



Biosecurity 2025

Direction Statement

for New Zealand's biosecurity system

November 2016



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Mihi

Tihei mauri ora! Tēnā koutou katoa.

Ka mōhiotia whānuitia e tātou o Aotearoa te mahi nui whakaharahara ki te tiaki pai i ō tātou whenua, mai i ngā maunga, heke iho rā ki ngā awa, rere iho rā ki te moana. Ka tutuki pai tēnā whāinga i a tātou katoa, inā kē tō te taiao oranga, tō te ohanga tōnuitanga, tō tātou whanaketanga. Tēnā, pānuihia, kātahi whakaarohia, me pēhea rā te whakatinanahia te whakataukī, 'Mā tāu rourou, mā taku rourou, ka ora te iwi' kia tiakina pai ō tātou tongarewa. Tēnā anō koutou katoa.

Greetings. We all know the importance of protecting our lands and waters. Succeeding in this is a cornerstone to environmental wellbeing, economic prosperity and our development. Therefore, please read and then reflect on how to give effect to the proverb, 'With your contribution and my contribution the people will flourish' so as to care for those things that are precious to us.

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Minister's introduction

Minister for Primary Industries
Hon Nathan Guy



This Direction Statement is a major milestone for Biosecurity 2025, a forward-focused project I initiated last year to ensure we strengthen New Zealand's biosecurity system.

We need to look ahead because while we have a strong and successful system, pressures are emerging along with opportunities to improve the way we manage biosecurity risk.

New Zealand's primary sector, tourism, environment, and our way of life are underpinned by biosecurity. Everyone in New Zealand has a part to play in our biosecurity system and everyone benefits from it. If you're a farmer, grower, gardener, tramp, or nature lover – you all have something at stake in our biosecurity.

As well as harnessing the contributions of all New Zealanders, we need to make more effective

use of our assets – our people, tools, information, science and infrastructure – throughout the system.

This Direction Statement presents a high-level roadmap for how we will collectively future-proof New Zealand's biosecurity system through to 2025 and beyond. It updates the 2003 Biosecurity Strategy *Tiakina Aotearoa: Protect New Zealand*.

It sets out important goals around raising awareness and knowledge; taking action; Māori participation, collaboration, and having the best tools, rules and processes.

Partnership will be a key way of achieving the Biosecurity 2025 goals. For example, MPI and industry groups are partnering through the Government Industry Agreement (GIA) to deliver better biosecurity outcomes

through shared responsibility and decision-making. GIA partners will be key players in Biosecurity 2025, both in terms of leadership and implementation.

Another great example of collaboration for improving biosecurity is Predator Free 2050, which has the ambitious goal to rid New Zealand of the most damaging introduced predators. It is a great model for how the different sectors can work together on pest eradication efforts around the country.

Giving effect to this Direction Statement will require a collaborative process among participants in the biosecurity system. I encourage everyone to read this living document, and start thinking about the role we all can play in contributing to New Zealand's biosecurity.

Peer Reviewers' foreword

Dr John Hellstrom, Professor Mick Clout, Glenice Paine



It has been an honour for us to take on the role of independent oversight of the process of developing this Direction Statement for the Minister, and we have taken this as a clear responsibility to provide critical and independent advice.

In our view, this Direction Statement is an important update of the 2003 *Biosecurity Strategy Tiakina Aotearoa* that has guided the development of our biosecurity system for more than a decade. We endorse its guiding principles and the five key strategic directions that have been identified to support the vision of all New Zealanders acting as kaitiaki. This Direction Statement has had a long gestation, during which citizens

and stakeholders have been able to participate in its development.

As peer reviewers we have been kept closely informed on the development of this Direction Statement and have had full access to it, and the ability to comment, at all stages. Between us we also attended five of the workshops and hui conducted by MPI during August/September 2016. These workshops were well-led by independent facilitators with significant expertise in biosecurity. It has been gratifying to see the document evolving in response to issues raised by the many participants at the hui and workshops.

In our view, the process has been

open and transparent and we have been impressed by the consistent efforts of MPI staff to capture the issues raised and to facilitate genuine discussion and debate. As a result there is now a considerable amount of recorded material that will be very useful in informing the development of implementation plans to support this Direction Statement.

We commend this Direction Statement as a guide to help all New Zealanders to participate in the further development and strengthening of our biosecurity system, which is so crucial to our national economy, environmental well-being, and social and cultural identity.

Why a Direction Statement?

Protecting our taonga, the things that we value, is a key part of being a New Zealander.

There are people all over New Zealand doing biosecurity every day – working in our communities, in business, in government and in our own backyards. These people recognise what’s at stake – our lifestyles, our livelihoods and our unique environment depend on it.

Protecting New Zealand from the risks posed by pests and diseases is a continual challenge. The threats we face are growing in scale and complexity. Growth and diversity in trade and tourism, changing risk pathways, climate change, and pressure from established pests are just some of the examples of the pressures we face.

We all need to participate in biosecurity. Only with everyone doing their part will the biosecurity system remain resilient. The Direction Statement supports this by building on the foundations of the *2003 Biosecurity Strategy; Tiakina Aotearoa – Protect New Zealand*; providing clarity of purpose and a refreshed sense of direction for all participants in the biosecurity system.

This Direction Statement belongs to all of us who participate in biosecurity. It draws

together the collective views of people and organisations across the biosecurity system and outlines a direction that we can all see our role in. This document will help knit together parts of the system, to ensure we are all pulling together in the same direction. The strength of the Direction Statement comes from it having the collective buy-in of system participants and us all working together towards the direction it sets out.

The five strategic directions in this document lay out the highest priority areas we’ll be focusing on to enable us to meet the challenges facing the biosecurity system. They’ll drive change where it’s needed, strengthen the parts of the system that are working well, and prepare us to take advantage of opportunities and respond to threats.

The five strategic directions are:

- A biosecurity team of 4.7 million
- A toolbox for tomorrow
- Smart, free-flowing information
- Effective leadership and governance
- Tomorrow’s skills and assets.

Biosecurity is everyone’s business. We need to work together to make a difference.

Whakapūputia te mānuka kia kore ai e whati!

Place the mānuka sticks in a bundle and they cannot be broken.

The biosecurity system

Biosecurity is implemented through a risk management system that involves many participants.

The system spans activities offshore, at the border and within New Zealand (see Appendix 1), which together contribute to the protection of four interlinked values:

- **Environmental** – including indigenous biodiversity, ecosystems and landscapes, taonga species and valued exotic species
- **Economic** – including primary industries, trade and tourism
- **Cultural** – including Māori cultural and spiritual values
- **Social** – including New Zealanders' lifestyles, health and wellbeing, our national identity, and recreational and historical values.

“ Biosecurity is the exclusion, eradication or management of pests and diseases that pose a risk to the economy, environment, cultural and social values, including human health. ”

Mission for the biosecurity system

The biosecurity system protects New Zealanders, our way of life, our natural and productive resources and our biodiversity from the harmful effects of pests and diseases.

Challenges to New Zealand's biosecurity system



Who participates?

There are many agencies, organisations, businesses and individuals that together make up the biosecurity system.

These include:

- The Ministry for Primary Industries (MPI) who is charged with overall leadership of the biosecurity system, and has a substantial operational role.
- Other government agencies, including the Ministry of Health, the Department of Conservation, and the Environmental Protection Authority, who have a range of statutory roles and responsibilities for decision making and operations.
- Regional councils who lead pest management in their regions.
- Industry organisations under the Government Industry Agreement who enter into a formal partnership with MPI to share responsibility for decision-making and funding of agreed readiness and response activities, and are involved in wider engagement across the system.
- Māori/iwi who are partners with the Crown through Te Tiriti o Waitangi, kaitiaki (guardians) of New Zealand's

taonga, and increasingly have statutory roles in the management of natural resources.

- Organisations who implement national plans to manage significant pests.
- Industry and businesses who have a role and a responsibility to manage the biosecurity risks to, and caused by, their business.
- Scientists, and research organisations and collaborations, who develop knowledge and tools for managing biosecurity risks.
- Landowners and occupiers, including agencies that manage public lands, who have a responsibility to manage pests on their land.
- Community groups, non-governmental organisations, and other groups of people who come together to protect what they value.
- Every individual, including in their capacities as travellers, educators, and consumers.

Throughout this document, the word “we” is used to refer to all who contribute to biosecurity.

New Zealanders protecting what they value

Our environment, economy, health, cultural and social values



Guiding principles

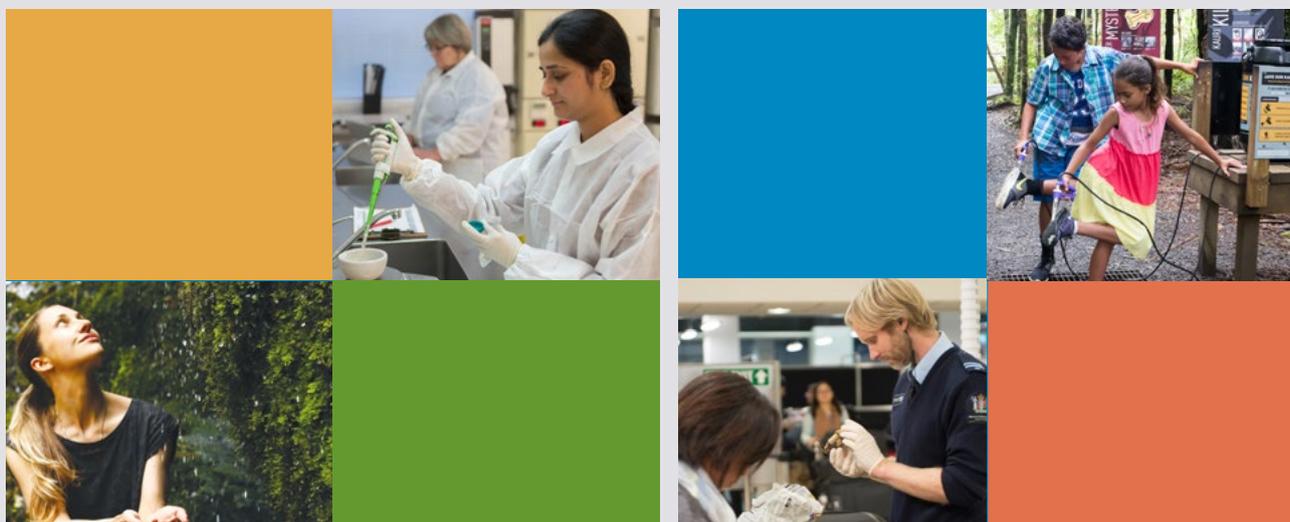
The principles below are intended to guide participation and decision-making across the biosecurity system. They will provide a shared understanding of how we will work and the values that will guide our activities.

PRINCIPLES TO GUIDE HOW WE WORK TOGETHER

- 1 Everyone** has a role to play in biosecurity.
- 2** We learn from our experiences and **share learnings** with others.
- 3 Collaborative approaches** and **wide participation** are enabled and encouraged.
- 4** The role of **tangata whenua as kaitiaki**, and Mātauranga Māori, are recognised and provided for.

PRINCIPLES TO GUIDE DECISION-MAKING

- 5** Decision-making is **transparent** and takes into consideration cultural, social, economic, and environmental values.
- 6** Risk-based decision-making is informed by the best available **science and information**.
- 7** Decisions are **timely**, and take account of consequences that may be irreversible.
- 8** Where possible, **biosecurity risks are identified and managed** at the earliest intervention point, in many cases before reaching New Zealand.
- 9** Decisions recognise **international obligations** and commitments, and the need to facilitate safe imports, safe travel, and support assured exports.





Direction

for the future

Five key strategic directions

Five key strategic directions have been developed with input from across the biosecurity system. These are our main priority areas to focus on together as we strive to strengthen the parts of the system that are working well, to drive change where it is needed, and harness opportunities to work more effectively.

There is strong agreement that these are the right directions to focus on in light of the challenges and

opportunities facing New Zealand's biosecurity system.

The five strategic directions should be read as key parts of one big picture. Each one complements and reinforces the others. In saying that, the first strategic direction, 'A biosecurity team of 4.7 million', is crucial and will be a key part of success in delivering the other four directions.

Each strategic direction has a set of goals, outcomes and targets.

Goals are what we would like to achieve at a high level within each strategic direction.

Outcomes build towards the goals. They break down in more detail the end results we are looking for.

Targets for 2025 are aspirational and will sharpen the focus of implementation. Unlike the goals and outcomes, they do not cover the full breadth of the strategic direction. They set a stake in the ground for the key achievements we want by 2025.



Case studies

Queensland fruit fly response 2015

In February 2015, a Queensland fruit fly was discovered in a trap in the Auckland suburb of Grey Lynn. Queensland fruit fly is an unwanted organism that could become a serious horticultural pest if it established in New Zealand. A response operation was immediately set up to contain and eradicate the population.

Community involvement was critical to the success of the operation. After the first fly was discovered, a resident captured and reported a fly he found on a lemon tree on his property. This was a key find – the fly was female which meant a risk that a breeding population could have established. Wide cooperation meant residents were willing to have their trees treated, traps set up on their properties, and restrictions on moving fruit and vegetables. Supermarkets and fruit and vegetable markets also had restrictions placed upon them. Without such widespread cooperation, the response could not have been so effective.

The response was led by MPI with Government Industry Agreement (GIA) industry partners. Both MPI and GIA had operational staff on the ground and decision-makers on the response governance board.

The National Biosecurity Capability Network, run by

AsureQuality, was crucial in mobilising skilled people to contribute to response operations. A range of activities took place, from treating infested properties, to trapping, baiting and controlling movement of fruit and vegetables. More than twenty-five organisations provided people to assist with the operation, many with specialist skills such as insecticide spraying or tree identification. ■



Co-managing risk at New Zealand's ports

Port companies around New Zealand are managing their own biosecurity risks through Co-Management Systems where trained port staff are accredited to check incoming empty sea containers for biosecurity risks, such as insects and soil. This speeds up clearance processes and allows MPI quarantine officers to focus on higher-risk sea containers and cargo.

Regular evaluation has shown that Port Chalmers and Port Nelson have been delivering results comparable to

MPI staff. Port staff are committed to biosecurity risk management, which in turn is leading to greater efficiency.

Biosecurity Operational Excellence at the Port of Tauranga

This partnership between industry and government encourages everyone who works around the Port of Tauranga to play their role in keeping pests out of New Zealand.

The initiative is being driven by Kiwifruit Vine Health in collaboration with the Port of Tauranga, MPI and local

government and industry organisations.

The aim is for everyone involved in port activities to have a better understanding of the biosecurity risks.

Activities include a biosecurity induction for all port workers; awareness campaigns focused on key pests such as Brown Marmorated Stink Bug; a widely distributed calendar showing potential pest risks; and regular communication with the port community, through signage and staff presentations. ■



Zoe Lyle

Strategic Direction 1: A biosecurity team of 4.7 million

A collective effort across the country: every New Zealander becomes a biosecurity risk manager and every business manages their own biosecurity risk.

Everyone has a role to play in biosecurity. The enormity of the biosecurity task means that we need all New Zealanders to pitch in. If we are successful, every New Zealander, from the person on the street, to the farmer on their land, and the business director at the board table, will know the importance of biosecurity and be motivated to act.

Biosecurity will become a reflex action – just like putting on a seatbelt. It's an ambitious goal, but one that will be crucial if we are to cope with the increasing pressures on the biosecurity system.

New ways of working are needed so that every individual, business, and organisation recognises their role and expects to contribute. We will begin by understanding how we can work more effectively together. This will include smart and engaging communication, and tools, systems and resources to support participation.

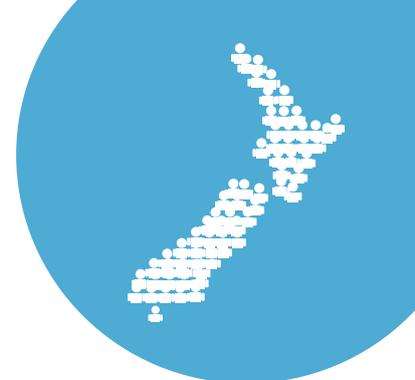
Those working in biosecurity will have the support they need, will be networked to essential information, and will be able to draw on the expertise and experience of others.

Kaitiakitanga will be exercised at all

levels of biosecurity and Māori will contribute their unique perspective effectively across the system.

Businesses will manage the biosecurity risks related to their activities and will routinely factor biosecurity into everyday decision-making.

The Government Industry Agreement has changed the landscape for how we do biosecurity in this area of the system. We need to build on this to further develop sustainable, long-term relationships and partnerships more widely across the system.



Goals – what we want to achieve

Awareness and knowledge

New Zealanders and visitors are aware and knowledgeable about biosecurity.

Taking action

Biosecurity is a reflex action – thinking about and participating in biosecurity has become fundamental to what we do as New Zealanders.

Māori participation

The unique knowledge and perspective of Māori is recognised and Māori/iwi actively participate as kaitiaki at all levels of the system.

Collaboration

Partnerships and other collaborations enable us to work more effectively towards a collective vision for biosecurity.

Tools, rules and processes

The tools, rules and processes available make doing the right thing easy for New Zealanders and visitors.

Outcomes – the end results

Knowledge – People and businesses know the importance of biosecurity, understand the system and good practice, and know what their responsibilities are.

Culture – Biosecurity is part of the social norm, culture and attitudes, and is regarded as an essential part of the New Zealand story.

Social license – All those involved in managing pests have the necessary social license to use appropriate biosecurity risk management tools and undertake biosecurity activities.

Action – People do the right thing and take action when they should. Businesses manage the biosecurity risks related to their activities, and routinely factor biosecurity risk management into everyday decision-making.

Empowerment – The public, businesses, Māori and community groups feel empowered to participate.

Public participation in science – The community participates in citizen science projects to further biosecurity knowledge and manage biosecurity risk.

Participation – Māori actively participate as kaitiaki.

Māori values – Mātauranga Māori and kaitiakitanga are incorporated into the way biosecurity outcomes are achieved.

Capability – Māori, agencies and other biosecurity system stakeholders have trusting relationships and the necessary capability to work together effectively.

Recognition – The special relationship between the Crown and tāngata whenua and the unique contribution that Māori make to biosecurity are recognised by all system participants.

Self-organisation – Businesses, community groups, Māori, and philanthropic institutions collaborate on biosecurity planning and delivery activities.

Enabling – Community groups have the necessary information and tools, and are motivated to collaborate with others on biosecurity programmes.

Capacity to support – Agencies have sufficient capacity to provide the necessary information, tools and other support to participants.

Rules – People do the right thing because biosecurity rules and regulations are clear, easy to understand and can be complied with.

Processes – Traders and travellers proactively reduce biosecurity risks before they or imported goods enter New Zealand.

Means for participation – Information and resources are made available to enable people to participate in ways that are easy for them, and to support people being the eyes and ears of the system in monitoring for pests and diseases.

Targets for 2025 – to drive action

- 75% of adult New Zealanders understand what biosecurity means and why it is important.
- 100,000 New Zealanders regularly take action to control plant or animal pests in their community. 40,000+ people currently are estimated to be part of a community group that manages weeds or pests.
- 90% of relevant businesses are actively managing pest and disease risk associated with their business.

Initial focus will be on the five international risk pathways: craft, mail, cargo, passengers and express freight. Later this will be extended to domestic risk pathways, such as coastal shipping and movement of equipment between farms.



Zoe Lyte

Case studies

What does participation look like?

➔ EVERYONE CAN...

- Routinely unpack online purchases carefully in case any hitchhiker pests are inside.
- Become citizen scientists by contributing their observations of species to an online portal such as NatureWatch.
- Take a photo of an unusual bug in the garden, get instant feedback on whether it might be a risk and send it to MPI for identification via a mobile app if it is.
- Promote New Zealand's biosecurity rules to overseas family before they come to visit.
- Team up with others in their neighbourhood to control pests, such as stoats and rats, and work towards becoming a predator-free community.
- Thoroughly check, clean and dry their boat before moving it to another waterway.

➔ MĀORI CAN...

- Have biosecurity sections in their hapū and iwi environmental management plans.
- Provide marae-based training in cultural competencies to agencies with biosecurity responsibilities.
- Operate biosecurity management hubs at the takiwā (tribal district) level to work with government to manage biosecurity risk.

➔ BUSINESSES CAN...

- Build biosecurity requirements into their purchasing and supply contracts.
- Establish a "pest of the month" campaign to educate staff about potential risk species.
- Train their staff to manage biosecurity risks they encounter on the job.
- Include biosecurity as a standard item on their board agenda.
- Partner with other businesses to reduce biosecurity risks collectively across an industry. ■





Predator Free 2050

Predator Free 2050 is an ambitious goal to rid New Zealand of the three most damaging introduced predators. Eradicating rats, possums and stoats from New Zealand would have considerable benefits for our indigenous biodiversity, our taonga and our economy.

Achieving the goal will require an integrated, large-scale effort across new and existing conservation projects, government, primary sector, and community groups on a globally unprecedented scale.

Science and innovation is crucial to making this vision happen. We will need to develop breakthrough predator control tools and techniques in order to enable eradication at such large

scales. Many recent developments in pest control technologies demonstrate the potential for science and innovation to transform the way we manage pests. For example, self-resetting traps (such as those developed by GoodNature) and wireless monitoring technology have transformed the resource-intensive and costly work of regularly checking and resetting pest traps.

The Government has committed an additional \$28 million over 4 years and \$7 million per year thereafter on top of over \$70 million already spent annually on predator control. Additional investment from others is a key part of achieving the initiative.

Four interim 2025 goals have been set

to focus initial efforts:

- An increase of one million hectares of mainland New Zealand where predators are suppressed, through Predator Free New Zealand projects.
- Demonstration that predator eradication can be achieved in areas of mainland New Zealand of at least 20,000 hectares without the use of fences.
- Eradication of all mammalian predators from New Zealand's island nature reserves.
- A breakthrough science solution that would be capable of eradicating at least one small mammal predator from the New Zealand mainland. ■

Community management of *Pyura* in the Far North

Pyura is an invasive sea squirt first detected in the far north of New Zealand in 2007.

The species competes with native green-lipped mussels affecting customary and recreational fisheries in the area. The species quickly colonised rocky shores, so attempting a full eradication was unrealistic.

Because shellfish gathering is so important to the local community, there was strong support and willingness to get involved in community action to

reduce the impact of the sea squirt.

Local community members volunteered to get involved in a trial to understand if the sea squirt could be effectively removed by hand. Two locations were chosen – the Bluff at 90 Mile Beach and Whareana Bay on the eastern coast – and local people were trained to be the field team.

Locals cleared the chosen sites of sea squirts and then monitored the sites over time to understand how effective the removal had been.

Collaborative management involving Te Hiku o Te Ika Fisheries Forum, the Northland Regional Council, the Department of Conservation and MPI is ongoing. Although *Pyura* continues to need ongoing management, the community's willingness to work together, to show local leadership and to develop their capability has reduced the impacts on recreational and cultural values. ■





Strategic Direction 2: **A toolbox for tomorrow**

Harnessing science and technology to transform the way we do biosecurity.

Science provides the foundation for our evidence-based approach to risk-management. It supports wise decision-making, the setting of rules and standards, development of tools to detect or eradicate pests and diseases, and innovation to solve problems. To get greatest value from our investment in science for biosecurity, we will ensure it is prioritised to deliver to whole-of-system needs.

Science for biosecurity will incorporate diverse fields of research and knowledge, including social science research and mātauranga

Māori. Stronger connections within the biosecurity science community will facilitate greater cooperation, alignment and knowledge sharing. Stronger links with the wider system will ensure that research outputs are relevant, practical, accessible and timely. This will enable science to have the greatest benefit for biosecurity.

Together we will accelerate innovation to drive smarter, better and more efficient ways of detecting and managing biosecurity risk throughout the system. We will proactively identify and invest in new tools and technology, seek out and adopt

innovations from other sectors, and enable the distribution of these new tools across the system.

Everyone working in biosecurity will have smart biological and digital tools at their fingertips to identify and manage risk – rapidly, efficiently and knowledgeably.

Improving and making better use of our current tools and technologies will drive increased effectiveness. This includes augmenting existing tools with new technologies and working to make sure the use of biosecurity tools is accepted.



Goals – what we want to achieve

Science

The best science underpins biosecurity through effective coordination and processes that allow the full value of science to be realised.

Current tools

Continuous improvement ensures we get the very best value from biosecurity tools and technologies.

New tools

Capitalising on innovation and technology, by proactively seeking out and adopting new tools, transforms the way we do things.

Outcomes – the end results

Strategic direction – We have an integrated, forward-looking view of how we access, use and invest in science for the biosecurity system.

Science alignment – Activities and investment in science for biosecurity are prioritised to ensure they are aligned with and deliver to whole-of-system needs.

Science breadth – Science for biosecurity incorporates a breadth of disciplines and diverse fields of research, including social science research, and incorporates Mātauranga Māori.

Science uptake – Research outputs are relevant, practical and accessible; timely and effective use is made of them to benefit the biosecurity system.

Tool efficiency and effectiveness – Value is generated by making more effective use of existing tools. This includes:

- applying new technologies to enhance effectiveness of current tools;
- maintenance of social licence for use of the tools.

Application of new technologies – new technologies enhance the effectiveness of new tools.

Social licence – There is social licence to allow the use of biosecurity tools and technologies.

Tools for workers – Everyone working in biosecurity has smart biological and digital tools available to maximise efficiency and effectiveness of biosecurity risk management activities.

Tools for monitoring and analysis – Wide deployment of transformational electronic monitoring technologies enables huge advances in New Zealand's capability for early detection and response to pests and diseases.

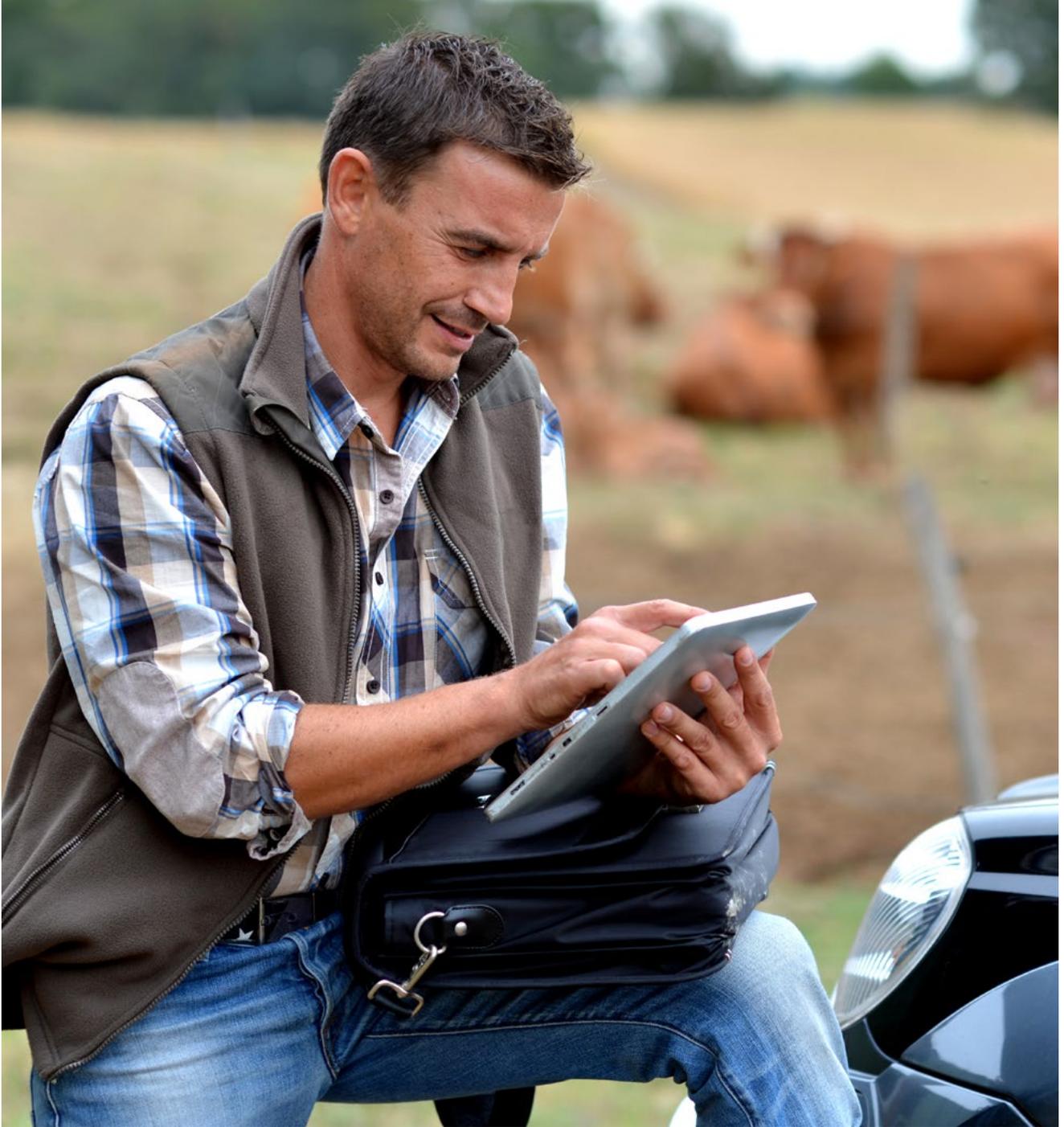
Tools for participation – Tools are available and well-supported to enable all participants to engage with and contribute to biosecurity in ways that are easy for them.

Targets for 2025 – to drive action

- At least \$80 million of public and private investment in science for biosecurity, with at least 50% of investment focused on identified critical biosecurity areas.
- Halve the cost of managing a significant established pest.

This will be achieved through innovative science and new tools and approaches to pest management.





Strategic Direction 3: **Smart, free-flowing information**

Tapping into the wealth of data available, building intelligence and using powerful data analysis to underpin risk management.

Information is a critical biosecurity system asset. Timely access to quality information is essential for evidence-based risk assessment, for anticipating and responding to risk, and for ensuring everyone across the system is on the same page.

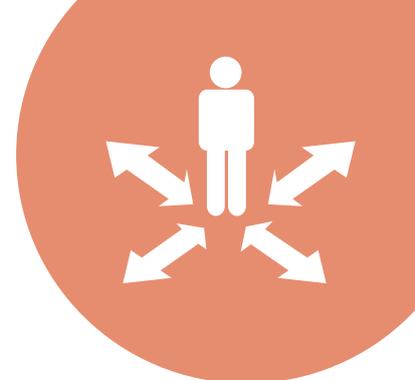
The right information will be available, rapidly, to everyone who needs it across the system. This will be

enabled by understanding system-wide information needs, ensuring sustainability of key databases, coordinating data collection and access across organisations, and facilitating data sharing where possible, such as through using common standards.

Greater value from data will come from employing analytics to turn

data into useful information and intelligence for risk assessment and to support greater awareness across the system.

We will make effective use of emerging information technologies, and take advantage of the transformational aspects of information technology.



Goals – what we want to achieve

Accessibility

Information is shared and open wherever possible.

Effective use

We unlock the full value of information through the best data use and analysis.

Preparing for the future

We anticipate and take advantage of the ways that information technology will transform society, support participation, and enhance biosecurity effectiveness.

Outcomes – the end results

System-wide priorities – Information needs are understood at a system-wide level: priorities are set strategically across the system.

Key data sources – The fundamental datasets required to support effective decision-making across the system are known; data is collected, maintained and stored using agreed consistent standards to support easy sharing of the data.

Distribution of access – Information is regarded as a system-wide asset, available to all who can make effective use of it, regardless of who collected or holds it.

Supporting mobility – Workers are able to record biosecurity information from wherever they may be working, and are able to access centrally-held information from remote locations.

Analytics – The best analytics are employed to turn data into information and intelligence for risk assessment, and to ensure resources are allocated to the areas of highest need.

Situational awareness – Information supports widespread understanding of biosecurity risks, coordinated effort, better decision-making at all levels across the system, and enhanced participation.

Networked sensors – Biosecurity risk management is more effective through use of big data such as that generated by networked sensors, e.g. in environmental locations by industry or local government, monitored and analysed by automated systems, with users notified if intervention or response is necessary.

Anticipate the future – Preparation for the transformational aspects of information technology becomes a standard part of biosecurity system planning and strategic thinking.

Take advantage of opportunities – Action is taken to make effective use of emerging information technologies, and to mitigate risks that may emerge through the transformation of business practices and society behaviours.

Targets for 2025 – to drive action

- A publicly-accessible network enables electronic access to organism data held by central government agencies, regional councils and Crown research institutes.
Organism data, linked together from multiple sources and including information on species name, distribution and impact, is crucial to identify and manage biosecurity risks.
- Automated and targeted alerts about emerging risks are available to all participants across the biosecurity system.





Strategic Direction 4: **Effective leadership and governance**

System-wide leadership and inclusive governance arrangements support all system participants in their roles.

The performance of the system depends not only on the capability of each individual part of the system but on how they all work together. Leadership and governance are crucial components of what enables us all to work together effectively.

The core purpose of system governance is to provide oversight of the system as a whole. It is crucial that governance arrangements provide participants, including Māori, regional councils, and GIA partners, with clear purpose, visibility of system performance, and assurance about how their interests are being reflected

in decision-making.

Two types of leadership are crucial to effective biosecurity system performance: system leadership such as the role held by MPI; and distributed leadership, in which system participants lead within their own parts of the system.

As system leader, MPI will support connections between participants by providing national direction, facilitating communication, fostering partnerships and collaborations, and promoting alignment and coordination of activities.

Distributed leadership recognises that leadership occurs throughout the biosecurity system.

This includes regional councils who have a statutory role to lead pest management in their regions, and GIA partners who are taking a leadership role in readiness and response. Many other system participants, such as industry, business and communities, can also step up to take leadership in their sphere of influence. MPI will support system participants to exercise leadership in their own parts of the system.



Goals – what we want to achieve

Leadership

System leadership supports everyone to contribute effectively within their own parts of the system.

Trust and confidence

Everyone has confidence in the system and its continual improvement.

Governance

Transparent and accountable system governance provides system oversight and clarity of purpose, confidence in system performance, and assurance to all system participants that their interests are reflected in decision-making.

Outcomes – the end results

System leadership –

- Provides national direction to system participants, and drives delivery of Biosecurity 2025.
- Ensures balance across all interests, values and parts of the system.
- Builds cohesion and a sense of common purpose across the system.
- Facilitates effective distributed leadership.

Distributed leadership – Participants exercise leadership within their own parts of the system, with:

- alignment and strong connections between programmes and activities across the system;
- effective communication, coordination and engagement amongst system participants;
- empowerment for participants to contribute effectively.

Leadership through partnerships

– Leadership and decision-making regarding significant aspects of biosecurity is undertaken through the Government Industry Agreement, and other partnerships and co-management arrangements.

Attitudes and perceptions –

New Zealanders have confidence in biosecurity system risk management.

System performance – System performance is monitored to support continuous improvement across the biosecurity system.

Assurance – Open reporting provides assurance about system performance.

System oversight – Biosecurity system governance provides whole-of-system oversight, including monitoring progress in implementing Biosecurity 2025.

Inclusive – Biosecurity system governance reflects the range of activities and participants in the biosecurity system.

Visible – Governance arrangements provide participants with clarity of how governance is being exercised, and who to approach to contribute to that process.

➔ WHAT DOES GOOD LEADERSHIP LOOK LIKE?

- A collaborative process identifies the best approach – whether regulatory or non-regulatory – to managing pathways for the spread of pests within New Zealand across marine, terrestrial and aquatic environments.
- Industry networks, regional forums and partnerships facilitate knowledge sharing, capability building, and collective management of biosecurity risks.
- Open communication and collaborative decision-making resolves uncertainties about roles, responsibilities and accountabilities.
- When responsibility for managing biosecurity risks is transferred, such as when an incursion response is transitioned into long-term pest management, there is open communication, collaborative decision-making, and tensions are well managed.
- Transparent system performance monitoring is developed to promote continuous improvement by all system participants.
- Effective mechanisms are developed for controlling pests that are only found in some regions and for which there is a clear national interest in limiting further spread.
- New Zealand takes the lead in international forums, such as the development of international agreements and scientific collaborations.



Strategic Direction 5: **Tomorrow's skills and assets**

A capable and sustainable workforce and world-class infrastructure provide the foundation for an effective system.

To be effective, the biosecurity system must be supported by enough people with the right knowledge, experience and skills at every level and across every function. To ensure this, we will understand the capability needs of the system, invest in the development of the current workforce and plan for

future needs and sustainability. This will include increasing the profile and attractiveness of biosecurity as a career, incorporating biosecurity into primary, secondary and tertiary education, and enabling people to develop system-wide biosecurity careers.

High-quality infrastructure is crucial to effective biosecurity risk management and needs to be well resourced, maintained and accessible. This infrastructure includes laboratories, databases, information technology systems, and policy infrastructure, such as legislation.



Goals – what we want to achieve

Skills

The biosecurity workforce is made up of enough people, with the right knowledge and skills, to meet our current and future biosecurity challenges.

Outcomes – the end results

Biosecurity-related careers – Careers available in biosecurity-related fields are well understood and sought after.

Biosecurity in education – Biosecurity is incorporated into primary, secondary and tertiary education.

Training and building capability – Biosecurity skills and capability are enhanced across the system through training packages and modules, professional development initiatives, internships and work experience, and educational resources.

Retaining capability – Biosecurity skills and capability within the system are valued, shared and retained.

Assets

Robust, resilient and enduring infrastructure supports biosecurity system functions.

Biological collections – Biological collections and databases, supported by world-class taxonomic expertise and research, provide the evidence base for New Zealand to respond effectively to present and future challenges.

Physical infrastructure and systems – Critical system infrastructure is well resourced, maintained and accessible to support risk management; this infrastructure includes laboratories and information technology systems.

Legal and regulatory infrastructure – Critical policy infrastructure, such as legislation and standards, are fit for purpose and support agile biosecurity risk management.

Target for 2025 – to drive action

- At least 150,000 people with identified skills can be quickly drawn on to provide support during biosecurity incursions.

This will be delivered by the National Biosecurity Capability Network or its successor.



Case studies

CatchIT: Seeing pest control come to life

CatchIT is an online tool for data management and analysis that is supporting community-led pest control at a landscape scale.

The CatchIT tool can store and organise data from pest trapping and monitoring, and turn the data into innovative and informative maps, interactive graphs and other



visualisations. The project aims to engage and motivate community volunteers by seeing their data come to life on the screen, yet it is also powerful enough to be used for conservation management and scientific research. The tool has been developed by the University of Auckland, and university students continually develop the software and respond to needs of users.

The tool is linked into the Department of Conservation-developed phone app 'Walk the Line'. People can see the success of their trapping work and compare with others in their community and beyond.

Through the CatchIT Schools programme, the Forest Bridge Trust is using these tools to get primary school students on board to learn about and control pests in their communities. Each student is given pest traps to

take home and the CatchIT tools are used in the classroom to record and analyse data. The project is integrated across the curriculum – students not only learn about the importance of pest management, but develop maths and statistics skills through recording and analysing their trapping data, and science skills are developed through an online game 'CatchIT-Experiment!'

Once students and their whānau are on board, pest control workshops are offered to the wider community. Communities are supported to establish local networks and work towards a common vision for their community.

Collaborative funding from a range of sources, including central and local government, university, NGOs and philanthropic sources, support the projects. ■

New Zealand's role in developing international biofouling guidelines

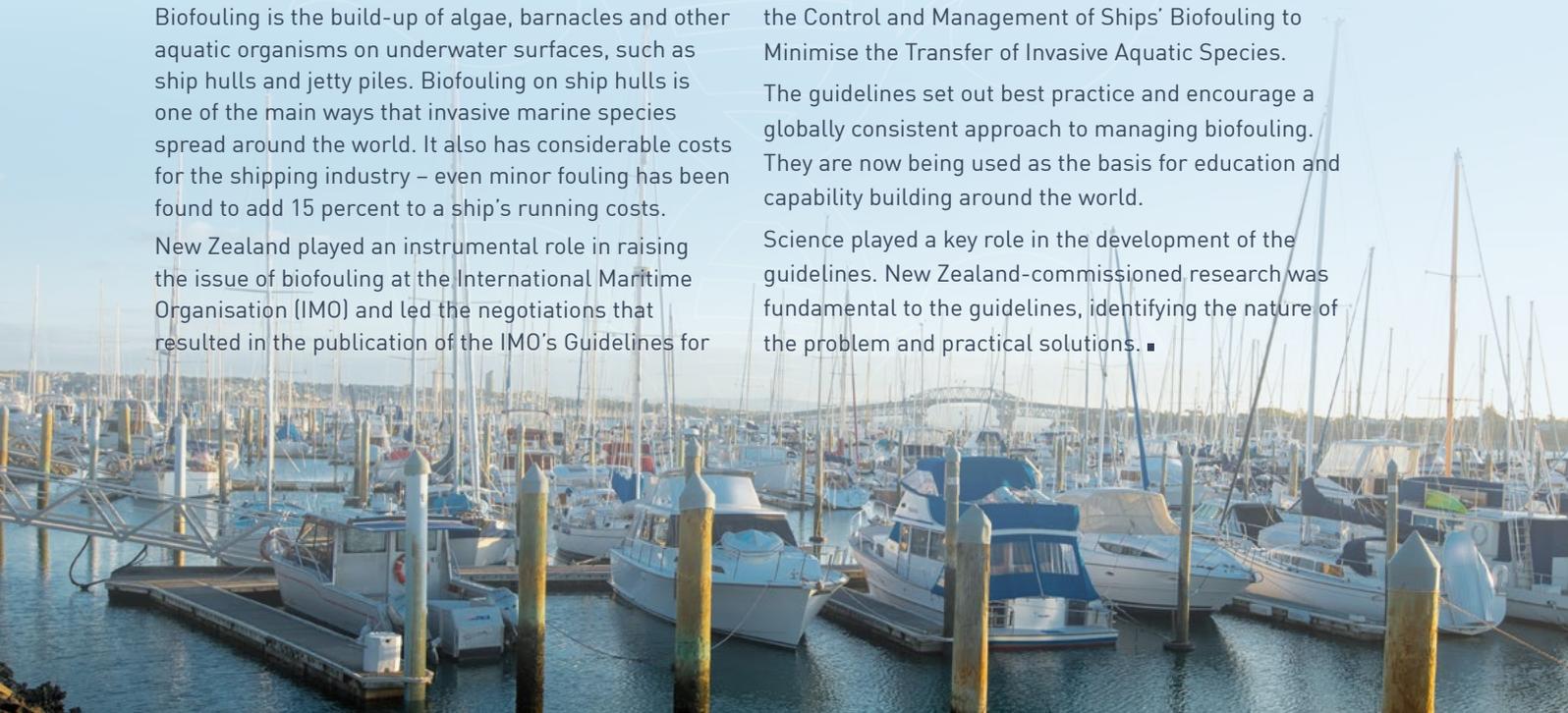
Biofouling is the build-up of algae, barnacles and other aquatic organisms on underwater surfaces, such as ship hulls and jetty piles. Biofouling on ship hulls is one of the main ways that invasive marine species spread around the world. It also has considerable costs for the shipping industry – even minor fouling has been found to add 15 percent to a ship's running costs.

New Zealand played an instrumental role in raising the issue of biofouling at the International Maritime Organisation (IMO) and led the negotiations that resulted in the publication of the IMO's Guidelines for

the Control and Management of Ships' Biofouling to Minimise the Transfer of Invasive Aquatic Species.

The guidelines set out best practice and encourage a globally consistent approach to managing biofouling. They are now being used as the basis for education and capability building around the world.

Science played a key role in the development of the guidelines. New Zealand-commissioned research was fundamental to the guidelines, identifying the nature of the problem and practical solutions. ■



A man with a receding hairline, wearing a grey button-down shirt, is seated and looking down at a tray of preserved moths. The tray is pulled out from a wooden drawer in a large cabinet filled with many similar drawers, each with a brass handle. The moths in the tray are various species, mostly in shades of yellow, orange, and green, and are pinned to a white surface. The background shows rows of drawers extending into the distance. On the right side of the image, there is a decorative graphic of a blue and green vine with leaves.

Making it happen

Now that we have a clear direction, which brings together views and aspirations from across the biosecurity system, we face the challenge of how we're going to achieve these together. The goals are ambitious and can only be met by working collectively.

How will we implement the Direction Statement?

Working towards the directions set out in this document will be a system-wide, collaborative effort. The implementation process will include wide involvement from central and regional government, iwi, GIA partners, industry, and other biosecurity system participants.

MPI will bring participants from across the biosecurity system together to establish a steering group. This group will lead the establishment and initial stages of the implementation process, until more enduring governance arrangements

for the system have been set in place.

Working groups will be established for each strategic direction, with their initial tasks being to:

- Develop an implementation plan, setting out actions that align to the outcomes and goals, and timeframes for their implementation.
- Establish measures or indicators that will be used to track progress. Baselines will be established for all measures in the first year.

Central oversight of implementation will ensure that the work taking place for each of the strategic directions is aligned and coordinated.

Progress towards the outcomes and goals of the direction statement will be reviewed regularly. The first review will begin three years after the Direction Statement is launched, with a second review scheduled for year six. In 2025, after nine years of implementation, the Direction Statement will be evaluated to determine whether the direction for the biosecurity system needs to be refreshed or replaced.

An overview of implementation



How does the Direction Statement relate to other documents in the biosecurity system?

This document is intended to be an enduring guide for New Zealand's biosecurity system until at least 2025. The strategic directions are necessarily high-level, and will be supported by implementation

documents that will set out the detail of what we'll do and how we'll do it.

As a high level strategic document for the biosecurity system, this direction statement overlaps with many other existing policies, strategies, initiatives and plans. These include the *Pest Management National Plan of Action*, the National Science Challenges, the Government Industry Agreement, the *New Zealand Biodiversity Strategy*

and *Action Plan* and *Predator Free 2050*. The Biosecurity 2025 Direction Statement won't replace these. They'll continue to be used to support strategy and delivery of biosecurity in their respective parts of the system. However, by providing a cohesive direction for the system as a whole, this document will provide an opportunity to better align or coordinate the parts of the system.



Turning the outcomes into reality

The initial actions presented below are intended to be a starting point for implementation planning. They comprise 'first steps' that were publicly consulted on, and amended to reflect consultation feedback. While these actions have been identified as initial priorities, many more activities will be identified through the implementation planning process.

Committing to these actions will provide a strong basis for implementation planning.

During implementation of the Direction Statement we will work together to develop a comprehensive set of actions that will deliver the goals and outcomes for each strategic direction.

➔ INITIAL ACTIONS FOR STRATEGIC DIRECTION 1

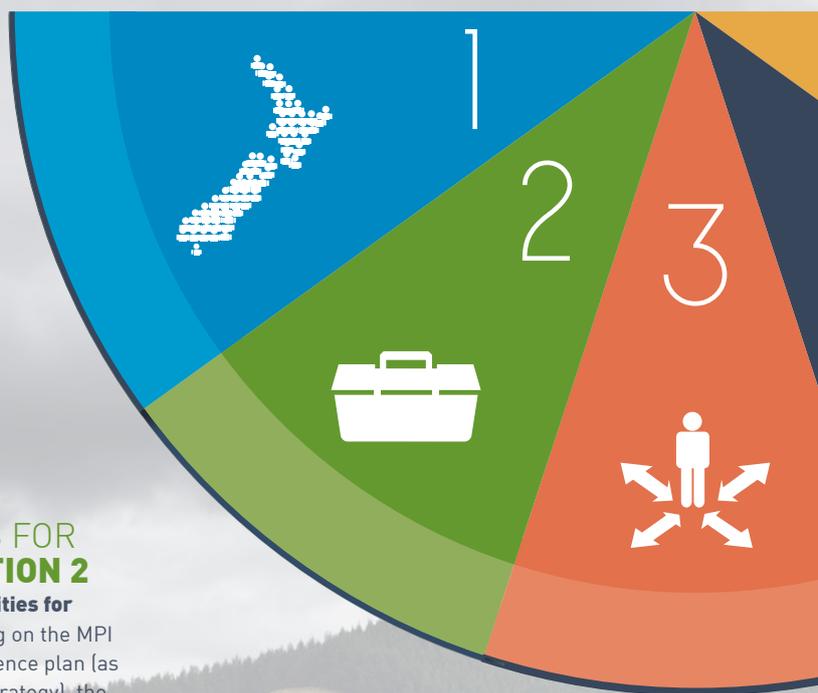
- **Develop an engagement plan to increase participation in the biosecurity system.** This will include:
 - audience segmentation to prioritise target audiences
 - actions to deliver increased awareness of biosecurity;
 - activities to drive behaviour change;
 - activities to encourage and enable people to participate.
- **Build corporate awareness of biosecurity** by working with business organisations to support businesses to embed biosecurity in business planning and everyday decision-making.

➔ INITIAL ACTIONS FOR STRATEGIC DIRECTION 2

- **Develop system-wide priorities for biosecurity science,** drawing on the MPI biosecurity science and evidence plan (as set out in the MPI Science Strategy), the National Science Challenges, relevant science roadmaps, the Better Border Biosecurity Strategy and other relevant strategies and plans. This will include:
 - setting science priorities
 - reviewing the balance between land, freshwater and marine focused research,
 - encouraging public-private investment in research and innovation, and
 - better incorporating social science and mātauranga Māori.
- **Upgrade the Biosecurity Toolbox** to provide an effective platform for sharing information about pest management tools and best practice, to support participation by Māori, agencies, industries and community groups.

➔ INITIAL ACTIONS FOR STRATEGIC DIRECTION 3

- **Identify the information needs for the biosecurity system and prioritise accordingly,** including critical infrastructure, information sharing, open data, participation, legislative and other means to overcome obstacles while providing adequate safeguards.
- **Establish national data standards and procedures to support sharing of organism information,** including a national data registry service that will enable, for example, real-time up-to-date distribution maps for invasive species, from all data sources held across New Zealand.





➔ INITIAL ACTIONS FOR STRATEGIC DIRECTION 4

- **Undertake a review of biosecurity system governance** to ensure that governance arrangements provide effective system oversight, support all participants in the system, and enable people to have trust and confidence in the performance of New Zealand's biosecurity system.
- **Review the readiness/response/pest management parts of the biosecurity system**, including greater clarity regarding roles and responsibilities of all system participants, and the transition process from response to long-term pest management operations.

➔ INITIAL ACTIONS FOR STRATEGIC DIRECTION 5

- **Develop a biosecurity capability plan** to address identified needs regarding capabilities, skills and capacity across the system, with a particular focus on critical areas; including the need to expand the National Biosecurity Capability Network or its successor, and to provide access to skilled individuals that can be called on to rapidly mobilise in biosecurity incursions.
- **Develop a response to the recommendations set out in the Royal Society of New Zealand's 2015 report on National Taxonomic Collections in New Zealand.** This is to ensure we maintain the essential biosecurity infrastructure to be able to identify species and know if they pose a risk to New Zealand. The recommendations address coordination, protection, stewardship and training to ensure the biological collections, supported by taxonomic expertise and research, continue to provide the evidence base needed for New Zealand's biosecurity system.

Targets for 2025

Strategic Direction 1

- 75% of adult New Zealanders understand what biosecurity means and why it is important.
- 100,000 New Zealanders regularly take action to control plant or animal pests in their community.
- 90% of relevant businesses are actively managing pest and disease risk associated with their business.

Strategic Direction 2

- At least \$80 million of public and private investment in science for biosecurity, with at least 50% of investment focused on identified critical biosecurity areas.
- Halve the cost of managing a significant established pest.

Strategic Direction 3

- A publicly-accessible network enables electronic access to organism data held by central government agencies, regional councils and Crown research institutes.
- Automated and targeted alerts about emerging risks are available to all participants across the biosecurity system.

Strategic Direction 5

- At least 150,000 people with identified skills can be quickly drawn on to provide support during biosecurity incursions.

Appendix 1: New Zealand's biosecurity system

The biosecurity system involves government, industry, Māori and all New Zealanders working together to manage risks posed by pests and diseases to the economy, environment and human health.

The biosecurity system is based on risk management activities undertaken across a range of inter-related areas – internationally, at the border and within New Zealand. Some of the activities and outcomes are described below.

	Layer of the system	Outcomes
 <p>International</p>	<p>International Plant and Animal Health Standards</p> <p>Developing international standards and rules under the World Trade Organization Sanitary and Phytosanitary Agreements.</p>	Science and risk-based standards lead to an easier environment to trade in while protecting our biosecurity.
	<p>Trade Agreements and Bilateral Arrangements</p> <p>Negotiation, agreements and processes for future biosecurity cooperation and trade.</p>	Biosecurity requirements for New Zealand businesses are reasonable and create commercial certainty when trading overseas.
	<p>Risk Assessment and Import Health Standards</p> <p>Identification of risk and specification of requirements for people and goods coming into the country, including assessment of applications to import organisms new to New Zealand.</p>	The majority of biosecurity risks are managed offshore so that compliant passengers and cargo arrive at our border. Biosecurity risks that arrive onshore are managed effectively.
 <p>Border</p>	<p>Border Intervention</p> <p>Educating and auditing to encourage compliance. Inspecting to verify compliance and taking action to manage non-compliance.</p>	Trade and travel are facilitated for people and goods complying with New Zealand regulation. The accidental or illegal import of pests is prevented from creating biosecurity risk.
 <p>Within New Zealand</p>	<p>Surveillance</p> <p>General and targeted programmes to detect harmful pests and diseases.</p>	Harmful pests and diseases are detected promptly. New Zealand's pest freedom status is known. The spread of established pests into new areas, or changes in a pest's risk profile, are detected promptly.
	<p>Readiness and Response</p> <p>Regular testing of the biosecurity system's capability to respond. Responding to detected harmful pests and diseases.</p>	The biosecurity system is ready to respond to new organism incursions. Harm from detected new pests and diseases is minimised.
	<p>Long-term Pest and Disease Management</p> <p>National scale management – eradication, containment or management of a pest across New Zealand.</p> <p>Regional management – primarily led by regional councils through regional pest management plans and pathway plans.</p> <p>Local scale management – to protect values in places. Pests within a site are managed to the extent necessary to protect the place's values.</p>	Harm caused by established pests and diseases is reduced or contained, through exclusion, eradication, progressive containment, or sustained control at the most appropriate scale (national, regional or local).



