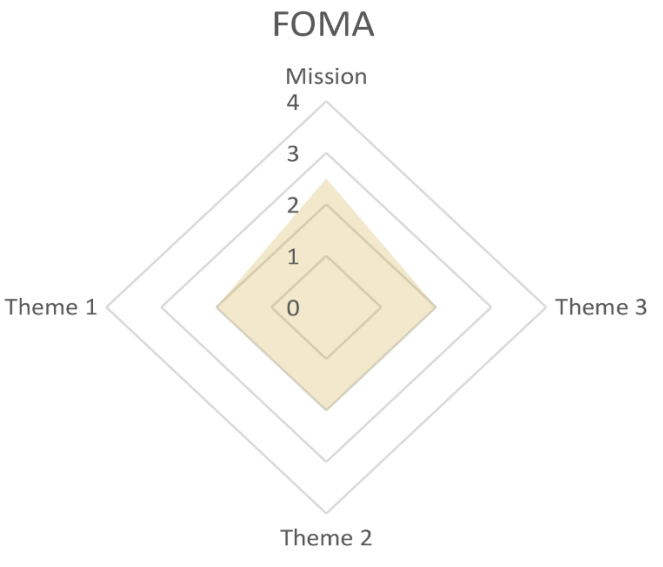
	**Greater Wellington Regional Council:** Does not appear appreciably aligned. Major issues of interest to GWRC appear to relate to pest management, resilience to weather events and earthquakes, and public transport.
	**Horizons Regional Council:** Good general alignment, although high level language appears to be more about trade-offs rather than an aspirational approach. Clear mention of intention to work with communities and land users to apply decision making tools well.

	**Otago Regional Council:** Not well aligned with aspirations of OLW; more transactional, focused on meeting targets rather than proactive decision making about land and water use. Notes an aspiration for a 'Brand Otago,' which is interesting and could have either a positive or negative impact on a Brand NZ approach.
	**Taranaki Regional Council:** Reasonable overall alignment, clearly drawing together the relationship between environment and production—though tends to pitch this in terms of trade-offs. Seems to have a good community uptake of resource management programmes.

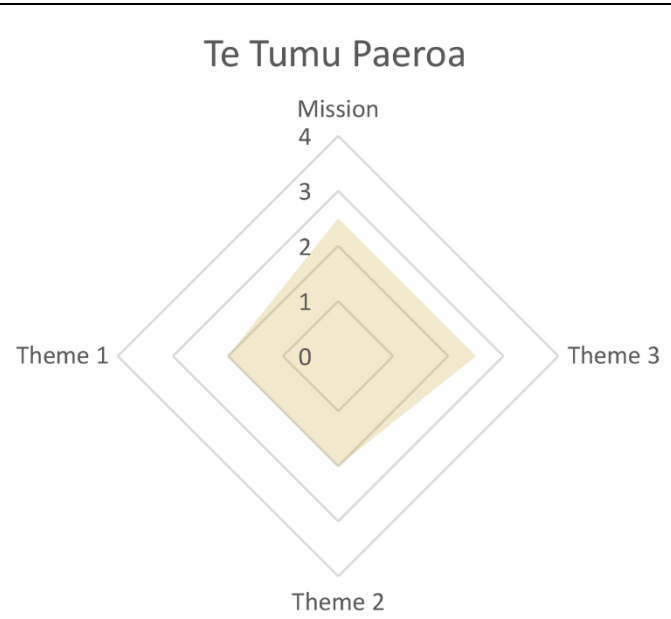
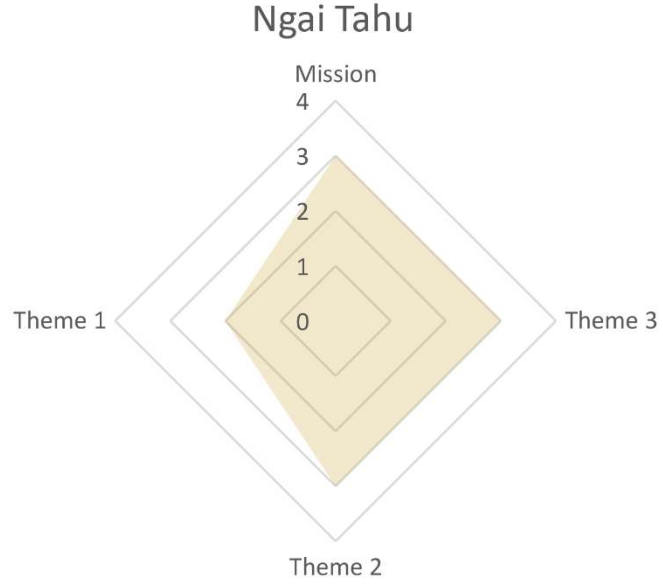


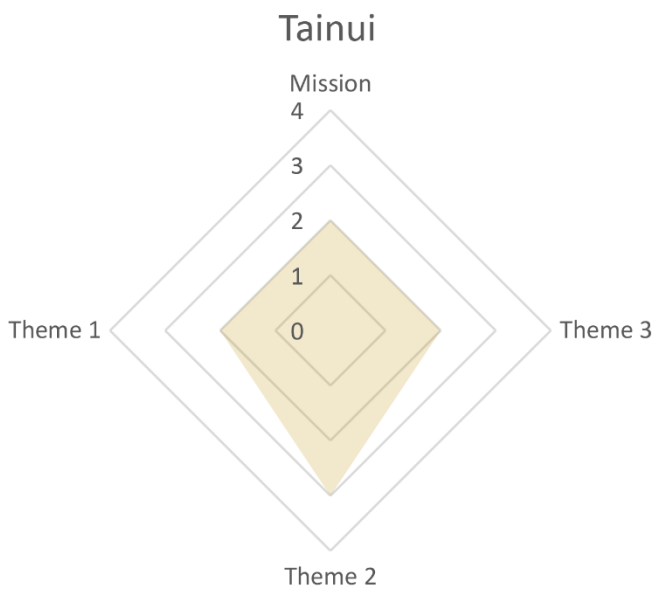
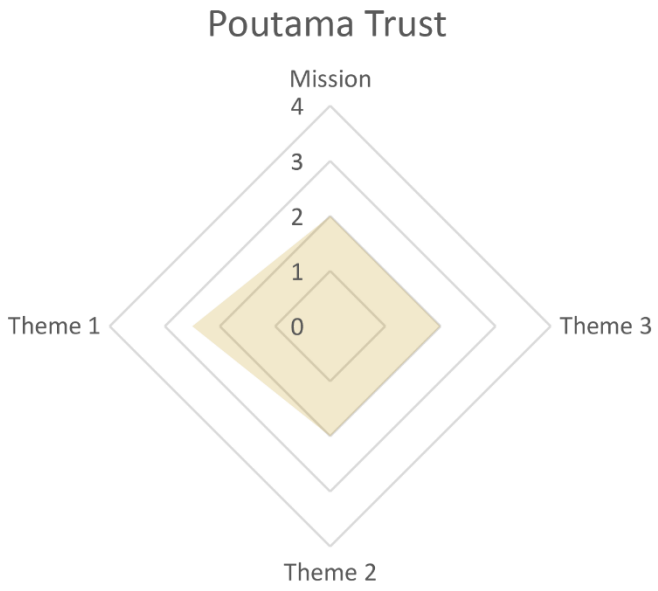
Environment Southland:
Not well aligned with the aspirational approach of OLW. Approach appears somewhat superficial and rather defensive (managing water to comply with requirements, for example).

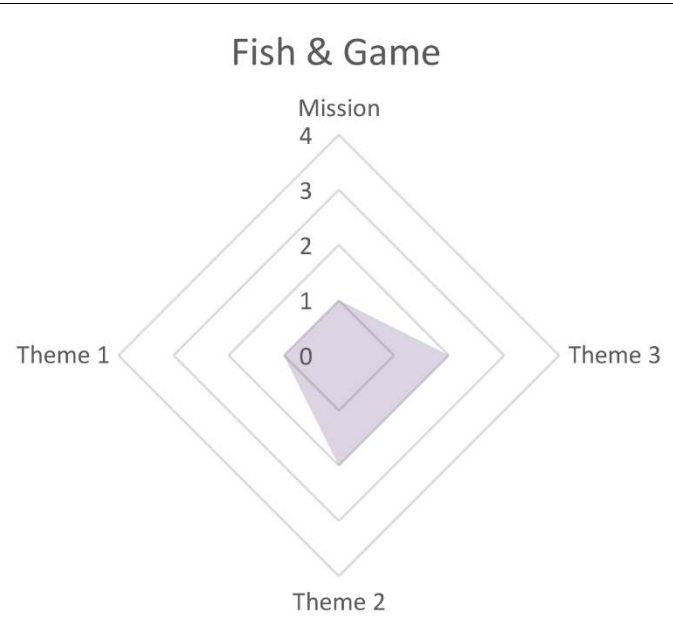
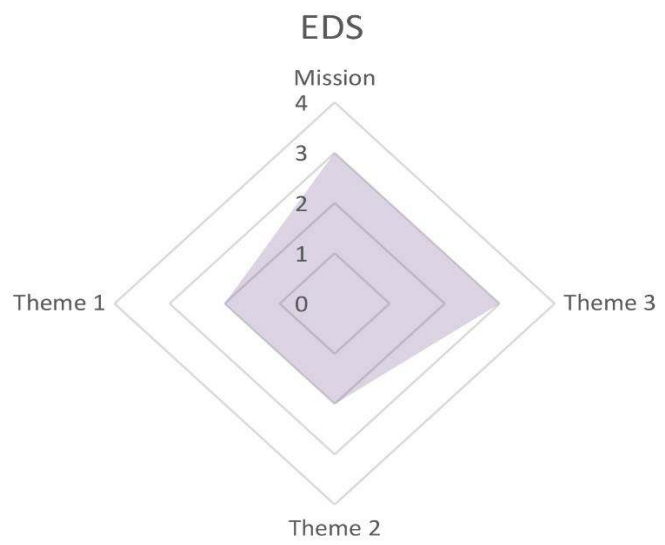
Māori development:

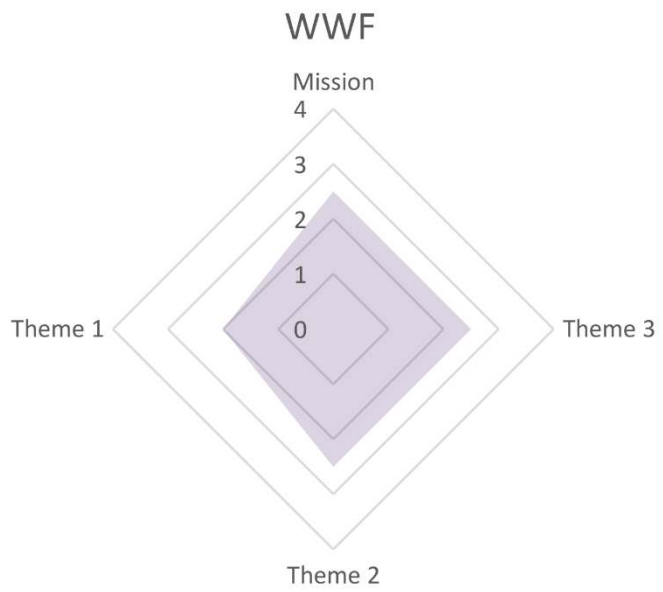
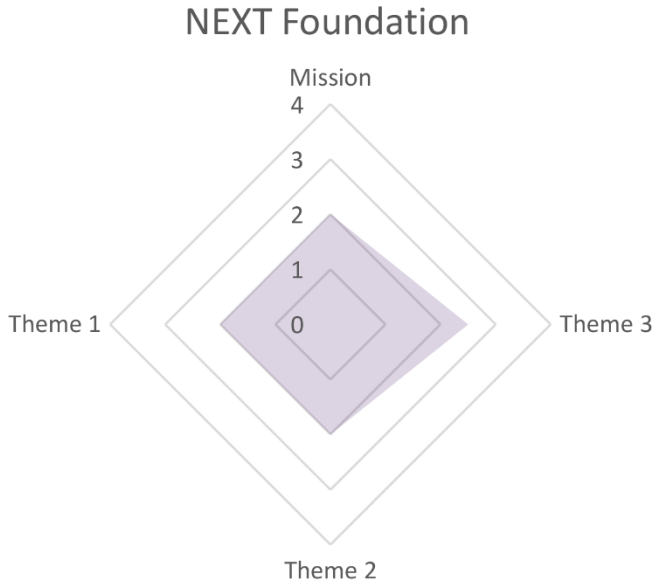


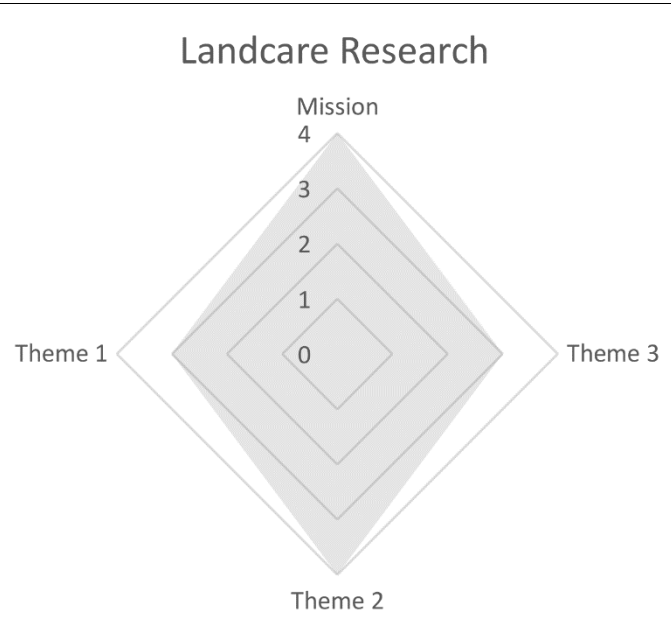
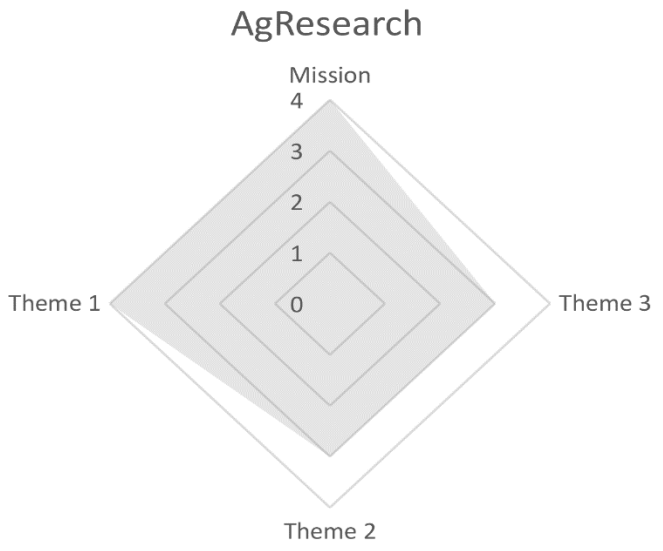
Federation of Māori Authorities:
OLW priorities do not appear strongly reflected in FOMA's priorities. They focus on Māori economic development and note their mechanism of influencing policy. They do cite a range of primary industry partners.

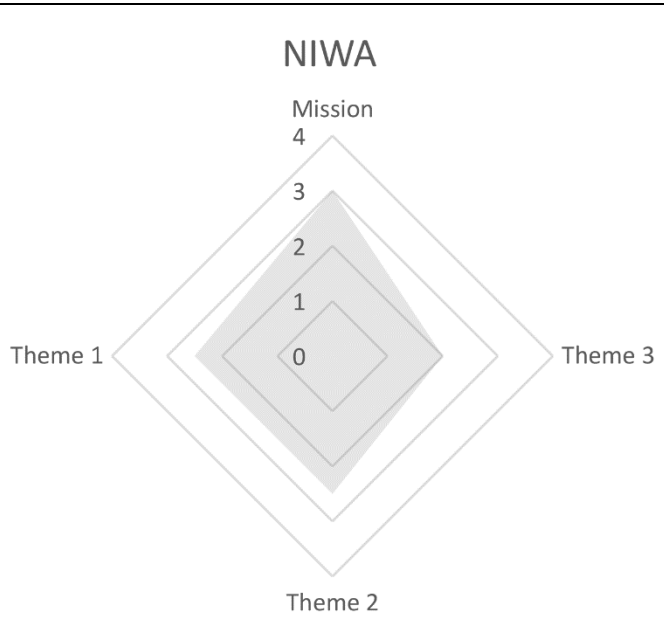
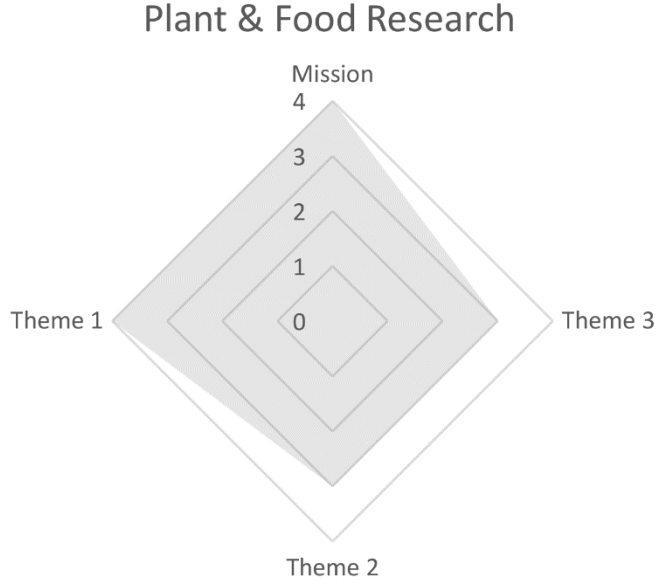
	**Te Tumu Paeroa:** Not specifically aligned with the unique aspects of OLW. Their focus is more generally on under-utilisation of Māori land, as opposed to the more specific land management decisions that OLW focuses on.
	**Ngāi Tahu:** Broadly aligned, with their strong focus on improving land and water use to be more sustainable, and with interests in upskilling primary producers. Unclear if there is a similar focus to OLW on hand-in-hand improvement of production and environment.

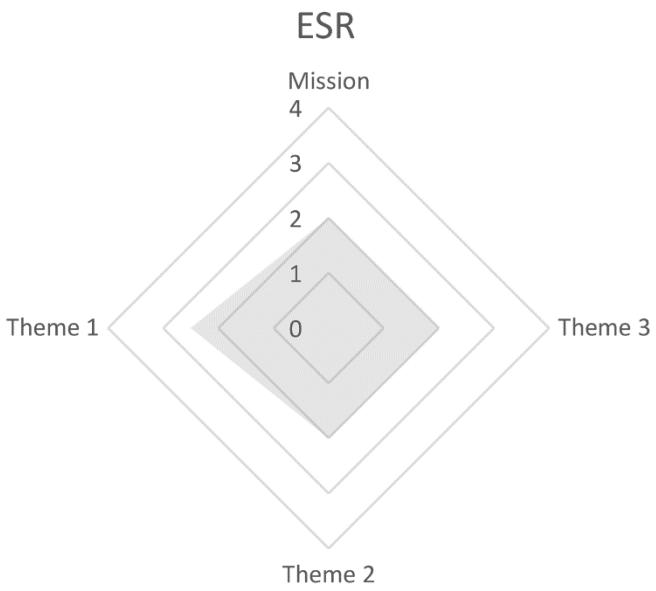
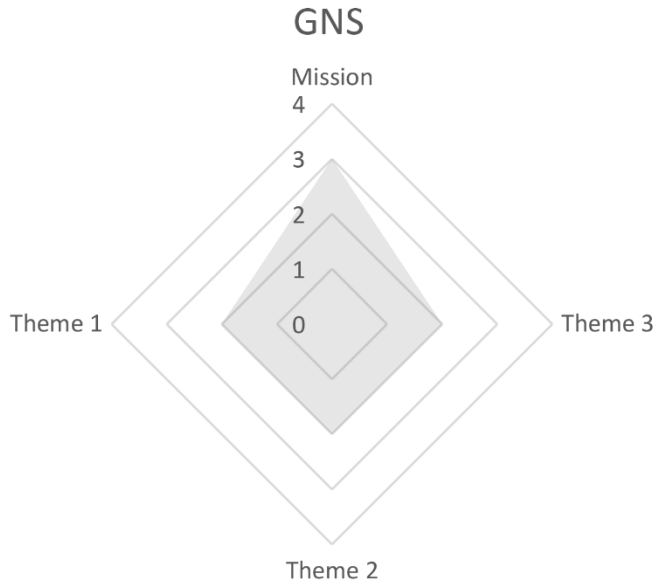
	**Tainui:** Objectives of OLW don't appear to be a strong immediate focus for Tainui. While their strategic objectives include strong statements about the importance of natural resources to tribal identity and economic productivity, little of this comes through explicitly into their 5-year strategic plan.
	**Poutama Trust:** Only very high-level mention of the importance of preserving the environment for the benefit of current and future generations. More of a general focus on intergenerational Māori economic development.

Not-for-profit	
	**Fish & Game:** The overall approach of Fish & Game appears relatively inconsistent with the aspirational approach of OLW. Although they refer to being in favour of environmentally sustainable production, their approach appears to be more about remediation and punishment than innovation and mutual benefit.
	**Environmental Defence Society:** Not inconsistent, and has a purpose of working with a range of stakeholders including community groups and iwi to better understand best practice resource management.

	**World Wildlife Federation:** impacts on specific species, as opposed to broad questions of land and water use and quality. They do express a broad acknowledgement that collaboration on science-based solutions is important, and that the state of the environment affects people's livelihoods.
	**NEXT Foundation:** Their education objectives have a good aspirational focus on innovation and future opportunity and growth, and their environmental side is largely about conservation. However, there seems to be relatively little joining of the two in terms of acknowledging economic opportunities from strong environmental performance.

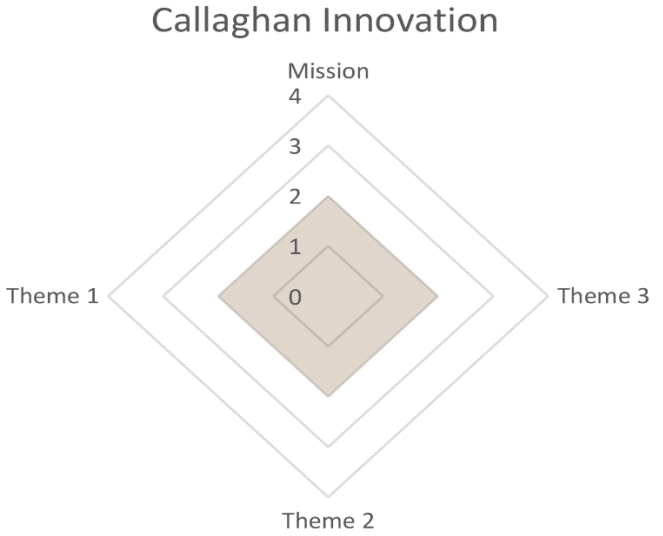
Crown Research Institute:	
	**Landcare Research:** Involved with OLW, and strong alignment is clear. They aim to enhance environmental sustainability and production in a synergistic way, and promote approaches including research-based collaborative processes, tools and benchmarking systems that cover both production and market access.
	**AgResearch:** As the host of OLW, it is no surprise that there is strong alignment. Strategic documentation may imply that AgResearch's overall purpose was set some time ago, before sustainability gained traction as a concept; and aspects of this have become integrated over time…?

	**NIWA:** Broadly aligned, but not specifically active in OLW--their strategic priorities reflect other National Science Challenges they are involved in or host.
	**Plant & Food Research:** Participates in and explicitly mentions OLW in their strategic documentation. Strong focus on value-add production, novel products, and market access.

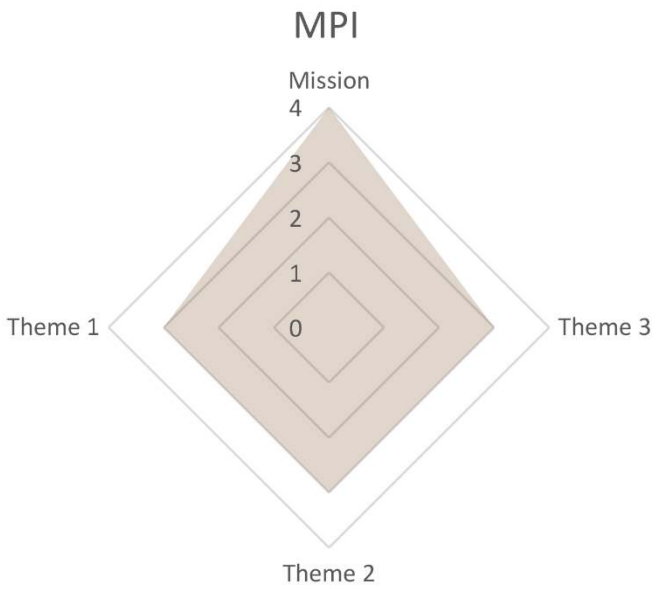
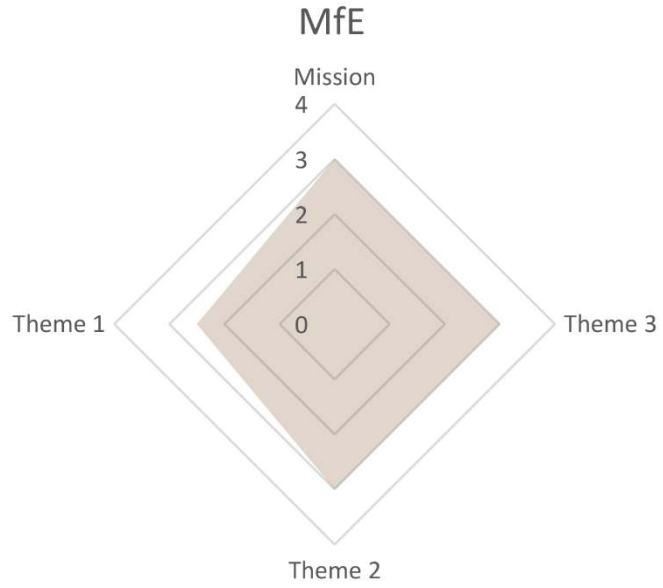
	**ESR:** Not strongly aligned, with much more of a focus on human health. Interest in water quality and economy are more around protecting human health and the safety and provenance of NZ produce.
	**GNS:** Only peripherally aligned. Refers to economic growth and productivity while improving the sustainable use of natural resources, but this is focused more on the energy and minerals sectors.

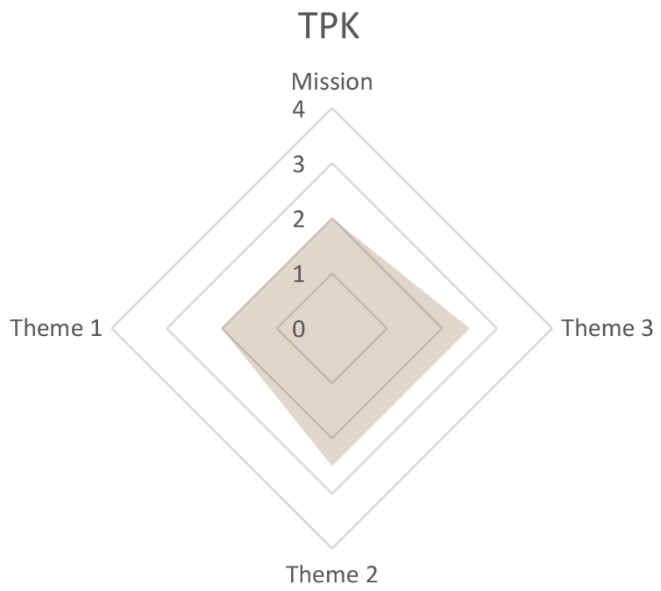
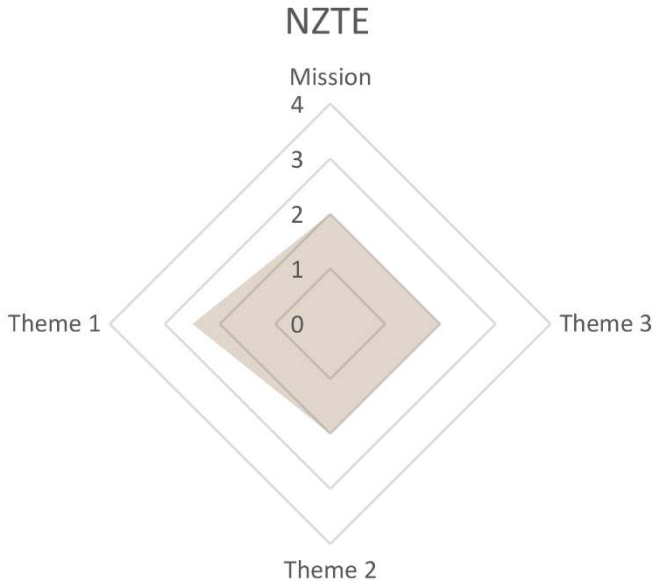
Scion:
Involved with and explicitly references OLW. Multiple mentions of both direct economic value from forests/forest products, and contributions of forests/ afforestation to water quality.

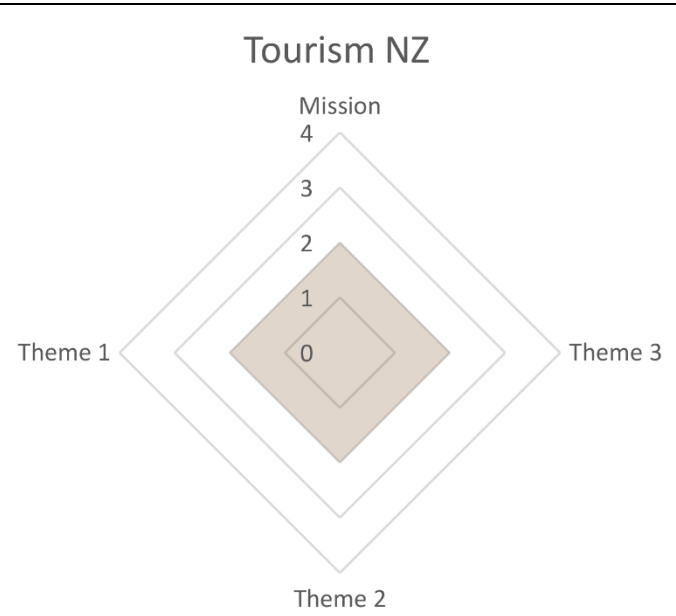
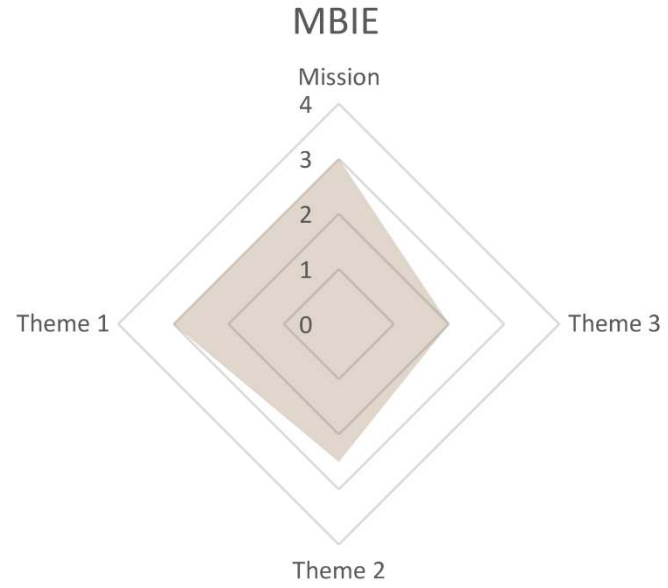
Central government:



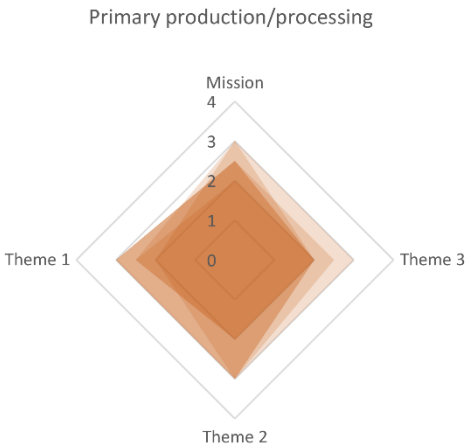
Callaghan Innovation:
Not closely aligned to OLW, as they have no specific focus on sustainability, primary production or the environment. Their activities are likely to be compatible in places, for example activities around innovation, commercialisation, value chains, etc.

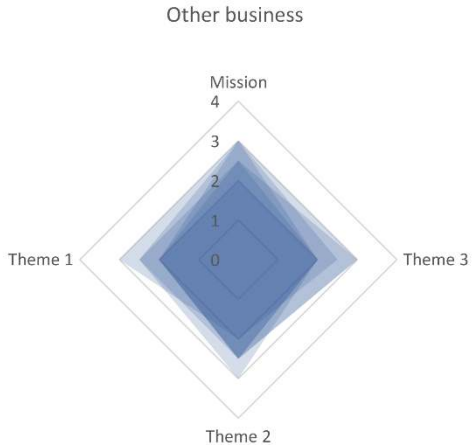
	**Ministry for Primary Industries:** Very strongly aligned with OLW. MPI's "Grow and Protect" strategy mirrors the aspirations of OLW around mutal strength and benefit between environment and economy, with a strong element of value from high-quality production. MPI is also the custodian of the Primary Sector Science Roadmap.
	**Ministry for the Environment:** Reasonable, if slightly muted, alignment. They recognise that it is appropriate to use natural resources (as opposed to strictly conserving them), although they refer to the ability of the environment to sustain itself—possibly at odds with the innovation-based approach of OLW to interventions that improve both environment and economy?

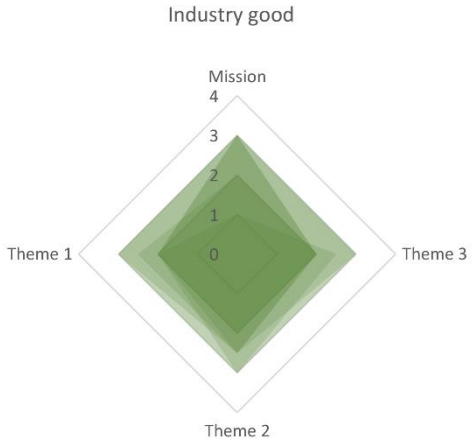
	**Te Puni Kōkiri:** Not unaligned, but alignment is not strong. Their focus is more generally on developing skills and innovation among Māori and developing the Māori economy. There is some acknowledgement of the importance of primary production and natural resources to the Māori economy, but no apparent strong focus on land and water use.
	**New Zealand Trade and Enterprise:** Peripherally aligned, in that the objective of the NZ Story is to use perception of environmental performance as a marketing tool. It is not clear how much importance is placed on being able generally to drive an image, as opposed to basing that image specifically on strong evidence.

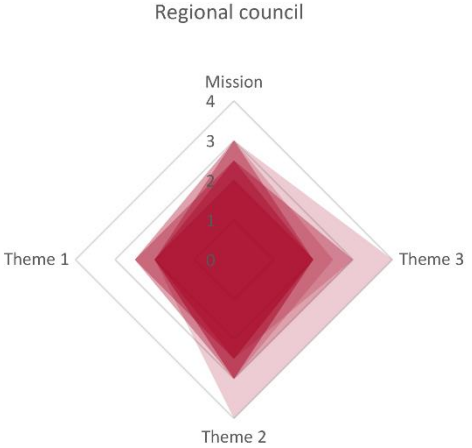
	**Tourism NZ:** Very little explicit alignment, other than a continued focus on '100% Pure New Zealand.' There is little discussion of specific challenges to this relating to land and water use, or of protecting this through good management of land and water.
	**Ministry of Business, Innovation and Employment:** MBIE is a large organisation with many functions and a hugely varied purpose. It also funds the National Science Challenges. There are many high-level threads at MBIE that are aligned with OLW, particularly around the Business Growth Agenda and Vision Mātauranga.

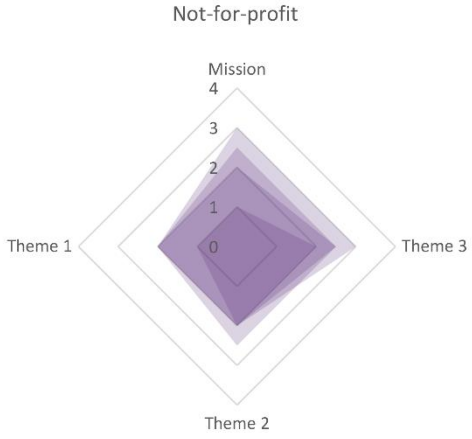
19. Within each of the stakeholder groupings, the radar plots were overlaid to show which types of stakeholders' interests lay where.

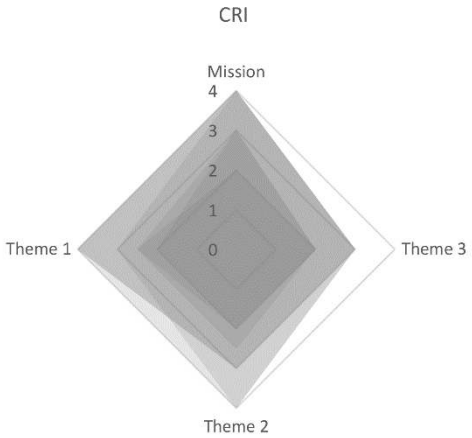


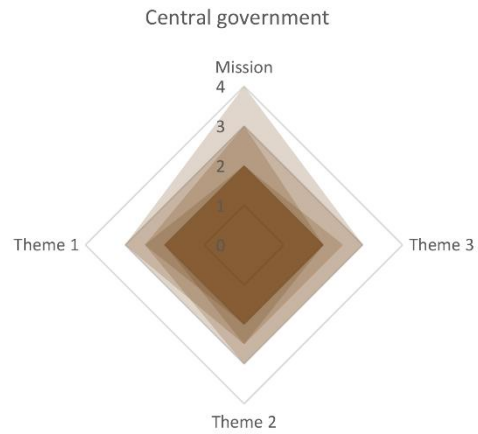












20. There is relatively little surprising about these overlaid maps.

21. **Primary production and processing** had a relatively strong focus on value-add and on the sustainability of land resources required to maintain this. They also showed an element of community and collaboration, reflecting their need for license to operate. This overall focus was reflected in the **industry good bodies**, who showed an even stronger relative focus on community. **Other business** stakeholders showed less clear alignment with specific objectives of OLW but still a good alignment with the overall mission.

22. **Māori development** organisations did not display a lot of specific alignment with OLW, but their priorities reflect Māori cultural views around the interdependence of people and land and an intergenerational approach. **Not-for-profits** were also generally only loosely aligned and tend to reflect their interest in community engagement.

23. The government organisations--**central government, CRI** and **regional councils**--were the only organisations explicitly mentioning OLW in their high-level strategies and priorities. As expected, **regional councils** focused strongly on the state of the environment and on collaboration with their communities. **CRIs'** radar plots reflect their links to the sectors they provide R&D for, and their functions around adding value to those sectors. And **central government** reflected a general and well-rounded commitment to economy, environment and public engagement.

Section 2 – In-depth investigation

Background

24. We used the high-level strategy scans to identify a range of key stakeholders whose activities were likely to be relevant to OLW. We looked to cover a range of different kinds of stakeholders, from as many of the stakeholder groups as made sense.

25. We initially made contact with selected stakeholders via email, explaining the purpose of the project and providing an outline of both the information sought and of the OLW KPIs.

26. Although we intended to gather most of the information we needed by interview, in practice we ended up having relatively short conversations and then the stakeholders would provide additional information by email, usually documents such as work programmes or strategic plans that outlined the stakeholder's high-level activities.

27. In terms of the KPIs, following discussion with Rich McDowell, we focused primarily on the OLW-specific KPIs (though did take note of activities relating to collaboration and co-design with Maori, which are some of the cross-NSC KPIs).

28. For the purpose of this exercise, we simplified and summarised the OLW KPIs. This was partly in order to make the mapping less busy, and partly because it became clear that at an absolute level, relatively few of the KPIs as worded would have been classified as being supported by stakeholder activities. Few of the activities we have collected and categorised were undertaken with the purpose of addressing the OLW KPIs, so the "OLW-ness" written into KPIs did not end up feeling very relevant to this analysis. Also, we felt that the spirit of the KPIs was more meaningful than the detail--for example, increasing value being generated from Brand NZ was more meaningful than how many industries were using Brand NZ within a specified timeframe.

29. For each stakeholder interviewed, we pulled out a range of relevant high-level activities and assessed how strongly they were likely to contribute to the summarised OLW KPIs.

30. Different stakeholders provided slightly different kinds and levels of information about activities. Thus, some stakeholders appear to have dozens of separate activities while others have only one or two. This is more likely to be an artefact of each stakeholder determining what information to provide, than an actual indication of how much effort one organisation is putting in compared to others. Some organisations, such as MPI in particular, were clear that they had many, many relevant threads and that the information provided is only a representative snapshot of the relevant work they do.

31. Therefore, the results of this analysis are intended to be taken as a representative indication to inform OLW's understanding of who is contributing where and how, not an exhaustive or definitive determination.

32. After discussion with Ken Taylor and Rich McDowell, we selected the following 18 stakeholders for interview. With the agreement of Ken and Rich, we did not interview

AgResearch or MBIE as we did not feel we could add much value to what OLW already knows about these organisations.

Primary production/processing:

- Wakatū
- Miraka
- Fonterra

Industry good:

- DairyNZ/wider dairy industry
- Beef+Lamb NZ
- NZ Wine
- Horticulture NZ - *although the high-level scan suggested minimal alignment with OLW, Ken and Rich felt this wasn't a fair reflection; interview did turn up a better alignment than initially suggested*

Other business:

- Landcorp
- Hancock Natural Resource Group - *however we were unable to find any contacts so they were not interviewed*

Māori development:

- Ngāi Tahu - *despite making brief phone contact with Ngāi Tahu, repeated attempts to engage further were unsuccessful*

CRI:

- Landcare Research
- Plant & Food Research
- Scion

Central government:

- MPI

Regional Council:

- Environment Canterbury
- Waikato Regional Council
- Horizons Regional Council
- Envirolink

Stakeholder narrative

33. Most stakeholders were either met in person, or via phone. In addition to gathering information about their high-level activity, most stakeholders provided their perspectives on OLW. This section notes some of the key points stakeholders made in their interviews about wider aspects of OLW, separate from our discussion about their relevant activities.

Primary production/processing:	
Wakatū	Wakatū talked about how caring about the land is deeply ingrained into their way of being, way of decision making and behavioural practice. They are concerned with ensuring that their practice genuinely reflects their underlying beliefs and feelings about the land, and that everyone coming into their organisation really understands this expectation. They always want to be aware of the tools that are available to ensure their values are reflected in land management practices, and they are stakeholders in OLW because they want to ensure that they are keeping at the front of the pack in terms of technology and use of data and information to support good land management practice. They note that the strength of their market is around the quality, which is backed by a genuine story. This story must have absolute integrity. The personal view of the interviewee is that there has to be value in leveraging a NZ 'clean, green' image but that Māori organisations need to consider whether they collectively wish to pursue a Māori/indigenous brand.
Miraka	Miraka was very cautious about speaking to us, as they are very concerned about protecting their commercial advantages. They noted that there are lots of emotions and tradeoffs around the choices involved in resilient land use, including rural and urban concerns. They felt that Overseer could do with more investment to strengthen its utility (noting that nitrogen, sediment and phosphorous are all important), and that catchments are over-allocated. Regarding the question of Brand NZ, Miraka was very strong that this doesn't fit well with them. Overall this is important to Miraka, but they are concerned about the fact that it is centralised and that it puts everyone on equal footing. Miraka want to maintain their own distinctive advantage. This view is noted in the tables in the next sheet, as not supporting OLW.
Fonterra	Fonterra spoke broadly about the range of their on-farm and manufacturing programmes that support their approach to land and water, and to social responsibility and sustainability. When asked about their specific participation with OLW, they said they mostly do this through their on-farm R&D team, and that historically they have wanted to engage more, and in a less ad hoc way, on land and water issues than they have done.

Industry good:	
DairyNZ/wider dairy industry	DairyNZ noted that they are currently refreshing their strategy, which includes a component of long-term land use planning that will contain more explicit expectations of collaboration. Just making each farmer do better won't fix things--collaborative effort, and at a larger scale, is required. They noted they would like to see OLW scaling up to catchment level: if we understand catchment planning better, then we can plug better dairy farming into catchment planning. Better dairy farming on its own isn't enough. They also noted that, "Business moves faster than science, and science moves faster than regulation." This makes things like implementing regional councils' plans challenging, in that business may well have moved in a relatively short space of time beyond the state of thinking in council planning. In the course of conversation, they also noted they have already told OLW they believe that for OLW to be successful all the councils must see OLW as the only credible place to go for relevant science. The councils all base their plans and activities on different science, which is often not transparent, and this is not ideal.
Beef+Lamb NZ	When asked about their engagement with OLW, B+LNZ said that they felt the push from OLW to engage with stakeholders has dwindled significantly. When this does happen, it is too focused on research outputs and not on the outcomes being delivered. They noted that the market moves more quickly than the science. They also suggested that an overall, high level comms strategy for all the NSCs is needed. They felt the NSCs are being driven by seeking funds, rather than by seeking outcomes; and that anyone can tick the box claiming alignment with an NSC without actually having to meaningfully prove this.
NZ Wine	NZ Wine opened by saying that they are passionately driven by sustainability, and very market-focused with Brand NZ…but that it is hard to see what they can take from OLW that they aren't already doing. They noted that science outcomes are different from industry outcomes, and it is very hard to translate the former to the latter. It takes an enormous amount of steps to change behaviour. They noted that their activity is probably very consistent with, but not at all driven by, OLW.
Horticulture NZ	HortNZ felt that social science has been a little bit lost--that understanding behaviour and decision making should get at least as much emphasis as the hard science. They also felt that extension and interpretation of science has not been given enough attention, and that the NSCs as a whole need a better connection between the high-level outcomes sought and the science that is needed to support those.

	They were also concerned that stakeholder events were more of a box-ticking exercise than representing a genuine interest in understanding the issues.
Other business:	
Landcorp	Landcorp talked broadly about their relevant activities, and noted that they are still regularly engaged with OLW at a leadership level. They are happy to participate in any OLW activities where they can contribute, and note that some of their work (e.g. mapping of ephemeral waterways) is ahead of OLW's work.
CRI:	
Landcare Research	Landcare simply provided a planning document in confidence, from which we drew their list of activities.
Plant & Food Research	PFR noted the consistency of their work with OLW, and provided excerpts from planning documents, from which we drew their list of activities.
Scion	Scion noted some of their work related to OLW and directed us to their SCI, from which we drew their list of activities.
Central government:	
MPI	We have had several conversations with MPI, which as an organisation seems uniquely aligned to the objectives of OLW through its 'Grow and Protect' strategy. They noted that this strategy has recently been refreshed, and that there is renewed focus on sustainable production including growing in-market value while protecting the productive capacity of the environment. So much of what MPI does relates to the objectives of OLW, that it was decided that a selection of representative activities would be taken from the last MPI Annual Report and that it would be noted that this was only a fraction of MPI's relevant activity.
Regional council:	
Environment Canterbury	ECan noted that they are very well aligned with OLW (including their top organisational priority of fresh water), and that they regularly engage with OLW. They noted that the research done at ECan is even further on the 'applied' scale than the work that CRIs do. They also noted that they appreciate the ability of NSCs to say provocative things--ECan appreciates the value of doing this, as this kind of provocation can stimulate communities to action.
Waikato Regional Council	Waikato Regional Council would particularly like to see OLW provide some leadership about truly aspirational planning for the future. Doing the same type of research isn't going to provide the new kinds of systems needed for the future; so where should funding be applied, and what do councils need to be putting in place in terms of policies to support new directions? What should the next 10 years look like, and what new initiatives will come out (e.g. regional branding)?
Horizons Regional Council	Horizons Regional Council felt there is a piece missing in OLW that translates the outcomes of the Challenge into practical applications--what mechanisms

	are needed to translate the science to the real world, and what drives behaviour change? They suggested working through some real examples of "here's what the science is, and here's what needs to happen to translate this into practical action" could be helpful. They also felt that OLW takes too simplistic a view of separating out land issues from water issues, and that Horizons would be more interested in working with OLW if they adapted their approach. They questioned how interdisciplinary OLW is managing to be, noting the need to integrate ecology, geography, biology, sociology, behaviour, and economics. They also noted that they find the erosion management work led by Landcare Research, as part of OLW, to be highly valuable and want to ensure this is looked after.
Envirolink	Envirolink talked broadly about their activities and offered, via the Regional Council RS&T Strategy, that they could provide OLW with advice on prioritisation.

Stakeholder activities

34. Relevant high-level activities of stakeholders are below. In some cases the actions noted below are referenced back to specific elements of that organisation's priorities and to the document(s) referenced by the interviewee.

Primary production/processing:	
Wakatū	*Based on a phone conversation* 1 - Participating in OLW because they want to ensure they are at the front of the pack with technology and integration of data, and tools, to support the integrity of their claims that their values and way of being are supported by their performance 2 - Market intelligence - connecting with the depth of the story and quality of product--how to derive commercial success in a way that supports the integrity of who they are and what they stand for 3 - Cross-referencing between Western language of "sustainability" and Māori concepts around an intergenerational approach--how can Western language around sustainability be used in a meaningful way to help market their products 4 - Understanding what land wellness looks like within the context of land uses inherited via Waitangi Tribunal - these are not always the land uses they would have chosen, so must learn to put their values into practice in the contexts they have been given
Miraka	*Based on a phone conversation and Te Ara Miraka - Farming Excellence Programme* 1 - Guidance and support to farmers around best practice in management of their farm environment to minimise any negative footprint, via encouraging use of Environmental Management Plans and access to industry experts and templates *(Environment - Te Taiao - pou)* 2 - Financial incentives to farmers for premium quality milk, by price banding based on the quality of milk supplied - which is typically within tighter parameters than competitors *(Milk - Miraka - pou)*
Fonterra	*Based on a phone conversation and Fonterra website* 1 - Tiaki programme - providing tailored farm environment plans free of charge 2 - Living Water Catchments (partnership with DoC to improve biodiversity and water quality--"working with farmers, iwi/hapu, community groups and key stakeholders on projects, including pest and weed control and riparian restoration that benefit freshwater and coastal environments and show sustainable dairying can be part of healthy functioning ecosystems") 3 - 50 Catchments project - working with regional councils and communities to identify the 50 catchments where water quality will be restored, and "develop a strategic framework for the programme" 4 - Work with manufacturing plants - reducing water use, and using world-leading technology to minimise the impact for waste water discharge
Industry good:	

DairyNZ/wider dairy industry	*Based on a phone conversation about Key Objectives for 2017/18 from the Annual Report 2016/17; and Dairy Industry Strategy for Sustainable Dairy Farming (2013-2020)* 1 - Forage improvement (field testing) *(Research and Development)* 2 - Southern Dairy Hub (planning for first season of systems trials is underway) *(Research and Development)* 3 - Water Accord results (supporting dairy sector to meet all annual commitments in the Sustainable Dairying: Water Accord) *(Environmental Stewardship)* 4 - Improving water quality (supporting dairy farmers to meet environmental obligations under the National Policy Statement for Freshwater Management) *(Environmental Stewardship)* 5 - Public reputation (programme of work to improve the public's perception of dairying) *(Local Communities)* 6 - Joint approach in the regions (working with government agencies with a more effective co-investment approach to align extension and skills training in the regions) *(Talented People)* 7 - Benchmarking (regional discussion groups providing evidence-based benchmarking to support decision making) *(Farm Profit)* 8 - Integrated approach (piloting approach with dairy farm businesses that links environmental imperatives with dairy farm systems and people management practices) *(Farm Profit)* 9 - DairyBase (increasing data flow into DairyBase, and access by and value to farmers) *(Industry Information Systems)* 10 - Work with councils/government (working with regional councils and central government to ensure NPS-FW "is implemented wisely and the concerns of dairy farmers taken seriously") *(National Prosperity)* 11 - Research and develop innovative solutions to meet the future needs of dairy farms, specifically farm systems that increase production and profit by $110/ha per year while reducing the environmental footprint by 30% *(National Objective - Research and Development)* 12 - Farming with Limits' programme (in response to NPSFW) - building partnerships with regional councils and other decision makers, contributing to development of a strong technical evidence base (science and economics), ensuring farmers' voices are heard in policy development, and advocating on behalf of farmers *(National Objective - National Prosperity)* 13 - External engagement plan for improving awareness of the positive contribution dairying makes to the standard of living of New Zealanders *(National Objective - National Prosperity; similar programme under National Objective - Environmental Stewardship)* 14 - Improving on-farm environmental performance, to fulfil Sustainable Dairying: Water Accord commtiments and contribute to proving to the public that the dairy industry is proactively working to improve its environmental performance and this activity is leading to better water quality *(National Objective - Environmental Stewardship)* 15 - Training dairy environment leaders - building networks of dairy farmers with the confidence and skills to participate in local government and

	regional council decision making processes, running community projects and improving public perception *(National Objective - Environmental Stewardship)* 16 - Engaging and working constructively with those who influence environmental policy and management *(National Objective - Environmental Stewardship)*
Beef+Lamb NZ	*Based on "Priorities in detail" from the strategy refresh* 1 - Sector R&D Strategy implemented *(Supporting farming excellence)* 2 - New and collaborative extension system: • Farmer Action Groups • Farm benchmark system • Future farm programme • Online knowledge hub *(Supporting farming excellence)* 3 - Dairy engagement strategy to: • Achieve better integration • Pan pastoral issues cooperation *(Supporting farming excellence)* 4 - Market Development • Market/Consumer Intelligence • Red Meat Sector Story implemented (domestic and international) • The New Zealand Farm Assurance (NZFAP) adopted by all farmers • Market innovation programme with sector collaboration *(Unlocking market potential)* 5 - Engage public on key reputational issues to increase understanding and support *(Government & public insight & engagement)* 6 - Proactive issues management for key industry risks *(Government & public insight & engagement)* 7 - Sector environment strategy implemented *(Enhancing our environmental position)* 8 - Farmers tools to optimise and measure environmental change *(Enhancing our environmental position)* 9 - Urban communities are engaged and trust farmer environmental initiatives *(Enhancing our environmental position)* 10 - Partner others to measure and report sector progress *(Enhancing our environmental position)* 11 - An authentic environmental story is told and has measured impact *(Enhancing our environmental position)* 12 - Increase farmer and stakeholder engagement from 50 to 80% with particular emphasis on Māori Agribusiness *(Internal)* 13 - Create stronger public and government relations and engagement capability *(Internal)* 14 - Monitor and measure against targets to show effectiveness of our activities *(Internal)*
NZ Wine	1 - "Soil for Vineyards" - Guide for Continuous Improvement in Sustainability *(a guide to provide pathways for NZ Wine's members to achieve the aspirational goal of safeguarding soils for future generations and minimising the ecological footprint of viticulture)*

	2 - "Water for Wineries" - Guide for Continuous Improvement in Sustainability *(a guide to provide pathways for NZ Wine's members to achieve the aspirational goal of optimising water use & quality with no negative environmental effects)* 3 - Water reports - *providing benchmarking to wineries to let them know where they are compared to others and therefore what they need to improve*
Horticulture NZ	*Based on meetings and Strategic Plan 2016-2025* 1 - Enabling stewardship of and access to natural resources for generations to come *(Enabling)* 2 - Partnering with product groups and associations for the benefit of growers *(Enabling)* 3 - Supporting the development of people capacity and capability *(Enabling)* 4 - Helping growers adapt to regulatory and technology change *(Enabling)* 5 - Telling the overarching story about horticulture to our communities and consumers to protect and enhance the well-being of our sector, focusing on: • Responsible and sustainable use of natural resources, particularly land and water • Intergenerational stewardship of the land • Healthy and nutritious New Zealand produce • Skills, knowledge and innovation of our growers • Research and development • Our ethical and socially responsible practices • [...] • Facilitating collaboration to get better industry solutions • The contribution to the New Zealand economy *(Promoting)* 6 - Advocating for National Regulatory Reform, in all aspects of business, to enable the industry to grow and prosper *(Advocating)* 7 - Advocating for the best outcomes for grower businesses in Regional and District Plans *(Advocating)* 8 - Advocating for increased investment into Research and Development *(Advocating)*
Other business:	
Landcorp	1 - Reducing leaching from the root zone by 50% - to reduce the impact of farm operations to external water sources. 2 - Pamu Foods - adding value to existing farm products, advancing to higher value products (organics, grassfed, etc.) & new products (deer milk, sheep milking, plant based food products) 3 - Collaborative approaches - working with communities and individuals to look at better outcomes across communities and catchments. Landcorp has an external Environmental Reference Group and other iwi farming partnerships in different regions of NZ
CRI:	
Landcare Research	*Based on Key Research Initiatives from the Science Plan (FY18-20)*

	1- Continue to implement cost-effective, scalable national indicators to monitor the health of conservation, production and urban landscapes *(Biodiversity)* 2 - Integrate current and emergent techniques for measuring biodiversity & ecosystem function to better understand productivity drivers *(Biodiversity)* 3 - Better quantify and integrate the ecosystem, economic and environmental outcomes of weed control *(Biodiversity)* 4 - Implement tools for Māori landowners to develop economic and environmental returns from their whenua based on biodiversity resources *(Biodiversity)* 5 - Continue to enhance the national soils map by extending coverage, functionality, scalability, and interoperability of online soils information *(Land)* 6 - Maintain and enhance the stewardship, use and accessibility of land resource data for decision-makers from farmers to Government *(Land)* 7 - Improve and clarify protocols and standards for land resource measurement to ensure defensible land data is available to decision-makers *(Land)* 8 - Fill critical knowledge gaps in soil-water attributes, ecosystem services, soil processes, the C-N-water cycle, and societal values *(Land)* 9 - Accelerate integration of ecosystem services into land use modelling/mapping to underpin land use decisions, & reduce environmental risk *(Land)* 10 - Further investigate underpinning processes regulating changes in soil organic matter and the implications for ecosystem services *(Land)* 11 - Better assess/quantify a wider range of ecosystem services, in particular to integrate above-ground aspects with below-ground aspects *(Land)* 12 - Improve the accuracy and utility of national erosion and sediment models, including risk assessment of erosion susceptibility *(Land)* 13 - Quantify the impact of irrigation on a number of soil properties, processes and ecosystem services *(Land)* 14 - Better understand how land use affects soil health/resilience, by integrating soil biodiversity, chemical contaminants, & soil quality metrics *(Land)* 15 - Further investigate the underpinning interactions between plants, and soil biodiversity and function *(Land)* 16 - Further investigate underpinning soil hydrological & microbiological processes and how these regulate nutrient and contaminant leaching *(Land)* 17 - Advance technologies to increase the sustainability of irrigation practices and improve water use efficiency *(Land)* 18 - Explore opportunities for more sustainable use of marginal land, which deliver carbon, biodiversity & other co-benefits *(Land)* 19 - Develop new tools and information, and grow capability to support the sustainable development of Māori land *(Land)* 20 - Develop and refine integrated models to address complexity, and increase resilience to environmental and land-use change *(Land)*

	21 - Down-scale key research methods, models & datasets to provide more accurate farm-scale information on sustainable land use *(Land)* 22 - Develop and implement biodiversity measures using kaupapa Māori frameworks to reflect local interests in the environment *(Environment)* 23 - Enhance land cover & land use mapping via new remote sensing technologies & data integration methods *(Environment)* 24 - Align standards of measurement, data management, and reporting with international best practice *(Environment)* 25 - Enhance economic & agent-based modelling to address complex natural resource decisions on land use and management *(Environment)* 26 - Improve tools/approaches to integrate economic, cultural and social issues, values and data into natural resource decisions *(Environment)* 27 - Demonstrate how temporal & spatial ecosystem service values can be integrated in natural resource decisions & reporting frameworks *(Environment)* 28 - Quantify the effect of uncertainty in land resource data on natural resource decisions on land use and management *(Environment)* 29 - Research data, models and analysis inform Government and Industry policy development on sustainable land use *(Environment)* 30 - Enhance models of what drives behaviour change and demonstrate tools/approaches that can incentivise conservation action *(Environment)* 31 - Integrate research, tools and information to enable and empower tangata whenua to exercise their role as kaitiaki of the land *(Environment)* 32 - Explore new methods to integrate consideration of mātauranga into land management decisions *(Environment)* 33 - Develop new strategies and tools to enable effective Māori participation in biodiversity and natural resource decision-making *(Envrionment)* 34 - Use new sensor-based technologies to more accurately quantify, model and monitor soil carbon stocks *(Environment)* 35 - Improve a process-based model to better assess and report the effects of land use on emissions and nitrate leaching on water quality *(Environment)* 36 - Establish a soil carbon monitoring framework for pasture and forestry to better inform management and reporting *(Environment)*
Plant & Food Research	*Summarised Outcome Area Sector Impact Targets, Research Themes and Critical Steps 2017/18* 1 - Development, trialling and commercialisation of a range of species (berryfruits, kiwifruit, pipfruit, potatoes, grapes) designed to gain value from, among others, sustainability traits 2 - Development, trialling and commercialisation of species (grapes) designed for performance, including reduction of management costs and increasing sustainability 3 - Development of cultivars (kiwifruit, pipfruit, potato, tomato) better optimised for new supply chain systems, and quality management systems, that expand the supply of high-value, differentiated products 4 - Characterising and enhancing uniqueness of NZ-branded products (wine, honey, marine products)

	5 - Development and validation of "improved soil and crop management practices that enhance irrigation water use efficiency and sustain high rates of crop production" so that NZ dairy, poultry and pork industries use only NZ-grown grain 6 - Improving understanding of environment and kiwifruit vine behaviour, to contribute to sustainability of production systems 7 - Development of new pipfruit orchard management methods (via better understanding of water and carbon dynamics in the root zone) to improve productivity and profitability 8 - Development of new tools for efficient nutrient use in export field vegetables 9 - Vineyard and winery management strategies - suite of new viticulture tools - to "produce reliable and consistent harvests from vineyard practices with internationally recognised eco-credentials" 10 - New knowledge and tools to "forecast and manage the impacts, risks and trade-offs of land use and management decisions" that are "positioning primary industries to respond to changes in climate, resource allocation (e.g. water) and community and market demands that enhance their economic and environmental sustainability"
Scion	*Based on conversation and the Statement of Corporate Intent* 1 - Support monetisation of the contribution that forests make to environmental and community well-being (ecosystem services) *(Impact Area 1 - Increase value from plantation forested land)* 2 - Supporting the forest industry's licence to operate as FSC certified through research that underpins minimisation of pesticide use in forests [...] *(Impact Area 3 - Licence to operate and standards across the forest industry value chain)* 3 - Support the implementation of the National Environmental Standard for plantation forestry *(Impact Area 3 - Licence to operate and standards across the forest industry value chain)* 4 - Support the New Zealand export industry by developing new options for bioproducts such as packaging to enhance acceptance of New Zealand products in international markets *(Impact Area 3 - Licence to operate and standards across the forest industry value chain)* 5 - Support industry to meet environmental compliance for regulators and customers *(Impact Area 3 - Licence to operate and standards across the forest industry value chain)* 6 - Develop conceptual framework for the economic assessment of alternative forestry options, focused on indigenous forestry and Māori land holdings *(Impact Area 4 - Diversify forests and local manufacturing to support regional growth)* 7 - Develop tools and models for the forest products value chain that will be used to determine where to intervene to maximise benefits from the existing forest resource--which will create better connectivity between growers and processors, and between small-scale forest growers *(Impact Area 4 - Diversify forests and local manufacturing to support regional growth)* 8 - Scion's forest economics and ecosystem services approaches into landscape level planning for multiple land uses will be integrated by at least

	two regional councils by 2019 *(Impact Area 4 - Diversify forests and local manufacturing to support regional growth)* 9 - Scion's information contributing to NZ's national and international reporting obligations and the NZ Freshwater National Objectives Framework *(Impact Area 4 - Diversify forests and local manufacturing to support regional growth)* 10 - Collaborate with Māori organisations to develop forestry options that meet their economic and social aspirations *(Impact Area 4 - Diversify forests and local manufacturing to support regional growth)* 11 - Describing barriers and obstacles facing Māori in the development and implementation of alternative land uses, and developing new governance approaches and testing these with key agencies *(Impact Area 4 - Diversify forests and local manufacturing to support regional growth)* 12 - Enable New Zealand to capture value from the emerging global market for biobased, renewable and high performance products by establishing global partnerships along new and existing value chains (bioeconomy) *(Impact Area 6 - Manufacture and apply biorefinery products from wood fibre, waste and other materials)* 13 - Develop environmental technologies to support a circular economy, bioprocessing technologies and utilisation of waste streams *(Impact Area 6 - Manufacture and apply biorefinery products from wood fibre, waste and other materials)* 14 - Forest and land owners to explore options for using forests as an energy product or co-product *(Impact Area 7 - Use more forest biomass to improve New Zealand's energy security and reduce emissions)*
Central government:	
MPI	*Based on a meeting and the 2017 Annual Report* 1 - Supply Chain Integrity Programme - framework for demonstrating supply chain integrity of NZ's exports, to grow NZ's international brand 2 - Primary Sector Science Roadmap 3 - Primary Growth Partnership 4 - Sustainable Farming Fund 5 - Supporting Māori Agribusiness - supports Māori landowners to maximise economic returns through sustainable use of primary sector assets 6 - National Environmental Standards for Plantation Forestry 7 - Farm Systems Change Programme - case studies of high-performing dairy farms and how they achieve the results they do 8 - Sharing Farm IQ Programme - tool allowing farmers to build an integrated, demand-led value chain for their products; link on-farm practice to farm outputs and revenue
Regional council:	
Environment Canterbury	*Based on the Annual Plan 2017-18 (Year 3 of 2015-2025 Long Term Plan)* 1 - In partnership with the Canterbury region's district and city councils and Ngai Tahu, facilitate the CWMS zone and regional committees to provide ongoing and improved community input to water management decisions - through reports from committees on their progress with their Zone Implementation Programme and target areas *(Canterbury Water Management Strategy portfolio - CWMS facilitation)*

	2 - Gather and make available information on water quantity, water quality, ecosystem health, soils and progress towards the CWMS targets *(CWMS portfolio - Environmental monitoring, progress reporting)* 3 - Work with the zone committees to lead a community process to collaboratively establish environmental limits for water quality and water quantity in Canterbury *(CWMS portfolio - RMA water framework)* 4 - In partnership with other parties, implement the recommendations in the zone implementation and regional programmes *(CWMS portfolio - Zone Implementation Programme delivery)* 5 - Facilitate an integrated approach to development of water infrastructure in Canterbury that delivers on all the CWMS targets *(CWMS portfolio - Regional water infrastructure)* 6 - A programme of relationship and engagement agreements is developed and maintained with councils, government agencies, key industry groups and non-government organisations *(Regional leadership - Governance services)* 7 - Environment Canterbury collects, maintains and shares quality assured data and information, and uses this to inform policy development and implementation and to support regional sustainable development *(Regional leadership - Regional policy, data, strategy and community engagement)* 8 - Governance, co-governance and working relationship arrangements are in place with nga Runanga and Te Runanga o Ngai Tahu *(Regional leadership - Ngai Tahu engagement)* 9 - Environment Canterbury's regional policy and plans serve the community in an efficient and timely manner in line with the planning timetable set out in the LTP *(Reaching compliance - Regional planning)* 10 - Information and support is provided to resource consent applicants and building control authority applicants (dams) to assist them in the delivery of high quality applications and information to ensure the efficient and timely processing of resource consents *(Reaching compliance - Consents)* 11 - Compliance and monitoring of natural and physical resources are aligned with Environment Canterbury's key priorities *(Reaching compliance - Compliance with plans and consents)*
Waikato Regional Council	*Based on the Waikato Freshwater Strategy; and Waikato Regional Council Strategic Direction 2016-2019* 1 - Continue to empower community actions and understanding through developing and expanding information provided on fresh water to the regional community, including spaitally defined and real-time information on use and condition of fresh water *(Focused Advocacy - Providing information to the public)* 2 - Engage iwi partners in support of the strategic direction for fresh water to advance a region-wide consensus for change *(Focused Advocacy - Providing information to the public)* 3 - Seeking new freshwater allocation policy options from central government *(Focused Advocacy - Resource Management legislation reform and advocacy)* 4 - Assist legislative change *(Focused Advocacy - Resource Management legislation reform and advocacy)*

	5 - Ensure policy options are aligned with iwi rights and interests, and opportunities are available for iwi to be actively involved with policy options *(Focused Advocacy - Iwi rights and interests)* 6 - Planning a transition pathway from current rule based allocation framework to a new framework *(Focused Advocacy - Transitional arrangements)* 7 - Transition freshwater allocation from a regulatory system to one where rules are complemented by other options for behaviour change such as incentives and persuasive methods, including multi-stakeholder and collaborative processes *(Smarter Methods - Use the full range of policy options for freshwater allocation)* 8 - Publicise and demonstrate benefits of transfering freshwater permits *(Smarter Methods - Efficiency via transfers and trading)* 9 - Explore policy options around pricing freshwater *(Smarter Methods - Pricing freshwater)* 10 - Investigation of cost-effectiveness and suitability of engineering options, in comparison to (and/or alongside) economic instruments and regulation *(Smarter Methods - Environmental and engineering options)* 11 - Recognise the contribution and benefits of multi-stakeholder processes for setting direction and for the alignment of policy options using multiple legislative tools *(Smarter Methods - Alignment with the Waikato Regional Plan)* 12 - Scope, design and implement an 'overarching' Integrated Water Information System *(Better Information - Planning)* 13 - Continue to engage with and leverage relationships with external research providers *(Better Information - Planning)* 14 - Development of Freshwater Management Units (and science to support these), and related tools - Freshwater accounts, Freshwater supply and demand balance, Freshwater footprinting *(Better Information - multiple Freshwater related objectives)* 15 - Increased focus on community empowerment and engagement - by providing readily accessible data and information, skills, funding, materials and working in partnership *(Support communities to take action on agreed outcomes)* 16 - Strengthening & developing new partnerships with iwi Māori, community and business organisations; and delivering on co-management and co-governance requirements *(Forge and strengthen partnerships to achieve positive outcomes for the region)* 17 - Plan and make decisions on land use based on multiple values and benefits, including economic and non-economic *(Positively influence future land use choices to ensure long term sustainability)* 18 - Advocate to protect high quality soils from inappropriate development *(Positively influence future land use chocies to ensure long term sustainability)* 19 - Advocate for and are involved with regional economic development that delivers positive environmental and social outcomes across the region *(Shape the development of the region so it enhances our quality of life)*
Horizons Regional Council	1 - One Plan - implementation of regulatory pathways for nutrient management 2 - Large non-regulatory pathways for whole-of-catchment management

	3 - Hill country erosion programme covering productivity, profitability and resilience 4 - Water quality intervention programmes
Envirolink	1 - Development and updating of the Regional Council Research, Science and Technology Strategy, which - helps Regional and Unitary Councils to pursue relevant and high quality research and knowledge transfer. - provides an overview of what Regional and Unitary Councils require in research, science and technology 2 - Coordination of Regional Sector Special Interest Groups (SIGs) in: - Air quality - Biosecurity and biodiversity - Land - Groundwater - Surface water - Coastal - Policy These groups identify and rank research priorities, work to align effort with other SIGs, CRIs and other stakeholders to ensure effective delivery of the research priorities, and make recommendations for wider systemic changes needed to create impact in their domains 3 - Selection and administration of small advice grants (up to $5,000 per grant excluding GST). Eligible regional councils may obtain an expert consultation with a research organisation to help them identify their information needs, receive advice on science techniques or meet training requirements. In 2017, 24 grants to a value of around 40,000 awarded, in the areas of freshwater, freshwater biodiversity, and soil. 4 - Selection and administration of medium advice grants (up to $20,000 per grant excluding GST). Eligible regional councils may obtain a detailed expert consultation for discrete projects, or for the second phase of an initial small grant project. The aim of this grant is to help councils apply existing knowledge held by scientists on regional environmental issues. In 2017, 24 grants to a value of around $370,000 awarded in the areas of freshwater, freshwater biodiversity, and soil. 5 - Selection and administration of tools development funding. Funding to develop or adapt new and/or existing resource management tools for use by more than one council. Funding is available per annum for two years. Projects are likely to be $100,000 to $200,000 each. In 2017, 4 tools development grants to a total value of just over $400,000 were awarded in the areas of freshwater, soil, and improving uptake of decision support tools. A further 3 projects that are very relevant to OLW are being considered for funding in 2018 (currently unknown which will be funded)

Section 3 – Stakeholder activity mapping

Background

35. The information gathered about stakeholders' activities was mapped against the simplified OLW KPIs, in order to provide information for OLW about:
    - Which stakeholders are undertaking what kinds of activities; and
    - Which stakeholders are undertaking activities that are relevant to OLW KPIs.

36. Stakeholder activities were:
    - Classified by what type of activity they are; then
    - Assessed on a scale of 0-5 (least to most supportive) against each of the simplified KPIs.

37. Activities could be classified against more than one type.

38. The types of stakeholder activities have been classified as:
    - R&D - fundamental science
    - R&D - economics, behaviour, integrated modelling
    - R&D - supporting the story, adding value
    - R&D - tools for policy
    - R&D - tools for resource management
    - Sector engagement
    - Public engagement/telling the story
    - Policy development & engagement/advocacy
    - Promotion/implementation of tools
    - Value- add & market development/promotion of the story
    - Internal/sector capability/capacity development
    - Funding/grant provision
    - Collaboration with Māori

39. The KPIs have been summarised and simplified as follows:
    - Increasing NZ brand value
    - Developing new land use tools
    - Land use tools are used in planning
    - Increasing social capital
    - Increased community awareness of OLW
    - Increased community engagement in & ownership of limit setting
    - Increased confidence in land and water use decisions
    - Increased transdisciplinary science in OLW

40. In some cases there is a naturally close relationship between the type of activity and the KPI (e.g. activities around promotion of tools, and KPI around increased use of tools in planning). This will result in some "obvious" correlations in the maps but it was mostly still deemed useful, as there are some subtleties around either the specific activity or KPI that mean it is not an automatic 1:1 relationship.

41. The exception is that given that we were using an activity classification of Collaboration with Māori, we didn't also include a KPI around collaboration with Māori. We felt there would have been a complete 1:1 relationship between these two classifications and it would not provide any meaningful new information to include both dimensions.

Heatmaps – activities and KPIs

42. The tables shown below are "heatmap" plots, where the intensity of the green shading indicates the magnitude of the value. Groupings of stakeholders are shown by coloured shading. Cells shaded red indicate areas where the objectives behind stakeholder activity in that area does not support OLW.

TABLE 1:

Which stakeholders are addressing which KPIs?

Numbers in the table are percents--for each stakeholder: (number of activites relating to that KPI)/(total number of activities for that stakeholder). Percents totalling greater than 100% indicate reported activities covering multiple KPIs. Different organisations reported activities at different levels of detail, so absolute number of activities is neither reported nor meaningfully comparable between organisations. These activities are representative, not exhaustive.

	Increasing NZ brand value	Developing new land use tools	Land use tools are used in planning	Increasing social capital	Increased community awareness of OLW	Increased community engagement in & ownership of limit setting	Increased confidence in land and water use decisions	Increased transdisciplinary science in OLW
Fonterra	0.25		1	0.5	0.75	0.75	0.75	0.25
Miraka			0.5					
Wakatū	1		0.25					
Landcorp	0.33	0.33	0.67	0.33	0.33	0.33	0.33	
B+LNZ	0.29	0.29	0.07	0.43	0.57	0.43	0.64	
HortNZ	0.63	0.38	0.75	0.13	0.25	0.38	0.38	
NZ Wine			1					
DairyNZ	0.19	0.56	0.31	0.25	0.44	0.25	0.5	0.06
WRC	0.05	0.47	0.42	0.32	0.37	0.47	0.58	0.05
ECan		0.27	0.55	0.45	0.45	0.45	0.55	
Horizons		0.25	1					
Envirolink		0.6	0.6					
Landcare	0.17	0.89	0.25			0.14	0.18	0.31
PFR	0.7	0.5					0.1	0.1
Scion	0.64	0.71	0.29	0.07	0.07	0.14	0.21	0.07
MPI	0.75	0.38	0.5	0.13		0.13	0.13	

43. Many of these key stakeholders are contributing across a number of OLW KPIs--probably the most meaningful conclusion about who is doing what. Stakeholders with a string of high numbers are not "doing more" than those with a string of lower numbers--this simply suggests that the stakeholders with high effort across multiple KPIs (for example, **Fonterra**) have more multidisciplinary programmes that each contribute to a range of objectives, whereas stakeholders with more balanced effort across KPIs (such as **DairyNZ** and **Waikato Regional Council**) probably have activities with more focused objectives.

44. Looking down the columns, it is clear that the majority of KPIs are receiving a significant amount of stakeholder attention. **NZ brand value** and the **development and use of land use tools** are clearly threaded through a majority of activities undertaken by multiple stakeholders across all the different groups. The KPIs around **social capital** and **community awareness and participation** are also well addressed, and it appears that these objectives are probably being addressed by more focused activities.

45. There appears to be relatively little effort addressing the **advancement of transdisciplinary science in OLW**. However, it may be simply that this is not reflected as an explicit priority in the high level activity statements of stakeholders, but may be happening nonetheless. It would be useful to examine this question in conjunction with the research landscape map to see how transdisciplinary science is actually faring within OLW.

TABLE 2:

How strongly do each stakeholders' activities contribute to each KPI?

Activities were assessed on a scale of 0-5 (least to most supportive) against each of the simplified KPIs. Numbers in the table are averages--for each stakeholder: (sum of 5-point ranking of all activities contributing to a KPI)/(number of activities contributing to that KPI)

	Increasing NZ brand value	Developing new land use tools	Land use tools are used in planning	Increasing social capital	Increased community awareness of OLW	Increased community engagement in & ownership of limit setting	Increased confidence in land and water use decisions	Increased transdisciplinary science in OLW
Fonterra	4		4.5	5	4.3	5	4.7	3
Miraka			5					
Wakatū	4.3		3					
Landcorp	4	5	4.5	5	5	5	5	
B+LNZ	4	3.8	5	4.3	3.8	3.7	4	
HortNZ	4	3.3	4	5	4	4	4.7	
NZ Wine			5					
DairyNZ	3.7	4	4.8	4.5	4.1	5	4	4
WRC	3	4.8	4.3	4.3	4.1	4	3.9	3
ECan		5	4.2	4.6	4.8	5	4.8	
Horizons		5	5					
Envirolink		5	5					
Landcare	2.2	4.4	4.4			3.5	3	3.8
PFR	4	3.8					3	4
Scion	4	3.5	4.3	5	4	3	3.3	3
MPI	4.2	5	4.5	5		5	5	

46. It appears to be encouraging that most stakeholders seem to be contributing strongly, when they contribute to OLW KPIs. This is likely to be an expected bias, however, given that the activities collected for this analysis were specifically selected to be relevant to OLW.

47. Again, looking down the KPI columns, it is clear that many of the KPIs are strongly supported by a range of stakeholder activities. The majority of the KPIs are supported by multiple stakeholders contributing strongly. Interestingly, **increasing NZ brand value** is not one of these--it appears that stakeholder activity in this area is more modestly supportive of the OLW objectives.

48. There are two likely interpretations of this, and they may apply differently to different stakeholders. For industry-focused stakeholders, it may reflect an element of self-interest as a priority, rather than a broader focus on a wider NZ brand. This is the case with **Miraka**, as noted in their interview narrative. The other likely interpretation, for example in an organisation such as **MPI**, is that it is undertaking some dedicated activities to strongly support development of brand NZ, as well as a range of other activities that support it in a lesser way. There are probably many more aspects to Brand NZ that can be influenced in a range of ways by a wide range of activities (compared with, for example, development of land use tools which probably requires a more focused kind of activity). Looking at an organisation's average strength of contribution would therefore give the appearance of less-than-wholehearted support. If exhaustive information about stakeholder activities were available, it could be more meaningful to consider the sum of the strength of contribution, rather than the average; however, this information is not available.

49. **Transdisciplinary science** is another area that does not appear strongly supported by stakeholders, although for the stakeholders who do work in this area, their activities are modestly supportive. Again, it would be useful to consider this against the research landscape map.

TABLE 3:

Which stakeholders are involved in what kinds of activities?

Numbers in the table are percents--for each stakeholder: (number of activites of that type)/(total number of activities for that stakeholder). Percents totalling greater than 100% indicate reported activities covering multiple types. Different organisations reported activities at different levels of detail, so absolute number of activities is neither reported nor meaningfully comparable between organisations. These activities are representative, not exhaustive.

	R&D - fundamental science	R&D – economics, behaviour, integrated modelling	R&D – supporting the story, adding value	R&D – tools for policy	R&D – tools for resource management	Sector engagement	Public engagement/ telling the story	Policy development & engagement/advocacy	Promotion/implementation of tools	Value-add & market development/ promotion of the story	Internal sector capability/ capacity development	Funding/grant provision	Collaboration with Māori
Fonterra							0.5	0.5	0.5	0.25			0.25
Miraka									0.5				
Wakatū							0.25		0.5	0.75	0.25		0.75
Landcorp					0.33	0.33			0.67	0.33			
B+LNZ			0.14		0.14	0.21	0.29	0.07	0.14	0.21	0.14		0.07
HortNZ							0.13	0.38	0.25	0.13	0.13		
NZ Wine									1				
DairyNZ	0.06	0.06	0.13		0.38	0.06	0.25	0.31	0.25		0.13		
WRC				0.21	0.11	0.16	0.16	0.32	0.32	0.05			0.16
ECan				0.09	0.18	0.09	0.18	0.45	0.27				0.18
Horizons					0.2				0.8				
Envirolink				0.2				0.4				0.6	
Landcare	0.31	0.42			0.17			0.03	0.22				0.17
PFR	0.2		0.6		0.7								
Scion		0.21	0.5		0.36	0.07		0.21	0.07	0.14			0.21
MPI								0.25	0.38	0.5		0.25	0.13

50. The associations shown in this table are largely unsurprising. **CRIs** are most focused on a range of R&D activities, with some implementation actions. **Industry** is extremely focused on the implementation of tools as well as market development and value-add. **Regional and central government** are well focused on policy development, and **MPI** also extends to promotion of tools and market development. A number of organsiations are undertaking actions supporting collaboration with Māori.

51. There appears to be only a moderate amount of effort across stakeholders on public engagement; and relatively little effort on sector engagement activities and internal capacity development that relates to OLW. (Note that internal development activities were only recorded in the context of OLW and make no judgment about the extent of any wider internal development activities undertaken by these organisations.)

52. However, the real meaning behind this would be if the relatively lower effort on these activities translates through to OLW KPIs not being addressed sufficiently. There is more consideration of this below.

TABLE 4:

Which types of stakeholders' activities support which KPIs?

Numbers in the table are percents--for each type of activity: (number of activites of that type undertaken by all stakeholders)/(total number of activities supporting that KPI). Percents totalling greater than 100% indicate reported activities covering multiple types.

	Increasing NZ brand value	Developing new land use tools	Land use tools are used in planning	Increasing social capital	Increased community awareness of OLW	Increased community engagement in & ownership of limit setting	Increased confidence in land and water use decisions	Increased transdisciplinary science in OLW
R&D - fundamental science	0.14	0.93	0.07	0.07			0.07	0.29
R&D - economics, behaviour, integrated modelling	0.37	1		0.05		0.1	0.1	0.58
R&D - supporting the story, adding value	0.94	0.41	0.06	0.06	0.18	0.18	0.24	0.06
R&D - tools for policy		1		0.17	0.17	0.17	0.17	
R&D - tools for resource management	0.31	0.91	0.13	0.03	0.03	0.6	0.13	0.06
Sector engagement	0.18	0.09	0.55	0.73	0.64	0.73	0.82	
Public engagement/telling the story	0.28		0.33	0.56	0.89	0.67	0.89	0.06
Policy development & engagement/ advocacy	0.16	0.57	0.53	0.39	0.29	0.39	0.42	0.06
Promotion/implementation of tools	0.16	0.12	0.86	0.12	0.21	0.3	0.4	0.02
Value-add & market development/ promotion of the story	0.94	0.06	0.29	0.06	0.12	0.06	0.12	0.12
Internal/sector capability/capacity development	0.17	0.5	0.33	0.5	0.33	0.5	0.5	
Funding/grant provision	0.2	0.4	0.8	0.2		0.2	0.2	
Collaboration with Māori	0.3	0.2	0.45	0.4	0.35	0.5	0.5	0.05

53. This table, when assessed against the previous one, can be useful in beginning to consider meaningful gaps. Again, this table shows some relatively unsurprising associations: **increasing NZ brand value** is most strongly supported by activities around **value-add and market development**, and **R&D** to support this. **Developing land use tools** is strongly supported by **R&D** into **fundamental science, integrated modelling, tools for policy** and **tools for resource management**. **Use of land use tools in planning** is strongly supported by activities around **promotion of those tools**, and **provision of funding**. **Transdisciplinary science** is best supported by **integrated R&D** activities.

54. It is also clear from this table that, unsurprisingly, the KPIs around **social capital** and **community awareness, engagement and confidence** are most strongly supported by **sector engagement and public engagement** activities. However, the associations between these factors do not appear to be as strong as associations between other factors. The community-based KPIs appear to be more broadly supported by a wider range of activities, rather than a clear dependence on one or two types of activities. This suggests that in many cases, other types of activities are also contributing to these KPIs.

55. This is supported by information in Tables 1 and 2, which indicate that many stakeholders are contributing effort to the community-related KPIs, and that the activities they are undertaking are strongly supportive of these KPIs. Overall, these KPIs are probably being reasonably well addressed by multiple stakeholders, using a range of types of activities. It is worth, however, keeping an eye on this to assess whether more concerted effort on sector and public engagement may be useful.

56. It is also worth noting that there are other stakeholders who we did not interview, who might be making a positive contribution in these areas. As one example, we suspect that an organisation such as Ngāi Tahu would have a significant amount of effort dedicated to relevant sector and public engagement activities; and it is unfortunate that we were unable to get the information from them that we sought for this phase of the project.

Section 4 – Concluding thoughts

57. The strategy scan and interviews have hopefully given OLW some assurance that their overall objectives are broadly consistent with the aspirations and high level actions of a wide range of stakeholders, and that the substance of the OLW KPIs is well supported by stakeholder activities.

58. Overall, there is a range of activity happening across stakeholders that appears to be quite robustly consistent with OLW's overall mission and KPIs. There are relatively few surprises in terms of which stakeholders are contributing to the OLW outcomes, and via what routes. However, part of the purpose of the project was to note any potential risks, conflicts or gaps.

59. One significant area that OLW might like to consider is exactly who their stakeholders are, and what this means both to them and to their stakeholders. Beyond the government sector--central government, regional councils and CRIs--it was surprising how few stakeholders considered that they were connected with OLW, and drew particular meaning from OLW's work. This was particularly the case in the primary industries, including industry good; where stakeholders tended to feel that their position was well beyond OLW, which was limited by the speed of both science and regulation. This sentiment from primary industry could present a risk to OLW given that one of the themes--Greater value from global markets--is clearly very industry-focused and the outcomes can really only be achieved via the primary industries.

60. This is likely to be an important issue to tease out some more with stakeholders and potentially also with MBIE. It was clear in assessing stakeholders' contributions to OLW's KPIs that very few stakeholders were undertaking activities for the purpose of addressing OLW KPIs. They often had parallel or related objectives, but within their own context rather than relating back to OLW. Are primary industry stakeholders using work generated by OLW without realising this? Are there indirect ways that OLW is contributing to the market success of the primary industries, which may not have become apparent through this process? Examples might be if industry is engaging with CRIs, or regional councils, without industry realising the explicit link back to OLW. How focused is MBIE on the detail of the KPIs? If the primary industries are benefiting from OLW's work without realising or acknowledging this, or without formally being engaged with OLW, does this "count" toward delivery of the KPIs?

61. Or is there a genuine issue that industry, in responding to market needs, is operating beyond where OLW is? More investigation would be required to understand this, and to consider how OLW can meaningfully work with and for industry if this is the case. Does industry need to have more leadership of Theme 1 for OLW? What frameworks would be needed to promote cross-business, cross-industry or cross-sector cooperation if this were an area where industry is best placed to lead?

62. It is also worth flagging that, while there did seem to be broad support for the Brand NZ approach among most of the big industry stakeholders, not all primary industries may wish to buy into a Brand NZ, as was indicated by one of the companies we spoke to. Other stakeholders who we did not interview also noted unique branding and marketing approaches that may conflict with an overall Brand NZ approach. While the Brand NZ approach is significantly larger than OLW and not OLW's issue to tackle, it is worth considering whether tying the KPIs to Brand

NZ may provide an opportunity to engage with some stakeholders, but a barrier from engaging with others. It may be worth keeping in mind that even businesses who don't wish to use the Brand NZ approach may still benefit from OLW tools, and it would be important that this can be recorded as contributing to OLW outcomes even if it doesn't strictly match to the KPIs.

63. Another area that came up frequently in stakeholder interviews was the desire for OLW to cover more ground in terms of social science and behaviour change, as well as more effort on turning science into application. Although this is an area that appears reasonably well addressed through the activity mapping, there is a clear call from stakeholders that more is needed. It would be interesting to see in the Research Landscape Map how these areas fare. On the one hand, there is the view that if the stakeholders want this, then they must be right--no matter how much is already going on. But it is also possible that there may be other barriers present that mean that stakeholders simply can't see or access the work that is happening. Is it making its way out of the research institutions carrying it out? Are the links between research and community, council and industry stakeholders functioning properly? Are there any intellectual property issues getting in the way of translating science into on-farm technology?

64. Possibly most interesting was the strong desire expressed by stakeholders for OLW to think bigger and to lead more: not to be driven by the science that is being done, but to aim for more complex and meaningful outcomes over longer timeframes and work the science needs back from there; and to secure its place as "the" science source for land and water issues.

65. In introducing this project to stakeholders, we told them that the unique feature of OLW we were looking for reflected in stakeholder strategies was an aspirational view that environment and economy don't have to be in competition and that there must be innovative ways of the two creating mutual and sustained benefit. All of the stakeholders we spoke to in the second phase acknowledged this, and we think this is reflected in their desire for OLW itself to be more aspirational and future-focused. There were some views expressed that the whole Challenge is too driven by existing science teams and existing science questions. It is obviously not our place to judge, but there appears to be a perception issue regardless. Is there value in considering more novel processes with stakeholders that can be undertaken to develop the next tranche of proposals? One stakeholder in particular noted the value of the NSCs to be provocative. How does this fit with the realities of bidding for funding? Is this something that needs to be raised with MBIE?

66. The flip side of this is that the first phase of this project uncovered a number of stakeholders who still take a more adversarial or transactional view: that environment and economy must be in competition, that there are environmental needs that have to be met but only because the council says so or so that production doesn't dry up. Rights must be protected so that production can be protected, and the price to be paid is having to make concessions for the environment. These stakeholders see lots of sticks, but few carrots. If OLW is pursuing its aspirational agenda and providing thought leadership, more effort on engaging with sectors and communities may be needed, or more effective methods might need to be explored.

67. In terms of gaps in progress against KPIs, then, it appears that there is good alignment and good support from stakeholders to the objectives and KPIs of OLW. As this was a subjective, and

indicative rather than exhaustive, analysis, there is limited ability to note gaps in the detail of delivery of the KPIs. However, hopefully the above notes will provide some insight about areas where OLW could work more closely with stakeholders and consider how they can add more mutual value to each other, to enhance the overall impact of the Challenge.