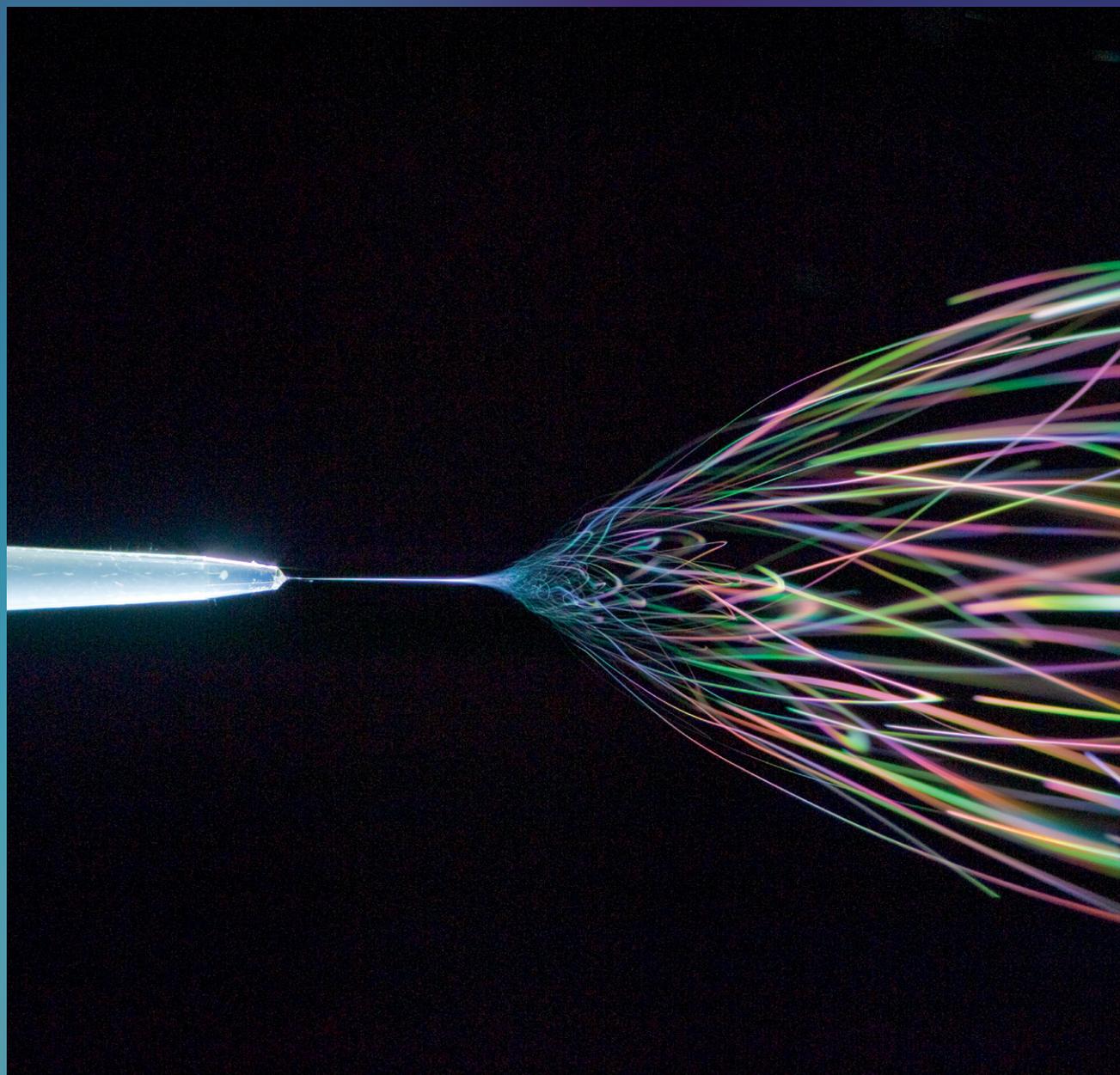


**Mahere
Takahuritanga
Ahumahi
Hao Ika**

**Fisheries Industry
Transformation
Plan**

**DRAFT for
consultation**

Te Kāwanatanga o Aotearoa
New Zealand Government



Consultation process

This document is an opportunity for anyone with an interest in the future of Aotearoa New Zealand's commercial fishing sector to give feedback on whether we've identified the right priority areas – and the right actions – to transform the industry to improve its environmental performance and increase the value created from fishing, while supporting people and communities.

After considering your feedback, we'll publish the final Fisheries Industry Transformation Plan in mid-2023.

The consultation is open from 27 April 2023 to 11 June 2023. You can provide feedback by:

- responding to our [online survey](#); or
- making a submission to us at fisheriesITP@mpi.govt.nz; or
- talking to us at one of the hui we'll be holding.

The [Fisheries Industry Transformation Plan website](#) is where all other details can be found, including hui dates and locations.

Next steps

Following public consultation and consideration of the feedback on the priority areas and actions proposed in the draft, an agreed Fisheries Industry Transformation Plan will be released.

The final plan will be supported by a three-year implementation plan that will be overseen by a new Governance Group. This Group will reflect the partners involved in the development of the plan and the significant role of Māori in the industry.

We welcome your feedback.



Follow this QR code
to complete our short
online survey now.



Fisheries New Zealand

Tini a Tangaroa

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Kōrero whakataki a te Minita mō Ngā Moana me Ngā Rawa Hao Ika Minister for Oceans and Fisheries' foreword



Tēna koutou katoa.

As Minister for Oceans and Fisheries it is my pleasure to support the release of the *Draft Fisheries Industry Transformation Plan* for public consultation.

Our marine area comprises more than 4 million square kilometres and is 15 times our land area. With most New Zealanders living near the coast, the marine environment is part of our national identity and our economic, social, and cultural wellbeing.

Fisheries are a vital part of many regional economies and communities across Aotearoa New Zealand and have a key role to play in the future prosperity of our country. In 2022, the wild-capture fishing industry generated \$1.45 billion in export revenue while supporting whānau and businesses from Northland/Te Tai Tokerau to Stewart Island/Rakiura and the Chatham Islands/Rēkohu.

Our fisheries management system is recognised as amongst the world's best, and our wild caught fish is harvested and processed by passionate people and is a source of healthy, low emissions protein that is in demand here and around the globe.¹

At the same time, the sector is experiencing a number of challenges, including change in the marine environment, an aging inshore vessel fleet, difficulties attracting and retaining workers, and increasing cost pressures. With the backdrop of substantial regulatory changes, the sector is also in a period of transition.

The *Draft Fisheries Industry Transformation Plan* is one of eight industry transformation plans that have been developed, and it outlines a way forward for the future of the commercial fishing industry built around innovation, sustainability and partnership. It complements the [Government's Aquaculture Strategy](#), which sets out a plan to sustainably grow that sector.

The plan is intended to ensure the wild capture fishing sector can build on its existing strengths and make the most of the opportunities that lie ahead. It challenges the sector to take a long term view and use innovation to better position itself as we move to a more sustainable and productive economy.

It is generally acknowledged that the volume of wild fish caught in Aotearoa New Zealand is unlikely to significantly increase, so we need to innovate to grow value. There are promising initiatives in some areas: seafood-derived bioproducts with cosmetic, medical and nutraceutical applications; the way we record and use ocean data; and precision fishing technology that could revolutionise the way fishers fish. With substantial ownership in the sector, Māori businesses will help lead this transformation.

The plan also accelerates progress towards [Fit for a Better World](#), the Government's vision for a productive, sustainable, and inclusive food and fibre sector.

The plan focuses on supporting people and communities. Kaimoana is enjoyed by New Zealanders and is part of many whānau celebrations and gatherings. Improving connections between fishers and communities will support the selling and purchasing of fish locally.

I'd like to thank the Leadership Group for their work so far. Together, they have developed this plan and recommended actions that will lay the path for transformation in the wild-capture fisheries sector, by identifying opportunities for innovation and collaboration.

Fishing and the harvesting of kaimoana have been undertaken in the waters around Aotearoa New Zealand for hundreds of years. This plan, combined with our holistic approach to managing the oceans, is intended to support fishing in our waters into the future.

Now is the opportunity for wider feedback. This is your chance to get involved and have your say. I encourage you to share your views with us in order to further refine the plan and then support it as it is implemented.

Hon Rachel Brooking
Minister for Oceans and Fisheries

¹ Carbon footprint of fish from the Aotearoa New Zealand deepwater fishing fleet and from other New Zealand products, AgResearch.

Te kōrero whakataki a te heamana o te Rōpū Kaiārahi Leadership Group Chair's foreword

Ka pū te ruha, ka hao te rangatahi The old net is cast aside, while the new net goes fishing

Tēna koutou katoa.

I am proud to present the *Draft Fisheries Industry Transformation Plan* developed by the Leadership Group.

Fishing has played an important role in Aotearoa New Zealand's economy since at least the 1800s, starting with Māori fishing and trade.

In 2022, 840 fishing vessels operated in the waters around Aotearoa New Zealand that caught approximately 341,500 tonnes of fish and generated \$1.45 billion in export revenue. A total of 12,490 people are employed across the seafood sector, 89 percent of whom are New Zealanders. Māori are significant participants in the sector, owning at least 40 percent of all fishing quota.

The sector has many strengths, and 96 percent of the catch is from stocks with no sustainability concerns.² The passion and expertise of people in the industry, and the great product they produce, have set it up well for the future. This plan outlines 20 actions we believe will build on these strengths and enable the industry's transformation to a low- emissions, high-productivity sector.

Wild caught fish is a delicious, nutritious food with ongoing demand from consumers. Now is the time for us to strengthen our position in global markets by fishing with more precision and making higher value products.

Further developments in bioproducts and the creation of new products for new markets, will increase the economic value of the industry and provide skilled and well-paid jobs. The industry's existence is dependent on the continued health of our marine environment and it will take action to minimise the environmental impact of fishing activities.

I'd like to thank the members of the Leadership Group whose joint efforts and insights have guided the development of the *Draft Fisheries Industry Transformation Plan*.

Leadership Group

Andrew Talley
Talley's

Craig Ellison
Ngāi Tahu Holdings

Damon Cooper
Harbour Fish

Jeremy Helson
Seafood New Zealand

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Māori fisheries consultant

Steve Tarrant
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Abby Thompson
Food HQ

Bubba Cook
WWF

Dan Bolger
Fisheries New Zealand

Emma Taylor
Fisheries New Zealand

George Hollinsworth
E tū

The oceans are a shared resource and there are many strongly held views about how to care for them and create value for Aotearoa New Zealand. In developing the plan, the Leadership Group navigated the full range of opportunities and challenges for the wild catch seafood sector.

The Leadership Group is confident about the future of the industry and our ability to work collaboratively together to deliver an environmentally sustainable and profitable sector with the wellbeing of people at the centre.

We welcome your input on whether we have identified the right priority areas and actions that will steer the industry into the future.



Wayne McNee
Independent Chair, Leadership Group

² Consistent with international best practice, stocks are considered to have no sustainability concerns when they are above the 'soft limit' - a biomass level below which a stock is deemed to be overfished or depleted.

In pulling together this plan, the Leadership Group have acknowledged the following principles developed by previous collaborative efforts between industry and government:

- **Treaty of Waitangi and the Māori Fisheries and Aquaculture settlements** – respected and guiding our actions.
- **Kaitiakitanga** – a collective demonstration of guardianship and intergenerational sustainability.
- **Respect for our people** – valuing the contribution from all levels of industry and government.
- **Respect for our marine ecosystems** – valuing what sustains us and enhancing the marine environment.
- **Respect for our products** – proud of what we produce and achieving high value.
- **Respect for our communities and customers** – sharing the fruits of our collective endeavours and working with stakeholders.
- **Building on what is working** – enhancing the quota management system (QMS) as the foundation for the sustainable management of our fisheries.
- **Innovation** – celebrating innovation across everything we do.
- **Transparency** – an open and transparent fishing industry and management system.
- **Evidence-based decisions** – science and cost / benefit analyses underpin our work.



Whakarāpopototanga matua

Executive summary

Industry transformation plans are part of Government policy and intended to support sectors with growth potential to contribute to a high productivity, high wage, low emissions economy.

This *Draft Fisheries Industry Transformation Plan* was developed by a Leadership Group with fishing business, Māori, environmental, worker, food sector innovation, and government backgrounds.

The plan is intended to build on the strengths of Aotearoa New Zealand's wild capture fishing industry; seize opportunities, including in premium international markets; and navigate through the challenges the industry faces on the path to transformation to a low-emissions, high-productivity sector.

The Group heard from a range of people with Māori, iwi, industry, environmental, science and innovation, and worker perspectives on the opportunities and challenges facing the industry. It drew on the insights gained to develop a vision for the future of the industry and the actions outlined in this plan.

The plan sets out a vision that Aotearoa New Zealand is acknowledged globally as the world leader in the innovative and sustainable production of premium seafood and bioproducts.

The actions within the plan are centred around three priority areas – strengthening environmental performance; improving productivity and profitability; and supporting people and communities.

There are 20 actions proposed in the plan across the three priority areas. Several actions have a strong environmental focus, including:

- investing in innovation to accelerate selective fishing and further reduce benthic (seafloor) impacts and protected species interactions (action 1.1);
- advancing the use of marine and fisheries data, and analytical and spatial models, to support fishers to avoid unwanted catch (including protected species) and maximise target catch with the least effort (action 1.4); and
- reducing the sector's carbon footprint by developing standardised measurement tools (action 1.5).

Other actions focus on improving profitability and productivity through increasing exports of high value seafood and bioproducts to discerning international consumers and improving returns and investment across the value chain, including:

- supporting emerging innovative seafood and bioproduct businesses to accelerate successful expansion into export markets (action 2.2);
- accelerating the shift of large volumes of non-food fish material from low to higher value applications (action 2.4); and
- investing in efficient and environmentally sustainable fishing vessels including to endorse the further progression of the inshore fleet renewal innovation project (action 2.5).

The remaining actions focus on supporting people and communities, including:

- providing wellbeing support to those who work in the sector, and supporting those who are transitioning to retirement (action 3.1);
- developing the workforce of the future through a public perception and communication strategy on the benefits of working in the industry (action 3.3); and
- implementing initiatives to improve seasonal and generational retention (action 3.5).

The plan draws on insights from a report by the Prime Minister's Chief Science Advisor on [*The Future of Commercial Fishing in Aotearoa New Zealand*](#).

The actions relating to innovation, use of data, and creating additional value through new products build upon opportunities highlighted in the report.

While the specific focus of this plan is on wild capture fisheries, some of the actions will benefit all parties with an interest in the ongoing wellbeing of Tangaroa. Collaboration will be key to achieving the best outcomes in the future. We will work with others, such as the aquaculture sector, where our priorities align.

Uaratanga me ngā wāhi matua hei whakatinana

Vision and priority areas for action

Priority areas and key themes



Strengthening environmental performance

- Fishing with care and precision to support healthy ocean ecosystems
- Utilising data to fish selectively and with least effort
- Reducing carbon footprint and improving resilience to climate change



Improving profitability and productivity

- Increasing exports of high value seafood and bioproducts to discerning international customers
- Improving returns and investment across the value chain



Supporting people and communities

- Supporting people in the industry to thrive
- Developing the workforce to grow the industry
- Supporting communities to access local seafood

▶ Actions

Strengthening environmental performance

Fishing with care and precision to support healthy ocean ecosystems

- 1.1 Invest in innovation to accelerate selective fishing and further reduce benthic impacts and protected species interactions:
 - 1.1.1 establish a joint industry / government project to source and develop technology that minimises adverse impact on the ocean floor to the maximum extent practicable; and
 - 1.1.2 review regulatory settings and operations to identify and mitigate regulatory barriers to fishing innovation.
- 1.2 Incentivise and facilitate fast adoption of proven efficient and environmentally sustainable fishing gear and methods by fishers.
- 1.3 Investigate opportunities to apply new methods of habitat restoration and enhancement in New Zealand, for example: sea ranching, artificial upwelling, seagrass and kelp restoration.

Utilising data to fish selectively and with least effort

- 1.4 Advance the use of marine and fisheries data and analytical and spatial models to support fishers to avoid unwanted catch (including protected species) and maximise target catch with the least effort:
 - 1.4.1 address barriers to the regular and timely release and sharing of data collected from fishers, including reviewing the Guidelines for Fisheries Data Release;
 - 1.4.2 build technology and products that leverage data to support fishers; and
 - 1.4.3 use data to support timely decision-making by fishers and fisheries managers to manage local distribution, seasonal variation, and effects on the aquatic environment.

Reducing carbon footprint and improving resilience to climate change

- 1.5 Invest in a sector decarbonisation programme to connect New Zealand seafood businesses with world-class innovation and best practice guidance including developing an industry benchmarking and standardised measurement tool to support businesses to measure and reduce their carbon footprint.
- 1.6 Invest in innovation to reduce the environmental impact of airfreighting premium seafood to international markets.
- 1.7 Support the development of an adaptation pathway framework to assist the sector prepare for, and adapt to, climate change.

 **Vision**

Vision: Aotearoa New Zealand is acknowledged globally as the world leader in the innovative and sustainable production of premium seafood and bioproducts.

To deliver on this vision: we will work in harmony with nature, respect the ocean, draw on intergenerational knowledge, support local communities and invest in innovative technologies on-board and onshore.

Improving profitability and productivity

Increasing exports of high value seafood and bioproducts to discerning international consumers

- 2.1 Promote the New Zealand seafood story in priority international markets highlighting the environmental sustainability, transparency and traceability of New Zealand caught product.
- 2.2 Support emerging innovative seafood and bioproduct businesses to accelerate successful expansion into export markets.
- 2.3 Support industry to access information on export market requirements and compile the data needed to demonstrate transparency and traceability requirements.
- 2.4 Accelerate the shift of large volumes of non-food fish material from low to higher value applications to target market opportunities.

Improving returns and investment across the value chain

- 2.5 Invest in efficient and environmentally sustainable fishing vessels, including endorsing the further progression of the inshore fleet renewal innovation project:
 - 2.5.1 reach industry-wide agreement on a sister ship model for the replacement of aging vessels in the inshore fleet; and
 - 2.5.2 confirm the government support available to assist the transition to new inshore fishing vessels based on a sister ship model.
- 2.6 Improve the investment environment for fishing and seafood processing, including exploring the introduction of tax measures like accelerated depreciation.
- 2.7 Assess the automation opportunities across the fishing industry value chain and invest in priority automation solutions following the assessment.

Supporting people and communities

Supporting people in the industry to thrive

- 3.1 Provide advice (particularly for small fishers) on fishing with selectivity and low environmental impact and on improving vessel energy efficiency.
- 3.2 Provide wellbeing support to those who work in the sector, including those who are transitioning to retirement.

Developing the workforce to grow the industry

- 3.3 Develop a public perception and communication strategy, including the benefits of working in the industry.
- 3.4 Work more closely with the education sector to develop and implement fit for purpose qualifications and training.
- 3.5 Assess and implement initiatives to improve seasonal and generational retention.

Supporting communities to access local seafood

- 3.6 Encourage greater consumption and easy local purchasing of fish.

Te Tiriti o Waitangi

Te Tiriti o Waitangi guaranteed to Māori rangatiratanga over their fisheries and other resources.

Rangatiratanga includes the right to exercise kaitiakitanga in accordance with tikanga Māori. For fisheries, kaitiakitanga includes the duty to manage fisheries responsibly, the māuri of an area is strong/vibrant, and the fishery can provide for the needs of current and future generations. Rangatiratanga also includes the right to decide who may access the fishery and on what terms. Te Tiriti/Treaty protects the ability of Māori to exercise these rights.

The Treaty creates the basis for governance of Aotearoa New Zealand by the Crown subject to the duty to protect and acknowledge Māori rights and interests. In some circumstances the application of the Treaty may place limits on Crown decision making or require specific provision for Māori to ensure the protection of Treaty rights.

Historically, the Treaty was only considered to be relevant to decision making to the extent provided in legislation. More recently the courts have recognised tikanga Māori as part of Aotearoa New Zealand's common law and as a value that informs its development. This means that tikanga Māori may be a relevant consideration in situations where there is no Treaty reference in statute and where the Crown is not a party to a decision.

Where there is no Treaty reference in statute the courts will generally presume that Parliament intends Treaty principles to apply to all decision making unless specifically excluded.



Image source: MPI

The principles of the Treaty provide for the Crown and Māori to act as partners together, participate together to identify and address issues and for the Crown to protect Māori rights and interests.

Together the duty to act in accordance with the principles of the Treaty and the exercise of rangatiratanga in accordance with tikanga Māori provides strong direction to decision makers in the fisheries sector.

In implementing this plan government will work to:

- recognise the Crown obligations to act consistent with the Treaty of Waitangi;
- give effect to the principles of partnership, participation and protection that underpin the relationship between the government and Māori under Te Tiriti o Waitangi;

- provide for the exercise of kaitiakitanga in accordance with tikanga Māori;
- protect the rights and interests of Māori secured by the Fisheries Settlement;
- recognise that those rights are ultimately for the benefit of all Māori;
- work with iwi, hapū, whānau, and Māori communities in partnership to enable full participation and the realisation of their aspirations as Māori to utilise their fisheries resources to benefit from the business and activity of fishing;
- enable Māori to have a voice at all levels across the sector; and
- safeguard and create a space for Māori cultural concepts, values, and practices.

He tirohanga ki ngā rawa hao ika Fisheries at a glance



4th largest

Exclusive Economic Zone in the world



341,500 tonnes

of fish reported caught in 2022 calendar year



Māori own at least 40%

of all quota



840 vessels

fished in the 2022 calendar year



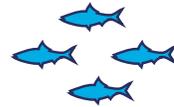
\$1.45 billion

in wild capture exports³



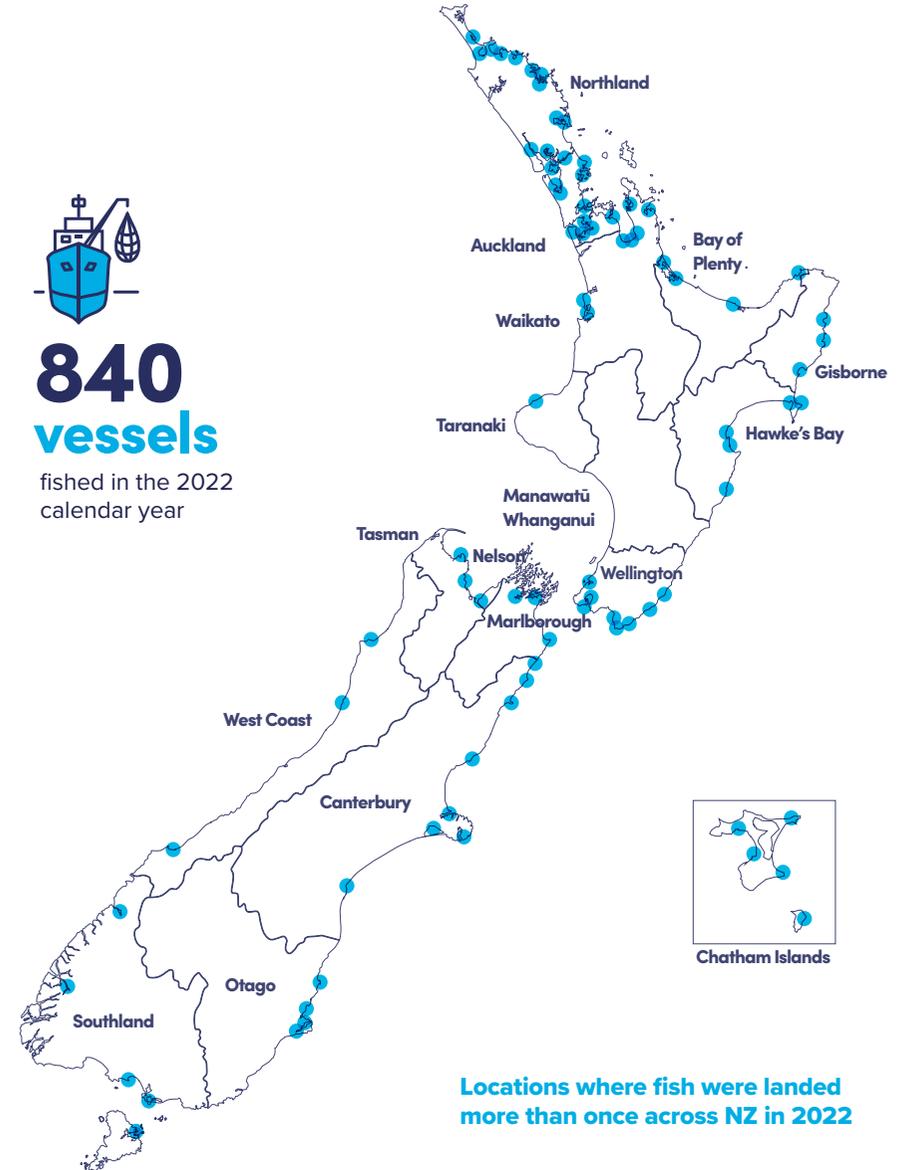
12,490 people employed

in the total seafood sector,⁴ 89% are New Zealanders



96%

of catch is from **stocks** with no sustainability concerns⁵



Locations where fish were landed more than once across NZ in 2022

³ Source: Ministry for Primary Industries, Situation Outlook for the Primary Industries, December 2022, for year ended 30 June 2022.

⁴ Source: <http://www.workforceinsights.govt.nz>. Around 1,000 people work in aquaculture production.

⁵ Consistent with international best practice, stocks are considered to have no sustainability concerns when they are above the 'soft limit' - a biomass level below which a stock is deemed to be overfished or depleted.

**He tirohanga
ki ngā rawa
hao ika**

Fisheries in Aotearoa New Zealand

In developing a plan for the future of the industry, we build on the history of Māori and fishing, the Aotearoa New Zealand fisheries management system and acknowledge the cumulative pressures on the marine environment.

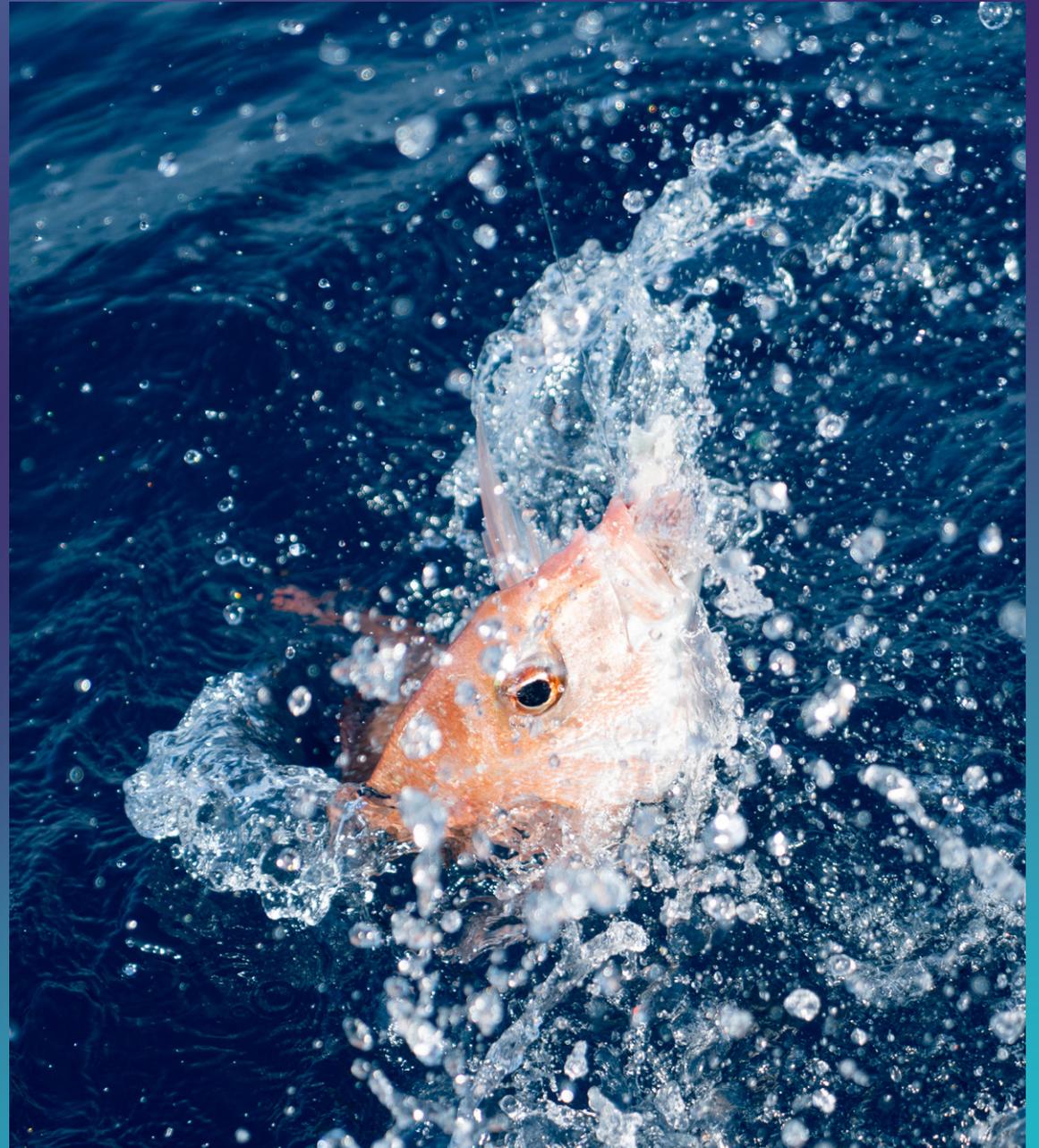


Image source: Getty images

Te hī ika: Māori me ngā mahi hī ika

Te hī ika: Māori and fishing

Māori are inextricably linked to Tangaroa by whakapapa.

For most iwi, fisheries have underpinned their culture and economy. Life was impossible without access to and control of fisheries resources.

Iwi were often renowned as kaitiaki of particular fisheries. Their mana often depended on their ability to provide manuhiri with those important species at hākari.

Māori also traded extensively, exchanging fish for other natural resources.

Fisheries were, and continue to be, a key part of Māori cultural identity. The ability to exercise rangatiratanga, kaitiakitanga and manākitanga over important fisheries continues to define most hapū and iwi.

After first contact and the signing of the Treaty, Māori extended their traditional trade to supply visiting ships and new European settlements and began trading with Sydney and other international destinations. Māori had become the first commercial fishers in Aotearoa New Zealand in the sense that we understand the term today.

While the Treaty guaranteed to Māori rangatiratanga over their fisheries, the Crown breached the Treaty. The ability of Māori to exercise rangatiratanga and kaitiakitanga over their commercial fishing interests was disrupted. For example, commercial fishing



Image source: nzstory.govt.nz

permits in the lucrative Auckland rock oyster fishery were denied to Māori.

Māori commercial fishing became incorporated into the general scheme of fisheries management where individual fishers required a permit from the Crown to take fish for commercial purposes. Māori community commercial harvesting ceased and commercial fishing by individuals declined.

Māori customary fishing which had included social, cultural, and economic components was now defined as being for non-commercial purposes alone.

In the early 1980s, the Crown, in the face of a rapidly declining open access commercial fishery, sought to introduce a management regime based on individual fishing quotas. As a precursor, access to fishing permits was restricted to full time fishers. Many Māori fishers were part time fishers, dependent on a mix of seasonal employment in processing industries, small scale farming, and commercial fishing to provide a viable income.

Consequently, many Māori were excluded from fishing in the years that were used to set individual quotas for fishers. Māori participation in commercial fishing further declined.

The Quota Management System (QMS) was introduced in 1986. The 1988 Waitangi Tribunal report on the Muriwhenua claim found that the newly introduced QMS was “in fundamental conflict with the Treaty’s principles and terms”. The High Court subsequently agreed with this view and an injunction was put in place to prevent the introduction of additional species into the QMS.⁶

In 1989, in an effort to provide redress for these Treaty breaches, the Crown and Māori negotiators agreed on an interim settlement that ensured Māori progressively received 10 percent of all fish species in the QMS or the equivalent value in cash. The Crown was successful in acquiring the agreed quota in most fish stocks.

The 1992 Fisheries Deed of Settlement secured a settlement of all Treaty claims relating to fisheries, provided for the settlement to benefit all Māori, and established a role for Māori in the management of Aotearoa New Zealand fisheries. In the settlement, the Crown provided funds for Māori to buy a 50 percent stake in Sealord, and guaranteed 20 percent of quota for all new species brought within the QMS. In turn, Māori agreed that all Māori commercial fishing rights and interests were settled and they would accept regulations for customary fishing, cease litigation, and endorse the QMS.

As a result of the settlement, Māori have returned as major players in Aotearoa New Zealand’s seafood industry. Based on 2018 data, the Māori asset base in fishing was estimated to be worth \$2.9 billion, with 81 percent of it owned by collectives.⁷ Iwi collectively own over 40 percent of all quota and many have shares in fishing companies.

A large portion of collectives own fishing quota but do not fish or process fisheries resources. Their primary income from fishing is derived from the sale of annual catch entitlement (ACE) to individual fishers or fishing companies, including companies whose shareholders include iwi, such as Sealord and Moana New Zealand.⁸

The returns from fishing support whānau and communities, as well as other business ventures. More frequently Māori communities have been indicating that, while financial returns from their commercial interests are important, they are also seeking wider social, cultural and benefits from fishing for their communities.

As descendants of Tangaroa, iwi Māori have the obligation and responsibility to tiaki – care for Tangaroa so that he may continue to care and provide for iwi. Ultimately the right to kai – to enjoy the benefits of the living relationship between Māori and Tangaroa and its contribution to the survival of Māori identity – depends upon the ability of Māori to tiaki Tangaroa in a meaningful way.



Image source: Sean Cooper from the DOC Marine Conservation Unit

⁶ Motu Working Paper 07-02 “New Zealand’s Quota Management System: A history of the first 20 years”, April 2007.

⁷ Source: www.rbnz.govt.nz/hub/research/additional-research/te-ahanga-Māori—the-Māori-economy-2018

⁸ Annual catch entitlement is the right to catch a certain amount of a fish stock during a fishing year.

Pūnaha whakahaere rawa hao ika Fisheries Management System

The Fisheries Management System has many elements as illustrated here:

Industry

- Non-regulatory measures
- Third-party sustainability assessments
- Industry bodies (e.g Seafood NZ)

Collaborative

- Fishery Plans
- National Plans of Action

Marine & Fisheries Science

- Stock assessment
- Environmental effects quantification
- Ecosystem and biodiversity

Government

- Legislation
- Treaty obligations
- Regulations
- Quota Management System implementation
- Spatial management
- Verification & enforcement

Quota Management System

Total Allowable Catch (TAC)

the total quantity that can be sustainably taken each year

Total Allowable Commercial Catch (TACC)

the total amount of fish the commercial sector is allowed to catch each year

Individual Transferable Quotas (ITQ)

Individual companies own quota that generates an annual catch entitlement (ACE) to harvest a proportion of the TACC

Recreational

- Bag limits
- Size limits
- Closures & restrictions
- Honorary Fishery Officers

Allowance for recreational fishing

Allowance for customary fishing

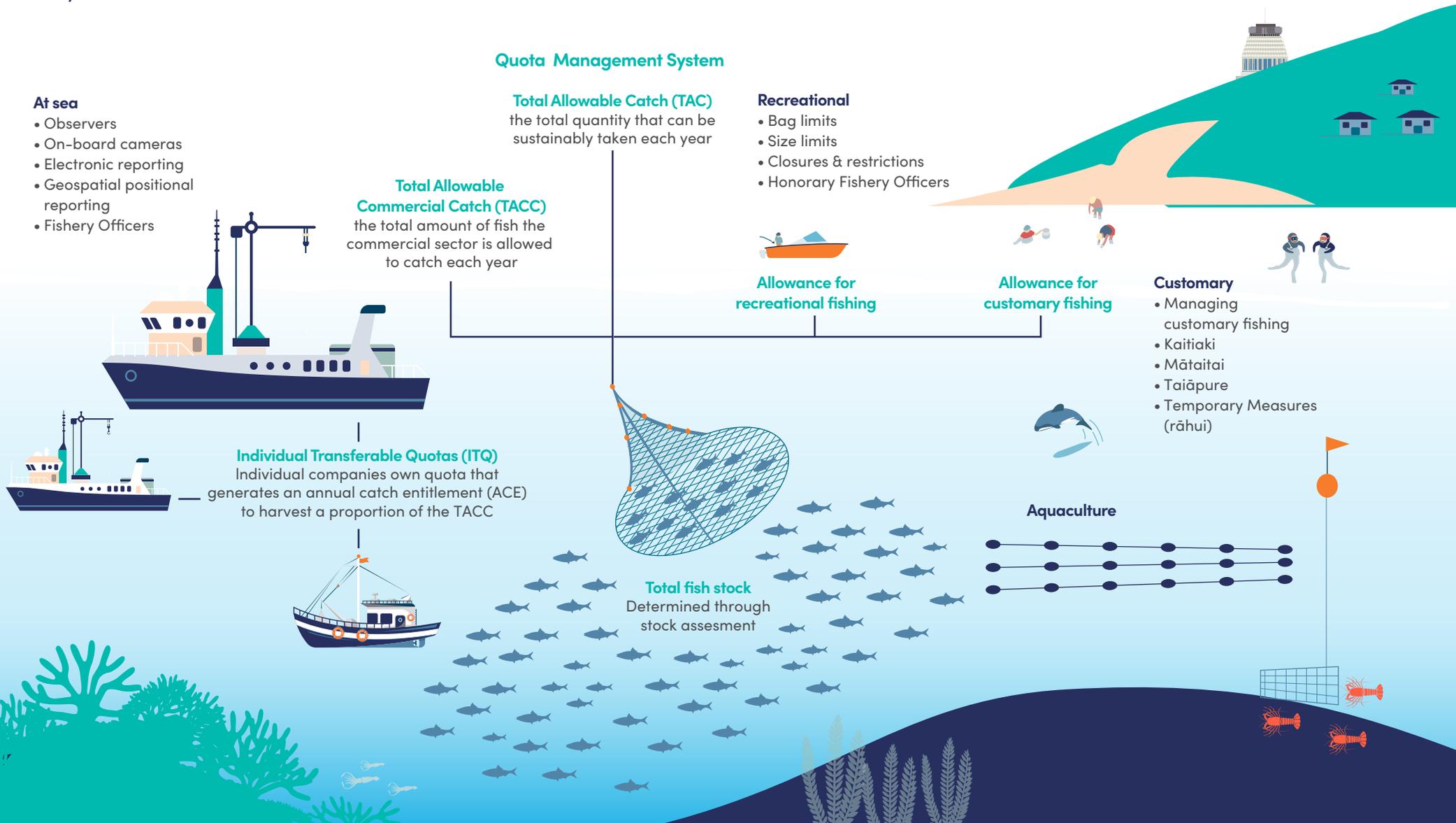
Customary

- Managing customary fishing
- Kaitiaki
- Mātaitai
- Taiāpure
- Temporary Measures (rāhui)

Aquaculture

Total fish stock

Determined through stock assessment



At sea

- Observers
- On-board cameras
- Electronic reporting
- Geospatial positional reporting
- Fishery Officers

Rerenga rauropi me te pūnaha rauropi o te moana

Biodiversity and the ocean ecosystem

Physical changes



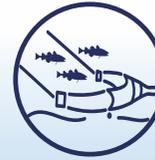
Erosion
Excess sediment

Pollutants from land



Run-off
Heavy metals
Excess nutrients
Pathogens

Use of natural resources



Fishing gear impacts
Negative impacts on
marine habitats and
non-target species

Climate change effects



Ocean warming
May change species
distributions

Ocean acidification
Makes it harder for
organisms with calcium
carbonate shells like pāua,
mussels and oysters to
build shells

One pressure
Healthy ecosystems are
more likely to recover
when affected by a
single pressure

Cumulative pressures
Multiple pressures on the ecosystem can
cause severe impacts to biodiversity and the
functions of the ecosystem





Image source: FirstMate

Te wāhi kei reira tātau ināianei

Where we are now

Our changing environment and global economic trends are creating new challenges for the fishing industry. These challenges also create the conditions for transformation, and how we respond can create opportunities to achieve better social, economic, and cultural outcomes for Aotearoa New Zealand.

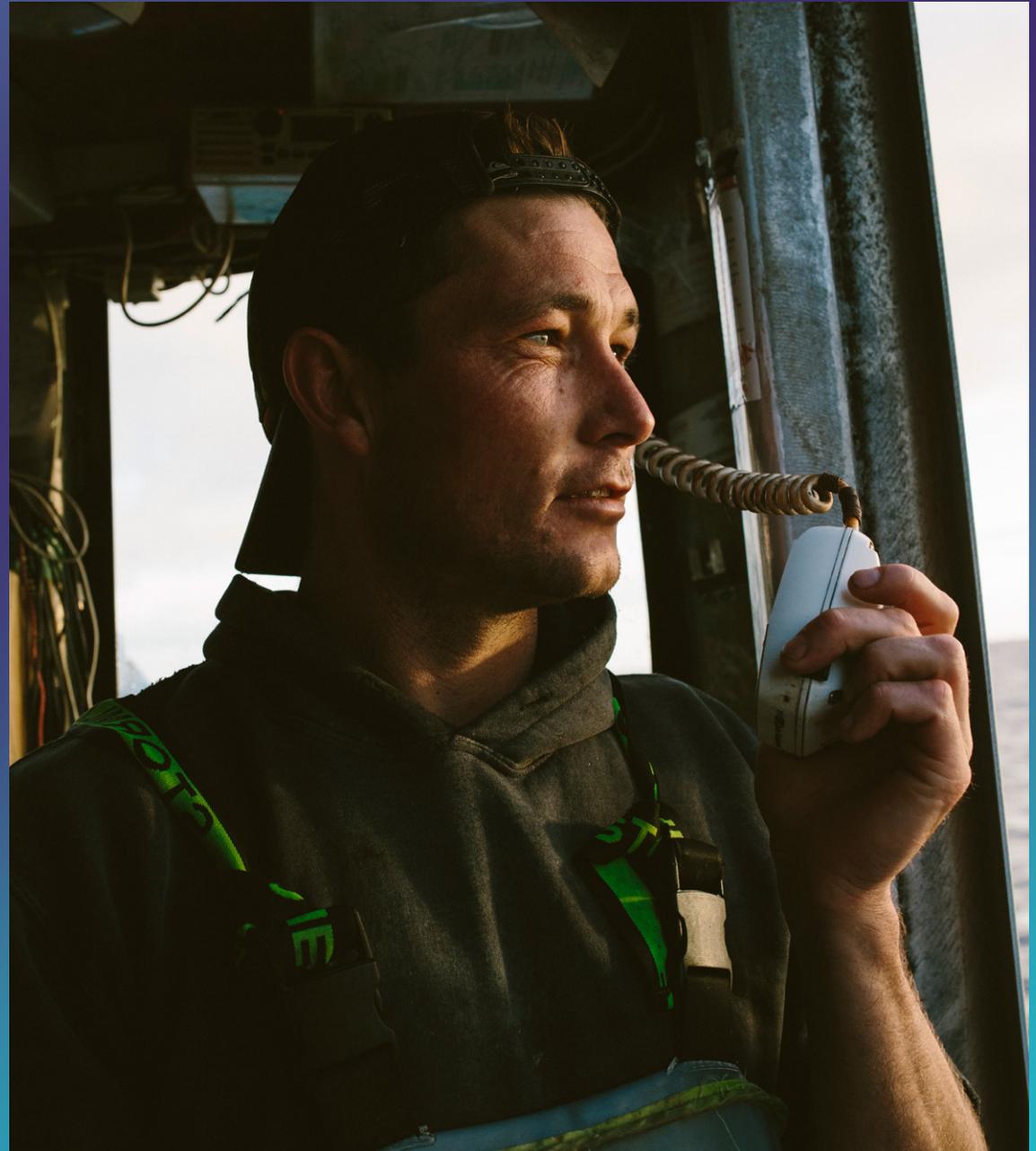


Image source: Seafood NZ

Ngā whai wāhitanga mō te takahuritanga Opportunities for transformation

Māori economic growth – Across the food and fibre sector, Māori are at the forefront of growth. Mātauranga Māori approaches to commercial fishing have a strong grounding in the wellbeing of Te Taiāo and Māori identity, and could potentially gain higher in-market premiums. Māori businesses will be among the leaders of transformation in the fishing industry.

One of the world's largest EEZs – New Zealand's Exclusive Economic Zone (EEZ) is the fourth largest in the world and is a significant strategic asset for our country. It creates both opportunities and responsibilities as we undertake activities that enhance our fisheries and environment.

Technology to improve precision fishing and environmental performance – Technological innovation can drive improved environmental outcomes by reducing interactions with protected species, undersized fish and the marine environment, while improving the quality of harvest and reducing costs for operators.

Making better use of data – Extensive data is collected on oceans and commercial fishing activity. Near real-time and better integrated data could be used to avoid protected species and unwanted fish; guide fishers to efficiently locate target species; and minimise waste. Better connecting all ocean data and making it more widely available could benefit commercial, customary and recreational fishers.

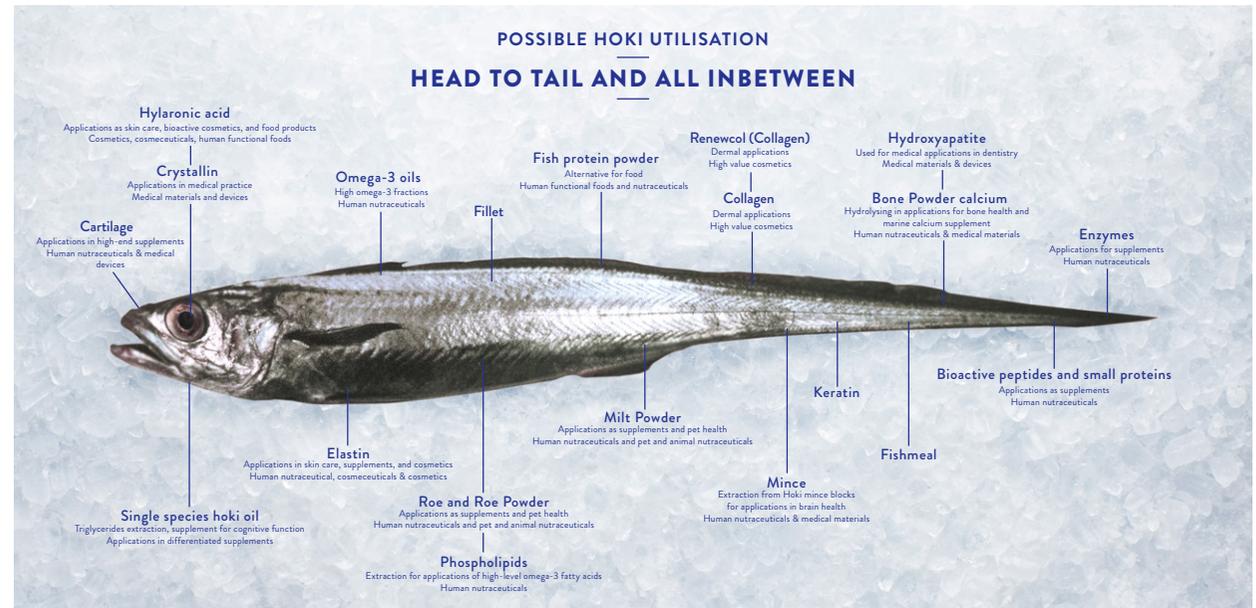


Image source: Sanford

Increased transparency – Making more information widely available about fishing practices and the movement of seafood products through the supply chain could increase the confidence of discerning international consumers in the environmental credentials and provenance of wild caught fish. It would also improve New Zealanders' understanding of what is happening in the marine environment.

The New Zealand Story (NZ Inc.) – Aotearoa New Zealand benefits from a strong environmental reputation, with high standards of food safety and a fisheries management system that is recognised as amongst the world's best. This country's seafood is a great product, the right product for consumers who demand sustainably produced food. Our seafood is harvested by passionate people, and it provides a source of healthy, low-emissions protein that is in demand at home and across the world.

Innovation in seafood and bioproducts – Seafood can be used to make a wide variety of bioproducts that have high value applications, including cosmetics and nutraceuticals. New extraction techniques and product development will allow the seafood industry to improve utilisation and maximise value without requiring more fish be caught.

Ngā kaikōkiri i te huringa Drivers of change

Consumer preferences and community confidence – Global consumer preferences and expectations about the types of seafood products and methods by which they are harvested are changing. Discerning consumers are engaged, educated, and seeking brands that verify they meet high social and environmental standards. Fish is one of the few wild food products New Zealanders regularly consume. Maintaining community confidence in fishing requires the industry to adopt and demonstrate high environmental standards.

Climate and environmental changes – Rising ocean temperatures and acidification around Aotearoa New Zealand are affecting the location and types of fish in our waters. Responses to climate change are driving a move away from fossil fuel reliance and high emissions activities.

Labour supply and demographic change – Access to workers at all skill levels is an ongoing challenge for the industry, particularly given the very tight labour market at present and the challenging nature of many roles in the sector. The existing workforce is aging, while regional populations are projected to shrink. Population growth is largely expected in major centres, away from most fishing activity.



Image source: Sealord

Fleet capacity and efficiency – The total number of vessels operating has dropped substantially in recent decades, in part due to the economics of small-scale fishing. Many inshore operators focusing on wetfish have found it difficult to invest in new vessels, so the fleet is comprised of a significant number of older vessels that are less energy efficient and do not meet modern expectations. The number of vessels operating in the inshore will likely reduce further.

Regulatory changes – With the introduction of the Fisheries Amendment Act 2022 and other regulatory changes, including the roll-out of onboard cameras, fishers need to adapt to new requirements for their fishing practices.

Cost pressures – Inflation and rising input costs are putting pressure on the industry. While many of these cost pressures are the result of global headwinds, others are specific to New Zealand regulations. The combined effect on our fishing industry has been considerable and the sector has not yet returned to its pre-COVID-19 level of exports.

Ngā rongo kōrero i tēnei wā What we've heard so far

During the development of the plan, the Leadership Group heard from a range of people, including environmental non-government organisations (NGOs) and speakers with expertise in science, innovation and commercialisation, skills and workforce, marketing, exporting, and internationalisation. The Leadership Group had a dedicated session with speakers to discuss opportunities to incorporate mātauranga Māori into the plan and advance Māori aspirations for the sector.

The Secretariat also undertook engagement with a range of groups to gather a broader set of Māori, iwi, industry, science and innovation, and worker perspectives on the opportunities for the industry and hear what people wanted to see in the plan. Leadership Group members participated in some of these engagements to hear first-hand the perspectives shared.

The key themes arising from what we've heard so far are:

Early involvement in management decisions

Some iwi raised concerns around the opportunities for early involvement in the design of management interventions. They considered that the principles of the Treaty require a collaborative approach to identifying research and data needs, the identification and design of management objectives and outcomes, as well as education and information programmes that express the Māori perspective on fisheries and management.

Protecting the value of the Māori Fisheries Settlement

Māori voices emphasised their ongoing commitment to fisheries and the importance of protecting the value of the 1992 Fisheries Deed of Settlement. The Crown has a Treaty duty to develop policies to provide protection for, and scope for the exercise of, rangatiratanga regarding traditional fisheries. Some felt that the regulatory environment has evolved in ways that undermine the Crown's obligation to provide for the development of the collective and individual interests of iwi in fisheries, fishing, and fisheries-related activities. For example, spatial restrictions on fishing reduce the areas in which fish are able to be accessed and may put more pressure on other fishing areas.

A passion for the industry and concern about negative community perceptions

People who work in the industry are passionate about the quality of Aotearoa New Zealand's seafood and care for the ocean. Many have a whānau history of working in the industry and want it to provide for future generations. People are concerned about the lack of community confidence in the industry, with several commenting that the fish stocks are as healthy as they have ever seen them. Many in the industry are looking for support from government to tell the story of the changes made in the industry and to be recognised as producing quality, healthy food and contributing positively to Aotearoa New Zealand. Many also recognise that premium global consumers are influenced by their perceptions and there is an opportunity to differentiate Aotearoa New Zealand from countries with poor fishing practices.

Protecting marine biodiversity

Many people highlighted the importance of protecting and caring for the ocean. Environmental groups shared their vision for a minimal impact, clean and targeted approach to commercial fishing that extracts a small, high value amount from the ocean and allows restoration of the marine environment. The importance of data and information to monitor the status of the ecosystem was also highlighted.

Collecting and using data

Many in the sector talked about the amount of data that is collected and science that is undertaken to support fisheries management decisions. Some queried whether there will be potential costs savings available from using electronic reporting data and the data that will be available from on-board cameras. Some Māori communities indicated a desire for more opportunities to partner with government to design and collect marine data in their areas that would help them to better care for their local environments and plan for sustainable utilisation.

Te Taiao health and community wellbeing

Some Māori communities also noted the strong links between the health of the ecosystem / fish abundance and community wellbeing. Some iwi noted that the lack of abundance and availability of fish in the community was breaking down the cultural practice of manākitanga and the ability of hau kaingā to demonstrate their mana by providing for manuhiri.

Whānau and iwi both expressed a desire to mitigate impacts on the environment and improve the availability of kaimoana by moving to uses that maximise the value extracted from marine resources. As kaitiaki, a fish in the sea also has value. This ran alongside a view that better education and information should be made available to fishers.

Lack of local infrastructure

In parts of rural Aotearoa New Zealand, particularly where there is a concentration of tangata whenua, but populations are small, there is a lack of investment in local infrastructure, or aging infrastructure. For example, there is insufficient power infrastructure available north of Tokomaru Bay for industrial use. This impacts auxiliary industry such as setting up fish factories to employ locals and ensure supply chain continuity for iwi Māori fisheries.

Lots of change, particularly for fishers

Fishers, particularly those who rely on accessing ACE (ACE fishers), are facing several challenges, including regulatory changes, reductions in access to fishing grounds, and cost increases including fuel and labour. The increase in costs is impacting on the financial viability of businesses at a time when they also need to transition to new rules.

A number of people expressed views that ACE fishers have relatively less economic power than quota owners with implications for returns and risk. Others had a different view and highlighted the reliance of quota owners on their ACE fishers and initiatives that quota owners have undertaken to support ACE fishers. There was also a view that the relationship between quota owners and ACE fishers is dynamic and will continue to evolve in the future. For example, if the number of ACE fishers declines, they may be able to charge higher prices/pay less for access to ACE.

A need to attract people to the industry and create a skills pipeline

The industry needs a wide range of skilled people, including those with on-water, processing, marketing, and entrepreneurial skills, to develop new products. Labour and skill shortages are prevalent in the industry, and people shared stories about the challenges of attracting New Zealanders, particularly for at-sea roles. It was acknowledged that life at sea is not for everyone, but can provide rewarding careers across a wide variety of roles. Māori voices highlighted that rangatahi had become disconnected from the moana and there was a desire to educate them on its importance. They also highlighted the need to provide pathways for rangatahi into all levels of the industry, including vessel ownership.

Opportunities for collaboration

Many in the sector identified that there were opportunities for the industry to collaborate amongst itself and with government to gain greater value from the fish caught. People recognised that we are a small part of the global seafood market and collaborative promotion efforts to international consumers will benefit all. Collaborative efforts to solve common problems, such as reducing the environmental impact of packaging, could also be beneficial for all.

Impact of land use change on the marine environment

People shared stories of the land use changes they have seen and the impact this has had on inshore fisheries. They reported areas that had been rich with marine life that were now covered in sediment with limited marine life. People also shared stories of how debris washed into the ocean had impacted on fishing grounds.

Lack of information on recreational fishing

People expressed concern at the lower level of data on how many fish are taken and the pressure on fish stocks from recreational fishing. Many were keen to see more comprehensive data collected on the recreational catch so it can be used as an input into fisheries management decisions.

We are keen to hear your views during public consultation.



Follow this QR code to complete our short online survey now.



Image source: Sealord

**E ahu pēhea
ana tātau**
**Where we
are heading**



Te anamata o te ahumahi hao ika The future of the fishing industry

In 10 years' time, our aspiration is that:

- Aotearoa New Zealand is recognised and trusted internationally as a global leader in sustainable fisheries management and innovation.
- Aotearoa New Zealand is recognised as the world leading sustainable producer of seafood and our product is sought after by international consumers who willingly pay high prices.
- New Zealanders are proud of their fishing industry and regularly eat local wild caught seafood, improving their food security.
- Māori achieve their aspirations in commercial fishing and the fishing industry draws on, and is informed by, mātauranga Māori.
- Industry, Māori, environmental groups, recreational fishers and government work collaboratively to enhance the marine environment and support a productive and profitable industry.
- Integrated data is accessible, guides fishing effort and shows what is happening in our marine environment.
- The fishing gear and methods used across the industry are selective (primarily those fish that the fisher is targeting are caught), there are very few interactions with protected species, and there is less impact on the seafloor.
- The fishing fleet is refreshed as older vessels stop operating and the sector invests in modern vessels.
- The industry reduces carbon emissions across the value chain through its catching, processing, packaging, and transport choices.
- There is minimal biological and non-biological waste across the value chain.
- The industry has confidence and is motivated to invest in innovation, vessels, automated processing, and developing new products.
- The industry is exporting valuable bioproducts from species that are currently high-volume, low-value per kilogram to international markets.
- Rangatahi are attracted to working in the industry.
- Skill levels across the industry have risen, and people are well paid and experience positive wellbeing.
- People who work in the sector share in the risks and rewards, are supported through industry changes, and can access wellbeing support.

This plan is focused on key actions that can be progressed now and over the next three years towards our vision:

Aotearoa New Zealand is acknowledged globally as the world leader in the innovative and sustainable production of premium seafood and bioproducts.

Future plans can build on this foundation and take further actions towards the industry we want to see in 10 years.

Te ine i te angitu Measuring success

The actions in this plan are mutually reinforcing and work together. Implementation of the actions will lead to:



Strengthened environmental performance



Improved profitability and productivity



Supported people and communities

The success of this plan will be shown in 10 years through:

Reduced environmental impacts



Increased use of the best commonly available fishing technology by commercial fishers



Reduced emissions across the industry value chain



Reduced median age of vessels



Increased export earnings from wild catch



Increased average dollar per kilogram of exports



Increased volume and value of seafood bioproduct exports



Increased domestic consumption of fish



Increased community and consumer confidence in the industry



Data is not currently available for some of the impacts we want to measure. Where data is not available, over the next three years as part of the implementation plan, we will investigate data sources to establish a baseline and measure progress.

Reduced environmental impact

Improving environmental performance of commercial fishing is a key pillar of this plan. Primary measures of environmental performance are being developed and reported on through other existing processes, including for the National Plan of Action Seabirds, Threat Management Plans, and the Aquatic Environment and Biodiversity Annual Report.

Increased use of the best commonly available fishing technology

One way to reduce the environmental impact of fishing is to rapidly adopt technology that minimises environmental impact. Success will be measured by an increase in the use of the best commonly available fishing technology by commercial fishers. More selective and lighter gear will also enhance profitability through higher value catch and lower fuel costs.

Reduced emissions across the industry value chain

Tracking emissions across the industry value chain will measure progress on sector decarbonisation. Initial steps will include developing benchmarking and standardised tools for businesses to measure and reduce their carbon footprint and methods for calculating the aggregated emissions of the sector.

WILD CAPTURE EXPORT PRICE, VOLUME AND VALUE 2018–26

Year to 30 June 2022

Product	ACTUAL					FORECAST			
	2018	2019	2020	2021	2022	2023	2024	2025	2026
Export volume (tonnes)	239,512	238,864	232,267	207,084	221,200	217,700	214,100	212,000	211,200
Average export price (NZ\$/kg)	5.73	6.32	6.01	6.51	6.55	6.65	6.80	6.95	7.05
Export value (NZ\$ million)	1,372	1,509	1,397	1,348	1,448	1,450	1,460	1,470	1,490

Source: Ministry for Primary Industries, Situation and Outlook for Primary Industries June 2022 and December 2022.

Reduced median age of vessels

Reducing the median age of fishing vessels (currently 44 years) will support lower emissions, less impactful fishing methods and better living quarters for crews, as older vessels are retired and replaced by modern vessels. Investment in new vessels is also an indicator of profit and investment conditions in the industry.

Increased export earnings from wild catch and increased average dollar per kilogram of exports

Increasing revenue from the wild catch harvest can increase the value created for New Zealanders. The total allowable commercial catch is unlikely to increase overall. Increasing the value of exports will require an increase in per-unit price either through a price premium for sustainable Aotearoa New Zealand seafood (measured through the increase in the average dollar per kilogram of exports) or through selling higher value products. Another measure of increased value could be an increase in market share in high value markets, however some premium products such as rock lobster and scampi would require additional product to increase market share which is unlikely.

Increased volume and value of seafood bioproduct exports

Improved data will be needed to monitor the volume and value of seafood bioproducts and their contribution to the industry's export earnings.

Increased domestic consumption of fish

Seafood is a nutritious food to be enjoyed by New Zealanders. Some consume fish they have caught, while most are reliant on the commercial sector to access seafood. The data on domestic consumption is not as comprehensive as that on seafood exports and will require development to measure domestic consumption.

Increased community confidence in the industry

The industry has been negatively perceived by some in the community which has impacted on the willingness of people to work in the seafood sector and purchase seafood. Negative perceptions of the industry have also impacted on the wellbeing of those who work in the sector.

Improved confidence in the industry could be measured in different ways such as measuring the proportion of: New Zealanders who eat fish regularly; those who believe the fishing industry cares for the marine environment; or those who view the seafood industry as providing well-paid and interesting careers.

In the first three years a baseline measure will be established to understand community confidence. Improving environmental performance, and showing the improvement through transparency and traceability, could be expected to have a positive benefit on community perceptions of the industry.

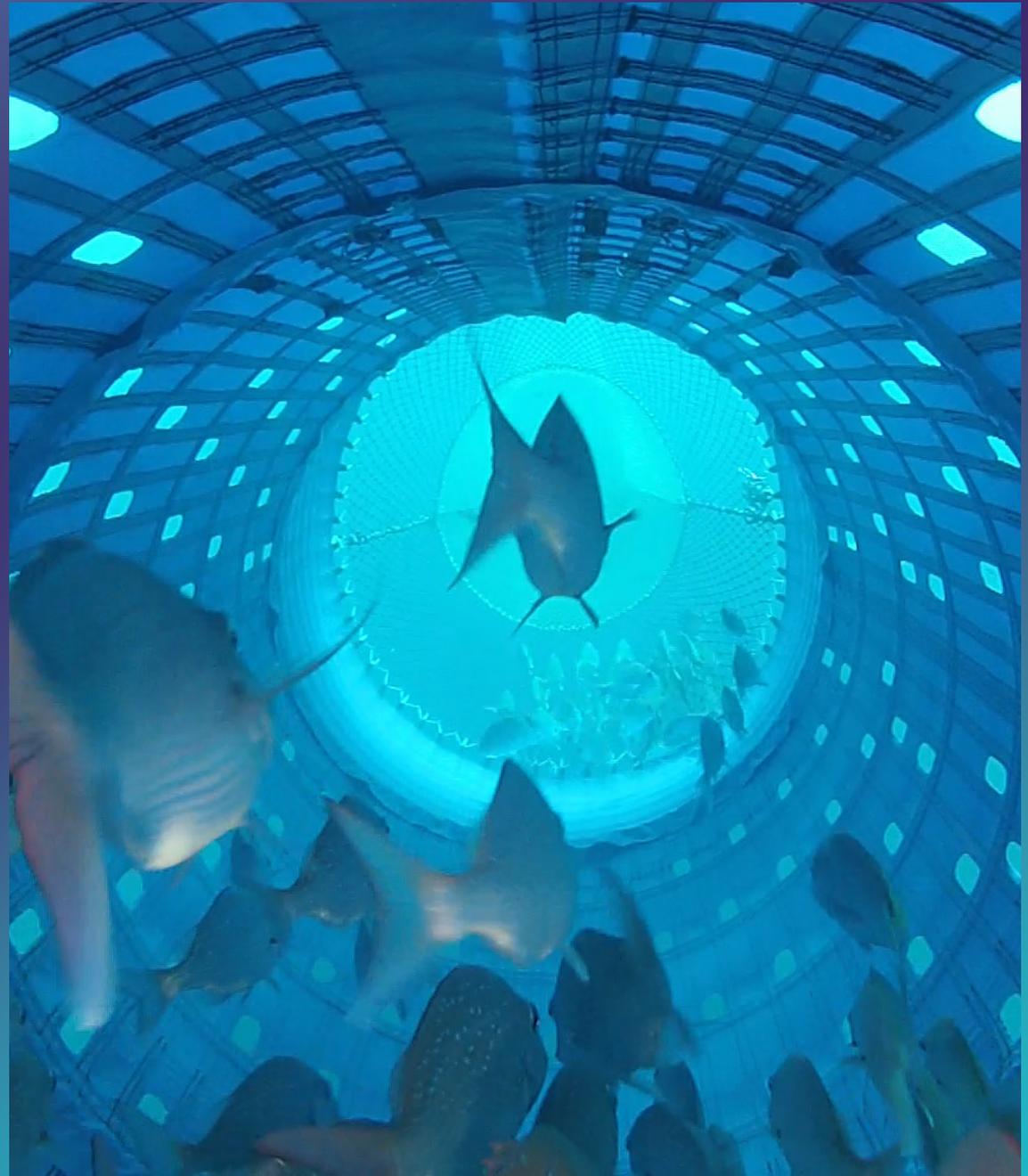


Mahere Mahi mō te Takahuritanga

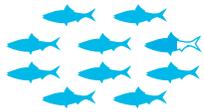
Action Plan for Transformation

This plan is based around three priority areas to support the transformation of the fishing industry:

- Strengthening environmental performance
- Improving profitability and productivity
- Supporting people and communities



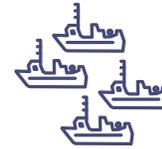
He tirohanga ki te mahinga taiao Environmental performance at a glance



96% of landings from known stocks in 2022 were from stocks with no sustainability concerns **70%** of those are from stocks above their management target⁹



68% of all catch was taken by trawl on / near the bottom in the 2021/22 fishing year¹⁰



Around 150 vessels used bottom trawl as a fishing method in 2022



11% of the area within New Zealand's waters and around **33%** of fishable area has been contacted by trawl gear since 1990 and around **2%** is contacted each year¹¹



Around 30% of New Zealand's EEZ (14% of fishable area) and **21%** of the Territorial Sea are closed to bottom trawl and dredging



341,500 tonnes of fish reported caught in 2022 calendar year



The fishing fleet is responsible for **almost 4% of New Zealand's** transport emissions



Preliminary studies indicate that the **carbon footprint of New Zealand's deepwater fisheries** is significantly lower than many other sources of protein¹²

! Find out more

- Further information on the status of New Zealand fishstocks can be found here: mpi.govt.nz/fishing-aquaculture/fisheries-management/fish-stock-status
- Information on the environmental impacts of fisheries on protected species, including National Plans of Action, Threat Management Plans, and reported captures of protected species can be found here: mpi.govt.nz/fishing-aquaculture/sustainable-fisheries/managing-the-impact-of-fishing-on-protected-species
- Further information on bottom trawling in New Zealand can be found here: mpi.govt.nz/fishing-aquaculture/sustainable-fisheries/strengthening-fisheries-management/bottom-trawling/
- Information on the transport emissions of the maritime sector can be found at: eeca.govt.nz/about/news-and-corporate/news/government-funding-for-reducing-emissions-from-the-maritime-sector-announced

⁹ Consistent with international best practice, stocks are considered to have no sustainability concerns when they are above the 'soft limit' - a biomass level below which a stock is deemed to be overfished or depleted.

¹⁰ All catch taken by trawl reported to be within 1m of the sea floor.

¹¹ Fishable area refers to waters shallower than 1600 meters.

¹² Carbon footprint of fish from the Aotearoa New Zealand deepwater fishing fleet and from other New Zealand products, AgResearch.

Hector's & Maui dolphin



- About **15,000 Hector's dolphins** older than 1 year in New Zealand
- Estimated **23 commercial fishing-related deaths** of Hector's dolphin per year – average of **~2 reported per year** over last five years
- Estimated to be about **54 Māui dolphins** older than 1 year in New Zealand¹³

Extensive new measures were introduced in 2020 and 2022 through the Hector's and Māui dolphin Threat Management Plan to better protect the dolphins, resulting in:

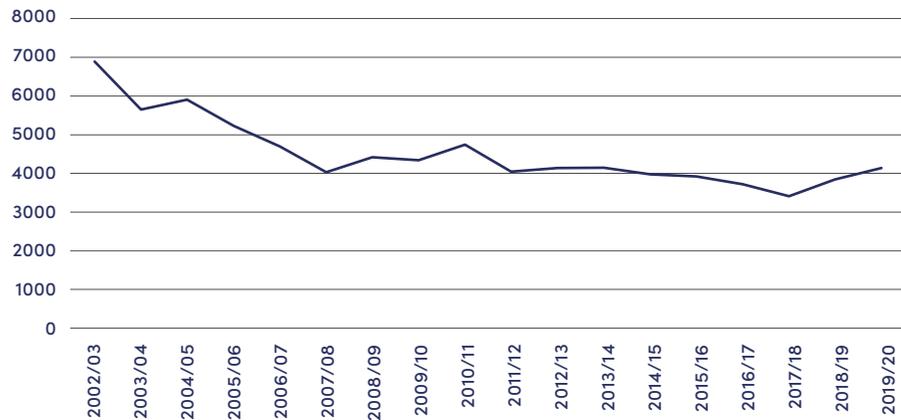
- **12,825 square kilometres** of trawl closures and restrictions
- **32,675 square kilometres** closed to set netting
- regional **Fishing Related Mortality Limits** in place

Seabirds

Estimated **seabird captures have declined from 2002/03** and averaged **3780 per year over** the last five years

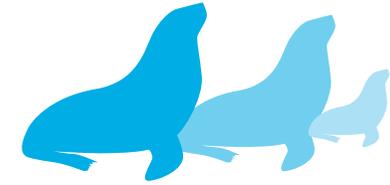


Estimated seabird captures

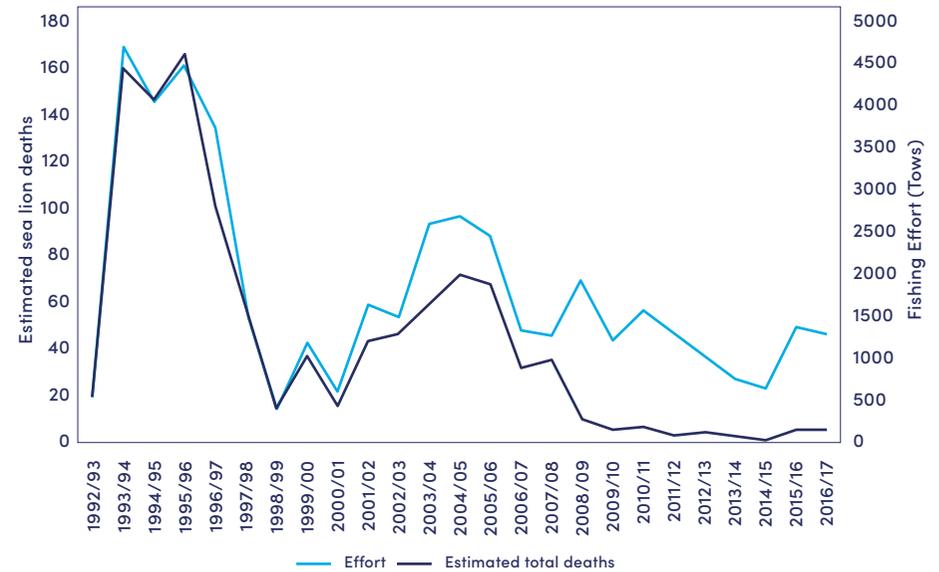


New Zealand sea lion

In **2015**, the **New Zealand sea lion** population was estimated to be around **12,000 individuals**.



Estimated sea lion deaths 1992 -2017



Estimated fishing-related **sea lion deaths** per year in the Auckland Islands squid fishery **declined from around 160** annually in the 1990s to fewer than **10 per year over the last decade** due to the use of **Sea Lion Exclusion Devices** and reductions in fishing effort in the area.

¹³ Source: www.doc.govt.nz/nature/native-animals/marine-mammals/dolphins/maui-dolphin/facts/



Ngā mahi hei whakakaha i te mahinga taiao

Actions to strengthen environmental performance

The future of the commercial fishing sector depends on a healthy marine ecosystem. Fishing selectively, minimising the impacts of fishing gear, and minimising protected species interactions reduces the impact of commercial fishing on the ocean ecosystem.

Future technology and innovation developments, for example, artificial upwelling, may enhance the ecosystem. Being aware of these developments and applying them where feasible in Aotearoa New Zealand could strengthen environmental performance. Available technology and near future developments in artificial intelligence (AI), and imaging and digital capabilities will enable a step change in the information we use to fish and care for the oceans.

Improving environmental performance underpins our ongoing ability to harvest fish and have a profitable commercial fishing industry. The importance of the ocean to New Zealanders requires the commercial fishing industry to minimise its impact on this shared resource.

Kia manaaki, kia tino tika te hao ika hei hāpai i ngā pūnaha rauropi ora

Fishing with care and precision to support healthy ocean ecosystems

1.1 Invest in innovation to accelerate selective fishing and further reduce benthic impacts and protected species interactions.

The current state

Gear innovation has significant potential to lessen the environmental impact of fishing by reducing bycatch (juvenile fish, non-commercial fish species and protected species), accelerating selective fishing and further reducing benthic impacts.

Past examples of successful funding initiatives for gear innovation include the large-scale investment by fishing companies and government in Precision Seafood Harvesting, as well as the gear innovation pathway developed by Fisheries Inshore New Zealand through a project with Seafood Innovations Limited.

There are, however, still barriers to gear innovation as highlighted in the *Future of Commercial Fishing in Aotearoa New Zealand* report including:

- regulatory approval of new fishing technologies;
- the cost and access to facilities to trial gear; and
- particular challenges for smaller fishers to get their ideas off the ground.

The action we will take

The industry and government will establish and resource an innovation programme to accelerate research into reducing bottom trawl impacts and protected species interactions.

In three years

As a result of this action, in three years:

- An innovation programme with agreed priorities and support to access funding (e.g. through the Sustainable Food and Fibre Futures Fund) will be established. The programme will be focusing industry and government efforts; strengthening relationships with researchers and science organisations; and providing pathways and support for smaller fishers.
- There will be an acceleration in developing and implementing gear innovations. These will range from incremental changes to traditional ways of fishing using nets, lines, hooks and traps to developing completely new ways of fishing.
- The innovation programme will be informed by mātauranga Māori and western science.

NGĀ MĀTAI TAKE / CASE STUDY

Lightening the harvest footprint

Moana is actively seeking to lighten the footprint of its inshore finfish harvest. Moana has engaged international fishing technologist, Dr Steve Eayers, along with Terra Moana, to interview all full-time contract trawl fishers and some longliners and Danish Seine fishers. This engagement is to understand the gear they are using, any changes they have made to improve performance and reduce environmental impact, the benefits they are seeing and their aspirations for future improvements.

Some of the key findings were:

- all participants have made modifications to their gear to lessen their impact on the seafloor and/or reduce bycatch;
- many participants have modified their headline gear to increase selectivity and their mesh size to reduce small fish bycatch; and
- all have ideas on how they can be even better, but need support to bring their ideas to fruition.

Moana has also invested in a mapping tool and worked with their contract fishers to understand exactly where they are fishing. Where possible, they have overlaid habitats of significance data against fishing behaviour to show how these areas are being avoided. Through this process Moana has been able to verify that its bottom contact inside 12 nautical miles is 3.5 percent and 0.5 percent within the EEZ.

1.1.1 Establish a joint industry / government project to source and develop technology that minimises adverse impact on the sea floor to the maximum extent practicable.

The current state

Trawling is an efficient way to catch fish. Many of Aotearoa New Zealand's popular fish like snapper, squid and orange roughy live on or near the seafloor and are commonly caught by trawl fishing.

Bottom trawling, defined as fishing using bottom trawl gear and fishing with mid-water trawl gear that operates within 1 metre of the seafloor, accounts for 68 percent of all fish caught commercially in this country.

The design and weight of trawling gear, towing speeds, tides and currents, and seabed characteristics influence the impact of trawling on the seafloor, which is an important habitat for many marine species.

A multi-stakeholder forum recently considered further measures to reduce the impacts of bottom trawling. Fisheries New Zealand and the Department of Conservation are now considering the recommendations of the forum and will be advising Ministers on options for public consultation.

The action we will take

Industry and government will establish a priority project to drive development of new fishing gear and methods to reduce adverse impacts on the ocean floor to the maximum extent practicable.

In the first year, a survey will be completed on available fishing technology that minimises adverse impact on the ocean floor.

In three years

As a result of this action, in three years projects underway will be accelerated and new approaches to minimise impact will be being tested, trialled, and piloted.

In addition, in three years, recommendations and outcomes from the stakeholder forum on managing the effects of trawling in the EEZ will be being implemented.

NGĀ MĀTAI TAKE / CASE STUDY

Sustainable Food and Fibre Futures: funding problem-solving and innovation

The Sustainable Food and Fibre Futures (SFFF) Fund has \$40 million available each year to spend on a co-investment basis. SFFF is focused on supporting projects that are innovative and go beyond business as usual.

Seafood projects funded to date include:

- **Unrealised Potential:** Builds on the Precision Seafood Harvesting Primary Growth Partnership programme and aims to complete research on species survivability, selectivity and quality using this type of technology and to ultimately commercialise it.
- **Pelagics 2023:** Aims to both advance industry practice and determine the sustainability of pelagic fisheries by developing new management tools and data capture technologies.
- **Ngā Huru huri Waitai ō Tangaroa:** Improved the sharing of information and insights into how to sustainably use marine resources while protecting tikanga Māori and taonga kai in the Māhia, Hawke's Bay and Wairarapa regions.

Find out more information and see whether your project could be eligible here: www.mpi.govt.nz/funding-rural-support/sustainable-food-fibre-futures/.

1.1.2 Review regulatory settings and operations to identify and mitigate regulatory barriers to fishing innovation.

Current state

While there is a need for safeguards to ensure new technologies and methods are fit for purpose and do not have unintended impacts, current regulations including the Fisheries (Commercial Fishing) Regulations 2017 constitute a hurdle to the approval of new fishing technologies.

Real-time monitoring of trawl nets underwater, for example, could be improved by using technology that incorporates a data transmission cable, the use of which is currently prohibited by regulations.

The use of data transmission cables was prohibited in 1992 due to the risks to seabirds from the cable. Seabird mitigation has improved significantly since 1992, although some risk remains. The regulation prohibiting cable use is under review.

The regulations specify some fishing methods that can be used commercially and others that are prohibited. Some prohibited methods limit the commercial use of selective fishing methods such as spear fishing.

In the past, operational practices were an additional hurdle when seeking approval of new fishing technologies, as experienced during the first Precision Seafood Harvesting trawl net approval process. Lessons have been learnt from this experience and operational practice has improved and continues to do so.

A risk-based approach is taken to fishing gear approvals. The granular reporting available through the electronic reporting regime enables any unanticipated negative impacts from a gear approval to be quickly identified and addressed through changes to the approval. The availability of this information and the ability to monitor enables a greater tolerance for risk in gear approvals.

Information already held is also used to inform new gear approvals. For example, the requirement for additional trials can be waived, where there is sufficient information to make decisions on the likely impact of new gear. This makes the process for seeking approvals to use gear in different areas, or on different species, more streamlined and less costly.

The action we will take

Government will review fishing gear regulatory settings and operational practices to identify and mitigate barriers to fishing gear innovation.

In three years

As a result of this action, in three years:

- New gear regulations will have been developed and approved and will be updated when required.
- Regulatory settings will be perceived as providing appropriate protections rather than being a barrier to innovation and gear innovations will be being approved more efficiently.

1.2 Incentivise and facilitate fast adoption of proven efficient and environmentally sustainable fishing gear and methods by fishers.

The current state

Fishers face a number of barriers to adopting newly proven fishing gear and methods including knowledge and awareness of new approaches; concerns about the impact of a new approach on catch volume and income; capital costs of new gear; and, depending on the vessel set up, the costs and practicality of retrofitting a vessel to accommodate new gear and fishing methods. These barriers lead to some fishers using out-of-date gear and fishing methods with a larger environmental impact than the most up-to-date gear.

The action we will take

Industry will establish a co-ordinated and collaborative approach to support and encourage fishers to adopt up-to-date fishing gear and methods. This approach could be part of a navigator / advisory service for fishers, potentially drawing on existing industry relationships and resources, expanded to provide advice on up-to-date fishing gear, measuring and reducing carbon footprint (action 1.5) and fishing selectively with fuel efficient vessels (action 3.1).

In three years

As a result of this action, in three years almost all fishers will be supported and encouraged to use the most up-to-date fishing gear and methods to reduce the environmental impact of the industry.

1.3 Investigate opportunities to apply new methods of habitat restoration and enhancement in New Zealand, for example: sea ranching, artificial upwelling, seagrass and kelp restoration.

The current state

Technologies are being developed in Aotearoa New Zealand and internationally that could be applied in this country for habitat restoration and enhancement. There may be opportunities for sea ranching / restocking of species (rearing juveniles in a controlled environment before releasing them into the sea) to replenish stocks as part of ecosystem restoration and enhancement. Sea grass and kelp bed restoration and artificial upwelling in deep water could also contribute to restoring and enhancing ecosystems.

Some studies are already underway such as:

- Quantifying Blue Carbon: kelp contribution to carbon sequestration in marine sediments project by Blue Carbon Services funded through a successful 2021 Smart Ideas (Endeavour) bid.
- Building a seaweed sector project as part of the Sustainable Seas National Science Challenge – The Seaweed Sector Framework. Developed as part of this project, is a roadmap for development of a seaweed sector that provides meaningful environmental, social, and cultural benefits as well as economic benefits to local communities and nationally.

The action we will take

Government and industry will undertake feasibility studies to determine opportunities to apply new methods of habitat restoration and ocean enhancement.

In three years

As a result of this action, in three years:

- At least 3-4 feasibility studies will be complete.
- Pilots will be underway for methods identified as promising in completed feasibility studies.
- Around the country, commercial and recreational fishers, Māori, and environmental groups will be working more closely together to support habitat restorations that enhance fish stocks and restore the marine ecosystem.

Te whakamahi i ngā raraunga kia whāiti te hao, ā, kia iti te mahi

Utilising data to fish selectively and with least effort

1.4 Advance the use of marine and fisheries data and analytical and spatial models to support fishers to avoid unwanted catch (including protected species) and maximise target catch with the least effort:

1.4.1 address barriers to the regular and timely release and sharing of data collected from fishers, including reviewing the Guidelines for Fisheries Data Release;

1.4.2 build technology and products that leverage data to support fishers; and

1.4.3 use data to support timely decision making by fishers and fisheries managers to manage local distribution, seasonal variation, and effects on the aquatic environment.

The current state

Substantial data is reported by fishers or collected in near real-time. The accuracy of this data will increase as on-board cameras are rolled out in the inshore fleet and oceans datasets are integrated. A significant amount of this data is considered commercially sensitive and is only accessible in-house by Fisheries New Zealand or by small groups of fishers or their representatives by agreement. Some data is made publicly available with significant aggregation or the specific agreement of the relevant permit holder(s).

There are some examples of fishers sharing data to inform fleet-wide notification of particular events (for example, captures of basking sharks). Fisheries New Zealand has internal processes using data analytics to provide alerts about protected species capture events.

The action we will take

To harness the power of available data and advances in analytics, government and industry will identify shared priority use cases to focus initial data sharing and development of analytical tools.

Industry will develop and adopt data tools for efficient and selective fishing.

Government will review the Guidelines for the Release of Fisheries Information and the classification of fisheries data in relation to the Public Records Act 2005, the Official Information Act 1982, and the Privacy Act 2020. The review will aim to allow significantly more data to be regularly available without compromising privacy or commercial sensitivity.

NGĀ MĀTAI TAKE / CASE STUDY

Creating a dashboard for the hoki fishery

Aotearoa New Zealand's hoki fishery generates over \$165 million in export revenue.

Small hoki (one to three years old) are primarily found in the Chatham Rise area. Fishing in the area comprises around 35 percent of the total hoki catch. Fishers generally aim to minimise their catch of small hoki, and there have been a range of non-regulatory management measures in place. These include areas closed to targeting of hoki and agreements to move to a new fishing area if more than a certain proportion of the catch in a tow is smaller than a particular size.

A dashboard pulling together information on the catch quantity and rate (using electronic reporting data), the size of fish (based on company packing data), area fished, sea temperature (based on vessel data) and other oceanographic data, would allow fishers to better target their fishing activity and avoid small fish. It would also help manage the intensity of fishing spatially in near real-time (that is, avoid fishing in an area that was heavily fished on previous days).

NGĀ MĀTAI TAKE / CASE STUDY

Right Time, Right Place proposal

Dragonfly Data Science is working with industry to propose the Right Time, Right Place project. The vision is to optimise operational fisheries management through a dynamic data driven platform: maximising benefits and minimising impacts in Aotearoa New Zealand's changing environment. This approach directly aligns with the vision of the Oceans and Fisheries Portfolio 'Ensuring the long-term health and resilience of ocean and coastal ecosystems.'

Dragonfly is developing an industry-led process to bring together company- and vessel-specific electronic reporting, geospatial position reporting data and ocean and fisheries modelling, to inform at-sea decision making. The project will use the Kahawai Collective framework to guarantee fully reproducible and transparent analyses for fisheries science.

Project outputs are intended to be made available through dashboards or other features, (that is, interactive maps to support optimised fishing to maximise benefits and minimise effects).

The Right Time, Right Place proposal is developing a data governance and data release framework alongside industry representatives, companies or fishers to access their data. It also uses existing infrastructure and established relationships to access data streams as they become available rather than through periodic updates.

Source: Dragonfly Data Science.

In three years

As a result of this action, in three years:

- Fisheries data will be available to the greatest extent possible and a step change will be evident in fishing activity and regulatory practice.
- The availability of fisheries data will be improving the, traceability and transparency of Aotearoa New Zealand seafood, supporting brand integrity.
- New analytical tools will be being developed with integrated marine and fisheries data sets.

- Fishers will be fast adopters of new analytical tools, using them to make informed decisions at sea regarding risk of protected species interactions, the potential catch of unwanted fish species, and aggregations of target species.
- Collective decisions on management measures at relatively small spatial or temporal levels will be being made quickly based on fisher-reported information. For example, catch per unit effort may be monitored across a fleet to enable quota owners to voluntarily avoid certain areas with low catch rates to avoid exacerbating potential localised depletion.



NGĀ MĀTAI TAKE / CASE STUDY

Using data to improve trawl efficiency and selectivity

New Zealand developments - Advanced Conservation Solutions (ACS): using artificial intelligence to fish more efficiently and sustainably



Nelson company Advanced Conservation Solutions (ACS) has created 'DeepSet', a camera with machine learning algorithms to identify in real time fish species entering a trawl net. The DeepSet system has been in development for three years with support from Callaghan Innovation. ACS' DeepSet is currently operating as a prototype in Aotearoa New Zealand waters.

The ACS camera is attached to a trawl net. As a fish or mammal enters the camera's field of view, recognition software detects and identifies the species and transmits summarised information to the trawling vessel in real time. The data is interpreted into a visual format and plotted on a screen.

DeepSet gives fishers the technology to respond to increased fisheries regulation. ACS facilitates real time notification of the presence of non-fish protected species, assists in the reduction of non-quota bycatch, helps reduce trawl time and fuel costs, and aids the marine environment by reducing contact time with the sea floor.

ACS envisages that better quantitative data on the whole-environment effects of current fishing management practices may enable more insightful quota and catch management. Better data should improve stock management and ultimately derive a more profitable and sustainable fishing industry.

ACS technology can be developed to identify any flora or fauna or seabed type, and instantaneously communicate the analysed data, anywhere in the world. Limitations in detection and identification are restricted to sensor effectiveness in a given environment and constraints in subsea communication. The tech could be configured to report anomalies in identification such as new or unfamiliar species, or configured to monitor changes to populations of fish, non-fish or plant species. It can also record any short- or long-cycle impact of climate change or marine or human activity on an environment.

The trials have been encouraging. The next steps are to demonstrate the system on different commercial fishing vessels, and gather more results to secure investor funding and attract commercial development and global distribution partners.

International developments – Deep Vision

Deep Vision, developed by a Norwegian company, is an advanced subsea vision system that identifies and measures fish underwater in real-time. During a haul, fish and organisms passing through the trawl are photographed by the stereo camera. Using Deep Vision software, species are registered, lengths are measured automatically, and the images are logged with depth and time information.

A research version of Deep Vision is currently available to purchase. A pilot is being installed on commercial fishing vessels in 2023 and the company is advertising that a commercial trawl version will be available to purchase in 2024.

To enhance trawl control, Deep Vision can be integrated with echo sound data and data from SYM 7 Autotrawl symmetry control. The combined systems will provide skippers with real-time and historical information about the catch and trawl. Once the haul is over the skipper will be able to analyse the logs from the combined systems to determine when and where the best catch occurred, how the trawl was positioned and behaved, the vessel speed and trawl movements, as well as the catch rates and species. This information will enable the skipper to reduce bycatch and fuel consumption.

Source: www.deepvision.no/

Te whakaheke i te pānga waro me te whakapai ake i te tū pakari mō te huringa āhuarangi

Reducing carbon footprint and improving resilience to climate change

1.5 Invest in a sector decarbonisation programme to connect New Zealand seafood businesses with world-class innovation and best practice guidance including developing an industry benchmarking and standardised measurement tool to support businesses to measure and reduce their carbon footprint.

The current state

There is growing awareness and focus on reducing the industry's carbon footprint along the value chain through to the end consumer. Some large companies are publicly reporting on their efforts to measure and reduce their carbon footprint, but there is currently no benchmarking or standardised measurement tool for the fishing industry.

With the Government Investment in Decarbonising Industry fund, there is significant support available to operators looking to find lower emissions alternatives for processing seafood on-shore. The Forestry and Wood Processing Industry Transformation Plan also identifies the potential for producing biofuels from forestry to reduce emissions.

Fishing vessels contribute almost 4 percent of Aotearoa New Zealand's total transport emissions with fuel use in the total maritime sector (including coastal shipping, commercial fishing vessels, ferries, and recreational vehicles) responsible for nearly 10 percent.

The emissions reduction potential varies according to available technology. Options for commercial fishing vessels include propeller optimisation and hull coatings to improve energy efficiency. Alternative fuels, particularly for deepwater vessels, are not yet available.

In 2022, New Zealand signed up to Annex VI of the International Convention for the Prevention of Pollution from Ships (MARPOL Annex VI). This international agreement includes requirements about ship energy efficiency and air emissions from ships, some of which apply to fishing vessels.

Maritime decarbonisation under the first Emissions Reduction Plan

The Emissions Reduction Plan includes a specific action to decarbonise maritime transport. Fishing vessels contribute over one-third of the commercial maritime emissions. The seafood sector is also dependent on international shipping to export products that are not airfreighted to international markets.

Key initiatives related to the decarbonisation of maritime transport are to:

- Develop a national action plan to reduce commercial and recreational maritime emissions.
- Set new targets for maritime emissions, including:
 - supporting the uptake of zero-emissions small passenger, coastal fishing, and recreational vessels; and
 - all new large passenger, cargo, and offshore fishing vessels to meet highest carbon-intensity reduction, as set by the International Maritime Organization, by 2035.

- Undertake research to advance the development and uptake of alternative low- and zero-carbon fuels for shipping in Aotearoa New Zealand and developing safety and environmental standards for their use.
- Work with other like-minded countries to put in place the conditions to allow low- or zero-carbon shipping on key trade routes by 2035.

The action we will take

Government and industry will develop an emissions benchmarking and measurement tool for fishing industry businesses and will also establish the carbon footprint of the industry, similar to the Carbon Footprint of the Irish Seafood Sector report. This could work in conjunction with the expanded advisory services proposed to aid fast adoption of new fishing gear and methods (action 1.2) and provide advice on low emissions and selective fishing methods (action 3.1).

In three years

As a result of this action, in three years:

- Businesses will be measuring, and taking action to reduce, their carbon emissions.
- Fishing vessels will be optimised to reduce fuel use and emissions.
- Onshore processing and transport of product will be reducing energy use where possible.
- The industry carbon footprint will be established and regularly reported on.

Economy-wide work will be progressing on liquid biofuels as part of reducing Aotearoa New Zealand's transport emissions including maritime.

1.6 Invest in innovation to reduce the environmental impact of airfreighting premium seafood to international markets.

The current state

Live (for example rock lobster) and chilled seafood is currently airfreighted to international markets. This is a premium perishable product that delivers good returns to businesses. However, airfreight has a significantly higher carbon footprint than sea freight. The product also tends to be transported in polystyrene chilly bins (poly bins) often wrapped in plastic because the thermal properties keep product chilled until delivered and they are light, lowering the cost and emissions of airfreight. Poly bins are designed and produced as single-use products, are not reusable for the distribution of seafood and are not commonly recycled.¹⁴

The action we will take

Industry will invest in an innovation programme to reduce the environmental impact of airfreighting premium seafood.

In three years

As a result of this action, in three years:

- Any new packaging that is light, has good thermal properties and is reusable or recyclable will be used for airfreighted product.
- An innovation programme will be investigating and piloting ways to extend the shelf life of product, including freezing technology that delivers product equivalent to the quality of chilled product.
- Emissions from airfreighting premium seafood will be reduced to the extent possible as the industry will be reducing total emissions across the value chain.

1.7 Support the development of an adaptation pathway framework to assist the sector prepare for, and adapt to, climate change.

The current state

Climate change impacts for the sector will include changes in species location, size and composition, and more frequent weather events, with resulting impacts on infrastructure and marine ecosystems. There is a collaborative effort by industry, government, and environmental NGOs to enhance the resilience and adaptive capacity of the commercial seafood sector. The Seafood Sector Adaptation Strategy has been developed and is being implemented.¹⁵

The Seafood Sector Adaptation Strategy utilises a process called adaptation pathways to identify critical intervention points, based on an understanding of environmental thresholds and tipping points. Businesses will be supported to apply the adaptation methodology to their businesses so they can operate within the boundaries of acceptable risk and profitability.

The action we will take

Government and industry will pilot adaptation pathway plans for hoki, snapper, and farmed salmon in 2023.

In three years

As a result of this action, in three years:

- Industry and government will be using adaptation pathway plans for a range of species to identify, prioritise, and make decisions to address climate change challenges.
- A knowledge sharing platform will be providing easy access to adaptation pathway plans.
- A common data compilation methodology will be applied across the sector.

¹⁴ Croft, F and Farrelly, T, 2021 "Tackling plastic pollution in New Zealand's fin fishing industry Case study: Moana NZ"

¹⁵ www.theaotearoacircle.nz/seafood-sector-adaptation-strategy

He tirohanga ki te whai hua me te whakaputaranga

Profitability and productivity at a glance

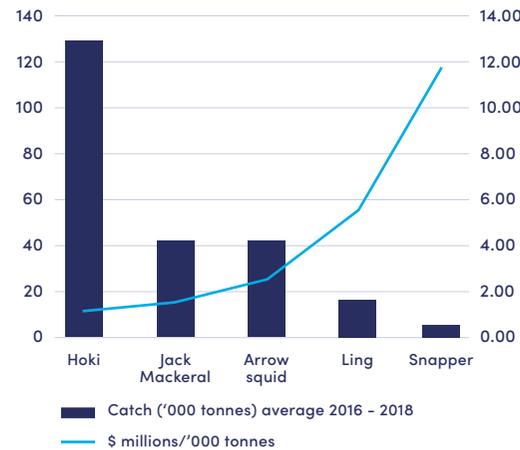
Continued international demand for seafood



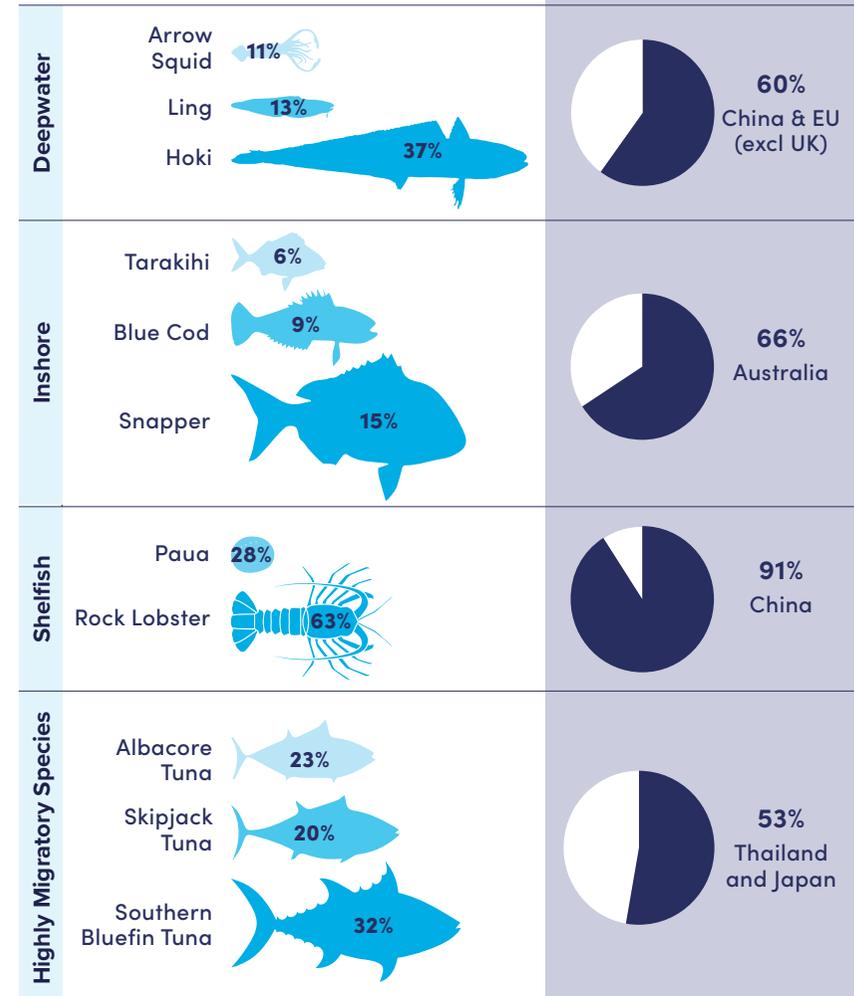
Prices of wild caught seafood expected to **grow 19%** over the next 10 years.¹⁶

- **\$1.45 billion exports** in year ending 30 June 2022.¹⁷
- **\$6.55 average** export price (\$NZ per kg).¹⁸
- Wide range in **\$ per kg value** from lower priced commodity products (e.g. hoki block) to higher value prestige products like rock lobster.

Our high-volume catch has lower per kg prices¹⁸



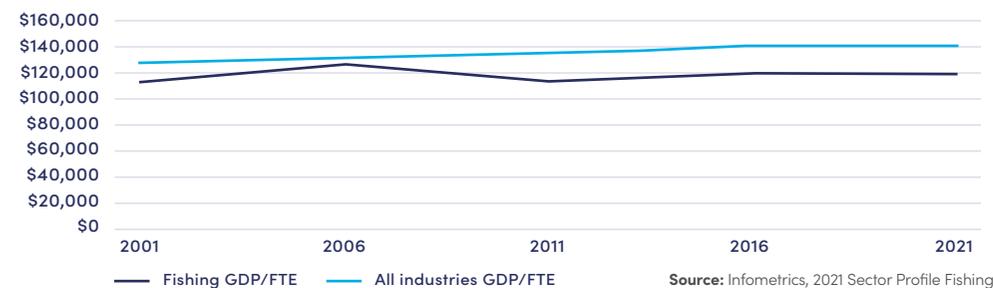
The species that underpin the catch value of the fishing sectors



Room to improve productivity

- Productivity in the fishing and aquaculture production sector is higher than the seafood processing sector.

New Zealand fishing industry labour productivity compared to all industries



¹⁶ Source: OECD-FAO AGRICULTURAL OUTLOOK 2022-2031 © OECD/FAO 2022.

¹⁷ Source: <https://www.mpi.govt.nz/dmsdocument/54517-Situation-and-Outlook-for-Primary-Industries-SOPI-December-2022>

¹⁸ Source: based on data from deepwatergroup.org/wp-content/uploads/2022/09/BERL-2022-Commercial-Fishing-Economic-Contribution-Final-Report.pdf

¹⁹ Source: <https://www.mpi.govt.nz/dmsdocument/51754-Situation-and-Outlook-for-Primary-Industries-SOPI-June-2022>

Ngā mahi hei whakapai ake i te whai hua me te whakaputaranga

Actions to improve profitability and productivity

Economic wellbeing contributes to overall community wellbeing. A robust and resilient commercial fishing industry will continue to provide quality seafood and increasingly produce high value bioproducts such as collagen and nutraceuticals. The actions to lift profitability and productivity are across the value chain, improving what we do now, and investing in creating new products for new markets in the future.

Te whakapiki ake i ngā kaimoana me ngā huakoiora hoko ki uta nui te uara ki ngā kaiwhakapeto hinengaro hihiri o te ao

Increasing exports of high value seafood and bioproducts to discerning international consumers

2.1 Promote the New Zealand seafood story in priority international markets highlighting the environmental sustainability, transparency and traceability of New Zealand caught product.

The current state

The 'New Zealand story' develops free resources for use in promoting this country offshore. Businesses can use the videos, images, and infographics to promote their products.

A New Zealand seafood story was developed in 2017. More recently seafood has been part of the New Zealand Trade and Enterprise (NZTE) 'Made with Care' programme. This programme runs campaigns across several large markets promoting consumer awareness and preferences for locally sourced products to drive their purchase behaviours in key export markets.

The action we will take

Industry and government will work together to promote the sustainability, transparency and traceability of Aotearoa New Zealand's seafood to international markets.

In three years

As a result of this action, in three years:

- The New Zealand seafood story will be showcasing the environmental sustainability, transparency, and traceability of local seafood.
- Businesses will be using the New Zealand seafood story in promoting their products.
- International consumers, in response to the refreshed seafood story and 'Made with Care' programme, will be choosing Aotearoa New Zealand's seafood and bioproducts.

2.2 Support emerging innovative seafood and bioproduct businesses to accelerate successful expansion into export markets.

The current state

Government agencies provide resources to support seafood industry exporters to understand their consumers and markets. There are opportunities to promote use of these resources and to better tailor these resources, particularly for small and medium enterprises.

Global innovation launch pad for New Zealand aquaculture

To support internationalisation of innovative and ambitious aquaculture companies from Aotearoa New Zealand, Hatch Innovation Services is providing business support and market advisory services. A part-time global market programme will take place online over two months, with support from industry experts helping successful applicants to refine their go-to-market approach and value proposition to accelerate successful market expansion into global aquaculture markets.

The action we will take

Government and industry will establish a programme to support and mentor small and medium sized emerging innovative seafood and bioproduct businesses to expand into export markets. The programme will build on lessons learnt from the Hatch Innovation Services / NZTE Global innovation launch pad for New Zealand aquaculture programme.

Ministry for Primary Industries (MPI) as part of Rautaki mo te Taurikura: Embracing change for prosperity will be providing tailored support to Māori export businesses.

In three years

As a result of this action, in three years small and medium innovative fishing industry businesses will be mentored and supported as they expand into export markets.

NGĀ MĀTAI TAKE / CASE STUDY

From the Hauraki Gulf to “Fish of the Day” in leading international restaurants

Lee Fish take an artisanal approach, treating each fish with care to deliver quality seafood to the tables of top domestic and international restaurants in Matakana, Wellington, Manhattan, Toronto and Zurich.

Small boats with a skipper (plus one to two crew) venture into the Hauraki Gulf at dawn, returning to unload their catch on the same day. The fish comes aboard the boat alive, one at a time and is quickly spiked via ‘iki-jime’.²⁰ This method is a lot of work and limits the fish that can be caught in a day. The result is a cleaner tasting fillet and a major increase in quality, with the final product well and truly ‘sashimi-grade’. Shelf life is also extended, allowing the fish to reach customers on the other side of the world in ‘just caught’ condition.

The fish is carefully graded, packed, and in the shortest time possible transported from the boat to the customer. The chef receives a mixed box of fish carefully chosen by the grader, it might be primarily snapper, and may also have a few blue cod, tarakihi, and other species. The chef can showcase a variety and provide diners with premium seafood.

The fisher is rewarded for their efforts and diners around the world get to enjoy quality New Zealand seafood.

Source: www.leighfish.co.nz/

²⁰ Iki jime is a humane method of killing fish scientifically proven to minimise stress for the fish while also maximising its eating qualities



NGĀ MĀTAI TAKE / CASE STUDY

Rautaki mo te Taurikura – MPI’s plan to support the Māori food and fibre sector to prosper

Rautaki mo te Taurikura: Embracing change for prosperity was launched at Fieldays in 2022 and sets out the Manatū Ahu Matua inaugural plan to grow partnerships with Māori in service of their aspirations in the food and fibre sector. The vision is *“Ka angitu ngā pākihi Māori, ka ora ai ngā hapori Māori, ka ora ai a Aotearoa. Māori businesses succeeding, Māori communities thriving, Aotearoa prospering.”*

Manatū Ahu Matua recognises that, across the food and fibre sector, Māori are uniquely positioned to be at the forefront of growth and be a beacon for others in the sector to do the same.

Rautaki mo te Taurikura identifies three initial priority areas of mahi that Manatū Ahu Matua will focus on to accelerate economic prosperity for Māori – including partnerships, investment and building services to meet the aspirations of Māori. The plan outlines the commitment that Manatū Ahu Matua is making to ensure its services are better aligned to back and enable Māori interests, and Tini a Tangaroa (Fisheries New Zealand) is undertaking work as part of this.

2.3 Support industry to access information on export market requirements and compile the data needed to demonstrate transparency and traceability requirements.

The current state

The seafood industry is required to track and trace product from the supplier to the next recipient in the supply chain. This is currently conducted using different traceability systems and technologies that may or may not be interoperable with other supply-chain data streams.

Official assurances are limited to food safety and technical attributes as negotiated between governments, and for animal products are provided through the electronic certification system (E-Cert). Fisheries related data is accommodated through a separate system not connected to E-Cert.

Fisheries data, traceability data, food safety and other data required for official assurances, as well as other verifiable attributes that could be used to provide assurances, are not integrated to allow easy traceability along the value chain.

The action we will take

The industry will use available and soon-to-be available technology to access information on export market requirements and to demonstrate the transparency and traceability of products.

Government will provide support to exporting businesses to navigate export market requirements.

In three years

As a result of this action, in three years:

- Industry will easily be accessing information on international market requirements.
- By using E-Cert, and integrating fisheries data, where possible, to certify the attributes of products, industry will achieve transparency and traceability.
- MPI’s Future of Certification programme will be replacing manual processes with full automation where appropriate.
- Government will be providing support to exporting business and MPI will be providing tailored support to Māori export businesses.

2.4 Accelerate the shift of large volumes of non-food fish material from low to higher value applications to target market opportunities.

The current state

Most of Aotearoa New Zealand’s non-food fish material is rendered and used for low-value applications (for example, fertiliser and fish meal). While niche high value applications may be attractive, in many cases these are cost-intensive to develop and market, and there are limits on the market size and/or the amount of material that can be diverted into those products.

Researchers and developers in this country are investigating techniques to create bioproducts from seafood with potential uses and markets. International researchers and developers are also investing in this area.

The action we will take

Industry will identify options to create and market higher value products from material that is currently rendered and used for lower value products.

Government will partner with industry and researchers to identify and test existing non-food fish material technologies for application to New Zealand.

Government will partner with industry in developing export markets for higher value products made from non-food fish material.

In three years

As a result of this action, in three years:

- The shift to higher value products from non-food fish material (for example, human edible oil, peptides, collagens and high-end pet food) will be gaining momentum increasing the income earned from the harvest.
- New markets will be being developed for the higher value products being made from non-food fish material.
- Overseas technologies will be quickly adopted and adapted for Aotearoa New Zealand, with business cases prepared once the technology has been proven.
- Further research into new ways to shift additional non-food material up the value scale will be under way.

NGĀ MĀTAI TAKE / CASE STUDY

Related work – Food and Beverage Industry Transformation Plan

The Food and Beverage ITP will support the food and beverage sector, including the seafood sector, to increase exports and capture greater value by enhancing our traditional foods and scaling up our emerging foods. The fishing sector will benefit from being able to tap into a number of actions and initiatives in the Food and Beverage ITP.

The Food and Beverage ITP proposes that Aotearoa New Zealand pursue two paths:

- enhancing our traditional foods; and
- scaling up our emerging foods.

Pursuing both paths means deepening our advantages in traditional food industries while driving growth and innovation in emerging areas. The Food and Beverage ITP proposes 16 actions for the industry, Māori, workers, and government over the coming years to pursue both paths, organised under four transformations.

Transformation 1: Orienting the sector towards consumers and the market

1. Determine target markets, to focus and transform market development effort.
2. Government to align, increase, and accelerate internationalisation support.
3. Continue the Made with Care programme: Made with Care NZ.
4. Explore a consolidated “one stop shop” information source.

Transformation 2: Increasing investment in innovation and attracting capital for growth

5. Grow support for the Food Innovation Network.
6. Develop up to three open-access scale-up food innovation facilities.
7. Allocate an entity to be the “entry point” to the food innovation system.
8. Form a network of specialist food and beverage “navigators”.
9. Map food and beverage sector capital sources.
10. Support high potential food and beverage businesses to access capital.

Transformation 3: Building capability to innovate, commercialise, and improve productive capacity

11. Grow and support programmes that build future food and beverage capability needs.
12. Establish a leadership programme for emerging sector leaders.
13. Establish global food and beverage internship placements.

Transformation 4: Regulatory settings enable food innovation

14. Support and influence the implementation of domestic policy and regulatory changes relating to mātauranga Māori, taonga, and indigenous organisms.
15. Recommend changes to make the regulatory system easier for food innovators.
16. Hold a discussion with the food and beverage sector on the role of genetic technologies in the sector’s future.

Te whakapai ake i ngā moni hua me te haumitanga puta noa i te mekameka uara

Improving returns and investment across the value chain

2.5 Invest in efficient and environmentally sustainable fishing vessels, including endorsing the further progression of the inshore fleet renewal innovation project:

2.5.1 reach industry-wide agreement on a sister ship model for the replacement of aging vessels in the inshore fleet; and

2.5.2 confirm government support to assist the transition to new inshore fishing vessels based on a sister ship model.

The current state

Refreshing Aotearoa New Zealand's fishing fleet is a key part of the transition to an efficient and environmentally sustainable fishing industry.

The age of the current fleet indicates investment is required, particularly in inshore vessels.

Replacing older vessels with modern vessels would enable lower emissions, less impactful fishing methods and more attractive living quarters for crew across the industry.

There were 840 active fishing vessels in this country in 2022 and the mean age of the vessels is 44 years. For the 169 vessels between 16–24 metres in length, 89 percent are older than 20 years and 25 percent are older than 50 years. Older vessels tend to have higher repair, maintenance, and fuel costs, are more difficult to retrofit with improved fishing gear, and have older-style living quarters.

Building the future inshore fishing fleet in Aotearoa New Zealand could provide broader benefits for this country through support for a ship building and maintenance industry with onshore skilled jobs and employment.

An inshore fleet renewal innovation project with a strong regional development focus has been developed by Northland Incorporated (Regional Economic Development Agency). A business case, funded by government, has been prepared and is an input into industry and government decisions on the project.

The project proposes replacing 169 vessels that are 16–24 metres with 70–100 vessels based on a sister ship design. The sister ship approach would provide collective benefits to the industry through the development of expertise in the building and maintenance of these vessels. The project seeks funding and support from government and industry. The project proposes that the Government:

- purchases the first three vessels (estimated cost of up to \$18 million);
- establishes a training facility in Northland, and provides skills and training support; and
- introduces a vessel buy-back scheme to support people with old vessels to either exit the industry or invest in a new vessel.

The project also requires the fishing industry to:

- commit to a sister ship design; and
- commit to purchasing New Zealand built vessels that cost 12–20 percent more than equivalent vessels built offshore.

There would be a lead time of at least two to three years following agreement to the proposal before the first vessel could be produced.

Investment in fishing vessels requires confidence in the future of the industry, including returns. Vessel owners who do not own quota also require confidence about future access to ACE. In the past some quota owners have supported ACE fishers to purchase vessels through multi-year ACE packages. This practice may need to be more widespread to encourage future investment in new vessels by ACE fishers. Government tax and financial investment incentives also have a bearing on investment decisions by individual fishers.

The Leadership Group endorses the development of a sister ship model to renew the inshore fleet. Newer vessels would provide the industry with greater fuel efficiency and lower emissions, up-to-date fishing methods, and modern living quarters that are more appealing to crew. Building the vessels in Aotearoa New Zealand, rather than offshore, would provide well-paid, quality jobs and training for New Zealanders, delivering social and economic benefits for local communities. Collaboration within the industry and with government will be required to deliver a sister ship model and develop this country's boat building capacity.

The action we will take

Industry will reach agreement on a sister ship model for the inshore fishing fleet and following this agreement individual businesses will commit to purchase sister ship(s).

Government will identify support available to facilitate the sister ships being built in Aotearoa New Zealand, once industry has reached agreement on a sister ship model for the inshore fleet.

NGĀ MĀTAI TAKE / CASE STUDY

Cyber Physical Seafood Systems (Cyber-Marine): Extracting maximum value from seafood

Cyber-Marine is a multi-million-dollar research programme aimed at achieving maximised value from all seafood. Making the best use of all raw material will allow the industry to grow without increasing the volume of wild-caught fish.

Seafood contains a large variety of molecules that have a wide range of high value applications, from big structural proteins for biomedical scaffolds, through to anti-inflammatory Omega-3s and blood pressure-lowering or anti-aging peptides. Many of these molecules are present outside of the portion of the fish processed for food, for example in the skin, viscera, and bones.

The Cyber-Marine programme is developing new technologies to extract these useful molecules during seafood processing. Ultimately, the programme aims to create an automated AI system that will detect the composition of materials and direct how a factory processes the seafood, extracting all available molecules and retaining their useful properties during the process. If successful, this could transform the way seafood operators do business and open up a range of new opportunities.

Plant & Food Research is leading this project which is funded by the Ministry of Business, Innovation and Employment's Endeavour Fund.

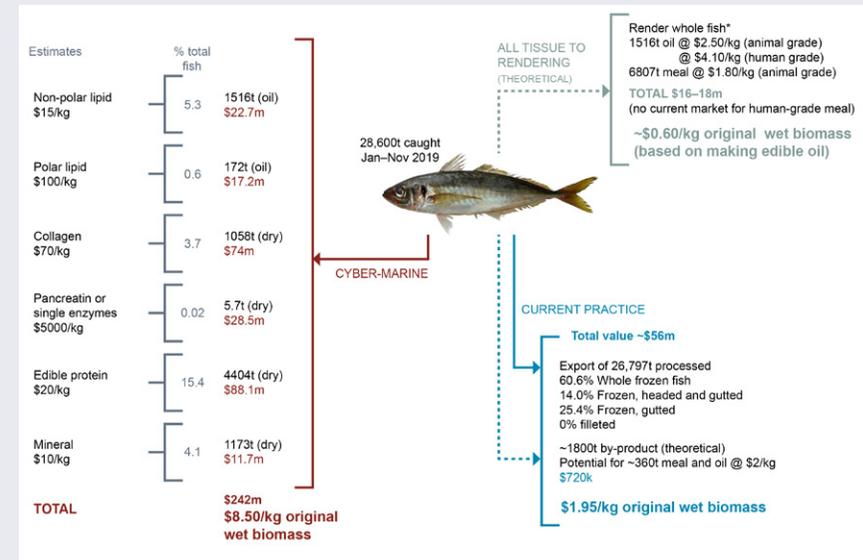


Image source: Plant and Food Research

In three years

As a result of this action, in three years:

- A decision will have been reached on a sister ship model for the inshore fleet and the financial feasibility of building these vessels in Aotearoa New Zealand.
- Uneconomic older fishing vessels will be being retired from the fleet.
- Quota owners, fishers and integrated companies will be working on catch plans and partnerships to invest in efficient and environmentally sustainable fishing vessels.

2.6 Improve the investment environment for fishing and seafood processing including exploring the introduction of tax measures, like accelerated depreciation.

The current state

The fishing industry is capital intensive. In 2016, Sealord invested \$70 million in a deepwater vessel, and in its 2022 Annual Report, Sanford advised that it is planning to invest \$30 million in a new scampi vessel. The cost of capital and returns on investment influence business investment decisions.

Government taxation, business support and regulatory settings form part of the environment within which businesses make investment decisions. There are a range of programmes available to support businesses, including those in the fishing industry to access finance to grow their business.

The action we will take

Government will assess the benefits and costs of mechanisms to improve the investment environment for fishing and seafood processing, including accelerated depreciation.

In three years

As a result of this action, in three years Government will have made decisions on mechanisms to support investment in the fishing industry that are consistent with Aotearoa New Zealand's international trade obligations and will have begun implementation.

2.7 Assess the automation opportunities across the fishing industry value chain and invest in priority automation solutions following the assessment.

The current state

Most seafood businesses use some form of automated machinery in their factories or vessels, although the level varies across companies and the type of operation. Automation in processing, grading, and packing is possible on a species-by-species basis. For example, deepwater factory trawlers that target hoki for most of the year have been automated with mechanical filleting and skinning machines. However, equipment capable of automating the entire process for several species on the same vessel does not currently exist. Partial automation is a possibility when new replacement vessels come online.

A priority in the industry's Seafood Workforce Transition Plan is the collaborative development of automated aquaculture processing to support the sector to grow. This will mean less reliance on lower skilled, lower-paid, repetitive roles, which are unattractive to most workers. Automation developments in aquaculture processing may have some broader applications for seafood processing.

Investment in automation is a business decision made by individual firms, influenced by:

- the availability of technology – there is less risk in adopting technology that has been tested and already commercialised;
- the availability of alternative business investments, for example, Sealord has invested in new vessels (with modern onboard processing facilities), rather than updating the Nelson onshore processing facility;
- the financial capacity of the business to invest and the return on investment; and
- the products valued and demanded by consumers – for some products the highest value is for a product in a natural state, for example, fish that is unprocessed and not gutted or scaled.

Automation can occur across the value chain, and there are also available technologies in the packaging, palletising and warehouse end of the value chain.

The action we will take

Industry will assess automation opportunities across the fishing industry, including aquaculture.

In three years

As a result of this action, in three years:

- industry will be well informed of available technology and businesses will be making decisions to invest; and
- people will be supported to train for new roles if roles are being replaced by automation.

NGĀ MĀTAI TAKE / CASE STUDY

Valka Water Jet Cutter: Processing innovation at Moana

Moana has invested in a Valka Water Jet Cutter machine which has enabled the company to improve fish processing efficiency, while also improving the quality of the product and reducing health and safety risks for workers.

This state-of-the-art processing innovation is designed to remove the pin-bone efficiently and effectively from fish fillets, using x-ray technology and flexible, high pressure water jet cutting arms.

It can increase output by up to 20 percent per worker per hour, which has helped the company in the current tight labour market. Workers who previously manually removed pin-bones and trimmed fillets have been relocated to harder to staff areas of the production line, such as the cutting line.

Watch the video on youtube

<https://youtube/Mhx9Op7msnA>

He tirohanga ki te tangata me ngā iwi People and communities at a glance



New Zealanders have a special connection with the ocean

Aotearoa has the **ninth longest coastline in the world.**

Seafood was landed in 188 locations across the country in 2022, **and processed at facilities in 14 towns and cities.**

About **13%** of our population fish recreationally, either to feed their whānau or to spend time in the great outdoors.



People are at the heart of the commercial fishing industry

89% of the people who work in the seafood sector **are New Zealanders.**

Across all at-sea roles in the largest seafood firms, the median wage in 2021 was \$83,909 per year. Skippers can make three times this amount, while shore-based processing staff made an average of \$50,402 per year.²¹

64% of skippers are aged 50 and over.

A Seafood Sector Agreement sets the conditions for the **sector to hire migrant workers.**

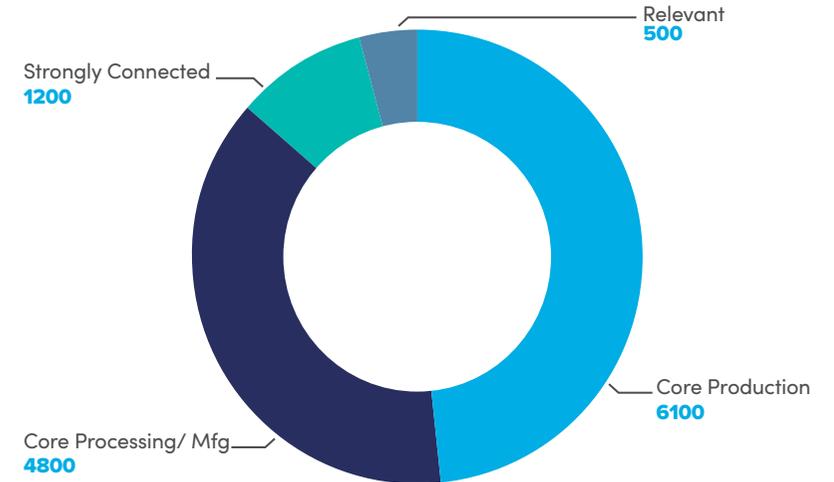


Tangaroa sustains people's wellbeing

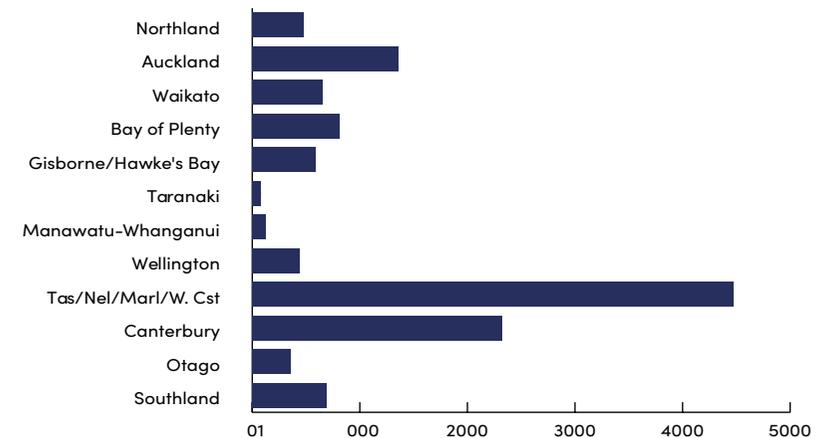
FirstMate navigators have had **over 890 wellbeing conversations** with fishers and their whānau since 2021.

There are **over 600 kaitiaki around the country** who manage customary fisheries for their local communities.

Seafood workforce count



Workforce regional breakdown



²¹ Te whakatipu | ngā tāngata o Tangaroa | Growing ocean people, October 2021

Source: www.workforceinsights.govt.nz. Figures have been rounded to the nearest hundred for workforce count.

Ngā mahi hei tautoko i te tangata me ngā hapori Actions to support people and communities

People are at the heart of the industry, and their skills, capabilities and passion will create the industry of the future.

Creating connections between fishers and their local communities will help New Zealanders access fresh fish and develop relationships with the people who harvest the fish. Improving perceptions of fishers and knowledge of the industry will have a positive influence on people being interested and willing to work in the industry.

The actions in the plan will support those currently working in the industry and build the workforce of the future to benefit regional communities. Government will take a just transition approach to supporting communities as we move towards a low-emissions economy and fishing industry.

The broader community – seafood lovers and those who enjoy Aotearoa New Zealand’s easy accessibility to the sea and the biodiversity of our ocean ecosystem also benefit from actions to improve the environmental performance of the industry.

Te tautoko i ngā tāngata i roto i te ahumahi kia momoho ai

Supporting people in the industry to thrive

3.1 Provide advice (particularly for small fishers) on fishing with selectivity and low environmental impact and on improving vessel energy efficiency.

The current state

Many fishers have made changes to their fishing gear and approach to improve selectivity and environmental performance. Some fishers readily share information with others on the changes they have made, while others see it as part of their competitive advantage so are less willing to share their intellectual property.

Other sources of information for fishers include advice on fishing gear from companies selling gear, or on seabird mitigation from liaison officers. Some large companies also provide support to their ACE fishers, including to upskill by undertaking international sustainable fishing courses.

High fuel prices have encouraged all fishers to focus on fuel efficiency. There is no systematic way of sharing fuel efficiency measures.

Action we will take

Industry will provide tailored information to fishers on sustainable fishing practices and vessel energy efficiency. This approach could be part of a navigator or advisory service for fishers also providing advice in relation to action 1.2 and action 1.5.

In three years

As a result of this action, in three years:

- Fishers will have up-to-date information on sustainable fishing and options for improving vessel efficiency and reducing carbon emissions.
- Fishers will be using up-to-date fishing practices and will be optimising the energy efficiency of their vessels lifting the environmental performance of the whole industry.

3.2 Provide wellbeing support to those who work in the sector, including those who are transitioning to retirement.

The current state

FirstMate New Zealand supports the health and wellbeing of people across the commercial seafood sector. It offers businesses, fishers and their whānau guidance, direction and support to help navigate the pressures and complexities that come with the job.

FirstMate's 14 navigators have had hundreds of conversations with fishers and their whānau across the country since 2021 and have aided them to access support and wellbeing services. As initial government funding ends in June 2023, industry and government need to work together to continue providing wellbeing services to people working in the sector.

The fishing workforce is aging with the average age of skippers being over 50 years old and fewer young people coming into the industry. These demographic changes may require a bespoke focus on succession planning and retirement for this component of the workforce when providing wellbeing support.

Action we will take

Industry and Government will secure ongoing funding for FirstMate or will agree alternative ways to support those who work in the sector.

In three years

As a result of this action, in three years:

- People across the sector will know how to reach out to FirstMate when they need support.
- Wellbeing outcomes for people in the industry will be improving.
- Support will be provided to those retiring and exiting the industry.

NGĀ MĀTAI TAKE / CASE STUDY

First Mate – supporting fishers and their whānau



Image source: FirstMate

Working at sea can be very challenging – mentally, physically, legally, and financially. As things continue to change, it is vital that people in the industry – and their whānau – have the support they need to adjust and thrive.

Since July 2019 FirstMate have:

- supported 193 individuals by referring them to counselling and wellbeing services, or providing administrative assistance with a variety of reporting types;
- carried out 896 total interactions with individuals;
- organised 7 wellbeing workshops, held in Wellington, New Plymouth, Auckland, Timaru, Kaikoura and Nelson; and
- held 46 industry engagements, including exhibitions at seafood conferences across the country, and supported government at electronic reporting and camera workshops.

Case study 1

Fisher 1 had a crew member pass away on-board who was not located in the region. FirstMate got the boat blessed, liaised with Police and talked with the rest of the crew.

“The kindness and help they gave the boat was bloody good.”

Case study 2

The pressures of the quota system caused Fisher 2 to rely on alcohol. FirstMate's support was instant. Fisher 2 receives regular check-ins and someone stayed the night with them. They are no longer struggling with alcoholism.

“It really felt like they were supporting you.”

Case study 3

Fisher 3's skipper underwent Maritime NZ investigation due to drug use onboard the boat. Fisher 3 lost everything. The stress of it all was getting them down. FirstMate took the pressure off by finding someone to deal with the phone calls, insurance and note-taking.

“I recommend them to people. Talk to FirstMate – it helps.”

Case study 4

Fisher 4 had legal action taken against them by IRD because of owing business tax debt. A FirstMate navigator went to an IRD meeting with Fisher 4 and then linked them with professionals who could continue helping them.

“FirstMate are the most amazing support group where you feel safe.”

NGĀ MĀTAI TAKE / CASE STUDY

Māori businesses developing the workforce of the future

The nature of the of the inter-generational Māori Fisheries Settlement means that Māori will always be involved in fisheries. There are a number of programmes providing opportunities for Māori to be involved in all levels of the fishing industry, and a few are highlighted here.



Image source: nzstory.govt.nz



Image source: nzstory.govt.nz

Māori business leaders of tomorrow

In 2022, Moana introduced an Associate Director Programme to provide opportunities for the Māori business leaders of tomorrow. The Associate Directors gain exposure to a large, successful Māori business and the chance to learn from an experienced board of directors. In turn, the Moana Board learned from the Associate Directors, unfurling new possibilities for the future.

The first two of the future leaders appointed as Associate Directors are Ngarimu Parata (Ngāti Porou, Ngāi Tahu) and Linda Grave (Whakatōhea).

Te Pae Tawhiti Kaimoana Enhancement Scholarships – support for tertiary study

The Te Pae Tawhiti Kaimoana Enhancement Scholarship was established to support Māori with aspirations to contribute to and work within the Māori marine and/or kaimoana industry.

The scholarship is available for students of Māori descent who are enrolled in a kaimoana enhancement related tertiary programme which is defined as:

- contributing towards the production of sustainable, regenerative or restorative kaimoana, for example, fisheries or aquaculture, business studies;
- environmental studies that support the production of sustainable

- kaimoana for example, climate change, marine ecosystems, marine sciences; and
- social or political studies that support fisheries policy development.

In 2022, the Scholarship was awarded to:

- Te Waikamihi Lambert (Ngāti Awa, Tūhoe) who is undertaking a Bachelor of Science and has been involved in voluntary work with mussels in the Ohiwa Harbour.
- Michaela Martin (Ngāti Hauiti, Ngāti Whitikaupeka) who has completed a Bachelor of Business and is now undertaking a Bachelor of Environmental Studies.



Image source: Sealord

Sealord – strengthening iwi links brings new crew members

The collaborative agreement, Nga Tapuwae o Māui, which Sealord signed with 41 iwi groups in 2019 provides iwi members with opportunities for training and employment in addition to the agreement to catch the quota they hold in deepwater fisheries.

As part of providing opportunities, iwi delegates visited Sealord to learn about career opportunities on offer for rangatahi and the diversity of roles available in the

company. Three new recruits joined the vessel *FV Rehua*:

- Te Kaahui Nepia (TK), from Ngāruawāhia, who had come through the Westport Deep Sea Fishing School and who experienced some severe weather conditions on the first voyage and was pleasantly surprised not to get seasick once.
- Cody Tukaki, from Kaikohe in the Far North and from Ngāti te Rangi iwi who worked in the freezer on the vessel and while the vessel was tied up also put in some extra hours working at Sealord's land based wet fish factory in Nelson.
- Dusky Pineaha – a father of four, from Muriwhenua iwi and of Ngāpuhi descent – who started on the boat just two days after finishing the course in Westport building on his deepwater experience fishing aboard a scampi vessel.

Note: This material has been drawn from public information – Moana 2022 Annual report and the Te Pae Tawhiti Scholarship Booklet.

Te whakawhanake i te ohu mahi hei whakatipu i te ahumahi

Developing the workforce to grow the industry

3.3 Develop a public perception and communication strategy to build connections between fishers and the community, including the benefits of working in the industry.

The current state

Attracting and retaining workers at all skill levels is an ongoing challenge for the industry. This is partially due to the nature of the work, but also to perceptions of the industry. Many outside the industry are unaware of the benefits that can come with working in at-sea roles in the sector, such as high pay and generous leave provisions.

The promotion of seafood sector roles is left to individual companies and often reaches people once they already have preconceived ideas about the industry.

There is no clear, co-ordinated messaging from industry to inform the public's view of working in the sector.

Addressing this issue would be consistent with the 'Perception Campaign Strategy' initiative of the Seafood Workforce Transition Plan, agreed by industry in 2022.

Action we will take

Industry will develop a public perception and communication strategy to build connections between fishers and the community to encourage the domestic consumption of fish (supporting action 3.6) and to discuss the benefits of working in the sector. The overall aim of the strategy will be to help shape a more informed public perception of the industry.

In three years

As a result of this action, in three years:

- Many New Zealanders will have formed connections with fishers and will have increased their consumption of locally caught fish.
- New Zealanders, in particular, rangatahi, will have a better understanding of employment opportunities in the sector.
- People who would enjoy the type of work on offer will have the knowledge needed to decide whether to enter the industry.

3.4 Work more closely with the education sector to develop and implement fit-for-purpose qualifications and training.

The current state

Seafood New Zealand is engaging with the newly formed Muka Tangata Workforce Development Council to ensure seafood industry skills needs are understood as part of the new approach to vocational education and training.

There are clear qualification requirements and pathways for at-sea roles due to the international standards that need to be met. However, these pathways are not widely understood or promoted to rangatahi who could be interested in a career in the sector while at school.

Maritime New Zealand is also exploring options to address on-water workforce issues from a cross-maritime perspective. There is significant overlap in the training and ticketing requirements for the operation of fishing vessels and other maritime vessels. The Maritime New Zealand initiative is consistent with the

‘Working with the Education Sector’ initiative of the Seafood Workforce Transition Plan, agreed by industry in 2022.

Action we will take

Industry will promote clear pathways for building skills and gaining qualifications in the industry and will work with education providers, including universities, to deliver the skills and qualifications needed.

Industry will develop case studies and information on the sector to support career advisors.

In three years

As a result of this action, in three years:

- Seafood sector roles will be part of the skills pipeline being delivered by the vocational education sector. Rangatahi and new entrants to the industry will have a clear pathway to build their skills and gain qualifications that reflect their capabilities.
- Relationships between industry and the education sector will be strengthened and new relationships formed.
- Schools will have industry-informed insight into how the seafood sector operates and will use this to inform students and parents of career opportunities in the sector.
- New industry placements or apprenticeships will enable rangatahi to experience the industry first-hand.

3.5 Assess and implement initiatives to improve seasonal and generational retention.

The current state

The seafood workforce is aging, particularly those who operate fishing vessels, and generational changes mean fewer rangatahi are coming into the industry to fill these roles. Many at-sea roles are highly technical and require years of training. The industry needs young people who are willing to dedicate the time and effort to get the right qualifications in order to maintain the skillset of the workforce. The sector has issues attracting rangatahi for these roles, and even within fishing whānau, there are anecdotal reports that many in the younger generation do not want to carry on the family business.

The sector has relied on seasonal workers, such as working holidaymakers, to fill processing roles. There is higher labour demand at particular points throughout the year due to seasonality. However, relying on a transient workforce in the current tight labour market has left the industry competing hard to attract and retain workers, and there are not enough people coming through to fill the gaps.

Many seafood industry jobs are located in remote areas with a small local workforce, which can make attracting and retaining workers even more challenging.

Addressing this issue would be consistent with the ‘Retention – Seasonal and Generational’ initiative of the Seafood Workforce Transition Plan, agreed by industry in 2022.



Image source: FirstMate

Action we will take

Industry employers will implement more measures to incentivise staff retention.

Industry will provide fishers with succession planning support.

In three years

As a result of this action, in three years:

- More rangatahi will be entering and staying in the sector.
- More year-round employment opportunities will be available for those working in the sector. This will be achieved were possible by retaining staff during shutdowns, elongating the season, or developing relationships with neighbouring businesses.

Te tautoko hapori ki te āhei i ngā kai moana ā-rohe

Supporting communities to access local seafood

3.6 Encourage greater consumption and easy local purchasing of fish

The current state

New Zealanders currently buy their seafood in a variety of ways, including from fish mongers, supermarkets, and wharf sales. It can be difficult for customers to establish whether the fish was caught locally and to develop direct connections with their local fishers.

Action we will take

Government and industry will encourage greater consumption and easy local purchasing of fish, including through the perception and communication strategy referred to in action 3.3.

In three years

As a result of this action, in three years:

- New Zealanders will be aware of the avenues to purchase locally caught fish and domestic consumption of local fish will be encouraged.

**Whakarāpopototanga
o ngā mahi o te Mahere
Takahuritanga Ahumahi
Hao Ika**

**Summary of Fisheries
Industry Transformation
Plan actions**



Wāhi matua 1: Te whakakaha i te mahinga ā-taiao

Priority area 1: Strengthening environmental performance

Note: In the context of this document, 'lead' means to convene and take the action forward to report back to the Governance Group (to be established). It does not mean taking on sole responsibility for funding or implementation.

ACTION	LEAD
Fishing with care and precision to support healthy ocean ecosystems	
1.1 Invest in innovation to accelerate selective fishing and further reduce benthic impacts and protected species interactions:	Joint
1.1.1 establish a joint industry / government project to source and develop technology that minimises adverse impact on the ocean floor to the maximum extent practicable;	Joint
1.1.2 review regulatory settings and operations to identify and mitigate regulatory barriers to fishing innovation.	Government
1.2 Incentivise and facilitate fast adoption of proven efficient and environmentally sustainable fishing gear and methods by fishers.	Industry
1.3 Investigate opportunities to apply new methods of habitat restoration and enhancement in New Zealand, for example, sea ranching, artificial upwelling, seagrass and kelp restoration.	Government

ACTION	LEAD
Utilising data to fish selectively and with least effort	
1.4 Advance the use of marine and fisheries data and analytical and spatial models to support fishers to avoid unwanted catch (including protected species) and maximise target catch with the least effort:	
1.4.1 address barriers to the regular and timely release and sharing of data collected from fishers, including reviewing the Guidelines for Fisheries Data Release;	Government
1.4.2 build technology and products that leverage data to support fishers; and	Industry
1.4.3 use data to support timely decision-making by fishers and fisheries managers to manage local distribution, seasonal variation and effects on the aquatic environment.	Government
Reducing carbon footprint and improving resilience to climate change	
1.5 Invest in a sector decarbonisation programme to connect New Zealand seafood businesses with world-class innovation and best practice guidance, including developing an industry benchmarking and standardised measurement tool to support businesses to measure and reduce their carbon footprint.	Joint
1.6 Invest in innovation to reduce the environmental impact of airfreighting premium seafood to international markets.	Industry
1.7 Support the development of an adaptation pathway framework to assist the sector prepare for, and adapt to, climate change.	Joint

Wāhi matua 2: Te whakapai ake i te whai hua me te whakaputaranga

Priority area 2: Improving profitability and productivity

ACTION	LEAD
Increasing exports of high value seafood and bioproducts to discerning international consumers	
2.1	Promote the New Zealand seafood story in priority international markets highlighting the environmental sustainability, transparency and traceability of New Zealand caught product. Joint
2.2	Support emerging innovative seafood and bioproduct businesses to accelerate successful expansion into export markets. Joint
2.3	Support industry to access information on export market requirements and compile the data needed to demonstrate transparency and traceability requirements. Joint
2.4	Accelerate the shift of large volumes of non-food fish material from low to higher value applications to target market opportunities. Joint

ACTION	LEAD
Improving returns and investment across the value chain	
2.5	Invest in efficient and environmentally sustainable fishing vessels, including endorsing the further progression of the inshore fleet renewal innovation project:
2.5.1	reach industry-wide agreement on a sister ship model for the replacement of aging vessels in the inshore fleet; and Industry
2.5.2	confirm the government support available to assist the transition to new inshore fishing vessels based on a sister ship model. Government
2.6	Improve the investment environment for fishing and seafood processing, including exploring the introduction of tax measures like accelerated depreciation. Industry
2.7	Assess the automation opportunities across the fishing industry value chain and invest in priority automation solutions following the assessment. Industry

Wāhi matua 3: Te tautoko i ngā tāngata me ngā hapori

Priority area 3: Supporting people and communities

ACTION	LEAD
Supporting people in the industry to thrive	
3.1 Provide advice (particularly for small fishers) on fishing with selectivity and low environmental impact and on improving vessel energy efficiency.	Industry
3.2 Provide wellbeing support to those who work in the sector, including those who are transitioning to retirement.	Joint
Developing the workforce to grow the industry	
3.3 Develop a public perception and communication strategy, including the benefits of working in the industry.	Industry
3.4 Work more closely with the education sector to develop and implement fit-for-purpose qualifications and training.	Industry
3.5 Assess and implement initiatives to improve seasonal and generational retention.	Industry
Supporting communities to access local seafood	
3.6 Encourage greater consumption and easy local purchasing of fish.	Joint





Te Kāwanatanga o Aotearoa
New Zealand Government