

# Regulatory Impact Statement: Aquaculture Biosecurity Programme

## Purpose of Document

Decision sought: This Regulatory Impact Statement (RIS) has been produced to inform the release of a discussion document with regulatory proposals for biosecurity measures for New Zealand's aquaculture industry.

Advising agencies: *Ministry for Primary Industries (MPI)*

Proposing Ministers: *Minister for Oceans and Fisheries*  
*Minister for Biosecurity*

Date finalised: *May 2023*

## Problem Definition

New Zealand lacks a consistent national approach for the biosecurity system for the aquaculture industry (the industry). Currently biosecurity measures for the industry are largely undertaken on a voluntary basis, and land-based and marine-based aquaculture farms are managed under separate legislative and regulatory systems.

The Ministry for Primary Industries (MPI) has determined that the biosecurity system for the industry does not adequately manage the level of risk in relation to the potential adverse impacts that a biosecurity incursion could have on the industry and the wider aquatic environment. There are inconsistent biosecurity management approaches across the industry and gaps in information and data that could constrain the effectiveness of decision-making for biosecurity responses and impact the proactive management of future biosecurity incursions.

## Executive Summary

Aquaculture farming is undertaken on both land and in the aquatic environment. The aquatic environment has a unique profile that requires a different approach to biosecurity from terrestrial farming. The consequences of a biosecurity incursion on the industry can be significant, and it has proven to be very difficult to eradicate pests and diseases once they have established in the aquatic environment.

Under the status quo, land-based and marine-based and aquaculture farms are managed separately under a complex dual legislative and regulatory system, alongside non-regulatory 'best practice' industry guidance for biosecurity measures.

Marine-based aquaculture is managed under the Resource Management Act 1991 (RMA) and the Fisheries Act 1996 (the Fisheries Act). Land-based aquaculture is managed under the Fisheries Act, the Freshwater Fish Farming Regulations, and Fisheries (Record Keeping) Regulations 1990.

Industry-led initiatives have been developed to improve biosecurity practices within the industry. However, these voluntary measures do not have comprehensive coverage across the industry. There is also diversity within aquaculture, with differing levels of capability to upskill or improve biosecurity practices.

These factors indicate that a regulatory approach is the preferred option for improving the biosecurity system for aquaculture. This is due to the weighting of the consequences of a biosecurity incursion eventuating and having severe impacts for the aquatic environment, the industry, and New Zealand's regional economies. The preferred option would set regulatory requirements to achieve improved biosecurity outcomes for the industry. The regulatory requirements would involve a mixture of performance-based and prescriptive duties. Some matters could be more performance-based (where there are many acceptable ways of reaching the outcome) and other matters could be more prescriptive (where it is critical that a very specific action must be undertaken for good biosecurity).

MPI has undertaken a gap analysis that determined that a 'fit-for-purpose' system of recordkeeping and reporting, auditing, compliance monitoring and verification across the industry would support a proactive biosecurity system for aquaculture and would improve decision-making for biosecurity in the aquatic environment.

Improving the biosecurity system for the industry was originally part of the National Environmental Standards for Marine-based Aquaculture (NES-MA) instrument under the RMA. The NES-MA was considered not to be an effective tool for introducing industry-wide biosecurity measure, as its scope was limited to marine-based aquaculture and RMA consenting processes. Biosecurity requirements were subsequently removed from the NES-MA and Cabinet then directed officials to advise on the best way to ensure a comprehensive biosecurity approach that would deliver improved biosecurity outcomes for aquaculture by 2025.

MPI subsequently established the Aquaculture Biosecurity Programme (the Programme). The objective of the Programme is to provide a comprehensive biosecurity system across the industry that will promote, protect, and sustain the industry and minimise biosecurity risks associated with New Zealand's *Aquaculture Strategy* growth target of \$3 billion in annual sales by 2035.

The analysis provided in this RIS has determined that the preferred policy approach for strengthening the biosecurity system for the industry would include:

- Repealing the Freshwater Fish Farming Regulations 1983 to unify the regulatory framework for land-based and marine-based aquaculture.
- Introducing new regulations to require each aquaculture farm to implement on-farm biosecurity management plans to manage biosecurity risks.
- Setting new recordkeeping and reporting requirements for aquaculture farms.
- A national pathway management plan for the four northernmost regions of New Zealand (Northland, Auckland, Waikato, and the Bay of Plenty).
- Establishing a surveillance programme for farmed aquatic animal health.

Delivering the Programme will ensure that aquaculture activities are managed in relation to biosecurity. If implemented, the Programme will improve the knowledge and information required for MPI and the industry to make informed and effective decisions on biosecurity management. The Programme could make significant gains in improving the industry's

resilience to biosecurity risks and could provide benefits in protecting New Zealand's wider aquatic environment from harmful pests.

The detail of the regulatory requirements will continue be developed by MPI in consultation with the industry, Treaty partners, and research and academic institutions.

### Limitations and Constraints on Analysis

The limitations and constraints on the analysis contained in this RIS are that actual figures are not able to be attributed for the cost benefit analysis for the options presented. The compliance costs for the industry and implementation and enforcement costs for the regulator (MPI) are not yet known, as the high-level options for the Programme have yet to be consulted on. As a result, the analysis provided on the costs and benefits is presented as high-level qualitative data. MPI intends to undertake a cost benefit analysis considering the feedback received during of the public consultation on the Programme.

The following areas are outside of the scope of the Programme and have not been considered in the analysis of this RIS:

- Recreational and commercial fishing.
- Māori customary fishing rights.
- Aquatic life and seaweed harvested for the consumption or serving to the guests of the person who harvested it.
- Small-scale activities such as small home-based aquaria and aquaponics, pet shops.
- Facilities producing or processing dried aquatic products (such as dried bonito flakes).
- The pre-border and border biosecurity systems, fish processing plants, existing pest management programmes and new biosecurity responses.

Other limitations include the lack of baseline data and 'real-time' information regarding aquatic pests and diseases in New Zealand that could harm the industry.

### Responsible Manager(s) (completed by relevant manager)



*Fiona Duncan*  
*Director, Regulatory Systems Policy*  
*Ministry for Primary Industries*

24/03/2023

<b>Quality Assurance (completed by QA panel)</b>	
Reviewing Agency:	MPI's Regulatory Impact Analysis Panel
Panel Assessment & Comment:	MPI's Regulatory Impact Analysis Panel (the Panel) has reviewed the RIS and the Stage One Cost Recovery Impact Statement (CRIS) for the Aquaculture Biosecurity Programme. The Panel considers that the RIS fully meets the assessment criteria. It clearly sets out the problem and available options while providing solid initial analysis to support consultation. The Panel also considers that the CRIS fully meets the assessment criteria. The CRIS sets out the rationale for future cost recovery and identifies what further information is required to inform the next stage of work.

## Section 1: Diagnosing the policy problem - what is the context behind the policy problem and how is the status quo expected to develop?

### Background on New Zealand's aquaculture industry

#### *Defining aquaculture activities and fish farming*

1. Aquaculture is defined as the farming of aquatic plants and animals. Aquaculture farms are established either above the high-tide mark (known as land-based aquaculture) or in the ocean (known as marine-based aquaculture).
2. In New Zealand's legislation, aquaculture activities are defined in the Resource Management Act 1991 (RMA) as the breeding, hatching, cultivating, rearing, or on-growing of fish, aquatic life, or seaweed for harvest.<sup>1</sup> The same definition is contained in the Fisheries Act 1996 (the Fisheries Act).<sup>2</sup>
3. The following aquaculture activities are considered within the scope of the Aquaculture Biosecurity Programme (the Programme) and this Regulatory Impact Statement (RIS):<sup>3</sup>
  - Activities deemed to be aquaculture activities under the RMA.
  - Land-based fish farming for sale (current Freshwater Fish Farming licensees).
  - Ornamental fish farms and breeders and transitional facilities (e.g. tropical fish producers).
  - Sports fish hatcheries (e.g. the Department of Conservation and Fish and Game New Zealand have hatcheries).
  - Hatcheries for restocking or enhancement of wild fish other than sport fisheries.
  - Research and experiments involving breeding or on growing fish by universities, research institutes or wānanga.
  - Producers or farmers of algae, seaweed, spirulina, or freshwater plants.
  - Producers of zoo / phytoplankton.
  - Fish production for weed control.
  - Holding of wild finfish (precision harvesting tanks on land).

#### *New Zealand's aquaculture industry*

4. New Zealand's aquaculture industry (the industry) was established in the early 1960s. Commercial aquaculture farming began in the 1970s and the industry is primarily based on the production of Green-lipped mussels, Chinook (King) salmon, and Pacific oysters.

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<sup>1</sup> Section 2(1) of the Resource Management Act 1991.

<sup>2</sup> Section 2(1) of the Fisheries Act 1996.

<sup>3</sup> Submissions on the scope of the Aquaculture Biosecurity Programme will be considered as part of the public consultation on the Programme.

5. New Zealand supplies around 85 percent of the global supply of King salmon, which is highly valued on the global market. Other species farmed at smaller scale or that are being trialled for commercialisation include snapper, hāpuka, kingfish, pāua, whitebait, koura (native freshwater crayfish), grass carp, and seaweeds.
6. In New Zealand, the majority of aquaculture is marine-based farms located in coastal areas close to land. There are around 1,147 marine-based farms across New Zealand. The three regions where most of these farms are based is Marlborough (~ 580), Waikato (~ 270) and Northland (~ 100). There are 62 licenced land-based farms under the Freshwater Fish Farming Regulations 1983 (the Freshwater Fish Farming Regulations).
7. Most species farmed for aquaculture across New Zealand use the following farming techniques:
  - Green-lipped mussels are farmed on long-line systems, where a long-line of surface floats are anchored to the seafloor at each end carries 'dropper ropes' where mussels are grown. There is one major commercial land-based hatchery for mussels.
  - Salmon are farmed in sea pens or cages in Big Glory Bay in Rakiura / Stewart Island, in Banks Peninsula, and the Marlborough Sounds. They are also farmed in freshwater hydro-canals in Twizel and Tekapo.
  - Pacific oysters are farmed using various methods, including on floating baskets attached to long lines, cages and to wooden racks that are anchored in lower intertidal areas. Farming is generally confined to the warmer areas of the northern North Island, with smaller numbers farmed in the top of the South Island.
8. Aquaculture New Zealand (AQNZ) is the main industry body and represents farmers of the three main aquaculture species of Green-lipped mussels, King salmon, and Pacific oysters. The majority of commercial aquaculture farmers are members of AQNZ.
9. A 2016 study published by the Ministry for Primary Industries (MPI), *Managing Biosecurity Risk for Business Benefit – Aquaculture Biosecurity Practices Research*, found that the majority of land-based and marine-based aquaculture farmers were concerned about biosecurity. The study identified that barriers to farmers achieving biosecurity practices included:
  - The belief that nothing can be done to stop the spread of aquatic pests and diseases.
  - The perception of the high costs of biosecurity measures.
  - The perception that investing in and implementing biosecurity practices will present operational challenges.
  - High tolerance of biosecurity risk due to New Zealand's relatively disease-free status and the perception biosecurity incursions being relatively low risk.

#### *Aquaculture's contribution to New Zealand's economy*

10. Aquaculture is a rapidly growing industry that contributes significantly to New Zealand's regional economic development. The Government's *Aquaculture Strategy* outlined the goal of accelerating the growth of New Zealand's aquaculture industry by increasing its

annual revenue from \$600 million to \$3 billion by 2035.<sup>4</sup> The *Aquaculture Strategy* identified resilience of the aquaculture sector through strengthened biosecurity management as an outcome that would contribute to the Strategy's goal.

11. *Fit for a Better World* is the Government's primary industries plan to boost New Zealand's economic recovery following the COVID-19 pandemic.<sup>5</sup> It identified the *Aquaculture Strategy* as a significant opportunity to achieve the 2035 target sooner.

## Legislative and regulatory settings for aquaculture

12. New Zealand's aquaculture industry is managed under two separate systems via primary and secondary legislation. The system used depends on if the farm is land-based or marine-based.
13. Marine-based aquaculture farms are managed primarily by regional councils (including unitary authorities) under the RMA through planning processes and coastal permits (resource consents). Additionally, anyone undertaking fish farming must be registered on the Fish Farmer Register under Part 9A of the Fisheries Act, unless an exemption has been granted. The Fisheries Act enables registration to be subject to certain conditions. Resource consents have expiry dates and if the consents expiry, then the farmer ceases to be entitled to be registered.
14. Land-based aquaculture farms are managed primarily under the Freshwater Fish Farming Regulations 1983 (the Freshwater Fish Farming Regulations). Anyone operating a land-based aquaculture farm who intends to sell their stock must hold a fish farm licence. Licences can only be issued for species that are gazetted as farmable. Part 9A registration requirements of the Fisheries Act do not apply. Licences are issued under the regulations and are administered by MPI. The regulations contain provisions on disease control and notification and enable licenses to be subject to certain conditions.
15. A fragmented approach to legislative and regulatory regime for aquaculture has developed over the years. The Freshwater Fish Farming Regulations were made in 1983. As the industry grew over the decades, registration requirements for both land-based and marine-based aquaculture were included in the Fisheries Act in the mid-2000s. The Aquaculture Reform (Repeals and Transitional Provisions) Act 2004 included the revocation of the Freshwater Fish Farming Regulations. These regulations have not yet commenced, as regulatory gaps would be created without having any adequate measures for biosecurity in place.
16. Both land-based and marine-based farms must be either licensed or registered. Otherwise, the Fisheries Act prohibits fish farming. A licence for a fish farm is issued for a 14-year term and can be renewed at expiry. A licence is required if activities include breeding, hatching, cultivating, rearing, or on-growing. A licence is not required if fish or product from a farm is not being sold. Licences include requirements for the management of fish, aquatic life, and seaweed health management. Examples include maintaining and implementing a biosecurity plan for the farm, conducting regular visual

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<sup>4</sup> The New Zealand Government (2019). [The Government's Aquaculture Strategy](#) Wellington, New Zealand.

<sup>5</sup> Ministry for Primary Industries (2020). [Fit for a Better World](#). Wellington, New Zealand.



inspections and assessments of stock health, and notifying MPI of any increase in stock mortalities or sickness that are unexplained or unusual as soon as practicable.

17. A fish farm may still need to be registered, even if it does not undertake these activities. Registrations can be done on the *FishServe* website and are permanent, but farmers must notify of any changes including changes to resource consent details.<sup>6</sup> Registrations must have certificates of compliance to use the space. The Chief Executive that is responsible for administering the Fisheries Act must decline the application if they do not have a certificate in place. Pet shops, non-commercial domestic aquaponics and ponds do not require a fish farm licence and do not need to be registered.
18. The Minister for Oceans and Fisheries and the Minister for Biosecurity are the Ministers with joint responsibilities for aquaculture.

### *The Biosecurity Act 1993*

19. The Biosecurity Act 1993 (the Biosecurity Act) is administered by MPI and provides the legal framework for New Zealand's biosecurity system. Part 5 of the Biosecurity Act pertains to pest management and enables the creation of pest management plans to manage pests and diseases and pathway management plans to manage the ways in which pests and diseases can be spread (e.g. the movement of fouled equipment).
20. Both pest management and pathway management plans can be regional (in that they apply only to a specific region or area), or national (where they apply nationally or several regions). The Minister for Biosecurity is responsible for approving national plans and regional councils are responsible for approving regional plans.
21. National pest and pathway management plans can be funded through cost recovery options, such as levies made under the Biosecurity Act. Regional pest and pathway management plans are funded through rates from properties. There are also plan rules requiring persons to undertake activities that cost financially or in-kind, charges that are imposed under section 135 (*Options for cost recovery*) of the Biosecurity Act and voluntary funding.
22. There are two regional council-managed pathway management plans for the Fiordland and Northland regions. These plans manage regional vessel movements to prevent the spread of pests and diseases via hull biofouling.<sup>7</sup> Regional councils at the top of the North Island (Northland, Auckland, Waikato, and Bay of Plenty) together with Biosecurity New Zealand and the Department of Conservation are collectively developing an inter-regional pathway management plan for marine vessel movements (i.e. recreational boats moving around New Zealand) in their regions.<sup>8</sup> This includes initiatives for a national engagement and behavioural change.

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<sup>6</sup> *FishServe* is a third-party provider service that manages New Zealand's fish farm registrations and commercial fishing data.

<sup>7</sup> Biofouling is the accumulation of aquatic organisms on surfaces immersed in, or exposed to, the aquatic environment, and is considered one of the main vectors for spreading pests and diseases in this environment.

<sup>8</sup> Biosecurity New Zealand is a branded business unit within MPI with responsibilities for New Zealand's biosecurity system.



*The Fisheries Act, Freshwater Fish Farming Regulations, and Fisheries Recordkeeping Regulations*

23. In addition to the Fisheries Act and the Freshwater Fish Farming Regulations, there are the Fisheries (Recordkeeping) Regulations 1990 (the Fisheries Recordkeeping Regulations). The Fisheries Recordkeeping Regulations include requirements on what records must be maintained for aquaculture farms, which could assist with biosecurity events.
24. Table One illustrates the complexities of recordkeeping and reporting across land-based and marine-based and aquaculture.

*Table One: Recordkeeping and reporting requirements for aquaculture*

Framework	Regulated party	Recordkeeping requirements	Reporting requirements
The Fisheries Act 1996 (Part 9A)	Registered fish farmers	<ul style="list-style-type: none"> <li>• Purchase and sale invoices</li> <li>• Annual inventory, mortalities and transfers for pāua and rock lobster only</li> </ul> <p><u>Registration conditions</u></p> <ul style="list-style-type: none"> <li>• None</li> </ul>	<ul style="list-style-type: none"> <li>• Maintain client details updated</li> <li>• No requirements regarding fish farming activities</li> </ul> <p><u>Registration conditions</u></p> <ul style="list-style-type: none"> <li>• None</li> </ul>
Freshwater Fisheries Regulations 1990	Licensed fish farmers	<p><u>License conditions</u></p> <ul style="list-style-type: none"> <li>• Purchase and sale invoices</li> <li>• Mortalities and transfers for all species</li> <li>• Stock holdings at regular intervals</li> <li>• Health checks, cleaning, equipment brought onto farm, and visitors</li> </ul>	<ul style="list-style-type: none"> <li>• Maintain client details updated</li> </ul> <p><u>Licence conditions</u></p> <ul style="list-style-type: none"> <li>• Monthly stock transfers and mortalities</li> <li>• Notification of unusual mortalities and diseased fish (on a case-by-case basis)</li> <li>• No annual inventory requirements</li> </ul>

25. Section 297 of the Fisheries Act sets out the general regulation making powers. These do not include any explicit regulatory powers to prescribe measures to avoid or manage pest or disease outbreaks either on fish farms or attributable to fish farming activities. There are regulation-making powers in section 301(i)<sup>9</sup> to avoid disease outbreaks.
26. The National Environmental Standards for Marine Aquaculture (the NES-MA) is a regulatory instrument under the RMA. Further details on the NES-MA are provided at paragraphs 39 – 43.

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<sup>9</sup> Section 301(i) provides for “prescribing the measures to be taken to avoid the outbreak, or on an outbreak, of any disease among the fish, aquatic life, or seaweed, and authorising or requiring the taking of any specimen, the testing of any thing, or the sampling of any substance present on any fish farm, and authorising or requiring the removal of any specimen or sample, or the destruction of diseased fish, aquatic life, or seaweed, whether with or without payment of compensation”

27. Regional councils may set biosecurity requirements as a condition to obtaining an RMA consent for marine-based farming activities. However, these are not applied consistently and are not mandatory requirements, with some regional councils having set such rules, while others have not.
28. The Conservation Act 1987 is administered by the Department of Conservation and includes requirements that may apply and assist in the management of biosecurity, such as requiring a permit for the release of fish into the environment.

### The biosecurity system for aquaculture

29. Managing pests and diseases in the aquatic environment poses unique challenges when compared with the terrestrial (land) environment. Once established, it is extremely difficult to eradicate pests and diseases.
30. The prevention of the introduction, exacerbation, and spread of pests and diseases is seen by MPI as being critical for the sustainable development of the aquaculture industry.
31. Biosecurity New Zealand, in conjunction with AQNZ, previously commissioned a programme of work to consider how to strengthen aquaculture biosecurity. This resulted in the publication of a range of documents in 2016 that set out best practice voluntary biosecurity measures for the industry. These included the *Aquaculture Biosecurity Handbook* to assist the industry in minimising on-farm biosecurity risks.<sup>10</sup>
32. There are other government initiatives to support aquaculture and broader marine biosecurity including the Marine Biosecurity Toolbox, a collaborative research programme to develop science-based tools and technologies to empower governments, tangata whenua, the industry, and the public to effectively mitigate biosecurity risks.<sup>11</sup> Additionally, MPI's Marine High Risk Site Surveillance Programme undertakes surveillance of 11 of New Zealand's busiest international shipping ports and marinas to detect incursion of non-native organisms.<sup>12</sup>
33. There are several MPI projects that are relevant to the Programme. The project for open ocean aquaculture is within the scope of the Programme.<sup>13</sup> The Programme would seek to prevent incursions of harmful marine pests through providing further biosecurity tools. The ongoing review of the Biosecurity Act would examine the Act and make improvements to the legislative framework of the biosecurity system and any proposals from the review would flow through to the Programme.

### Voluntary guidance for industry standards for biosecurity

34. AQNZ has developed voluntary industry biosecurity standards for the three main farmed species for aquaculture as part of its current A+ framework: New Zealand

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<sup>10</sup> Ministry for Primary Industries (2018) [Aquaculture Biosecurity Handbook](#). Wellington, New Zealand.

<sup>11</sup> Marine Biosecurity Toolbox (2019) [Marine Biosecurity Toolbox](#).

<sup>12</sup> Ministry for Primary Industries (2018-19) [Marine High Risk Site Surveillance](#). Wellington, New Zealand.

<sup>13</sup> Aquaculture that operates further into coastal waters and potentially as far out as the Exclusive Economic Zone.

Salmon, Greenshell mussels and Pacific Oysters.<sup>14,15,16</sup> Each standard is reviewed every two years by the Biosecurity Working Group. The New Zealand Salmon Biosecurity Standards was reviewed in 2022 by the Salmon Biosecurity Working Group.

35. Compliance with the A+ framework is mandatory for AQNZ's members and AQNZ conducts annual audits to confirm compliance with the framework.
36. AQNZ is a signatory to the Government Industry Agreement (GIA) partnership to improve biosecurity readiness and response. Organisations that have joined the GIA are referred to as signatories or partners and are groups or associations that represent a primary industry (such as the kiwifruit or forestry industry).
37. As GIA signatories the industry is not required to commit to any cost-sharing activities for biosecurity readiness and response activities until they have a signed operational agreement in place under the Biosecurity Act. Currently AQNZ has not signed an operational agreement under the GIA.
38. In 2020, Biosecurity New Zealand released technical guidance documents to assist with the development and assessment of high-level biosecurity management plans for finfish and shellfish. MPI does not have information on the industry uptake of these technical guidance documents, as there are no records of who within the industry has implemented on-farm biosecurity management plans, as these are currently developed on a voluntary basis only.

### **National Environmental Standards for Marine Aquaculture and the establishment of the Aquaculture Biosecurity Programme**

39. The NES-MA is a regulatory instrument under the RMA that came into effect in 2020. MPI is responsible for administering the NES-MA with support from the Ministry for the Environment and the Department of Conservation.
40. The policy objective of the NES-MA was to nationally standardise resource management consenting processes for marine-based aquaculture farms and to reduce regulatory uncertainty for regional councils, unitary authorities, and the industry.
41. Initially, one of the aims of the NES-MA was to strengthen the biosecurity system for aquaculture. The proposal for the NES-MA included biosecurity requirements for marine-based farm applicants to comply with that would be set out in an externally referenced documents before resource consents for farms would be granted.
42. Following further public consultation on the NES-MA, views from the submissions established that the NES-MA was not the most effective tool to deliver improved biosecurity outcomes for aquaculture due to:
  - The limited scope of biosecurity matters that can be regulated through the NES-MA, as it could only cover matters relevant to the RMA consenting process.

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<sup>14</sup> Aquaculture New Zealand (2022) [New Zealand Salmon Biosecurity Standards](#). Nelson, New Zealand.

<sup>15</sup> Aquaculture New Zealand (2021) [Greenshell Mussel Biosecurity Standards](#). Nelson, New Zealand.

<sup>16</sup> Aquaculture New Zealand (2021) [Pacific Oyster Biosecurity Standard](#). Nelson, New Zealand.

- The need for a consistent approach across both land-based and marine-based aquaculture, where the NES-MA would only address marine-based aquaculture.
  - The challenges in the capacity and capability of local government to implement and enforce biosecurity measures.
  - The need for pathway management to accompany biosecurity measures for marine-based farms.
43. The desire for comprehensive biosecurity coverage across the industry resulted in Cabinet agreeing to the biosecurity requirements being removed from the NES-MA. The following Cabinet decisions informed the scope of the Programme:
- The need for a national approach to how biosecurity risks are managed for aquaculture at a farm-level.
  - An approach to biosecurity that has comprehensive coverage across marine-based and land-based aquaculture.
  - Includes users of the aquatic environment and pathways that affect aquaculture (e.g. recreational vessel movements).
  - A clear signal towards regulatory requirements for biosecurity.
  - The delivery of an approach for biosecurity for aquaculture by 2025, to be achieved in the timeframes that were proposed in the NES-MA.

### What is the policy problem or opportunity?

44. The problem definition for the biosecurity system for aquaculture has the following components:
- The status quo does not adequately manage the level of biosecurity risk and the impact that incursions of pests and disease would have on the industry. It is difficult and costly to eradicate pests and diseases once they have established in the aquatic environment. For example, an outbreak of the parasite *Bonamia ostreae* in the Marlborough Sounds in 2015 and on Stewart Island in 2017 led to flat oyster farms in these areas being removed to prevent the further spread of the parasite.
  - Biosecurity incursions that will affect aquaculture and the wider aquatic environment, have, and will continue to occur.
  - There are information and data gaps for biosecurity matters in industry, including inadequate recordkeeping and reporting requirements. There is also a lack of intelligence analysis on trends and patterns of potential biosecurity risks and threats.
  - There are differing levels of risk tolerance, mitigation measures and perceptions within the industry relating to biosecurity management, which has resulted in varying views relating to biosecurity management.
45. If the status quo is retained and biosecurity for aquaculture continues to be managed under separate legislative and regulatory systems, a comprehensive national approach to biosecurity for the industry would not be able to be introduced.

46. Not having on-farm biosecurity plans in place would result in some farms continuing to remain unaware and reactive to possible biosecurity risks, which may threaten the ongoing sustainability of the industry. MPI would continue to have a fragmented and incomplete picture of biosecurity risks and threats hindering its ability to prevent or respond to future incursions. This would not improve the biosecurity outcomes for the industry that were envisioned as part of 2020 Cabinet decisions on aquaculture.

#### *Difficulties in managing biosecurity incursions in the aquatic environment*

47. Aquaculture has a different biosecurity risk profile when compared with farming of the terrestrial environment. Biosecurity management in the terrestrial environment allows for the containment and eradication of incursions of pests and diseases more easily than in the aquatic environment.
48. The highly inter-connected nature of the aquatic environment means that the management of pathways of pest and diseases is complex. A significant portion of aquaculture occurs in natural, aquatic environments (i.e. in coastal sea) where it is not possible to establish physical boundaries, such as walls, to isolate the activities of a farm from the environment. Ocean currents mean that particles and organisms in the water naturally move from place to place. There are also logistical and safety requirements for access as part of biosecurity responses in these environments, such as the need for divers.
49. Aquaculture practices also poses biosecurity risks through the accidental release of farmed aquatic species or spread of pests and diseases into the aquatic environment. These activities can also exacerbate pests or pathogens that exist in the wild through farmed stock contracting a disease from wild animals and then proliferating these pests or pathogens.
50. Escapes of farmed aquatic species can occur from a farm or in the course of moving stock on or off the farm or around the country. Risks are heightened, as many aquatic organisms have larval dispersal stages, and therefore mitigation and eradication is difficult and uncertain in aquatic environments.
51. Aquaculture farms are also vulnerable because of other users of the aquatic environment, such as maritime vessels and the movement of recreational gear between freshwater environments.
52. Other examples of pathways in the aquatic environment include the input and output of untreated seawater or freshwater into and from land-based farms and structures and gear on farms that provide an artificial habitat for biofouling.
53. As aquaculture is a comparatively new industry in New Zealand, there is less knowledge on large scale fish farming when compared with terrestrial primary industries, such as agriculture. In addition, there are critical information gaps on pest and diseases in the aquatic environment that constrain the effectiveness of biosecurity responses and the proactive management of pests and diseases.

#### *Biosecurity incursions in the aquatic environment continue to occur*

54. Many pests and diseases have established in New Zealand's aquatic environment and often it is not known how these pests and diseases arrived. Examples of marine pests

that have affected the industry include *Bonamia ostreae* and *Didymosphenia geminata* (Didymo).<sup>17</sup>

55. Since the biosecurity response to *Bonamia ostreae*, the farming of flat oysters in New Zealand has effectively been banned. Globally, *Bonamia ostreae* has never been eradicated from an area where it has been introduced. Europe's experience has demonstrated that eradication programmes, even sustained over several years, may not be successful, as *Bonamia ostreae* re-emerged following the reintroduction of oysters to previously infected sites. Didymo was first found in New Zealand in 2004 and is now present in over 150 South Island rivers. In 2010, an outbreak of Ostreid Herpesvirus-1 (OsHV-1) in the North Island affected oyster stocks with mortality rates between 80 to 100 percent.<sup>18</sup>
56. There will continue to be biosecurity incursions that may put the resilience of the industry at risk. As noted previously, when incursions occur, it has been almost impossible to eradicate aquatic pests and diseases.
57. When biosecurity events do occur, the costs to the Government can be significant (the below figures exclude costs to the economy and revenue loss from industry):
  - The 2004 – 2007 biosecurity response for Didymo cost \$10 million.
  - The 2005 – 2006 biosecurity response for *Styela clava* cost \$4 million.<sup>19</sup>
  - The 2017 – 2018 biosecurity response for *Bonamia ostreae* cost \$24 million.
58. Despite mitigations, such as MPI's Craft Risk Management Standard for Vessels, which sets standards for managing biosecurity risks associated with vessels within New Zealand's territory, there will continue to be pathways for biosecurity incursions to enter the aquatic environment. These pathways include the importation of aquatic products, such as fish for human consumption, ornamental fish for pets, marine invertebrates, and fish for bait.<sup>20</sup>

#### *Lack of baseline data for aquatic pests and diseases*

59. There is a lack of baseline data for aquatic flora and fauna (including microorganisms) and limited 'real-time' data on the exact locations of aquaculture farms, what type of stock is being farmed, the health status of existing stock, and the frequency and volume of stock movement.
60. Fisheries New Zealand holds information on land-based licences and marine-based farms on *FishServe*.<sup>21</sup> Regional councils have data on resource consents for marine-based farms. However, this data does not adequately provide for traceability purposes

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<sup>17</sup> *Bonamia ostreae* is a parasite that can kill flat oysters and Didymo is a species of algae that forms large mats, affecting the lakes, rivers, streams and fish food sources.

<sup>18</sup> The Fish Site. *Oyster Herpes Threatens NZ*, [Oyster Herpes Threatens NZ | The Fish Site](#). Assessed 7 December 2010.

<sup>19</sup> *Styela clava* is an invasive sea squirt that competes for space and food with aquaculture species and can cause fouling of marine farming lines, vessel hulls and other structures.

<sup>20</sup> Ministry for Primary Industries (2018). [Craft Risk Management Standard - Vessels](#). Wellington, New Zealand.

<sup>21</sup> Fisheries New Zealand is a branded business unit within MPI that is responsible for managing New Zealand's fisheries resources.



to assist in biosecurity events, as it does not provide a comprehensive 'real-time' view of more specific data on the current health and movement of stock on aquaculture farms.

61. MPI does not have accurate and reliable information on the number of aquaculture farms nationally, where these farms are located, and the types of farming practices that are being undertaken. For those that who are licensed or registered, MPI does not have robust information requirements that enables data retrieval. There are a range of reasons for this:
- Some fish farms are excluded from having to be licensed or registered. For example, land-based fish farms that are not selling stock such as fish and game hatcheries and fish held by research organisations.
  - There are some activities that fall within the definition of fish farming under the Fisheries Act but have not traditionally been considered as fish farming and have either not been licensed or have been exempted from being licenced or registered (these activities are excluded from the Programme). These activities include pet shops and their suppliers, aquaponics, holding rock lobster in pots at sea or in tanks on land for weeks at a time, and plankton or algae farming where species are unidentified and not gazetted as farmable species.
  - Because of this regulatory ambiguity, it is unclear who must be registered or licensed in relation to fish farming activities. Additionally, there are fish farmers who are not registered, and therefore are not compliant with the law. There are difficulties in enforcing the law in these cases, as it is not known where these farms are located or who the farmers are. Reconciling each council or unitary authorities consent records with records on the MPI's Fish Farmer Register poses difficulties, as the consent holder may not be the fish farmer.
  - There are no cost recovery mechanisms in place for compliance services for aquaculture to assist with information and data retrieval from the industry.

*Lack of a consistent, nation-wide approach for biosecurity management for aquaculture*

62. To date, there has not been a clear and consistent nation-wide approach for managing biosecurity for the industry. The legislative and regulatory framework has indirectly addressed some aspects of biosecurity for the industry, however, the lack of consistent regulatory requirements across both land-based and marine-based aquaculture farms has created a fragmented and inconsistent approach to biosecurity management for aquaculture. This could increase the risk of biosecurity events occurring pest and the associated economic and ecological damage to farmed aquatic species (including to taonga species).
63. There is no continued justification to manage marine-based and land-based farms under separate legislative and regulatory systems, as the biosecurity risks for both farm types are largely the same.
64. Under the Biosecurity Act, powers to control stock movements in the case of a serious pest or disease outbreaks are reactive, as they are applied when a biosecurity risk has been identified and is required to be contained. The exception to this is where a pathway management plan is in place.
65. Proactive biosecurity measures to control and manage farm operations, water discharges, or stock movements, are also necessary to manage the biosecurity risks to



the industry. Biosecurity measures to avoid the introduction and spread of disease or pests through industry activities can be set through licence conditions, registration conditions, or coastal permit conditions. Licence and registration conditions are set by the regulator (MPI) and coastal permit conditions are set by regional councils.

66. All marine-based aquaculture farms with coastal permits for aquaculture are required to be registered. However, there is uncertainty in relation to other activities that hold fish, whether on land or in the marine area. It is also possible that a regional council may decide that a particular activity does not require a coastal permit, but if it fits within the definition of fish farming, then the operator must still be registered.
67. There is no agreed policy or operational guidance on which activities comprise fish farming, or what approach should be taken to determining exemptions or to setting conditions on both registrations and exemptions. Some individuals hold rock lobster in pots at sea or in tanks on land for weeks at a time and some fish dealers keep live fish in tanks. In both of these cases, the activities may meet the definition of fish farming, for example if these animals were fed. In the absence of a consistent approach to registration, the gaps in coverage for biosecurity measures within the industry will continue.

#### *Registered fish farmers have no biosecurity conditions under the Fisheries Act*

68. Marine-based farmers, that is those with coastal permits for aquaculture, and registered land-based fish farmers have no registration conditions relating to biosecurity measures for their farms.
69. The absence of registration conditions for biosecurity or coastal permit conditions means that there are no comprehensive proactive legal requirements to prevent or manage pest and disease spread within the industry.
70. Although the Biosecurity Act can be triggered in the case of a biosecurity incursion, the lack of reliable tracing for marine pests and diseases has led to difficulties in dealing with disease outbreaks in the recent past.
71. Licensed land-based farms under the Freshwater Fish Farming Regulations have regulatory requirements and licence conditions related to pest and disease prevention and management. A licence is not required when stock is not intended to be sold (e.g. fish and game hatcheries and research organisations).
72. Section 186S(5) of the Fisheries Act allows the Chief Executive that is responsible for the Fisheries Act to impose conditions on registrations relating to species that may be farmed, processes and systems to operate a farm (including recordkeeping, reporting, storage, and labelling). However, there is a legacy issue where section 186S does not explicitly provide for registration conditions to be added, amended, or revoked. The result is that there is no straightforward way to introduce registration conditions retrospectively for biosecurity measures.
73. Some regional councils may implement biosecurity measures under the RMA using resource consent conditions for marine-based farms, however these conditions have not been consistently applied across regions.

#### *Inconsistent, ineffective, or absent recordkeeping and reporting*

74. The Freshwater Fish Farming Regulations are nearly 40 years old and are increasingly outdated for their purpose. The regulations were developed primarily for regulating

salmon production in land-based facilities and link back to the Fisheries Act 1983, which has since been repealed and was replaced with the current Fisheries Act. The recordkeeping requirements under the Fisheries Act were established for fisheries management and not for biosecurity matters for aquaculture.

75. MPI has determined that the recordkeeping and reporting requirements that are currently in place under the Fisheries Act do not meet the policy intent. Quality information and records are necessary for good biosecurity and aquaculture management.
76. Improved recordkeeping and reporting are necessary for the regulator (MPI) and the industry to respond effectively to biosecurity events, to establish an auditable record for monitoring aquaculture activity, and enabling product traceability for food safety and marketing purposes for the industry. In addition, adequate reporting is necessary to:
  - Maintain up-to-date records of who is farming what species and where and what stock is being moved and to where.
  - Enabling the regulator to monitor activities and aquaculture farms that are of higher risk.
  - Allowing for the timely and targeted communication with farmers during biosecurity events.
  - Providing information for public statistics (i.e. production data from the industry that is compiled for public interest and to meet international reporting requirements).
77. Registered fish farmers are required to keep records under Fisheries Recordkeeping Regulations of purchase and sale invoices for stock, annual inventory, mortality records. Stock transfer documents are required to be kept for pāua and rock lobster, as they are considered high-risk species. These records must be made available for inspection on request by Chief Executive that is responsible for the administration of the Fisheries Act or an examiner.
78. There is no requirement for registered fish farmers to keep records of annual inventory, mortality, or stock transfers either under the Fisheries Reporting Regulations or as a condition of registration for any species, other than pāua and rock lobster.
79. Regional councils do not require or undertake stock assessments on farms or monitor what moves on and off aquaculture farms. Registered fish farmers have no reporting requirements related to fish farming activities. Licence conditions do require the licensee to notify MPI of unusual mortalities or stock behaviour on a farm.
80. All fish farmers, both registered and licensed, are required, under clause 34 of the Fisheries Reporting Regulations, to maintain their client details and report any changes within one month. Annual updates must be provided on request from the Chief Executive that is responsible for the administration of the Fisheries Act. There have been challenges with updating fish farmer client details, due to inadequate specifications for service requirements to manage the Fish Farmer Registry.
81. Current recordkeeping requirements for registered fish farmers do not enable an accurate picture of the species that are being farmed or moved on or off the farm. For example, there are no supporting labelling requirements to assist with tracking stocks through the supply chain. This undermines traceability, which is important for

compliance assurance processes, market access opportunities, and the ability to respond effectively and in a timely manner to biosecurity events.

82. Since no production information is provided, the Government cannot compile public statistics on the industry or meet international reporting obligations to the United Nations Food and Agriculture Organisation (FAO) and the World Organisation for Animal Health (WOAH).

#### *Te Tiriti o Waitangi / Treaty of Waitangi*

83. Māori have roles and responsibilities in aquaculture, including as aquaculture farmers, investors in the industry, and through whakapapa to rohe moana and the rights and interests that this provides.
84. The Māori economy asset base in the primary sectors includes 13 percent in fishing and aquaculture.<sup>22</sup> Having a strengthened biosecurity system for the industry will help protect Te Taiao (the environment), taonga species, and Māori aquaculture operations from the negative impacts of pests and diseases.
85. MPI has identified Te Ohu Kaimoana as an important stakeholder in the development of the Programme. The approach will include MPI working with Te Ohu Kaimoana to identify people to help embed Te Ao Māori and mātauranga Māori in the design of any regulatory proposals and how to address matters that may affect Māori.
86. The Programme will engage the principles of Te Tiriti o Waitangi / Treaty of Waitangi, including partnership, active protection, and participation. The duty of active protection is especially relevant to the Programme and to biosecurity work more generally given the implications of biosecurity on Te Taiao. MPI will be guided by these principles when conducting iterative engagement with Māori and prioritising Treaty settlement considerations, for example, working with Te Ohu Kaimoana and Iwi Aquaculture Organisations to determine the effect of the Programme on the ability and desire to choose space-based settlement over the financial equivalent.
87. Māori have specific Treaty settlement interests in aquaculture that are recognised by the Māori Commercial Aquaculture Claims Settlement Act 2004. This Act requires the Crown to provide Iwi Aquaculture Organisations with assets representative of 20 percent of the marine aquaculture space, from September 1992 onwards. Obligations arising from space established for marine aquaculture before October 2011 have been fully settled. There is an ongoing settlement obligation for all new space created after October 2011. Settlement assets are distributed to Iwi Aquaculture Organisations by Te Ohu Kaimoana, who acts as the settlement trustee.
88. Iwi Aquaculture Organisations can choose to receive settlements as one or more of the following:
- RMA authorisations giving Iwi Aquaculture Organisations the exclusive right to apply for resource consents within an area of marine space designated for aquaculture settlement.
  - A cash payment of the financial equivalent of that space.

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<sup>22</sup> BERL. (2021). Te Ōhanga Māori – The Māori Economy 2018.

- A combination of both RMA authorisations and cash payments.
89. The regulatory requirements that may be developed from the Programme will be consistent with the principles of Te Tiriti o Waitangi / the Treaty of Waitangi and will seek to:
- Recognise the role of Māori in aquaculture, both now and in the future.
  - Integrate perspectives from Te Ao Māori.
  - Facilitate aspirations for the future of the Māori economy.
90. MPI anticipates that the Programme will benefit Māori through the increased protection of Te Taiao and increased protection for Māori economic interests in aquaculture. The Programme, particularly the development of on-farm biosecurity management plans, will affect all aquaculture farms, including those run by iwi. For instance, there may be requirements or duties that affect how a farming operation would need to be set up, how a farming operation must be undertaken, or other limitations that affect farming operations. These may directly affect the nature of the space that has been provided for settlement and Iwi Aquaculture Organisations desire or ability to choose a space-based settlement.
91. The objective of on-farm biosecurity management for aquaculture and reaching 'best practice' across the industry is more closely aligned with the Crown's duty of active protection. An improved biosecurity system will enable a more resilient aquaculture industry, greater protection of cultural values, and protection of indigenous aquatic flora and fauna.

### What objectives are sought in relation to the policy problem?

92. The objective is to contribute to New Zealand having a resilient, sustainable, and growing aquaculture industry through the proactive management of biosecurity threats through minimising the risk of incursions of pests and diseases. Achieving this objective will assist in protecting the interests and rights of tangata whenua and the environmental, economic, and social values of New Zealand's aquatic environment.
93. The *Aquaculture Strategy* outlines the vision for New Zealand to become globally recognised as a world-leader in sustainable and innovative aquaculture management. One of the Strategy's goals is to accelerate the growth of the industry's annual revenue from \$600 million to \$3 billion by 2035. An improved biosecurity system for aquaculture will enable these opportunities to be fully realised by protecting the industry from pests and diseases and protecting the wider aquatic environment that New Zealanders value. To achieve this vision, preventing the introduction, exacerbation and spread of pests and diseases is critical.
94. The Cabinet decisions referred to in this RIS have informed the scope and objectives of the Programme. These include the design, development, and implementation the following components of the Programme to improve biosecurity management of the industry by 2025:
- The introduction of on-farm biosecurity management plans across the industry.
  - A system to manage pathways through which aquatic pests and diseases spread.
  - A standardised recordkeeping system across the industry.

- A surveillance programme that improves aquatic animal health baseline data and may also serve as an early warning system for new incursions.
95. Aspects of the problem definition that the Programme seeks to address includes the lack of a consistent nation-wide approach to biosecurity management for the industry, addressing information and data gaps, and introducing regulatory biosecurity requirements for the industry.
96. A nationally aligned biosecurity system for aquaculture will manage the risk of pests and diseases across land-based and marine-based aquaculture farms. This will ensure a comprehensive approach for biosecurity management across all aquaculture activities and high-risk pathways.
97. Additional benefits of an improved biosecurity system for the industry include improvements to the animal welfare of stock through improvements in the health of stock, stock management practices, and the prevention of pests and diseases that could harm stock.

## Section 2: Deciding upon an option to address the policy problem

### What criteria will be used to compare options to the status quo?

98. The criteria that will be applied when assessing the options for the Programme are detailed in Table Two.

*Table Two: Criteria for assessing options for the Aquaculture Biosecurity Programme*

Criteria	Rationale
<p><b>Criteria 1:</b> Provides a nationally aligned biosecurity system for aquaculture</p>	<p>Will provide a nationally aligned biosecurity system that proactively manages the risk of biosecurity events and improves the biosecurity system for aquaculture.</p> <p>For national consistency, changes would need to include all aquaculture farms (both land-based and marine-based). A comprehensive biosecurity system would manage biosecurity risks across the industry and high-risk pathways in a practical and effective way. In addition, the biosecurity system needs to be adaptable and align with MPI’s work programmes and developments in the industry.</p> <p>All components of the biosecurity system must fit together well, and the system must be strong enough to mitigate biosecurity risks, both potential and actual. The system must follow a good design process that is flexible and scalable rather than a one-size-fits-all approach and have the end-users in mind.</p>
<p><b>Criteria 2:</b> Supports effective biosecurity decision-making</p>	<p>Contributes to the delivery of improved knowledge and information to enable the industry and the regulator (MPI) to support informed decision-making on biosecurity management for aquaculture. Methods of contributing to improved knowledge and information should align with existing tools, frameworks, and approaches across the industry and the biosecurity system to support decision-making.</p>
<p><b>Criteria 3:</b> Contributes to New Zealand’s Aquaculture Strategy</p>	<p>Contributes to the vision and goals of <i>New Zealand Aquaculture Strategy</i>. The vision is for New Zealand to be globally recognised as a world-leader in sustainable and innovative aquaculture management and reach \$3 billion in annual sales by 2035. One of the strategy’s outcomes is resilience through strengthening biosecurity management for the industry. Other outcomes include sustainability (environmentally sustainable practices), productivity (supporting regional prosperity), resilience (adaptation to climate change) and inclusivity (partnering with Māori and communities).</p>
<p><b>Criteria 4:</b> Promotes an effective partnership between the industry and regulator</p>	<p>Promotes an effective partnership between the industry and the regulator (MPI) so that both parties can work collaboratively on biosecurity matters. This includes role clarity, integration, alignment, and ensuring that the roles of all relevant parties (central government, local government, farmers, Māori, aquatic users, and other industry bodies, etc.) to ensure that that biosecurity system is working effectively.</p>



Criteria	Rationale
<p><b>Criteria 5:</b></p> <p>Meets commitments to Te Tiriti o Waitangi / Treaty of Waitangi</p>	<p>Meets the Crown’s Te Tiriti o Waitangi / Treaty of Waitangi commitments to its Treaty partners and Māori aspirations for aquaculture and the aquatic environment. This includes existing and future commitments that regulator (MPI) has with iwi (e.g. commitments in the fisheries space) and engagement with Treaty partners and Māori on relevant aspects of the biosecurity system for the industry.</p>

### What options are being considered?

99. This RIS analyses four options to address the problems identified in Section 1 (detailed in pages 12 to 17). For all options, aquaculture is considered as it is defined under the RMA and the Fisheries Act.

#### *Option 1 (the status quo) – current approach with minimal regulatory requirements for the biosecurity system for aquaculture*

100. Option 1 would be to take no action and maintain the status quo. Biosecurity measures for land-based and marine-based aquaculture farms would continue to be managed separately under separate legislative and regulatory systems. There would be the continuation of the current approach of voluntary and some minimal regulatory measures for biosecurity. On-farm biosecurity would continue to be managed through a complex mixture of regional council requirements, industry-led standards, and ongoing regulatory stewardship by MPI.

#### *Option 2 – additional non-regulatory measures to improve the biosecurity system for aquaculture*

101. Option 2 is for additional non-regulatory measures to be used to improve the biosecurity system for the industry over time. Non-regulatory measures would include:

- Developing non-statutory biosecurity guidance material for the industry.
- Educational materials and MPI-led workshops or roadshows with the industry to disseminate and discuss biosecurity practices for the industry.
- Specific material on MPI’s website on biosecurity measures for the industry.

102. Option 2 would include the promotion of AQNZ’s A+ Standards, co-designed standards, standard operating procedures, and other technical documents for biosecurity practices for the industry. Technical design of these materials would occur with MPI, the industry, Treaty partners, research and academia institutions, and relevant government agencies (including the Department of Conservation and the Ministry for the Environment).

#### *Option 3 – broad, high-level requirements for on-farm biosecurity plans for aquaculture*

103. Option 3 would introduce mandatory on-farm biosecurity plans that would focus on broad, high-level outcomes to provide a shift towards best practice for biosecurity for aquaculture. Option 3 would differ from Option 4 in that it would not include more detailed requirements for what these plans must contain. There would be a general duty on the aquaculture farmer to have an on-farm biosecurity plan in place.



104. The level of biosecurity protection sought would be left to the discretion of the aquaculture farmer and best practice would be set out in non-statutory guidance material.
105. MPI would assess the adequacy of the on-farm biosecurity plans against regulatory requirements. Any move towards levels of best practice would be on a voluntary basis by the industry and would be developed by MPI in accordance with its regulatory stewardship obligations.

*Option 4 – regulatory and non-regulatory measures to improve biosecurity for aquaculture*

106. Option 4 proposes to unify the separate legislative and regulatory systems for marine-based and land-based aquaculture and to introduce a suite of regulatory and non-regulatory proposals, including:
  - Regulatory requirements for aquaculture farmers to have on-farm biosecurity plans in place for farms.
  - Regulatory requirements for aquaculture farmers to meet recordkeeping and reporting requirements for their farms.
  - Non-regulatory measures within the existing regulatory framework, including guidance and educational materials for the industry.
107. Under Option 4, the development of, and compliance with, an on-farm biosecurity plan would be mandatory. Failure to comply with on-farm biosecurity plan requirements set out in regulations would result in offences and penalties provided for in regulations under the Fisheries Act. It would be mandatory to meet specific requirements that would be raised towards best practice over time. The stages and corresponding standards would be co-designed with stakeholders, including the industry, Treaty partners, and research and academic institutions, with the first stage of implementation commencing in 2025.
108. The proposals for Option 4 include the following:
  - Repealing the Freshwater Fish Farming Regulations to have a single legislative and regulatory framework for marine-based and land-based aquaculture.
  - Creating new regulatory requirements for aquaculture farms to develop and implement on-farm biosecurity management plans.
  - Setting new regulatory requirements for recordkeeping and reporting requirements for aquaculture farms.
  - Focusing on pathway management in the wider aquatic environment through the Top of the North Island pathway management plan.
  - Establishing a surveillance programme focused on farmed aquaculture species on a delayed timeframe (post-2025).
109. Overarching requirements could be either prescriptive or performance-based, or a combination of both. Additionally, there would be administration and compliance efficiencies with having a single legislative and regulatory system for land-based and marine-based aquaculture.

*Options 3 and 4 would provide for exemptions from the regulations in certain situations*

110. Both Options 3 and 4 would provide for exemptions for an aquaculture farm to not have an on-farm plan in certain situations, based on an assessment of the biosecurity risk posed by the farm. This would be based on Section 186Q (Exemptions) and Section 89A of the Fisheries Act, which requires provides for an exemption to be granted relating to farmed fish.
111. Under s186Q, the Minister for Oceans and Fisheries can grant an exemption to a fish farm based on the following:
- The scale of the fish farmer's proposed fish farming operations, including the number of sites and the quantity of fish, aquatic life, or seaweed involved.
  - The species of the fish, aquatic life, or seaweed proposed to be farmed.
  - The use to which the farmed fish, aquatic life, or seaweed is to be put.
  - Any other fishing related operations carried out or proposed to be carried out by the fish farmer.
  - Any other matter that the Chief Executive considers relevant.
112. The provision for the Chief Executive to consider an exemption regarding any matter would be suitable for enabling an exemption from an on-farm biosecurity plan.

## Analysis of options

113. A summary of an analysis of the options against the criteria is provided at Table Three.

### *Criteria 1: Provides a nationally aligned biosecurity system for aquaculture*

#### Option 1

114. A lack of national alignment on how biosecurity measures are applied across the industry could result in an increased risk of biosecurity incursions over time. This would continue under Options 1 and 2, where there would be voluntary requirements only for biosecurity measures. While it is assumed that aquaculture farmers are progressively adopting voluntarily measures based on the standards and guidance provided by AQNZ and MPI, there still may be a portion of the industry that are not following these measures.
115. Option 1 would not deliver a comprehensive approach for the biosecurity management for the industry and there would still be the existing issues that have been identified in the problem definition. If Option 1 is retained, the inconsistencies in the biosecurity management of marine-based and land-based aquaculture farms would continue under the separate legislative and regulatory regimes and the impediments under this dual system would remain. Option One would not manage biosecurity across the entire aquaculture system nation-wide in an aligned manner.
116. While work was undertaken by the Government to develop consistent and comprehensive biosecurity requirements for marine-farms under the NES-MA (detailed on page 11) biosecurity components were removed from the NES-MA as it could only be applied to marine-based aquaculture and only limited controls could be established. There was also a concern from regional councils about implementing a biosecurity management plan framework which was not a regional council expertise. Therefore, the NES-MA could not provide the desired level of national consistency for biosecurity measures for the industry.

### Option 2

117. While Option 2 would promote national coverage of best practice biosecurity measures across the industry, such as AQNZ's A+ Programme and MPI and AQNZ guidance documents for biosecurity measures for aquaculture. However, this would not necessarily improve the consistent application of biosecurity measures nationally, as they would not be a regulatory requirement for the industry. Differing approaches for biosecurity would be able to be undertaken in an ad hoc manner. This analysis assumes that regulatory measures, combined with offences and penalties, will lead to greater compliance with biosecurity measures (as set out in Options 3 and 4).
118. There is an ongoing likelihood that the inconsistencies that have been identified with separate legislative and regulatory systems for land-based and marine-based aquaculture would continue under Options 1 and 2. This would not result in a comprehensive approach for biosecurity management within the industry. Inconsistent applications of biosecurity measures could create a fragmented biosecurity system with potential gaps and weak points that could result in the industry being more prone to a biosecurity event occurring.
119. The advantages of Options 1 and 2 are that there might be increased 'buy-in' from the industry, as the changes would be non-statutory, voluntary, and industry-led when compared with the regulatory approaches set out in Options 3 and 4.

### Option 3

120. Option 3 would provide aquaculture farmers greater flexibility in developing on-farm biosecurity management plans for their individual farms. However, this option would not provide the desired level of nationally consistency across the industry, as it would not set out detailed regulatory requirements for specific biosecurity measures for on-farm biosecurity management plans. There would also be no regulatory requirements for recordkeeping or reporting information on aspects of biosecurity to the regulator.
121. Option 3 would not provide the level of detail in on-farm biosecurity management plans to achieve overall improvements in biosecurity management across the industry. This option only requires broad, high-level outcomes to be set out in on-farm biosecurity management plans and not detailed biosecurity measures. There could be significant variation or deviation in these plans and biosecurity measures, as the level of detail would be left to the discretion of individual farmers.

### Option 4

122. The duties and requirements for Option 4 would be more prescriptive than Option 1, Option 2, and Option 3. Land-based and marine-based aquaculture farms would be required to comply with specific regulatory requirements to improve biosecurity measures for the industry.
123. For Option 4, regulatory requirements for on-farm biosecurity plans and recordkeeping and reporting for aquaculture farms would address the gaps that have been identified with the biosecurity system for aquaculture. The gaps and inconsistencies would be addressed through the introduction of detailed requirements for all land-based and marine-based and aquaculture farms to have on-farm biosecurity plans in place that are underpinned by recordkeeping and reporting, which would be provided to the regulator (MPI).

124. Option 4 would unify the current dual approach for managing land-based and marine-based aquaculture farms under a single legislative and regulatory system. Replacing the dual approach would reduce inconsistent approaches to biosecurity management, and aquaculture management in general, across the industry. This would ensure the desired level of nationally consistency through statutory requirements for on-farm biosecurity plans and recordkeeping and reporting. Reaching 'best practice' for biosecurity measures would be achieved over time through regulatory requirements and the provision of non-statutory guidance material to the industry.
125. While Option 4 would simplify the legislative and regulatory framework for managing the industry, consenting requirements under the RMA would still apply, as with all the options. If implemented, Option 4 would address any duplication or interface issues with the Biosecurity Act and the Fisheries Act.
126. The disadvantages of Option 4 are that it could more complex to implement when compared with the other options, due to the new regulatory requirements that would to be developed and implemented. This would result Option 4 requiring a longer implementation timeframe than the other options, for example Option 1 and Option 2 do not have regulatory proposals and therefore could be implemented more swiftly.
127. Option 4 would require significant industry 'buy-in' to achieve its outcomes. Introducing new regulatory requirements with offences and penalties could lead to some farmers exiting the industry, as farmers may perceive increased regulatory intervention as onerous and a regulatory burden. This could potentially lead some farmers disengaging or treating the process of developing on-farm biosecurity management plans and recordkeeping and reporting requirements as a simplified 'box ticking' exercise.

## *Criteria 2: Supports effective biosecurity decision-making for aquaculture*

### Option 1

128. Option 1 would not support existing measures for effective decision-making on biosecurity matters, as there would continue to be a lack of substantial recordkeeping and reporting to inform these decisions.

### Option 2

129. Option 2 would support biosecurity decision-making by the industry through the provisions of non-statutory guidance material and technical documents. However, this would be on a voluntary basis only - not all aquaculture farmers would necessarily follow the guidance provided, including guidance on reporting to aid decision-making on biosecurity matters.

### Options 3 and 4

130. Both Option 3 and Option 4 would support effective biosecurity decision-making through introducing regulatory requirements for farmers to keep records and report information to the regulator (MPI). Option 4 would improve the available information through regulatory requirements on the provision of information from the industry, such as the exact geographic locations of farms, the health of stock and stock movements. This would assist the regulator in making more informed and effective biosecurity decisions.

### *Criteria 3: Contributes to New Zealand's Aquaculture Strategy*

#### Option 1 and 2

131. Option 1 and Option 2 would not contribute substantially towards the aims and goals of the *Aquaculture Strategy*, as improvements to biosecurity management under these options would be gradual and voluntarily implemented by the industry or may not be implemented at all. The collective ability to manage and mitigate biosecurity risks would be less likely under these non-regulatory options and would not contribute to the benefits of the strategy being realised.

#### Options 3 and 4

132. Option 3 and Option 4 could improve the biosecurity system for the industry through the delivery of on-farm biosecurity management plans. Both options would contribute towards the *Aquaculture Strategy's* goal of increasing revenue through minimising biosecurity incursions and, as a result, sustaining and improving the health, quality, and quantity of the stock produced.

133. Option 4 could significantly improve the biosecurity system through on-farm biosecurity plans and record-keeping and reporting requirements. The disadvantages of Option 4 are that the new regulatory requirements might be perceived by the industry as affecting the commercial viability of aquaculture farms if the compliance costs were considered to be high (i.e. the costs associated with developing and implementing on-farm biosecurity plans and any cost recovery fee and/or levies imposed by the regulator). As a result, farmers may exit the market, which could result in the *Aquaculture Strategy's* production targets not being met.

### *Criteria 4: Promotes an effective partnership between the industry and the regulator*

#### Option 1

134. Option 1 would not provide increased opportunities for building a more effective partnership between the industry and the regulator (MPI), as the engagement would remain as it is at present. While the partnership is positive and effective under the status quo, opportunities to build on this partnership would not be fully realised.

#### Options 2

135. Option 2 would increase the engagement between the industry and the regulator through the development of non-statutory guidance material and technical documents that would assist the industry in applying biosecurity measures. This could involve workshops with representatives from the industry to develop non-statutory guidance material and technical documents.

#### Options 3 and 4

136. Option 3 could provide similar opportunities for engagement between the industry and the regulator as Option 4, with increased engagement between the industry and regulator to develop on-farm biosecurity management plans.

137. Option 4 may provide further opportunities to develop a more effective partnership between the industry and regulator through the development and implementation of on-farm biosecurity plans and recordkeeping and reporting. This interaction between the industry and regulator may provide benefits in the form of a more effective partnership for managing the biosecurity of the industry.

138. The disadvantages of Options 3 and 4 are that these may not be the preferred options for some members of the industry. Some members of the industry may prefer the voluntary non-statutory approaches of Options 1 and 2 to improve the biosecurity system for the industry, rather than the regulatory interventions of Options 3 and 4.
139. The industry may not perceive Option 4 as being an effective, or a particularly fair, partnership if the offences and penalties for non-compliance were considered as being 'heavy handed' or disproportionate to the level of offending. However, in general, the industry has been supportive of the Programme's proposals to date.

*Criteria 5: Maintains commitments to Te Tiriti o Waitangi / Treaty of Waitangi*

Options 1 and 2

140. Option 1 and Option 2 would provide similar levels of engagement with Treaty partners and Māori would maintain the regulator's commitments to Te Tiriti o Waitangi / the Treaty of Waitangi, including settlement obligations in the aquaculture space.
141. Option 2 may provide slight improvements on current engagement, as Treaty partners would be provided the additional opportunities for regular engagement on the development of the non-statutory guidance material and technical documents.

Options 3 and 4

142. Option 3 and Option 4 could both improve on the current commitments with Treaty partners and Māori through increased opportunities for engagement, both as aquaculture business owners and as tangata whenua. The views of Treaty partners would be sought and carefully considered when developing the regulatory requirements.
143. For Options 3 and 4, the Treaty partner and Crown relationship could be adversely affected if iwi aspirations were perceived as being unmet by these options. Māori organisations could perceive the regulatory requirements as undermining their aspirations in the aquaculture space or creating unnecessary regulatory barriers to entering the industry.



## How do the options compare to the status quo/counterfactual?

Table Three: Analysis of options against criteria

Criteria	<b>Option 1</b> <b>Status quo / counterfactual -</b> <b>Current approach with</b> <b>minimal regulatory</b> <b>requirements for biosecurity</b> <b>measures for aquaculture</b>	<b>Option 2</b> <b>Additional non-regulatory</b> <b>measures to improve the</b> <b>biosecurity system for</b> <b>aquaculture</b>	<b>Option 3</b> <b>Broad, high-level requirements</b> <b>for on-farm biosecurity plans</b>	<b>Option 4</b> <b>Regulatory requirements for</b> <b>on-farm biosecurity plans and</b> <b>recordkeeping and reporting,</b> <b>alongside non-regulatory</b> <b>measures</b>
<b>Criteria 1:</b>  <b>A nationally</b> <b>aligned</b> <b>biosecurity</b> <b>system for</b> <b>aquaculture</b>	<p style="text-align: center;">0</p> <p>Under Option 1, the biosecurity system for aquaculture would continue to be managed through a complex system of regional council requirements, industry-led standards, and ongoing regulatory stewardship by MPI. This approach would not promote an aligned biosecurity system for the industry and would not address the regulatory gaps and lack of in-depth information on biosecurity matters for aquaculture. Biosecurity matters would continue to be undertaken through non-regulatory measures and on a voluntary basis only.</p>	<p style="text-align: center;">0</p> <p>Option 2 would provide non-regulatory guidance material, technical standards, standard operating procedures, and other technical documents for biosecurity practices for the industry. While this option would provide aquaculture farmers useful and up-to-date technical information to improve existing biosecurity measures, similarly to Option 1, this would be done on a voluntary basis only and would not provide the desired nationally alignment across the industry to provide a comprehensive and aligned biosecurity system for aquaculture. It would be left to the motivation of individual farmers as to whether they</p>	<p style="text-align: center;">+</p> <p>Option 3 may provide the desired level of national consistency through the regulatory requirements to have an on-farm biosecurity plans when compared with Option 1. Allowing individual farmer to set their own level of biosecurity protection could result in significant deviations in biosecurity practices from farm-to-farm. This option would be less comprehensive than Option 4 in that it would not unify the separate regulatory regimes for land-based and marine-based farms. However, this option would strengthen the biosecurity system for aquaculture through the mandatory requirement to have on-farm biosecurity plans in place with broad, high-level outcomes.</p>	<p style="text-align: center;">++</p> <p>Option 4 would unify the separate legislative and regulatory regimes for land-based and marine-based aquaculture. This option would provide the desired level of national alignment for biosecurity measures for the industry, along with introducing detailed regulatory requirements for on-farm biosecurity plans. It would provide significant improvements to the biosecurity system for aquaculture using regulatory and non-regulatory levers. The non-regulatory measures would be used to support improvements, such as the use of pathway management plans, and establishing a surveillance programme for specific aquatic pests and diseases that affect the</p>



		would adopt biosecurity measures for farms.	Best practice biosecurity measures for aquaculture would be set out in supporting guidance material and educational materials.	aquaculture industry. Non-regulatory guidance material and supporting educational materials could also be produced.
<b>Criteria 2: Supports effective biosecurity decision-making</b>	0 Option 1 would not support more effective decision-making on biosecurity matters for the industry, as under the status quo these measures are largely non-statutory and therefore the uptake is on a voluntary basis only. As there would continue to be separate regulatory regimes for land-based and marine-based aquaculture, administering the regimes would potentially be more difficult and would not contribute to more effective decision-making for biosecurity for the industry.	0 It is difficult to determine if Option 2 would provide for more effective decision-making than Option 1, as non-regulatory measures would be on a voluntary basis only and uptake by aquaculture farmers would not be recorded. While it would be helpful to provide guidance material and technical documents to the industry, due to the voluntary nature of this option, it would not necessarily improve biosecurity practices or provide improved information to inform the industry and regulator on matters for the biosecurity industry.	+	++ Option 4 would introduce regulatory measures for specific and detailed requirements for on-farm biosecurity plans and for recordkeeping and reporting for the industry. Both aspects would support effective decision-making on biosecurity matters in that it would provide improved information on biosecurity activities being undertaken on and between aquaculture farms, such as recording the movements of stock.
<b>Criteria 3: Contributes to the Aquaculture Strategy</b>	0 Option 1 would not make a significant contribution to the aims and goals of the Aquaculture Strategy, as it would not provide for improvements to strengthen biosecurity management, other	0 When compared with Option 1, Option 2 similarly would not make a significant contribution to the Aquaculture Strategy, other than maintaining the current biosecurity system. Providing non-statutory	+	++ Option 4 would contribute to the aims and goals of the Aquaculture Strategy, more so than Option 1. This would be the result of introducing statutory requirements for on-farm biosecurity plans and

	<p>than what is currently in place. This would not address the policy problems that have been identified.</p>	<p>guidance material, while beneficial, is unlikely to make a significant shift towards improvements in biosecurity management.</p> <p>Options 1 and 2 are similar in that they would result in the same level of risk to biosecurity incursions to being present, which could impact the industry's production and goal of reaching \$3 billion in annual sales by 2035.</p>	<p>plans in place. This would improve biosecurity management and would contribute to the resilience of the industry. The flow on effect of this is that it would contribute to the goal of \$3 billion in annual sales by 2035 through the effective management of biosecurity risks through reducing the adverse impacts on stock. For example, during a biosecurity event stock can be destroyed from a pest or diseases or could be euthanised to prevent the further spread of a pest of disease, followed by a period of non-production in response.</p>	<p>record-keeping and reporting requirements.</p> <p>Improved biosecurity management will assist in the early detection of biosecurity risks and more efficient decision-making in response to these risks. Improving biosecurity management through a reduction in the likelihood and impact of biosecurity incursions would result in the improved health, quality and quantity of stock being sustainably produced. This would contribute to the goal of increasing sales revenue to \$3 billion by 2035. However, there is a risk that aquaculture farmers could exit the industry if they perceive that the regulatory requirements are too onerous or costly, which would pose a risk to the Aquaculture Strategy's production goals.</p>
<p><b>Criteria 4: Promotes an effective partnership between the industry and regulator</b></p>	<p>0 Option 1 would provide the same arrangements that are in place currently between the industry and regulator.</p>	<p>+</p> <p>Option 2 would provide opportunities for the industry and the regulator to engage on a more frequent basis when agreeing on non-statutory guidance materials that would be considered best practice for</p>	<p>+</p> <p>Option 3 is similar to Option 4, where under both scenarios, MPI would continue to work alongside the industry to ensure the success of proposals of the Aquaculture Biosecurity Programme and the development and implementation of high-level</p>	<p>+</p> <p>Option 4 would promote an effective partnership between the industry and the regulator, as both parties would work closely to develop the regulatory and non-regulatory proposals of the Aquaculture Biosecurity Programme. This partnership</p>

		<p>the industry to implement to improve biosecurity measures.</p>	<p>on-farm biosecurity management plans.</p>	<p>would continue, as the new regulatory requirements would require implementation, monitoring, and compliance.</p> <p>The non-regulatory components of this option would also require the industry and regulator to work together on pathway management and surveillance for biosecurity aspects of the industry. Overall this engagement would improve on the existing partnership between the industry and the regulator, which would benefit the biosecurity system for aquaculture through increased monitoring and additional information that will assist with best practice for biosecurity management and the management of aquaculture in general.</p>
<p><b>Criteria 5: Maintains Te Tiriti o Waitangi / Treaty of Waitangi commitments</b></p>	<p>0 Option 1 would provide the same level of engagement with Te Tiriti o Waitangi / Treaty of Waitangi partners and maintain the regulator's Treaty settlement commitments.</p>	<p>+</p> <p>Option 2 would provide a slight increase in the level of engagement with Te Tiriti o Waitangi / Treaty of Waitangi partners. The regulator's Treaty settlement commitments would be maintained.</p>	<p>+</p> <p>Option 3 would provide increased opportunities on the existing engagement with Te Tiriti o Waitangi / Treaty of Waitangi partners on the development of on-farm biosecurity plans. Treaty settlement commitments would be a required consideration as part of the development of the regulatory requirements for these plans.</p>	<p>+</p> <p>Option 4 would provide increased opportunities on existing engagement with Te Tiriti o Waitangi / Treaty of Waitangi partners in the industry through aquaculture business ventures, post-settlement entities and as tangata whenua. Treaty settlement commitments would be a required consideration as part of the development of the new</p>

				regulatory requirements and non-regulatory proposals.
<b>Overall assessment</b>	<p>0</p> <p>Maintaining the status quo is not preferred as it does not meet the criteria to a satisfactory level. The issues and gaps that have been identified with the biosecurity system for aquaculture will continue.</p>	<p>+</p> <p>Option 2 has an average qualitative judgement of two, with two +.</p> <p>Option 2 would be better than the status quo in some criteria, however, it would not provide the overall significant shift to improve the biosecurity system for the industry.</p>	<p>+</p> <p>Option 3 has an average qualitative judgement of five with five +.</p> <p>Option 3 addresses the criteria to a better level than Option 1 and Option 2. It would provide a greater level of flexibility for how biosecurity requirements for on-farm biosecurity plans are met. However, it has a greater risk of failing to meet desired biosecurity outcomes and measures, thus increasing the risk of a biosecurity incursion when compared with the more robust regulatory measures of Option 4.</p>	<p>++</p> <p>Option 4 has an average qualitative judgement of seven with two ++ and three +.</p> <p>Option 4 best meets all the criteria and will achieve the desired change through regulatory and non-regulatory intervention. Compliance costs will be reasonable and fair compliance for the industry and the Crown. Key aspects of the regulatory requirements could be achieved with Option 4 with fewer disadvantages than Option 3.</p>

**Example key for qualitative judgements:**

- ++** much better than doing nothing/the status quo/counterfactual
- +** better than doing nothing/the status quo/counterfactual
- 0** about the same as doing nothing/the status quo/counterfactual
- worse than doing nothing/the status quo/counterfactual
- much worse than doing nothing/the status quo/counterfactual

### **What option is likely to best address the problem, meet the policy objectives, and deliver the highest net benefits?**

144. Based the analysis contained in this RIS, Option 4 is the preferred option. This option would involve new regulatory requirements for biosecurity measures for the industry that would progress towards best practice over time.
145. On balance, Option 4 is more likely to achieve the desired biosecurity outcomes, would create more ease for MPI when assessing compliance and would provide more certainty for regulated parties on what is required to be compliant.
146. Introducing regulations that require aquaculture farms to have on-farm biosecurity plans in place would proactively manage the introduction, exacerbation, and spread of pest and disease through setting measures that farmers would undertake to manage how pests or diseases could enter, exit, and move within their farm. This would assist in meeting the objective of a strengthened and nationally consistent biosecurity system.
147. Option 4 will promote, protect, and sustain both the environment and the industry and contribute towards the target of \$3 billion in annual sales from aquaculture by 2035 by strengthening the biosecurity system for aquaculture, which will enable opportunities to be fully realised through improving the resilience of the industry to incursions of pests and diseases.

### *Cost recovery*

148. Options 3 and 4 would require cost recovery fees and levies for the industry that are comprehensive and equitable. A high-level cost recovery for the preferred option is detailed in the Stage 1 Cost Recovery Impact Statement for the Programme. A more detailed Cost Benefit Analysis will be developed before any final policy approvals are sought.
149. The outputs for the industry will include preparing on-farm biosecurity management plans for individual farms and recordkeeping and reporting. The costs for these outputs will involve changes to current practices by the industry and developing and maintaining new practices to comply with the regulations.
150. Aquaculture farmers may incur additional costs on operating expenditure, such as purchasing and using specific treatments, hiring new or skilled staff and capital expenditure if new structures are required on a farm to comply with regulations.



## What are the marginal costs and benefits of the option?

151. Cost recovery has an important role in ensuring that MPI has sufficient funding to effectively deliver services to third parties. The legislative provisions for cost recovery relevant to the Programme are set out in Part 14 of the Fisheries Act.

*Table Four: Costs and benefits of the preferred option*

Affected groups (identify)	Comment <i>nature of cost or benefit (e.g. ongoing, one-off), evidence and assumption (e.g. compliance rates), risks</i>	Impact <i>\$m present value for monetised impacts where appropriate; for non-monetised impacts, high, medium, or low</i>	Evidence <b>Certainty</b> <i>High, medium, or low, and explain reasoning in comment column</i>
<b>Additional costs of the preferred option (Option 4) compared to taking no action (Option 1)</b>			
Regulated groups - aquaculture farmers	<p>The proposed contribution of costs for the implementation of Option 4 is through a cost recovery model. We are not presenting a preferred proposal for cost recovery at this stage, as further work is required to understand cost sharing responsibilities between parties. This will be gained from undertaking a comprehensive cost benefit analysis that will be conducted at a later stage.</p> <p>The most significant monetary and non-monetary costs for Option 4 are likely to occur at the initial stages of implementation, including compliance costs. Monetary costs will fall to the regulated groups and will include an increased regulatory burden on the industry associated with preparing on-farm biosecurity plans, additional recordkeeping and reporting requirements, and monitoring and auditing. Other monetary costs include capital costs for infrastructure, potential changes to current practices to comply with the new regulatory requirements, hiring new staff, educational and training costs.</p>	<p>The monetary costs of impacts are to be determined but are expected to be medium to high.</p> <p>The non-monetised co impacts are estimated to be low.</p>	Medium
Regulator - MPI	Total monetary costs for Option 4 for the regulator are to be determined. These will include costs in developing and operationalising the system that will support the implementation of the regulations. This will include potentially hiring new staff,	The monetary costs of impacts are to be determined, but are expected to be medium	Medium

	educational and training costs, implementation, and compliance and enforcement costs, including on-going monitoring to ensure the regulations are being complied with. Other costs include the implementation of a surveillance programme and the development of guidance material to assist the industry in developing on-farm biosecurity plans and the management of records and information.	The non-monetised impacts are estimated to be low	
Others - wider government, consumers	Costs associated with improving on-farm biosecurity measures could potentially be passed on to consumers through an increase in the price of fish produced in aquaculture farms.	Monetary costs N/A  The non-monetised impacts are considered to be low	N/A
<b>Total monetised costs</b>	Total costs of Option 4.	To be determined	Medium
<b>Non-monetised costs</b>	Non-monetised costs could be reduced access to areas where there are aquaculture farming operations, impacting recreational use and socio-cultural values of the aquatic environment.	The overall non-monetised impacts are considered to be low	Low
<b>Additional benefits of the preferred option (Option 4) compared with taking no action (Option 1)</b>			
Regulated groups – aquaculture farmers	Economies of scale will occur, with a reduction in compliance and monitoring costs over time. There could be an enhanced quality of stock over time and the early detection of pests and diseases would avoid costs of biosecurity response activities. There may be improved social license to operate if the industry is undertaking proactive biosecurity management to minimise the spread of pests and diseases. Another potential benefit is improved international market access and trade if the detailed requirements are consistent with international best practice standards. Other benefits include increased job opportunities associated with growth in the industry in relation to biosecurity measures being introduced.	The monetary costs of the benefits to be determined  The non-monetised benefits are estimated to be medium	Medium
Regulator - MPI	Improved information from improved recordkeeping and reporting from the industry would	The monetary costs of the	High

	assist with biosecurity decisions and earlier detection of pests and diseases. There could be a potential decrease in costs associated with biosecurity responses, including long-term pest and disease management and compensation payments. Other benefits could include automated and targeted alerts on emerging risks for all participants across the system.	benefits are to be determined  The non-monetised benefits are estimated to be high	
General public	Increased environmental, social, and cultural benefits from the aquatic environment being protected from biosecurity events. The benefits include potentially better protection of biodiversity from less pest and disease spread and better protection of native species (including taonga species).	The monetary costs of the benefits are to be determined  The non-monetised benefits are estimated to be medium	Low
<b>Total monetised benefits</b>	To be determined	To be determined	To be determined
<b>Non-monetised benefits</b>	Wider environmental benefits to the aquatic environment, including the protection of taonga species, recreational (e.g. collecting of kai moana and fishing and boating activities) and social values associated with the adverse impact of a biosecurity incursion on communities.  Ongoing information to improve the biosecurity system.	The overall non-monetised impacts are estimated to be medium	Medium

152. Based on the analysis contained in this RIS, MPI has assessed that Option 4 is most likely to achieve the policy objectives. The benefits of the Programme and improving the biosecurity system for the industry are expected to exceed the costs that will be incurred.
153. The majority of the costs for Option 4 will occur through the implementation of the Programme's new regulatory requirements. The benefits will continue over a longer period and are dependent on the industry complying with the regulatory measures and continuing to work towards best practice for biosecurity measures for the industry. These benefits may not be able to be easily monetised.
154. The cost recovery principles set out in section 262 of the Fisheries Act provide for costs to be recovered from those people who request the services, or from those who benefit from harvesting or farming the resources or whose activities create actual or potential adverse effects on the aquatic environment.
155. Currently there is no ability at present to cost recover for processing registration applications, whereas the cost of assessing a fish farm license application is covered by the Freshwater Fisheries Regulations.

156. The Fisheries (Cost Recovery) Rules 2001 set out provisions for allocating the costs for certain aquaculture services.<sup>23</sup> The basis for levying costs differ for licensed fish farms and registered fish farms.<sup>24</sup> Under these rules, licenced fish farms are levied on the basis of fish farm area for research services and on the number of coastal permits and other authorisations held for enforcement and other services. In contrast, registered fish farmers are levied for all services on the basis of the area of all farms registered to that fish farmer.
157. The Fisheries (Cost Recovery Levies for Fisheries Services) Order 2019 sets the annual aquaculture levy. The levy is charged in respect of 'each coastal permit or licence' held during the fishing year.<sup>25</sup>
158. The aquaculture costs currently recovered through levies is limited to registry services - no other services are levied.<sup>26</sup> The annual levy is \$88.49 per coastal permit or licence.
159. There is currently no cost recovery structure in place for compliance services for aquaculture. Cost recovery would require the specification of the compliance services and the determination of an appropriate basis to allocate the costs, the inclusion of the cost of compliance services in the aquaculture services levy, and consultation with stakeholders prior to setting the levies.
160. Subject to the outcome of public consultation on the Programme, MPI will develop a cost benefit analysis for the preferred option. If biosecurity services, for instance, assessing on-farm biosecurity management plans or supporting farmers with on-farm biosecurity management - are considered to be part of the management of fish farming, then they would be within the definition of fisheries services and come within the cost recovery framework of the Fisheries Act. Further work is required to confirm to what extent it is possible to cost recover for biosecurity services under the Fisheries Act and to determine an appropriate basis for the recovery of any costs.

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<sup>23</sup> 'Aquaculture services' is not defined in the Cost Recovery Rules or the Fisheries Act, but it is taken here to mean fisheries services provided to manage or administer farming of fisheries resources. Based on the definition of *fisheries services* in s2 of the Fisheries Act, this includes management of fish farming, enforcement of provisions relating to fish farming, research relating to fish farming (including the effects of fish farming on the aquatic environment), and the performance of statutory functions related to fish farming. Conservation services are not included because they relate only to the adverse effects of commercial fishing on protected species.

<sup>24</sup> Section 264(3)(b) of the Fisheries Act expressly allows for levies for fish farming to be set on a differential basis.

<sup>25</sup> This appears to be inconsistent with the Cost Recovery Rules, but no legal opinion has been sought.

<sup>26</sup> There are also direct charge fees for aquaculture services – such as fee for aquaculture decisions.

## Section 3: Delivering an option

### How will the new arrangements be implemented?

161. To enable Option 4 to be implemented, the Freshwater Fish Farming Regulations would need to be repealed to regulate land-based and marine-based aquaculture farms under a single regime. New regulations would also be required to enable on-farm biosecurity plans and recordkeeping and reporting requirements.

162. As the regulator, MPI would be responsible for implementing Option 4 and the implementation plan would include the following components:

- *Compliance activities*

Detailed at paragraphs 170 – 175.

- *Guidance material and educational tools*

MPI may develop and disseminate guidance material and educational tools to assist the industry in developing and implementing the new regulatory requirements. This could be in the form of online materials via MPI's website, staff visits to aquaculture farms or regional information meetings for the industry to support the implementation of the new regulatory requirements. Information on aquaculture farms could potentially be kept in a central MPI database or perhaps a shared MPI and industry database.

- *Information management systems*

MPI may require adapting existing or developing new information management systems to support the collection and analysis of data for on-farm biosecurity plans and recordkeeping and reporting requirements. Dedicated MPI staff would upload, collate, and analyse data and information.

- *Support for the aquaculture industry*

MPI will be required to develop and build its capability and capacity to implement the new regulations and be a central contact point for the industry on biosecurity matters. MPI may provide additional support to farmers during the development and implementation of on-farm biosecurity plans through the answering of queries, the provision of technical input and on-site visits.

- *Additional research, development, and innovation*

Additional research, development and innovative activities for aquaculture may involve MPI working with the industry on aspects of farmed stock health and biosecurity matters for the industry.

### *Legislative amendments to enable implementation*

163. If the Option 4 is progressed, legislative changes could be made via an amendment to the Fisheries Act to clarify that on-farm biosecurity plans would be a condition of fish farmers registration. If a fish farmer were exempt from registration, they would be exempt from the requirement for an on-farm biosecurity plan.

164. Under the Fisheries Act, the Chief Executive who has responsibility for that Act may grant an exemption with any terms and conditions that they deem fit. MPI considers that this provision is suitable for enabling exemptions from an on-farm biosecurity plan

in the matters that the Chief Executive must have regards to. Additionally, the ability for the Chief Executive to have regard to “any other matter,” provides flexibility for the provision of an exemption.

#### *Implementation timeframes and cost recovery*

165. The estimated timeframes for the implementation of Option 4 are one to two years, depending on the level of resourcing provided by MPI, subject to the outcomes of public consultation on the Programme.
166. MPI’s implementation activities could include monitoring on-farm biosecurity plans and assisting farmers with the transition to the new regulatory regime.
167. There will be aspects of the Programme’s implementation that will likely require funding through cost recovery. Additional funding may be required for inspection and enforcement of the new regulatory requirements, along with surveillance activities. This will be examined through the development of a detailed Cost Benefit Analysis by MPI before any final policy approvals are sought. The Stage 1 Cost Recovery Impact Statement that has been produced for the Programme provides an initial high-level assessment of the cost recovery implications of the proposed regulations.

#### *Non-statutory guidance material*

168. There could be an opportunity for MPI to develop guidance material and other educational resources to assist the industry in meeting the new regulatory requirements. Guidance material could include a list of common risks and mitigations.
169. Providing guidance material could assist in assisting implementation of the new regulatory requirements and reduce instances of non-compliance. Further work would be required by MPI to develop the guidance material if this was progressed.

#### **Compliance and enforcement**

170. The existing fisheries compliance system was not designed for aquaculture. A compliance framework that is specific for aquaculture is necessary to achieve beneficial biosecurity and animal welfare outcomes.
171. MPI proposes that they would be the government agency that is responsible for undertaking a compliance, monitoring, and enforcement role for the new regulatory requirements. Farmers would register their individual on-farm biosecurity management plans and recordkeeping and reporting information to MPI.
172. The compliance and enforcement role would be led by Fisheries New Zealand. The compliance system for the biosecurity system for aquaculture needs to be flexible to meet the current and future needs of the industry and to assist Fisheries New Zealand as the regulator.
173. Compliance services will be required to be specified as part of a cost recovery analysis if Option 4 proceeds. Fisheries Officers would be required to upskill to enforce any new regulatory requirements for on-farm biosecurity plans and recordkeeping and reporting requirements.
174. MPI proposes that the duty holder for creating and adhering to an on-farm biosecurity plan be the same person or entity that is registered in the Fish Farmer Register.

175. MPI may require additional staffing and administration to support the compliance and enforcement with the regulations. This may include additional resources, including MPI staff and Fisheries Officers to undertake monitoring and compliance of on-farm biosecurity plans and the monitoring of diseases and other biosecurity risks with stock on aquaculture farms.

*Proposed offences for the new regulatory requirements*

176. A combination of infringement offences, offences, civil penalties (i.e., pecuniary penalties, revocation of registration), and enforceable undertakings could be considered as part of the compliance for the regulatory requirements.

177. The following duties are proposed for an offence and penalty regime:

- Having an on-farm biosecurity plan in place for an aquaculture farm.
- Keeping reports and information related to the on-farm biosecurity plan.
- Meeting the requirements of the new regulations.

178. MPI's Voluntary-Assisted-Directed-Enforced (VADE) model was used to consider the proposed offences and penalties for the new regulatory requirements. The VADE model suggests using less severe enforcement tools for lower-to-medium levels of non-compliance, such as infringement notices. Infringement notices are being proposed as suitable to support the new regulatory requirements.<sup>27</sup>

179. For the most critical elements of the regulatory regime, MPI is proposing using additional enforcement tools for less serious forms of conduct to accompany the existing criminal offences and large fines already available in the Fisheries Act. This would be in the form of a strict liability offence of failing to manage biosecurity in accordance with regulations with a penalty of up to \$5,000 for an individual and up to \$15,000 for a corporate.

180. Infringement offences are a subset of offences that do not result in criminal convictions. The purpose of infringement offences is to deter conduct that is of a relatively low level of seriousness and does not justify the full imposition of the criminal law. Infringement offences are used for situations that do not warrant criminal conviction and are considered minor contraventions of the law that can be used for issues that can be easily identified by an enforcement officer. Infringement fees are set under \$1,000 and are imposed directly from the prosecuting agency.

181. MPI is proposing an infringement offence for failing to comply with recordkeeping and reporting requirements requirements. The proposed amount for infringement fees would be less than \$1,000.

182. Table Five provides a summary of the proposed offences and penalties.

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<sup>27</sup> Other enforcement tools, including compliance orders and pecuniary penalties were considered but were rejected as they are not available under the Fisheries Act.



*Table Five: Proposed offences and penalties for the regulatory requirements*

Offence	Penalty
Strict liability offence for not complying with any of the new requirements for on-farm biosecurity, recordkeeping and reporting	Fine of up to \$5,000 for an individual and up to \$15,000 for a corporate Revocation of a fish farmer registration <sup>28</sup>
Infringement offence for not complying with any of the new requirements for on-farm biosecurity, recordkeeping and reporting	Infringement fee (generally no higher than \$1,000)
Infringement offence for failing to have a written biosecurity plan	Infringement fee (generally no higher than \$1,000)
Infringement offence for failing to meet recordkeeping and reporting requirements	Infringement fee (generally no higher than \$1,000)

*Defences for the new regulatory regime*

183. Fisheries New Zealand would be the enforcement agency for offences. These measures would be based on inspection functions currently undertaken under the Fisheries Act.

184. MPI is proposing two defences to the offences for the new regulatory regime:

- Where the contravention was due to the act or default of another person or was due to an accident or some other cause beyond the defendant's control, and the defendant took reasonable precautions and exercised due diligence to avoid the contravention.
- Where the defendant acted in an emergency, which resulted in them failing to comply with the regulatory requirements.

**How will the new arrangements be monitored, evaluated, and reviewed?**

185. To meet Cabinet's directions of delivering a comprehensive biosecurity system across the aquaculture sector, the Option 4 will be required to be enacted by 2025.

186. The technical details that will inform any new regulatory requirements are being further developed using a collaborative technical design process with stakeholders from the aquaculture sector. These stakeholders include the industry, Treaty partners, academia and research institutions and relevant government agencies.

187. MPI will develop the detail of any new regulatory requirements for on-farm biosecurity plans and recordkeeping and reporting, subject to feedback received during the public consultation process and Cabinet and Ministerial decisions on the Programme.

188. Following public consultation on the Programme and the technical design process, Cabinet approval will be sought for policy decisions supporting the Programme.

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<sup>28</sup> The Fisheries Act requires fish farmers to be registered. If a fish farmer is de-registered they can no longer operate a fish farm.

189. The final detail of the regulatory requirements will be refined by MPI and will involve further targeted consultation with those who will be directly affected by the regulatory requirements.
190. If implemented, MPI will be responsible for the monitoring, evaluation, and review of the new regulatory requirements on behalf of the Minister for Oceans and Fisheries and the Minister for Biosecurity.
191. The monitoring approach for the new regulatory requirements would be for aquaculture farmers to submit on-farm biosecurity plans to MPI, along with recordkeeping and reporting information on their farms. MPI would verify compliance and prioritise enforcement according to the level of risk, which would be a key component in ensuring the success of the Programme.
192. MPI is proposing that the regulatory requirements aim to begin with best practice for biosecurity for aquaculture in 2025, that would be based on technical details developed with industry. This would be built on further to strengthen best practice standards for biosecurity for aquaculture over time, with a proposed statutory review period (a statutory review period may be around five years).