Fisheries New Zealand
Tini a Tangaroa

22 June 2021

Mrs Jo Luxton
Chairperson
Primary Production Committee
Parliament Buildings
Wellington

C/O Primary Production Committee Clerk

Tēnā koe

Briefing on fisheries

1. This letter responds to the Primary Production Committee's request for a briefing on fisheries. It will also form the basis of an oral submission on Thursday 24 June from 10.00 – 10.45am. It provides an overview of the:
   a. Role of the Ministry for Primary Industries and Fisheries New Zealand (a business unit within the Ministry for Primary Industries) in managing and regulating fisheries;
   b. Fisheries management system (including the Quota Management System) and the commercial, recreational, and non-commercial customary fishing sectors; and
   c. Key challenges and opportunities for fisheries, and initiatives which are underway to strengthen the management of fisheries.

2. We welcome the opportunity to provide this submission. We last provided a submission on fisheries to the Committee of the 52nd Parliament in 2019. Since that information was provided, the Oceans and Fisheries portfolio has been established. The new portfolio underscores a shift to a more holistic and integrated approach to managing our oceans and promotes stronger connections across related portfolios.

3. As highlighted in this letter, a significant work programme is underway to build a more sustainable, productive, and inclusive fishing sector and maximise the benefits of fisheries for New Zealanders.

4. As the Committee's request focused on fisheries, we have not discussed aquaculture in this letter. However, we note that significant work is underway to implement the Government's Aquaculture Strategy and the 2021 Annual Implementation Plan. These set actions and objectives towards New Zealand becoming world leading in sustainable and innovative aquaculture.

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The role of the Ministry for Primary Industries and Fisheries New Zealand

5. The Ministry for Primary Industries and Fisheries New Zealand have the following responsibilities and capabilities, for which the Minister for Oceans and Fisheries has strategic oversight:

    a. **Fisheries management:** We administer the Fisheries Act 1996 (the Act) and support the Minister for Oceans and Fisheries to sustainably manage New Zealand's fisheries. This includes providing advice on catch limits, measures to manage the effects of fishing on the aquatic environment, and on the fisheries rights and interests of Māori under the Treaty of Waitangi (Fisheries Claims) Settlement Act 1992 (Settlement Act).

    b. **Science:** Science is a key component of Fisheries New Zealand and the science team is responsible for providing scientific advice on the status of fish stocks and on assessing and mitigating environmental effects of fishing. The science advice provided to fisheries management is generated based on an outsourced fisheries science programme with a budget of approximately $22 million per year. Research and science support is also provided for the engagement with international fisheries forums that manage fisheries in the Pacific and Southern Oceans.

    c. **Fisheries monitoring:** Commercial fishing is monitored at sea, through requirements for fishers to report their catch and positions electronically, and through the placement of fisheries observers on commercial vessels to independently confirm catch and other information.

    d. **Fisheries compliance and enforcement:** We encourage and enforce compliance, including prosecuting breaches of fisheries law. Fishery officers patrol New Zealand's coastline and conduct commercial, recreational, and customary inspections. We also work with the New Zealand Defence Force within New Zealand waters, the Ross Sea, the Pacific Ocean high seas, and the waters of Pacific Islands to inspect fishing vessels.

    e. **Fisheries policy:** We provide policy advice on fisheries to support the Minister for Oceans and Fisheries to achieve desired outcomes through the development of new regulations and legislation, funding and investment, and partnerships and collaboration.

    f. **International fisheries issues:** We play an active role in negotiating management frameworks that govern shared fish stocks (alongside the Ministry of Foreign Affairs and Trade). This is done through forums such as the United Nations and Regional Fisheries Management Organisations, and other international organisations.

    g. **Supporting innovation:** We have a role in supporting sustainability and innovation in the seafood sector. We work with the Sustainable Food and Fibre Futures Fund, which co-invests in innovative projects to improve environmental and economic outcomes.

6. We work closely with the Department of Conservation, Ministry for the Environment and Ministry of Foreign Affairs and Trade on many of these issues, and broader marine management as part of a Marine Hub. The Marine Hub is a mechanism that supports collaboration and coordination by providing governance for significant marine initiatives, and the sharing of resources and expertise.

The Fisheries Management System

7. New Zealand's fisheries resources are part of New Zealand's cultural identity and are important to our communities, economy, and environment. Fisheries are used by customary (tangata whenua - hapū and iwi), recreational and commercial fishers, and play an important role in the wellbeing of many communities.

8. The Act provides for the utilisation of fisheries resources while ensuring sustainability. This requires management of fish stocks and the effects of fishing on the aquatic environment.

9. A Total Allowable Catch (TAC) is set for each fish stock. The TAC aims to maintain fish stocks at or above a level that can produce the maximum sustainable yield. This is informed by the best available information, including scientific assessments. Within the TAC, an allocation for customary, recreational, and commercial catch is made, with commercial fishing limited by the Total Allowable Commercial Catch (TACC).

10. Public input is important in making decisions about fisheries resources. We engage extensively with tangata whenua and stakeholders to ensure decisions about sustainable utilisation are well informed.

11. An overview of the status of fish stocks is provided in **Appendix A**, and an overview of the management of interactions between fishing and protected species and the aquatic environment in **Appendix B**.

Commercial fishing

12. Commercial fishing in New Zealand is managed under the Act, including the Quota Management System (QMS), which allocates shares in each fish stock as quota. Quota generates an entitlement to catch a proportion of the TACC each year known as Annual Catch Entitlement (ACE) within the relevant Quota Management Area (QMA).

13. Both quota and ACE can be traded. By providing long-term rights and controlling the amount of fish taken, the QMS has made advances in not only the sustainable utilisation of New Zealand's fisheries, but also the economic efficiency of the industry.

14. The QMS is complemented by other measures to manage the effects of fishing on the aquatic environment, such as restrictions on fishing methods in certain areas. Plans set out the strategic direction and objectives for certain fisheries or areas, such as deepwater fisheries, and for managing the threats of fishing to protected species.

15. Commercial fishing plays an important role in New Zealand's economy, contributing $4.2 billion per year in total economic activity, including $1.4 billion in export revenue for the year ended June 2020. The seafood industry is also an important employer,with approximately 8,540 people employed in the seafood industry in 2019. Wild capture fisheries accounted for 2,550 people, aquaculture 840, and processing and commercialisation 5,150.

16. In the 2019/20 fishing year, about 860 vessels fished across all species. Some 37 were deepwater vessels, with the remaining being inshore vessels. An overview of New Zealand's fisheries waters and commercial fishing effort is provided in **Appendix 4.**

17. Māori commercial fishing claims were settled by the Māori Fisheries Act 1989 which provided 10 percent of existing quota (or the equivalent value) and the Settlement Act, which provided 20 percent of quota for species introduced after 1992. The Crown also provided $150 million to purchase 50 percent of Sealord Products Limited. As part of the Fisheries Settlement, Māori agreed that the QMS is an appropriate regime for exercising their commercial fishing rights and responsibilities.

18. Māori now collectively own around 40 percent of quota, and have diversified interests across the sector, including catching, processing, marketing, and food services. This income stream makes an important contribution to the economic, social and cultural wellbeing of some iwi.

Non-commercial customary fishing

19. The Fisheries Settlement settled claims relating to customary fisheries by requiring the Minister of Fisheries to recognise and provide for non-commercial customary food gathering by Māori and the special relationship between tangata whenua and important customary food gathering areas. This is done by:

    a. Enabling management of non-commercial customary fishing activities through an authorisation system for taking fish for specified customary purposes with the approval of Tangata Kaitiaki/Tiaki nominated by tangata whenua; and

    b. The ability to have important customary fishing grounds set aside as customary areas where tangata whenua can undertake management and propose bylaws for fisheries resources (such as Taiāpure and Mātaitai Reserves).

20. Over 644 Tangata Kaitiaki/Tiaki have been notified by tangata whenua and confirmed by the Minister, and 44 Mātaitai Reserves have been established.

Recreational fishing

21. Recreational fishing is a popular activity that makes an important economic contribution in many coastal areas. Approximately 600,000 New Zealanders fish each year. In 2018 New Zealanders went on 2 million fishing trips, catching over 7 million fish and 3.9 million shellfish. There are numerous local recreational fishing bodies (approximately 7 percent of recreational fishers are members of a club) with a range of interests.

22. Recreational fishing is managed through amateur fishing regulations. A recreational allowance is set as part of the TAC, and management measures include bag limits, minimum legal sizes, and seasonal and spatial closures.

Key challenges and opportunities for the fishing sector

Impacts of COVID-19

23. The seafood industry has faced a range of practical, logistical, and economic challenges because of COVID-19. Key issues include:

    a. **Softening demand.** COVID-19 related lockdowns have negatively impacted the ability to sell product through the food service sector, and important markets for premium seafood products. Seafood export revenue is forecast to fall 4.1 percent to $1.8 billion in 2021 due to a decrease in wild capture volumes and weaker aquaculture export prices.[1]

    b. **Logistical issues.** Supply chains remain constrained because of COVID-19. Reduced air and sea freight capacity has made it harder to access overseas markets and increasing costs. Port congestion and shipping delays continue to be an issue, as does the shortage of refrigerated containers. Airfreight is particularly important for high value chilled seafood products, such as salmon and rock lobster. The Government has worked with airlines and exporters to maintain air channels to key markets.

    c. **Access to labour and foreign workers.** Border restrictions have increased the challenge of addressing labour shortages and workforce gaps in the industry. Parts of the seafood industry rely heavily on foreign labour, particularly the deepwater fishing fleet where some vessels have a full foreign crew. An exception was granted to allow 570 migrant fishing crew to enter the country in September 2020. The exception was granted

[1] Situation and Outlook for Primary Industries, June 2021

on the condition that the seafood industry implement a transition plan to attract, develop and retain more New Zealanders into roles in the industry. The lack of access to temporary migrant workers is also having a significant effect in processing roles across the industry.

Environmental pressures

24. The Act and QMS have been largely successful in providing for efficiency and the sustainability of fish stocks. Overall, fish stocks are in good health, though there are notable exceptions, such as tarakihi on the East Coasts of the North Island and upper South Island, rock lobster in the Bay of Plenty, and several scallop stocks.

25. Over recent years considerable work has gone into improving the management of the effects of fishing on the aquatic environment, but there is more to do. Fishing places pressure on some protected species and sensitive areas of the marine environment. Some fishing is also not as selective as it could be, resulting in the capture of unwanted fish. Mitigating these impacts can be challenging but provides opportunities to enhance the seafood sector's reputation for sustainability.

26. Increasingly, New Zealanders and international markets demand that their seafood is sustainably caught or farmed, and that effects on the marine environment are carefully managed. Maintaining and increasing social licence for the operation of commercial activities is increasingly important.

27. Environmental factors, such as the effects of land-based activities (e.g. sedimentation and pollution) and climate change are also placing additional pressures on the marine environment and fisheries. Climate change is leading to warming oceans, the migration of some stocks, and ocean acidification. We are building our understanding of how cumulative effects influence the marine environment. Our work in this space is growing, with more to do.

Innovation

28. The amount of fish that can be sustainably harvested from wild capture fisheries is largely static, meaning that new innovations are required to improve economic value, as well as to improve environmental performance. This includes more innovative and agile approaches to management, which new technology and sources of data make possible.

29. The importance of innovation is recognised in the Prime Minister's Chief Science Advisor's report *The Future of Commercial Fishing in Aotearoa New Zealand*.

Key fisheries initiatives

30. A significant work programme, including both policy and operational initiatives, is underway to build a more sustainable, productive, and inclusive fishing sector and maximise the benefits of fisheries for New Zealanders. This work programme includes initiatives that will help to mitigate the challenges outlined above. Key initiatives include:

    a. The further roll-out of on-board cameras across the inshore fishing fleet, and near real-time reporting

    b. Amendments to the Act to improve transparency, accountability, and responsiveness

    c. Supporting commercial fishers to manage the impacts and maximise the opportunities of the changes

    d. Managing the effects of fishing on protected marine species

    e. Revitalising the Gulf – Government action on the Sea Change Plan

f. The development of a response to the Prime Minister's Chief Science Advisor's report *The Future of Commercial Fishing in Aotearoa New Zealand*.

The further roll-out of on-board cameras across the inshore fishing fleet, and near-real time reporting

31. Currently, there are cameras operating on 17 set-net and trawl vessels in the west coast of the North Island, an area with a high fishing risk to the critically endangered Māui dolphin. This programme supports comprehensive protection of the Māui dolphin.

32. The Government recently agreed to expand the rollout of on-board cameras to around 300 inshore fishing vessels. The proposed rollout will be targeted to fisheries that pose a risk to protected species (including Māui dolphin, Hector's dolphin, black petrel, and Antipodean albatross), covering up to 85% of the total catch (by volume) from inshore fisheries.

33. The introduction of electronic catch and position reporting now provides verifiable information about fishing activity in near-real time, at a much finer spatial scale. This enables better monitoring of compliance and fisheries management. Building on these improvements, cameras will enable verification of fisher reported catch data.

34. The further rollout of cameras will give greater assurance of sustainable commercial fishing practices by enabling increased monitoring, verification and compliance of fishing activity leading to positive environmental outcomes. It will help increase transparency and trust in the seafood sector, improving the quality of fishing data and driving positive on the water behavioural change.

35. Public consultation on coverage and phasing of further on-board cameras, and the level of costs to be recovered from industry will occur in the coming months. Procurement for camera technology will now commence.

Amendments to the Act to improve transparency, accountability, and responsiveness

36. The Government recently agreed to a number of changes to the Act, in particular:

    a. Changes to the commercial fishing rules for what fish must be landed and what can be returned to the sea

    b. establishing a graduated offences and penalties regime for the illegal discarding of fish

    c. changes to enable more responsive decision-making.

37. Changes to the rules for commercial fishers will simplify landings and discards rules and further limit what can be legally returned to sea. This will incentivise fishers to selectively target only the fish they want and to maximise the value from what is caught. This will be complemented by a graduated offences and penalties regime to more effectively target and tailor penalties to the severity of offending. Alongside on-board cameras, these changes will improve monitoring and enforcement.

38. Faster, more detailed and verifiable catch data from fishers can be used to make more responsive fisheries management decisions. Changes are required to better use this information and respond more quickly to changes in our fisheries. These changes require legislative amendments.

Supporting commercial fishers to manage the impacts and maximise the opportunities of the changes

39. The changes outlined in the initiatives above will have significant impacts on commercial fishers. Investment and innovation will be required to transition to new more selective fishing practices, and fishers may face pressures as they manage this transition. The Government intends to work with the sector to support this transition, including consideration of support for innovative fishing practices.

40. In 2020, the Government announced funding of $4.6 million over three years to establish a national seafood support network. The network, FirstMate, will help navigate fishers to advice and support to manage both business and personal challenges.

41. As previously outlined, the seafood sector has had challenges accessing labour as a result of COVID-19 border restrictions. The seafood industry has developed a Workforce Transition Plan to recruit more New Zealanders into the industry, focused around four pillars: attraction and recruitment, education, knowledge, and employment and retention. The sector is currently working to update the Plan.

42. On 11 May 2021, the Ministry for Primary Industries submitted to the Primary Production Select Committee Inquiry into the Future Workforce Needs of New Zealand's Food and Fibre Sector, including fisheries. This submission is attached at **Appendix 5** and outlines the workforce needs and areas of growth, from the immediate to longer term.

Managing the effects of fishing on protected marine species

43. There are a range of measures to manage the effects of fishing on protected species. Plans, such as the Hector's and Māui dolphins Threat Management Plan and National Plan of Action for Seabirds, set out the strategic direction and objectives for managing the threats of fishing to protected species.

44. Hector's and Māui dolphins are only found in New Zealand and are some of the world's rarest dolphins. Both species are vulnerable to human induced mortality from a range of fishing and non-fishing related threats. New measures to address these threats came into force on 1 October 2020. These include significant additional set net closures (from 17,195 km^2 to 31,550 km^2) and trawl closures and restrictions (from 11,397 km^2 to 12,825 km^2) to strengthen the protection of Hector's and Māui dolphins.[2]

45. New Zealand is a globally significant area for seabirds due to the diverse range of seabirds that breed here. There are a range of threats to seabirds, including impacts at breeding sites and impacts at sea.

46. A revised National Plan of Action for Seabirds (NPOA Seabirds) was released in 2020. The NPOA has a vision that 'New Zealanders work towards zero fishing-related seabird mortalities'. It provides clear goals and objectives and is supported by an implementation plan for reducing fishing-related seabird deaths as well as putting in place tools to measure and report on progress annually.

47. Further measures to strengthen protection for Hector's dolphins will be publicly consulted on later this year. Reporting and monitoring of the NPOA Seabirds is ongoing.

[2] Set net closures were extended along the entirety of the west coast North Island, and in parts of the north, east and south coasts of the South Island. Trawl closures were extended off the west coast North Island.

Revitalising the Gulf – Government action on the Sea Change Plan

48. On 22 June *Revitalising the Gulf – Government action on the Sea Change Plan* was released. It will guide an ongoing programme of work for the long-term health of the Hauraki Gulf.
49. It responds to the call to action in the 2017 Sea Change Tai Timu Tai Pari Hauraki Gulf Marine Spatial Plan, developed by a stakeholder working group, and contains Government actions across the many marine challenges facing the Gulf in a holistic package, including a Fisheries Plan with a range of changes to fishing practices and catch settings, including restricting trawl fishing to within carefully selected 'corridors'.

The development of a response to the Prime Minister's Chief Science Advisor's report The Future of Commercial Fishing in Aotearoa New Zealand.

50. In March 2021, the Office of the Prime Minister's Chief Science Advisor released The Future of Commercial Fishing in Aotearoa New Zealand (the report). The report makes a broad range of recommendations to improve the way New Zealanders catch fish commercially and the way our fisheries are managed. A Government response to the report will be prepared during 2021, and will inform future work.

Conclusion

51. As highlighted above, we are making progress in improving the management of fisheries to maximise the benefits for New Zealanders. Significant changes to the regulation of commercial fishing have been recently announced, and work is underway to ensure fishers can successfully transition. We are also increasingly focused on manging fisheries in a holistic way that considers the broader connections with the management of our oceans.

Yours sincerely,

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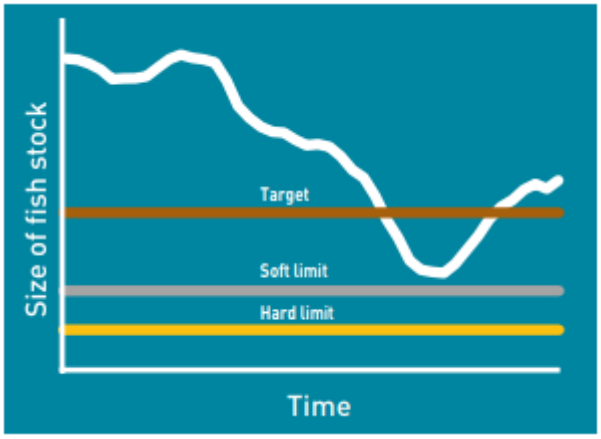
Fisheries New Zealand

Appendix 1: Status of fish stocks

We assess and manage fish stocks in accordance with four main performance measures:

- **A target level:** the level we want a fish stock to fluctuate around for the best balance between use and sustainability, while allowing for environmental variation.
- **A soft limit:** Below this level, a fish stock is considered to be overfished or depleted and needs to be actively rebuilt, for example by reducing the total allowable catch.
- **A hard limit:** below this level, a fish stock is considered to have collapsed and fisheries may need to be closed to rebuild at the fastest possible rate.



- **Overfishing threshold:** a rate of stock removal that shouldn't be exceeded as it will lead to stocks falling below other performance measures.

The fisheries management system covers 98 species (or species groups) across New Zealand's fisheries waters, which are divided into 642 fish stocks. A summary of stock categories is below. In addition, 150 stocks can be assessed against their target level. Of these, 72.7 percent are above their management target.

Classification of fish stocks	Number of stocks	Tonnage (% total landings)	% of value
Stocks of known status Fish stocks whose status can be assessed against the soft limit	159	239,405 t (68%)	86%
Low information stocks Fish stocks whose status is not able to be assessed relative to the soft limit. We are working to improve information for these stocks.	240	111,321 t (32%)	14%
Nominal stocks An anomaly of the QMS whereby quota is allocated to QMAs where individual fish species are either non-existent, at the periphery of their range, or have not demonstrated significant commercial or non-commercial potential.	290	69 t (0.02%)	0.02%
Total	**689**[3]	**350,726 t (100%)**	**100%**

Stocks of known status	Number of stocks	% landed catch	% of value
No known sustainability risks: Fish stocks are above the soft limit.	131	91%	81%
Potential sustainability risks: Fish stocks are below the soft limit. Note: For stocks with potential sustainability risks, management action has been or is being put in place to facilitate stock recovery in most cases.	28	9%	19%

[3] The total number of fish stocks in the QMS is 642. The number in the table above (689) is larger because several stocks are divided into sub QMA stocks or fished outside the QMS (such as toothfish in the Ross sea and some High Seas tuna stocks).

Appendix 2: Management of the environmental effects of fishing

Interaction and status	Current work
Seabirds New Zealand is a globally significant area for seabirds, with about 145 species making use of our waters. Fishing is one of a range of threats to seabirds, although it is often the highest profile. Approximately 3,300 seabirds were estimated to have been captured in 2017/18, with the number gradually declining over the last five years.	The National Plan of Action – Seabirds was released in 2020. Its vision is that New Zealanders work towards zero fishing-related seabird mortalities. It provides goals and objectives and is supported by an implementation plan for reducing fishing-related seabird deaths as well as putting in place tools to measure and report on progress annually. A key component is creating protected species risk management plans for all fishing vessels that are at risk of accidentally catching seabirds. These plans will be audited, and regularly monitored, against government standards.
Rāpoka/Sea lions New Zealand sea lions are incidentally caught by fishing operations, particularly in the squid and scampi fisheries around the Auckland Islands, and the southern blue whiting fishery around Campbell Island. The estimated population is around 12,000 individuals and is classified as nationally vulnerable.	The New Zealand sea lion/rāpoka Threat Management Plan (2017-2022) aims to halt the decline of the sea lion population within five years and ensure the population is stable or increasing within 20 years. The goal is to achieve Not Threatened status. The plan sets a holistic work programme to address threats. For fisheries, it is implemented through Operational Plans in at-risk fisheries, with commitments for high monitoring coverage and for vessels to deploy mitigation devices in key fisheries. There is a regulated fishing-related mortality limit for the squid fishery and the fishery is closed if 52 sea lions are observed caught. No captures were observed in the squid fishery last year.
Hoiho/yellow-eyed penguin There are two distinct populations. The northern population breed on mainland South Island, Stewart Island/Rakiura and outliers, and have declined in abundance over the last five years. The southern population breed on the sub-Antarctic Auckland Islands/Motu Maha and Campbell Island/Motu Ihupuku. Their status is largely unknown.	Te Kaweka Takohaka mō te Hoiho / The Strategy for Hoiho and Te Mahere Rima Tau / Five-Year Action Plan was released in August 2020. Its vision is that Hoiho should be able to go to sea to feed on abundant and good quality kai, and return safely to the whenua to breed, feed their young and socialise without human-induced threats. It includes a range of objectives and actions to better understand and minimise threats, including from fishing. One Hoiho has been reported killed by fishing over the past year. Around 50% of the fleet that might capture Hoiho carries observers.
Hector's and Māui dolphins Māui dolphins are classified as critically endangered, with about 63 individuals over one year old. Hector's dolphins are classified as nationally endangered, with an estimated population of 15,000.	The Hector's and Māui dolphins Threat Management Plan was approved in 2020. A range of measures came into force on 1 October 2020 to manage the risk of fishing to Hector's and Māui dolphins, including additional trawl and set net restrictions. These build on extensive existing controls. We have also been undertaking early engagement on options for additional measures to manage risks to Hector's dolphins in the South Island.
Mangō/Sharks Approximately 113 species of shark live in New Zealand's waters, and more than 70 species have been reported as caught in commercial fisheries.	The National Plan of Action for Sharks is currently being reviewed. The previous iteration, agreed in 2013, set out goals and five-year objectives for the management of sharks in New Zealand. The shark species that make up 90% of fisheries catch are managed through the Quota Management System. Research and monitoring are in place to ensure other species are maintained
Benthic (seafloor) environment Certain fishing methods such as trawling and dredging can disturb the benthic environment. This can impact associated habitat and biodiversity.	Around 30% of New Zealand's EEZ has been closed to bottom contacting fishing methods. A range of gear restrictions protect or mitigate the effects of fishing on the inshore benthic environment. However, many of these measures were implemented for other reasons, with benthic protection an ancillary benefit. The trawl footprint is monitored annually, and we have recently established a benthic science working group to advise on scientific inputs to support consideration of potential additional management measures in the EEZ.

Appendix 3: Overview of the commercial fishing sector

Industry structure

Seafood New Zealand is the peak seafood industry body. There are a number of smaller entities that represent different types of fisheries (Deepwater Group, Fisheries Inshore New Zealand, New Zealand Rock Lobster Industry Council, and the Paua Industry Council).

The seafood industry is diverse, including large companies such as Sanford Limited, Sealord Limited and Talley's Fisheries Limited, and small inshore fishers that primarily rely on others for ACE.

Approximately 8,540 people were employed in the seafood industry in 2019. Aquaculture accounted for 840 of this, wild capture fisheries 2,550, and processing and commercialisation 5,150.[4] A significant proportion of this employment is in regional economies.

Key export markets and species

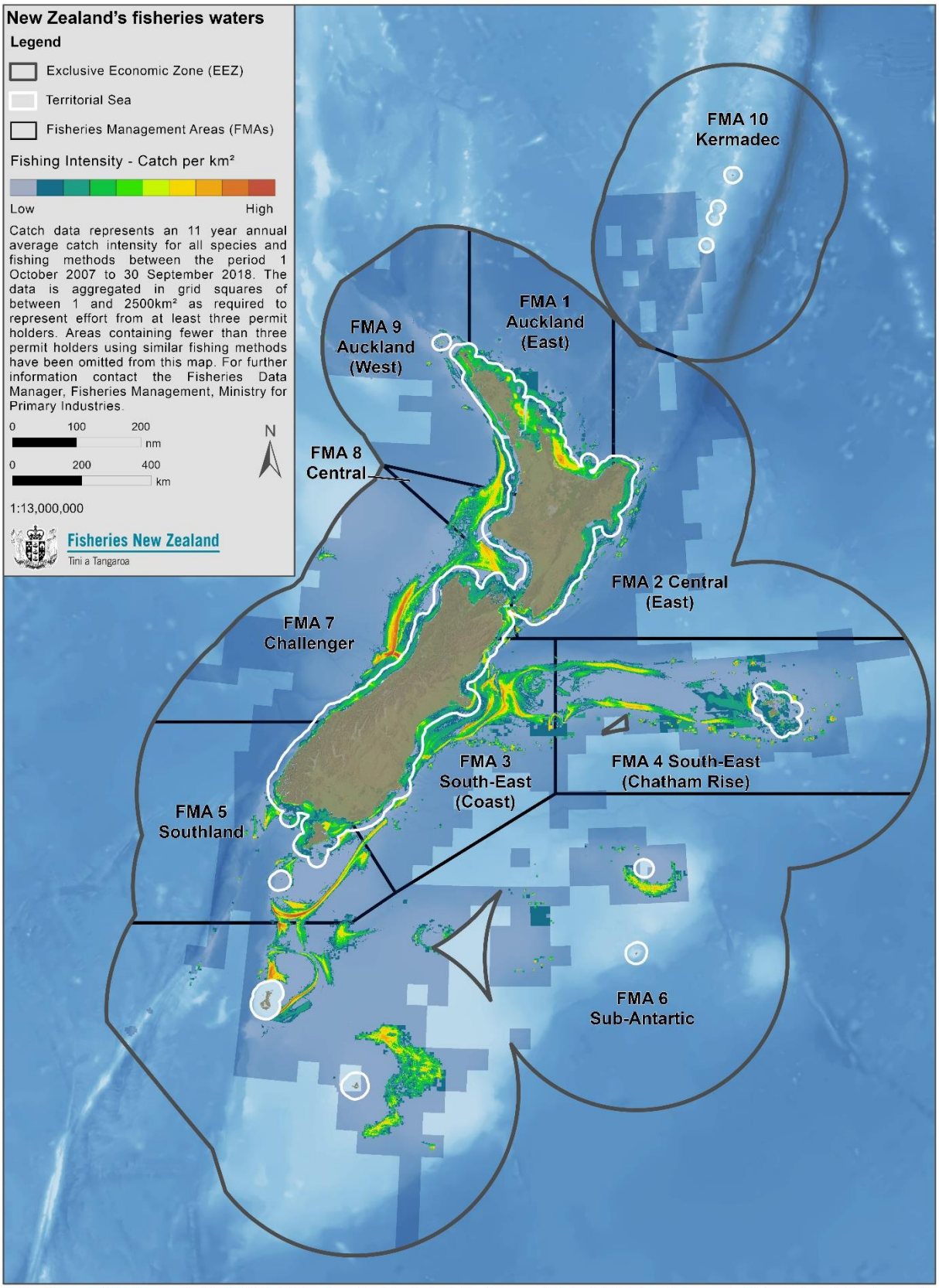
In the year ended June 2020 seafood accounted for $1.86 billion in export revenue. Wild capture fisheries accounted for $1.4 billion and aquaculture $485 million. The top 10 species and export markets are set out below.

Top 10 countries	YE June 2020 Export revenue (NZ$ millions)
China	605
United States	240
EU	238
Australia	208
Japan	102
South Korea	68
Thailand	43
Hong Kong	42
Canada	38
Vietnam	31
All others	240
Total	**1,855**

Top 10 species	YE June 2020 Export revenue (NZ$ millions)
Mussels	334
Rock Lobster	237
Hoki	230
Squid	175
Salmon	106
Mackerel	88
Ling	63
Orange Roughy	57
Tuna	56
Southern Blue Whiting	34
All others	476
Total	**1,855**

[4] Statistics New Zealand business demography statistics.

Appendix 4: Map of New Zealand's fisheries waters



Appendix 5: MPI submission to the Primary Production Select Committee Inquiry into the Future Workforce Needs of New Zealand's Food and Fibre Sector

Ministry for Primary Industries
Manatū Ahu Matua

MPI submission to the Primary Production Select Committee Inquiry into the Future Workforce Needs of New Zealand's Food and Fibre Sector

11 May 2021

New Zealand Government

Contents

***The future of the workforce needs in the growing food and fibre industries, and what they will look like in the short, medium, and long-term future, as we continue to innovate and develop new technologies*.**

PURPOSE

This submission responds to an invitation from the Committee to the Ministry for Primary Industries to make a written submission about issues it considers relevant to the inquiry. This submission will also form the basis of a 60-minute oral submission from Ministry officials to the Committee on 13 May 2021.

EXECUTIVE SUMMARY

1. New Zealand's food and fibre sector performed well through the initial part of the COVID-19 pandemic and continues to be pivotal to the country's economic recovery.

2. The Government's *Fit for a Better World* roadmap sets ambitious targets for the food and fibre sector's next 10 years and includes initiatives to accelerate productivity, sustainability, and inclusiveness across the sector.

3. These ambitions are set against a backdrop of challenges such as climate change and broader environmental issues, increased consumer expectations, issues around water ownership and associated rights, and resource management.

4. A larger and more highly-skilled food and fibre sector workforce is essential if the sector is to meet the targets set out in *Fit for a Better World* while navigating these challenges.

5. For the food and fibre sector, this means:
   - attracting and developing a greater diversity of New Zealanders into rewarding food and fibre careers, this includes expanding gender diversity and growing the proportion of Māori in the workforce, particularly in management and leadership roles;
   - continuously improving employment conditions so the sector is known for its great workplaces (including competitive remuneration and good development opportunities) and its ability to retain its workforce; and
   - building the capability to innovate faster and maximise the use of new technologies and practices.

6. The priority with which these matters are tackled, and their relative importance will change over time. At the moment, much of the workforce activity in the sector is focused on addressing labour shortages caused by lack of access to

We need a skilled workforce to make the most of transformational opportunities

The *Fit for a Better World* Roadmap highlights several significant opportunities to build NZ presence in international markets and to provide high-value products to discerning consumers.

This includes taking action and building capability in the areas of:

Māori agribusiness - expand Māori agribusiness to support the increased productivity and sustainability of whenua Māori.

Water storage - focused development of small-scale water storage to give farmers access to higher value land use options, product supply chains, and higher employment.

Aquaculture - improving regulatory settings and investment certainty, investing in critical wharf and hatchery infrastructure and unlocking open ocean aquaculture opportunities.

Strong wool - better support product development for natural fibres and in new product categories.

Forestry – identify new technologies to make better use of wood waste products to generate energy, and to develop sustainable products.

temporary migrant workers due to COVID-19 border restrictions. Urgent and necessary actions to mitigate these impacts could easily dominate the workforce conversation, so it is important to also keep a longer-term focus.

7. In the short-term (the next one to five years), in addition to managing the residual impacts of the border closure, the sector needs to broaden its focus to boost the numbers of workers in the sector from currently under-represented groups, build great food and fibre sector workplaces; and ensure that all workers have good opportunities to upskill and pursue career advances.

8. Over this period, the sector will also need to further refine its long-term workforce needs and direction (set down for example, in the Food + Fibre and Forestry Skills Action Plans and the subsequent Agri-Tech Industry Transformation Plan in 2020), accelerate the implementation of existing and planned initiatives, and determine which additional activities the sector will need to implement over the coming years.

9. The medium-term (the next five to ten years) is likely to be the period of greatest transition, with the sector having the dual focuses of refining and improving how it currently does business (through, for example, better people leadership and more highly regulated environmental management), while also laying the foundation for a very different, more technology-led sector. This stage will be the bridge between old and new ways of working.

10. Over the next period (10-20 years) the focus will likely be on embedding those new skills, technologies, business models and workforce practices that the sector has developed to increase prosperity, sustainability, and diversity. By this stage, though still a critical component of the workforce, it is likely that the proportion of people working in lower-skilled, lower-paid, seasonal and manual jobs will have decreased significantly.

11. The Ministry for Primary Industries (MPI) has a core role in supporting the food and fibre sector to meet its current and future workforce needs. This includes encouraging employers to invest more heavily in skills development and improving workplace conditions and raising the profile of primary sector careers. We work in partnership with industry and other agencies to attract, train and retain talented people in the primary industries. We also work with the sector to support innovation and new ways of working.

In the future, a greater proportion of the workforce have more skills in:

- Production (whole farm systems, resource and environmental management)
- Business management, marketing, IP, policy and regulation
- Māori Agribusiness
- People management and leadership
- Science and engineering (particularly in the areas of robotics, automation, precision production, and biotechnology).
- Value-chain and partnership management
- Information technology (cloud computing, big data analytics, artificial intelligence, e-commerce, digital markets)
- Circular economics (an economic system aimed at eliminating waste through the continual use of resources)

While a lower proportion of the workforce have skills in:

- Manual work skills on-farm, on-orchard, in-forest, at-sea) and in primary processing (fruit packing, fish processing).

CONTEXT

The food and fibre workforce is large, diverse, and changing…

12. The food and fibre sector includes the dairy, red meat, wool, horticulture, seafood, arable, forestry, pork, apiculture, and poultry industries, along with those support industries that service these industries in a range of different ways.[1]

13. Roles and skills in the sector are diverse and include those in the areas of **production** (e.g. roles that grow/raise and or extract a raw product from natural resources such as growing and picking fruit, fishing, growing and felling trees, milking cows), **processing** (roles that convert raw materials into primary products such as wine, fish fillets, laminated timber products, and infant formula), and **support services** (roles that service multiple sectors such as veterinarians, rural consultants, engineers, scientists, and accountants). More information about the diversity of primary sector skills is set out in Annex A.

14. Between 2012 and 2019, the food and fibre sector workforce grew by approximately 30,600 (9%) to approximately 366,800. Most of the growth in employment has been in support services (at approximately 22,300 extra people, or a 24% increase) and processing and commercialisation roles (at approximately 10,800 extra people, or an 8% increase), which are growing much faster than production roles which have reduced slightly (at approximately 2,500 fewer people, or a 2% decrease). More information about the composition of the current primary sector workforce is set out in Annex B.

15. Despite the growth in numbers, the food and fibre sector carries pervasive labour and skills gaps. In recent years the sector has faced significant challenges in meeting its workforce needs. The workforce is ageing and there is increasing competition for employees across sectors in the regions. Much work is seasonal, creating peaks and troughs in demand, and takes place in rural or smaller metro centres (e.g. Ashburton, Blenheim). These factors can be a disincentive to people who want more stable urban work opportunities.

16. The size and scale of the food and fibre sector in terms of productive footprint and yield size has also increased to a level that the domestic workforce alone cannot manage. Over the next decade we expect continued growth in several of our primary industries which will result in a need for greater numbers of seasonal and permanent staff.[2] Examples include:

    - the aquaculture industry as it grows and matures; and
    - the horticulture and viticulture industries across all main crops – kiwifruit, grapes, and apples.

17. In addition, an overall lift in numbers and skill level across the sector is needed to derive additional value from primary products. In the forestry sector, the growing focus on the bio-economy and the use of wood (fibre) to replace high-emitting products in the economy (fuel, heating, plastics, building materials etc) and the importance of using renewable materials to reduce the waste stream, are creating opportunities for the sector to grow additional value from its products.

[1] Support Services are roles that cannot be attributed to a specific sector. For example, veterinary services will be provided to all livestock farmers, fertilisers and pesticides can be applied to all land-based activities, and scientific research will have varying degrees of importance to all primary sector activities.

[2] Situation and Outlook for Primary Industries December 2020

18. To mitigate labour shortages, and to support continued growth, employers have increasingly sought migrant workers, particularly for lower-skilled roles in the food and fibre sector. COVID-19 border restrictions have all but stopped the flow of new migrant labour, and worker shortages are significantly impacting the primary industries. This has created a lot of critical short-term activity that aims to get New Zealand jobseekers and available migrant workers into the sector to plug labour gaps.

WORKFORCE NEEDS OVER THE IMMEDIATE, SHORT, MEDIUM AND LONG-TERMS

In the immediate term (12+ months), the main priority is to plug urgent labour gaps to keep some parts of the sector going

Characteristics of the immediate food and fibre sector environment…

New Zealand's food and fibre sector exports are playing a key role in our economic recovery post-COVID. Consumer demand for many primary products remains strong across multiple overseas markets, particularly from consumers seeking out healthy food options and natural fibres. Overseas consumers are willing to pay a premium for New Zealand products with strong environmental, food safety, and health credentials. Adequate, appropriately skilled workers are necessary to ensure New Zealand can make the most of volume and value increases. While there are many highly skilled roles across the whole of the value chain, the sector also currently relies heavily on manual work in production and processing.

The current key focus for much of the sector is on attracting and retaining New Zealand jobseekers to fill labour gaps ahead of seasonal peaks, and for some industries (such as horticulture and fisheries) on advocating for targeted border exceptions for critical workers. Each year a range of primary industries employ significant numbers of seasonal staff from overseas, predominantly in lower-skilled, lower-paid but essential work on orchard and farm, at sea, and in processing. Forestry is an exception to this, as much of the work is not seasonal and the industry does not rely so heavily on migrant labour compared to other primary industries.

Total migrant worker arrivals have trebled in the last 15 years. We estimate these numbers to range from around 21,000 people (approximately 8.5% of the season's primary sector workforce) during the winter months to around 32,000 people (approximately 12.3% of the season's primary sector workforce) in the summer/autumn harvest period.

A large proportion of migrant workers are Pacific workers on Recognised Seasonal Employer visas, Working Holiday Scheme workers, and workers on Essential Skills visas. Higher-skilled migrant workers are also used to supplement the workforce when New Zealand's domestic capacity is not large enough (e.g. veterinarians, agricultural contractors, specialist engineers, shearers). Work is often seasonal in rural or remote areas.

Border closures have significantly reduced the number of temporary migrant workers available to work in the food and fibre sector, with horticulture and viticulture most heavily impacted. Parts of the food and fibre sector are not well set up to look to different domestic sources for workers, which is disrupting existing business models and creating workforce uncertainty. The drop in migrant labour has exacerbated shortages many sectors were facing prior to COVID-19.

The ongoing pressure around access to workers is taking a toll on some business owners and employers who are trying to run their businesses and pick and pack their products. without enough workers.

What skills are particularly required right now?

19. The main food and fibre sector workforce pressure points right now are in the following areas:

    - Manual production (horticulture and viticulture pickers and pruners, deep-sea fishers, shearers, dairy assistants, and silviculture – tree planting);

- Manual processing (i.e. fruit packing and seafood, meat and wool processing, pulp and paper);
- Dairy farm management;
- Machine operation (rural contractors, wood harvesting and processing); and
- High skilled technical specialists (e.g. veterinarians, equipment engineers).

What are government and industry doing to build or obtain these skills?

20. Industry and government have acted with pace to develop employment schemes to get unemployed New Zealanders into work and mitigate the risks caused by lack of access to migrant labour.
    - The Opportunity Grows Here campaign is connecting newly unemployed New Zealanders with food and fibre sector jobs (see case study below).
    - The Ministry for Primary Industries (MPI) is funding a programme of taster and basic skills training taster-courses across the country that focus on building introductory skills in various industries. Examples include winter pruning courses run by New Zealand Kiwifruit Growers Incorporated, the Tane Mahuta familiarisation programme for silviculture, and DairyNZ's 'Go Dairy' course. The programme also includes partnerships at agricultural education campuses Telford (in Balclutha) and Taratahi (in the Wairarapa).
    - MPI has set up a regional workforce liaison service that continues to support redeployment of New Zealanders into food and fibre sector jobs, working with other agencies such as the Ministry of Social Development (MSD). This team is working closely with industry groups in Auckland, Waikato, Hawke's Bay, Nelson-Marlborough, Canterbury, and Otago to support local food and fibre sector employers.
    - MPI is funding a range of Māori skills training programmes to increase the uptake of food and fibre sector employment by Māori and boost the productivity of their food and fibre sector assets.
21. More broadly, MSD is continuing its work to better support more New Zealanders into seasonal work. This includes regional training and recruitment initiatives, and promotion of the New Zealand Seasonal Work Scheme which provides financial assistance for people to relocate to take up seasonal work.
22. In addition, in 2020 Cabinet approved Class Border Exceptions for 2,000 Pacific Recognised Seasonal Employer (RSE) workers, 570 deep-sea fishers, 210 agricultural and horticultural mobile plant machinery operators (rural contractors), 60 shearers and 30 mixed and large animal veterinarians to cover critical gaps. Government has also recently approved entry for a further 2500 RSE workers in time for next summer's harvest season, along with an additional 40 shearers and 125 rural contractors.
23. A range of immigration policy changes have also been made to allow Working Holiday Scheme and Essential Skills visa holders to stay in New Zealand and continue to work where possible.

Opportunity Grows Here – Case Study

In response to the shortfall of primary industry workers resulting from COVID-19, in July 2020 MPI launched the *Opportunity Grows Here* marketing campaign. This programme is part of the wider workforce programme that also includes funding for taster courses and workforce regional liaison staff working with industry on the ground.

The marketing programme began with an overarching brand campaign promoting the many industries and opportunities within the food and fibre sector, including immediate jobs, training, and careers. It has then expanded to individual targeted campaigns for immediate jobs needs, based on industry and targeted by region. Such campaigns include:

- **Kiwifruit campaign:** A campaign to attract job seekers into Kiwifruit picking and packing roles has been extended. To date digital ads have been viewed over 7.4 million times delivering over 30,250 ad clicks to the NZKGI or Work the Seasons job sites.

- **Citrus campaign:** The campaign to fill citrus picking roles in Northland and Gisborne is now underway (began mid-April). To date digital ads have been viewed over 730,000 times delivering over 5,000 ad clicks to the Works the Season job site.

- **Forestry and wine:** In May, MPI launched the forestry (winter planting) and wine (winter pruning) campaigns. These include promoting familiarisation courses for forestry planting run by Tāne Mahuta Forestry.

Planning continues for 2021-22 including the ongoing brand campaign, in particular attracting career changers and potential students into training opportunities within the primary industries.

As at May 2021, the website has 174,500 users. It has had 284,200 unique page views: and 381,500 total views. The digital ads have been viewed 27.3 million times and campaign videos played 7.3 million times.

The number of people placed in roles (as at 10 May) as a result of the *Opportunity Grows Here* campaign and MPI's wider recruitment programme is understood to be 5,234*****.

*******Based on numbers supplied by MSD of registered job seekers placed into jobs. The number above is likely higher as it excludes jobs filled where people have been directly referred on to employers or recruitment sites through the campaign.*

In the short-term (1-5 years) – the sector needs to grow its skill in providing great workplace conditions to attract and retain talented employees and ramp up its planning for the future

24. Short-term efforts taken to mitigate labour shortages will not meet the sector's long-term workforce needs. Over the medium term, the sector must do more to build great workplaces, upskill existing workers and new entrants to the sector, and reduce entry-barriers to those currently under-represented in the sector. Over this period, there will be an emerging focus on identifying and transitioning existing workers that may be displaced as their roles become more automated (for example transport and logistics, fruit packing).
25. Over this period, the sector will also need to further refine its long-term workforce needs and direction (set down for example, in the Food + Fibre and Forestry Skills Action Plans and the subsequent Agri-Tech Industry Transformation Plan in 2020), accelerate implementation of existing and planned initiatives, and determine the additional activities that the sector will need to implement over the coming years. The workforce forecasts from the MPI-led, pan sector Food and Fibre Workforce Data and Forecasting Working Group will be critical to this planning process. These are likely to be released in mid-2022.
26. The following section describes some possible characteristics of the short-term environment.

Possible characteristics of the short-term food and fibre sector environment…

As a result of the pandemic customers will continue to have an increased focus on health and nutrition, and safe food systems; this will drive up domestic and international demand for New Zealand's primary produce. The development and uptake of plant-based foods in the diets of mainstream consumers will also likely accelerate.

Over the short-term, we expect the food and fibre sector will continue to rely on a reasonable number of migrants, particularly in sectors with intensive peak harvesting periods. However, the Government's reset of New Zealand's immigration settings for migrant workers is likely to have tilted the balance of migrants entering the country away from the lower-skilled work towards high-skilled migrants and meeting genuine skills shortages. This will alter the makeup of the available labour pool for employers.

The focus will still be on attracting and retaining New Zealand jobseekers into production and processing roles, both permanent and seasonal. Employment conditions (particularly those relating to remuneration, career progression, and HR/ leadership) will likely remain a key barrier to attracting and retaining New Zealanders, although mechanisms like Fair Pay Agreements may be beginning to have an impact.

The sector is aware of this, and some industries (i.e. rural contracting, wool harvesting, horticulture, and deepsea fishing) will likely have begun implementing the specific Workforce Transition Plans they are currently developing. Other industries, seeing the need, will likely be developing their own plans.

We will likely see some technological innovation continuing to occur across the different industries, but a large number of businesses, particularly smaller firms, will still likely view investment in technology and innovative as expensive, high risk, and will not be prioritising it.

Much of the sector will likely be concerned about the impact and compliance costs of new regulatory requirements around integrated farm planning, water and nutrient management, and zero carbon requirements. There may be a shortage of qualified professionals to help growers and farmers navigate this area confidently.

What skills does the sector need to grow over the short-term?

27. Given this scenario, MPI expects the main areas of food and fibre sector workforce growth in the next 1-5 years to likely be in the areas of:

- People management and leadership to build better workplaces
- Engineering and science to develop new processes
- Food safety, biosecurity, animal welfare
- Marketing and communications
- Physical production and processing (on-farm, on-orchard/vineyard, in forest, at sea, in-processing)
- Production management (whole farm systems, resource management, staff management, business systems, export compliance)
- Strategic planning
- Technical and management support (IT, finance, human resources, administration).

In the medium-term (5-10 years), the sector will need to accelerate the growth of the specialist skills and processes that will be increasingly called on in the sector

28. MPI anticipates that this period is likely to be the one of greatest transition, with the sector having the dual focuses of refining and improving primary production to be more productive, sustainable, and inclusive, while building the capability and infrastructure for the food and fibre sector of the future.

29. The following section describes some possible characteristics of the medium-term environment.

Possible characteristics of the medium-term food and fibre sector environment…

New regulatory requirements around integrated farm planning, water and nutrient management, and carbon emissions will have entered into force. The sector will likely be building zero-carbon approaches and be more widely incorporating Māori knowledge and perspectives into its operating models.

New and non-traditional pathways to ownership will continue to emerge (earn-in options, portfolio ownership), which may provide sector participants (not just family / trusts) more opportunities to own machine/land/tools/processing plants/supply-chains etc.

Over the medium-term, sector growth will still likely rely on manual work in production and processing, and migrant labour will continue to supplement domestic labour supply during peak periods. However, the proportion of skilled New Zealanders across the supply chain is expected to grow. Production units will likely become more specialised, sophisticated and larger, and employ more people in higher-skilled roles. Even roles that are traditionally seen as lower-skilled will need greater skills to drive productivity and meet food safety, environmental and animal welfare requirements.

Specialist skills will likely be increasingly called on to help manage critical issues around food safety, biosecurity, sustainability and animal welfare, and we expect demand will grow for professional services from researchers, rural consultants, veterinarians, agronomists and irrigation specialists. Demand for ‘non-primary industry’ skills will also likely grow, these include such social sciences, languages, organisational development, marketing, IT and digital enterprise.

We expect that employers will have increased investment in training and upskilling and improving workplace conditions and will be on the path to becoming better people leaders. This, we expect, will improve staff engagement and retention across the sector and New Zealanders may start seeking the food and fibre sector as an employer of choice.

We expect industry and government efforts to increase diversity, will have increased the inclusiveness of the workforce, and may have increased the proportion of women, Māori and Pacific people in leadership and management roles. If so, this could mean there is a greater diversity of employees in production and processing than ever before. There may also greater transferability of skills across different primary industries.

The production and processing workforce will probably still be largely concentrated in rural areas and smaller metro centres, however better internet connectivity in rural and remote areas will likely be less of a barrier to working and upskilling. Those working in support or commercialisation roles are more likely to be dispersed across the country, in both rural and urban areas. Flexible work conditions, including remote working, are expected to be more common.

What skills does the sector need to grow over the medium-term?

30. Given this scenario, MPI expects the main areas of food and fibre sector workforce growth in the next 5-10 years to likely be in the areas of:

- Engineering and science skills to develop new processes
- Food safety, biosecurity, animal welfare
- Marketing and trade negotiation to access new markets
- People management and leadership
- Policy and regulatory (particularly around climate, water, resource management, food safety, and workplace health and safety)
- Production management skills (whole farm systems, resource management, business systems, export compliance)
- Strategic leadership and governance
- Technical and management support (IT, finance, human resources, administration).

In the longer-term (10-20 years and beyond) the priority will be to implement new ways of doing things to take advantage of new opportunities

31. Over the next 10-20 years, MPI anticipates that the focus will likely be on consolidating those new skills, technologies, business models and workforce practices that the sector developed and started to implement during the medium-term. By this stage, though still a critical component of the workforce, it is likely that the proportion of people working in lower-skilled, lower-paid, seasonal and manual jobs will have decreased significantly.

Possible characteristics of the longer-term food and fibre sector environment…

In the long-term, it is likely that reliance on manual work in production and processing will have decreased, as productivity advances (such as automation and robotics) augments and reduces manual labour requirements. However, overall sector workforce numbers are not expected to decrease; in fact, workforce numbers will likely continue to rise due to the introduction of entirely new types of professional roles across the supply chain (e.g. materials technology, nutriceuticals science, digital commerce).

Agritech solutions are expected to drive more efficient use of land, water and marine resources, resulting in greater productivity, greater diversity products, and better environmental outcomes spanning water quality, reduced methane, nitrous oxide and carbon dioxide emissions, both domestically and across export markets.

Because of this, it is likely that workers throughout the sector, including in production and processing roles, will need to have high levels of literacy and numeracy competency; and will need to be able to engage with new technologies and business processes.

It is also increasingly likely that government and industry will work more closely with Māori on applying Māori systems of knowledge in the food and fibre sector in ways that can help give effect to Te Taiao and build value in the Māori economy.

We expect that the workforce will be dispersed across the country and possibly overseas, in both rural and urban areas. Remote and flexible working will likely be much more common across the workforce.

We expect that new and non-traditional pathways to ownership be common (earn-in options, portfolio ownership), making it possible for more sector participants to own machine/land/tools/ processing plants/supply-chains etc.

By this time, a number of employers may have become more skilled in staff leadership and staff management and development, and there may have been a lift in workplace conditions, remuneration, and career progression opportunities across the sector. There may also have been a lift in employers' leadership and entrepreneurial abilities and their understanding of their interconnectedness with other points in their value chain and other sectors.

We expect that consumer demand for total transparency of productive systems and supply chains will continue to be a factor, and that consumers will make value-based purchasing decisions, influenced by social, environmental, and ethical factors. Primary products will likely continue to be a key source of health and nutrition, and natural fibres for consumers.

We envisage that the food and fibre sector will be known for its market and product skills, in-market skills, market-led product innovation, and cultural and language capability. This may be reflected by increasing numbers of foreign nationals employed in other countries but contributing to New Zealand's food and fibre sector.

What skills does the sector need to grow over the long-term?

32. While more speculative, the long-term scenario suggests that the main areas of food and fibre sector workforce and skill growth in the next 10-20 years are likely to be in the areas of:

- Automation and robotics
- Biotechnology (i.e. genetics, alternative proteins)
- Circular economics (an economic system aimed at eliminating waste through the continual use of resources)

- Information technology (cloud computing, big data analytics, artificial intelligence, e-commerce, digital markets)
- Precision production
- Understanding and application of Māori systems of knowledge in primary production
- Zero-carbon production, processing, packing, transport and logistics, and waste management.

There is a lot of activity already underway between and by government and industry to develop the food and fibre sector workforce of tomorrow

33. Work is already underway across the sector (though this will need to be further accelerated over time) to grow the pipeline of skilled, talented people the primary sector needs. This includes:
    - better communicating possible career pathways and opportunities;
    - ensuring that education and training is accessible to students and meets the future needs of employers; and
    - promoting and adopting good employment practices; and
    - investing in innovation and growing sector's appetite and ability to adopt new technologies.
34. Key initiatives include:
    - The Agritech Industry Transformation Plan (ITP), developed in partnership between government, business, workers and Māori to describe an agreed vision for the future state of the sector and outline the actions required to realise this vision, including investment, innovation and areas of specific skills development. Work on a Food and Beverage ITP, and a Forestry and Wood Processing ITP is underway;

- The Food and Fibre Skills, and Forestry and Wood Processing, Workforce Action Plans that build on existing initiatives to address food and fibre workforce challenges under the following focus areas[3]:
    - *Knowledge*
        - The development of a pan-sector skills and employment data set and workforce forecasting models to determine the workforce we will need to deliver Fit for a Better World – underway;
    - *Attraction*
        - Developed a targeted pan-sector marketing campaign (Opportunity Grows Here);
        - Supporting the Tertiary Education Commission's Food and Fibre Careers Hub and Inspiring the Future programme;
    - *Education*
        - The Reform of Vocational Education (RoVE) is currently underway. For the food and fibre sector, recent or imminent milestones include:
            - the creation of the Food and Fibre Centre of Vocational Excellence (CoVE) launched in March 2021 to support the growth of excellent vocational education programme design across the sector;
            - the establishment of the Muka Tangata People, Food and Fibre Workforce Development Council tol provide industry with greater leadership across vocational education and training;
    - *Employment*
        - The Government is supporting the sector to develop workforce transition plans for a number of industries, including horticulture, fisheries, rural contracting, wool harvesting and aquaculture.

There are many players involved in growing the food and fibre skills pipeline…

35. Industry has the lead role in lifting and shifting the employment conditions and skills of their workforces, as well as igniting the demand for new technologies and business models. The food and fibre sector is already on a path to transformation, with many employers actively working on attracting more New Zealanders to their sectors, up-skilling the current workforce, and improving employer practice.

36. MPI has a core role in supporting the food and fibre sector meet its current and future workforce needs, which are different across different primary industries. MPI also has a leadership role to raise the profile of primary sector careers and encourage employers to invest more heavily in skills development and improving workplace conditions. We also

[3] The Food and Fibre Skills, and Forestry and Wood Processing Workforce, Action Plans were launched in late 2019 as the result of collaboration between industry and government. Actions in both the plans draw together and build on existing initiatives to address food and fibre workforce challenges under four focus areas of knowledge, attraction, education, and employment.

work heavily in partnership with other parts of government, as the education system, labour market regulatory systems, and immigration systems are led by other ministries.

37. The key players in growing the food and fibre skills pipeline are set out below.

Stakeholders	Roles and responsibilities

Industry	• Industry-community interface
	• Improving workplace conditions
	• Providing input into the Reform of Vocational Education (RoVE) implementation process
	• Articulating an attractive value proposition to future sector participants
	• Representing industry in:
	  ○ defining current and future skill needs
	  ○ design and implementation of future initiatives

Ministry for Primary Industries	• Representing primary sector interests across immigration, education, and labour market settings • Fund innovation initiatives • Fund attraction and retention workforce initiatives
Tertiary Education Commission	• Funding vocational and wider tertiary education • Funding career initiatives, including the Food and Fibre Careers Hub and Inspiring the Futures Programme • Innovation in qualifications and delivery methods (e.g. micro-credentials)
Ministry of Education	• Education policy (early childhood, schooling and tertiary), including the RoVE • Curriculum requirements • Funding settings
Ministry of Business, Innovation, and Employment	• Immigration policy • Regional Skills Leadership Groups • Labour market policy development • Labour inspectorate
Ministry of Social Development	• Jobseeker and income support • Student allowances and loans • Pastoral support (e.g. accommodation, transport, training, relocation costs)

38. There are also several interconnected fora where industry and government work together on specific aspects of food and fibre sector capability building and workforce issues. Examples include:

Group/Forum	Roles and responsibilities
Food and Fibre Leaders Forum	Provides a forum for industry group Chairs and Chief Executives to engage on issues of importance and communicate an aligned view to Government Ministers and the Prime Minister.
Food and Fibres Partnership Group	A strategic group established to help accelerate current and new transformation efforts across the food and fibres sector. Shares responsibilities for implementation of key elements if the Government's Fit for a Better World Roadmap.

Food and Fibre Capability Leadership Group	A strategic and system-level leadership group for Food and Fibre capability and workforce development needs. Its role is to act as 'kaitiaki' of the Food and Fibre Skills Action Plan, coordinate and facilitate policy and problem-solving in partnership with government, Māori, and industry.
Forestry and Wood Processing Council	Established to oversee the implementation of the Forestry and Wood Processing Action Plan. Its role is to take the lead in the sector's workforce development challenges.
Food and Fibre Youth Network and Council | He Tātai Rangahua	A Food and Fibre Youth Network will be formally launched in May 2021 to give young people across agriculture, horticulture, forestry, and fishing a voice on environmental and other issues of relevance to the primary sector.
Primary Industry Capability Alliance (PICA)	A pan-sector group that brings together industry, educators, and government to attract and grow a diverse range of talented people into the food and fibre sectors. Its role includes working with schools to ensure they understand the food and fibre sectors and the careers the sector offers.
Sustainable Food and Fibre Futures fund (SFF Futures)	SFF Futures is a MPI-administered fund supporting innovative projects that will create value for the food and fibre industries. SFF Futures is a potential funding avenue for innovation aspects of workforce development.

CONCLUSIONS

39. The food and fibre sector will need higher skills and different specialist skills to take full advantage of changing consumer demands, advances in technology, specialised production and processing and a greater focus on sustainability and climate change.

40. Sustained effort, over the short, medium, and longer terms will be needed to:

- increase productivity and derive greater value from primary products;
- meet the growing expectations of New Zealanders and international consumers regarding environmental standards (particularly around climate and water) food safety, animal welfare, and social responsibilities;
- build greater resilience in the primary industries to withstand domestic, regional and international shocks, including any future epidemics; and
- support thriving communities, particularly those in rural and small metro areas.

41. At the moment, the urgent and important task of mitigating the impacts of migrant worker shortages is a key priority, but over time the sector's workforce priorities must increasingly shift towards growing the specialist skills that will be called on more and more in primary production and processing to increase innovation and productivity, sustainability and inclusiveness.

42. A lot of work is already underway to grow the skills and workforce needed for the sector's future. Industry has the lead role with support from government. Continued coordinated efforts will be essential to ensuring the sector can make the most gains in the areas of productivity, sustainability and inclusiveness and reach ambitions like those set out in Fit for a Better World.

Annex A: Examples of skill types across the food and fibre sector

Skill Type	
Production	
Automation and robotics	Physical and manual work skills (on-farm, on-orchard/vineyard, in forest, at sea)
Biotechnology (alternative proteins, bioplastics, gene tech)	Precision production techniques (irrigation, nutrient, harvesting)
Genetics and breeding	Production system's knowledge
Pest and bio control	Regenerative agriculture
Processing	
Equipment technicians	Manufacturing (costing, administration)
Factory processing lines (i.e. fisheries, fruit grading)	Mobile plant operation Science and engineering
Food safety	Transport and logistics
Support Skills	
Business (marketing, sales, finance, negotiation, entrepreneurship)	Marketing (includes product marketing into new markets, social media, digital marketing)
Circular economics	Māori Agribusiness
E-commerce	Manufacturing (costing, administration)
Equipment maintenance	Mobile plant operation
Export compliance	Networking and collaboration
Farm advisory and management Fresh water and nutrient science	New materials expertise (3D printing, bioplastics etc)
Food safety, biosecurity, animal welfare	Partnership/ consumer management
Geographical Information Systems mapping Immigration expertise	Pharmaceuticals / Nutriceutricals Policy and regulatory expertise (climate, water, resource-management)
Information technology (cloud computing, big data analytics, AI, E-commerce and digital trade)	Programming skills for robots and automation Project management Transport and logistics
Innovation (creativity, risk assessment, communication)	Value/supply chain management Veterinary science
Intellectual Property	Waste management
International relations and trade negotiation	
Organisational	
Digital transformation specialists (i.e. redesigning work around automation)	Technical and management support Training and assessment
Leadership and management	Workplace Health and Safety
People and culture (organisational design and human resources)	

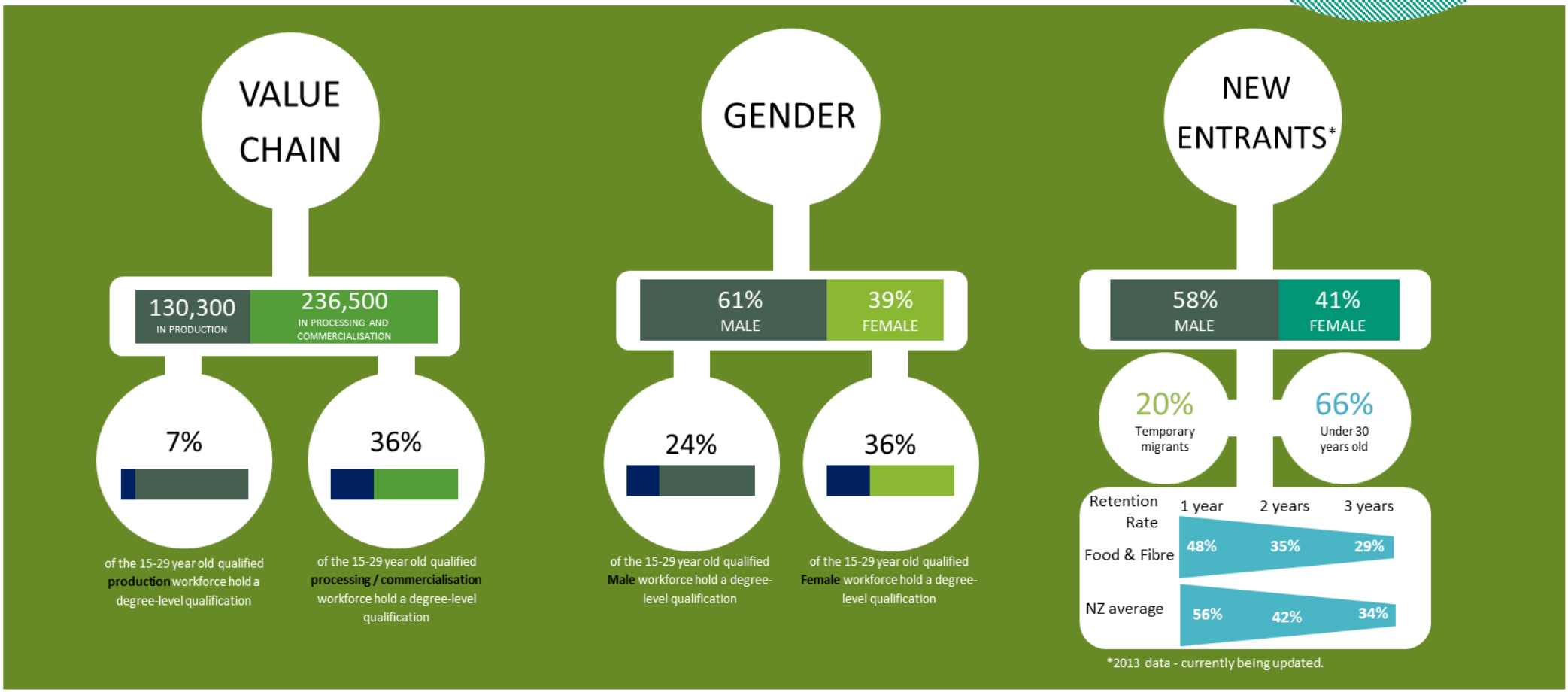
This list is to illustrate the breadth and depth of skill types currently used in the food and fibre sector. It is not intended to be a complete representation of all skills used. The MPI-led pan-sector Food and Fibre Workforce Data and Forecasting Working Group's pan-sector skills and employment data set and workforce forecasting models will provide more granular data about the skills and roles with the workforce. This will likely be due for public release by mid-2022.

Annex B

Who is the food & fibre workforce?

366,800

TOTAL FOOD & FIBRE WORKFORCE (2019 Data)



The food and fibre sector includes the dairy, red meat, wool, horticulture, seafood, arable, forestry, pork, apiculture and poultry values chains, along with the associated support service roles (roles that serve multiple sectors, such as veterinarians, rural consultants, engineers and accountants).

Ministry for Primary Industries

Manatū Ahu Matua

New Zealand Government