

National Plant Biosecurity Strategy

2021-2031

Acknowledgements

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Acronyms

FAO	Food and Agriculture Organization
IGAB	Intergovernmental Agreement on Biosecurity
NDP	National Diagnostic Protocol
NPBDN	National Plant Biosecurity Diagnostic Network
PSNAP	Plant Surveillance Network Australasia Pacific

Executive summary

The National Plant Biosecurity Strategy (strategy) provides a national framework to strengthen Australia's plant biosecurity system. It sets the focus and strategic direction for plant biosecurity activities, and drives the way for effective collaboration and action by all participants, including governments, plant industries and the community.

The strategy's vision for 2031 is a resilient and contemporary national plant biosecurity system that supports Australia's plant industries, economy, environment and communities. Achieving this shared vision requires collective effort nationally that ensures the people, resources, tools and systems are in place to facilitate the reforms and address the most important priorities for the system.

The strategy is based around four interconnected strategic priorities shown below. Each priority is supported by a series of actions that will guide and support national policy and inform investment across all aspects of the system. The actions can also be used to guide state/territory, regional and local efforts or efforts by individual governments, plant industries and stakeholder groups.

Strategic Priority 1	STRONGER TOGETHER 
Strategic Priority 2	SUSTAINED SUPPORT 
Strategic Priority 3	FUTURE READY TOOLKIT 
Strategic Priority 4	IMPACT THROUGH INNOVATION 

The strategy applies to plant pests and weeds that impact Australia's plant industries, environment and community. For the purpose of the strategy, plant pests are defined as any species, strain or biotype of invertebrate or pathogen injurious to plants, plant products or bees. The application of the strategy to weeds covers exotic weed species and declared weed species not known to be established in a particular jurisdiction.

This strategy is preceded by the 2010–2020 National Plant Biosecurity Strategy. The 2010–2020 strategy recognised the importance of working together to respond to current and future biosecurity challenges, and played a key role guiding activities to support improvements to Australia's plant biosecurity system. It helped deliver a system vital to supporting our way of life where:

- The rapid and accurate diagnosis of potential plant pests is carried out using a sophisticated nationally integrated diagnostic network.
- The capacity and skills of people to prepare for potential plant biosecurity incidents is enhanced through various training and professional development activities.
- A range of digital resources are available and routinely used to prevent, identify and respond to plant biosecurity incidents.
- Various software and technology platforms are in place to manage the collection, collation and analysis of plant biosecurity information.

This strategy builds upon the achievements and momentum of these previous actions and successes to provide continued benefits for the national plant biosecurity system. The realisation of these benefits have never been more important given the biosecurity challenges and opportunities that will be faced in a constantly changing environment.

Through its alignment with the Intergovernmental Agreement on Biosecurity (IGAB)¹ and links to other key strategies and plans that will support implementation, this strategy is a framework to ensure the national plant biosecurity system continues to manage risks to Australia's plant industries, environment and community while supporting trade and market access.

¹ The current version of the agreement was ratified in January 2019 and replaced the previous IGAB which came into effect in 2012.

National Plant Biosecurity Strategy at a glance

Vision	A resilient and contemporary national plant biosecurity system that supports	
Strategic priorities	<div data-bbox="395 353 798 638"> <h1>1</h1> <h2>STRONGER TOGETHER</h2> </div> <div data-bbox="443 689 826 1048">  </div>	<div data-bbox="930 353 1388 638"> <h1>2</h1> <h2>SUSTAINED SUPPORT</h2> </div> <div data-bbox="994 689 1348 1048">  </div>
Actions	<p>1.1 Establish a shared and agreed understanding of roles and responsibilities for plant biosecurity.</p> <p>1.2 Strengthen domestic and international connections across the plant biosecurity system.</p> <p>1.3 Improve participation and adoption of plant biosecurity practices.</p> <p>1.4 Develop education and awareness campaigns to better manage plant biosecurity risks.</p> <p>1.5 Create opportunities to enhance community and citizen science contributions to plant biosecurity.</p>	<p>2.1 Establish a common understanding of plant biosecurity risks and management options in the Australian context.</p> <p>2.2 Develop an ongoing understanding of capacity and capability gaps across the national plant biosecurity system.</p> <p>2.3 Develop the skills and knowledge required to support the ongoing needs of the national plant biosecurity system.</p> <p>2.4 Ensure systems, policies and infrastructure are available for all aspects of plant biosecurity.</p> <p>2.5 Use appropriate investment allocation models to fund and coordinate plant biosecurity system and reform efforts.</p>
Implementation	Action plans ²	

² The action plans will outline the specific tasks required for each action to achieve the outcomes and vision in the strategy. These plans will also identify organisations and/or groups with responsibility for implementing each task, resources required and timeframes.

3

FUTURE READY TOOLKIT



- 3.1 Encourage the early adoption of new technologies to improve the detection, identification and prioritisation of plant pests and weeds.
- 3.2 Develop and maintain decision-making tools, policies and processes to manage plant biosecurity risks.
- 3.3 Enhance arrangements to protect production and environmental assets and improve market access.
- 3.4 Strengthen national response, recovery and relief arrangements for plant biosecurity incidents.
- 3.5 Support efforts to enhance the adoption of best practice plant biosecurity related legislation and regulation.

4

IMPACT THROUGH INNOVATION



- 4.1 Implement and maintain interoperable and integrated national knowledge and information management systems.
- 4.2 Enhance analytics capability for plant biosecurity decision making.
- 4.3 Drive the adoption of research, development and extension activities across all aspects of plant biosecurity.
- 4.4 Measure and assess the performance of the national plant biosecurity system by engaging stakeholders from across the biosecurity spectrum.

Action plans²

Introduction

With many plant pests and weeds at our doorstep – ongoing investment to protect the livelihood of producers and the end-to-end supply chain has never been more important.

Plant pests and weeds are capable of damaging our plant industries, food production and natural landscapes. The Food and Agriculture Organization (FAO) estimates that 20–40 per cent of global crop production is lost each year due to plant pests³. These negative impacts could worsen over time and the FAO estimates highlight the need for a resilient and contemporary national plant biosecurity system.

This strategy recognises the importance of working together as a collective in providing a national framework to deliver a stronger and more resilient system. It sets the focus and strategic direction for plant biosecurity activities, and drives the way for effective collaboration and action by all participants, including governments, plant industries and the community.

Key to our success is a pathway for action that aligns efforts of stakeholders across the system and supports the demonstration of shared responsibility. This will lead to transparency in our efforts and help ensure we have the people, resources, tools and systems to address the most important priorities and effectively manage current and future biosecurity challenges.

Impact of the 2010–2020 strategy

Activities to support the strengthening of the national plant biosecurity system were supported by the 2010–2020 National Plant Biosecurity Strategy. The 2010–2020 strategy provided a comprehensive blueprint to deliver a first-class plant biosecurity system, establishing an important foundation for continued reform and improvement.

Implementation of the 2010–2020 strategy guided significant improvements in the national plant biosecurity system. Specific improvements included⁴:

- A range of digital resources were developed, sustained and improved to support plant biosecurity activities, providing stakeholders across the system with fast access to data and analysis of information. These resources include the **Australian Plant Pest Database**, **AUSPestCheck™**, **MyPestGuide** and the **Pest and Disease Image Library**.
- Implementation of the National Plant Biosecurity Diagnostic Network (NPBDN) and the Plant Surveillance Network Australasia Pacific (PSNAP) has helped improve capability and capacity for diagnostics and surveillance by building connections that promote the sharing of ideas, knowledge and information.
 - The NPBDN has grown to more than 500 members across Australia, New Zealand and the Pacific nations since the network was founded in 2011.
 - The PSNAP was established in 2017 and now has more than 300 members from over 50 different organisations across the Australasia-Pacific region.

³ Food and Agriculture Organization of the United Nations (FAO) 2020, New standards to curb the global spread of plant pests and diseases. Available at <http://www.fao.org/news/story/en/item/1187738/icode/>

⁴ Figures provided as at November 2021.

- Annual plant biosecurity workshops have helped improve the skills, knowledge and expertise of diagnosticians and people involved in surveillance. Skills based workshops have built upon these efforts to effectively address gaps in capacity or capability across the system.
- Over 350 NPBDN members from more than 35 different organisations have built connections and shared information at the 11 Annual Diagnosticians' Workshops held since 2012.
- More than 180 PSNAP members from over 30 different organisations have benefitted from attending the 3 Annual Surveillance Workshops held since 2018.
- The increased availability of agreed National Diagnostic Protocols (NDPs) has provided diagnosticians with trusted protocols to deliver reliable diagnoses. More than 40 NDPs for plant pests have been endorsed through the Subcommittee on Plant Health Diagnostics, with over 80 NDPs under development.
- The continued evolution of the Emergency Plant Pest Response Deed has resulted in an improved agreement that provides signatories with a high level of confidence and enables a more timely, effective and efficient response to plant pest incursions.
- The development of more than 100 contingency plans has strengthened Australia's preparedness for exotic plant pest threats. Delivery of a modular approach to contingency plans is also helping lead to better outcomes for responses.
- Extension programs have deepened engagement across the system by raising awareness on the importance of biosecurity and improving practices at the farm level and along the supply chain.
- The development and implementation of the National Plant Biosecurity Diagnostic Strategy (2012-2020) and the National Plant Biosecurity Surveillance Strategy (2013-2020) has improved the coordination of plant biosecurity activities across these components of the system.
- Industry surveillance programs, including those for bees, citrus and forestry, established under industry specific surveillance strategies, have helped provide early warning for exotic plant pests and data to support and maintain market access.
- The establishment of the Plant Biosecurity Research Initiative has increased collaboration between research and development corporations, PHA and the Australian Government and has provided an important mechanism to better coordinate investment in biosecurity research, development, and extension.
- Australian governments have implemented contemporary plant biosecurity legislation, regulations and consistency of regulation for trade.

Challenges

While significant activity has occurred over the last decade to strengthen Australia's plant biosecurity system, a range of existing, emerging and growing challenges are increasing the threat of biosecurity risks.

These include factors such as globalisation, international and interstate movement, climate change and the increasing volume of goods moved⁵⁶⁷⁸. Further compounding these challenges are several other trends including the emergence of new plant pests and new pathways (such as online retailers), the shifting geographic spread of existing plant pests and weeds, agricultural expansion and intensification, increased urbanisation, changing land uses⁹ and changing trading patterns/supply chains. In conjunction with these increasing challenges and trends, there is an ongoing competition for resources across the national plant biosecurity system.

All these factors have combined to place significant pressure on the ability of participants to meet their biosecurity responsibilities, national biosecurity obligations and respond to new and emerging risks and pathways.

At the same time, access to overseas markets for primary produce is becoming harder as some trading partners place more stringent requirements on our exports while others are improving their compliance and with it their competitiveness. Consumer preferences and expectations for information on food safety and quality are driving a greater need to ensure production systems are ethical, effective and safe. Part of these expectations include a growing need to maintain Australia's favourable biosecurity status over the next decade and into the future.

This strategy focuses on addressing these challenges over the next ten years through provision of a long term policy focus, coupled with a process of regular monitoring, review and reporting against the goals and actions. The strategy aims to remain agile and responsive to the changing and demanding biosecurity environment expected over the next decade.

Consultation and development

Development of the strategy has been informed through extensive consultation with a wide range of plant biosecurity stakeholders including:

- plant biosecurity and environment representatives in Australian, state and territory governments
- plant industry bodies
- research and development corporations
- research bodies
- local government authorities
- environmental groups
- community groups and
- growers.

The outcomes of consultation undertaken on a suite of national sub-strategies and implementation plans on preparedness, surveillance and diagnostics¹⁰ were used to guide development of this strategy as part of a bottom-up approach. Engagement activities for the sub-strategies included workshops, online surveys, stakeholder updates and a discussion paper.

The list of organisations/groups engaged are provided in Appendix 1 – Stakeholder consultation.

5 CSIRO 2014, Australia's biosecurity future: preparing for future biological challenges, Commonwealth Scientific and Industrial Research Organisation, Canberra.

6 Grafton, Q, Mullen, J & Williams, J 2015, Australia's agricultural future: returns, resources, and Risks, final report for the Australian Council of Learned Academics, Melbourne.

7 Hajkowicz, S & Eady, S 2015, Rural industry futures: Megatrends impacting Australian agriculture over the coming twenty years, report prepared for the Rural Industries Research and Development Corporation, Canberra.

8 Cope, R, Ross, J, Wittmann, T, Prowse T & Cassey, P 2016, Integrative analysis of the physical transport network into Australia, PLOS ONE.

9 Craik, W., Palmer, D. & Sheldrake, R. 2017, Priorities for Australia's biosecurity system: An independent review of the capacity of the national biosecurity system and its underpinning Intergovernmental Agreement, prepared for the Department of Agriculture and Water Resources, Canberra, Australia. Available at www.agriculture.gov.au/igabreview.

10 Through the Agricultural Competitiveness White Paper, the Australian Government funded Plant Health Australia to develop the suite of sub-strategies and implementation plans to support implementation of the National Plant Biosecurity Strategy.



National approach to plant biosecurity

Australia's plant biosecurity system is built on a shared responsibility between a diverse range of stakeholders including all levels of government, plant industry bodies, growers, research organisations, environmental groups, natural resource managers, supply chains and the wider community (e.g. Indigenous individuals and communities, education institutions and the general public). This means everyone can make a meaningful contribution to a successful national plant biosecurity system.

Shared responsibility should not be confused with partnerships. Shared responsibility is as much about sharing the duty of biosecurity actions as it is about sharing the benefits delivered by a robust biosecurity system.

The Australian Government and state and territory governments work under the principles set out in the IGAB. The IGAB aims to strengthen Australia's biosecurity system, enhance national collaboration among Australian governments, and support our biosecurity system to meet current and future challenges. The current version of the agreement was ratified in January 2019 and replaced the previous IGAB which came into effect in 2012.

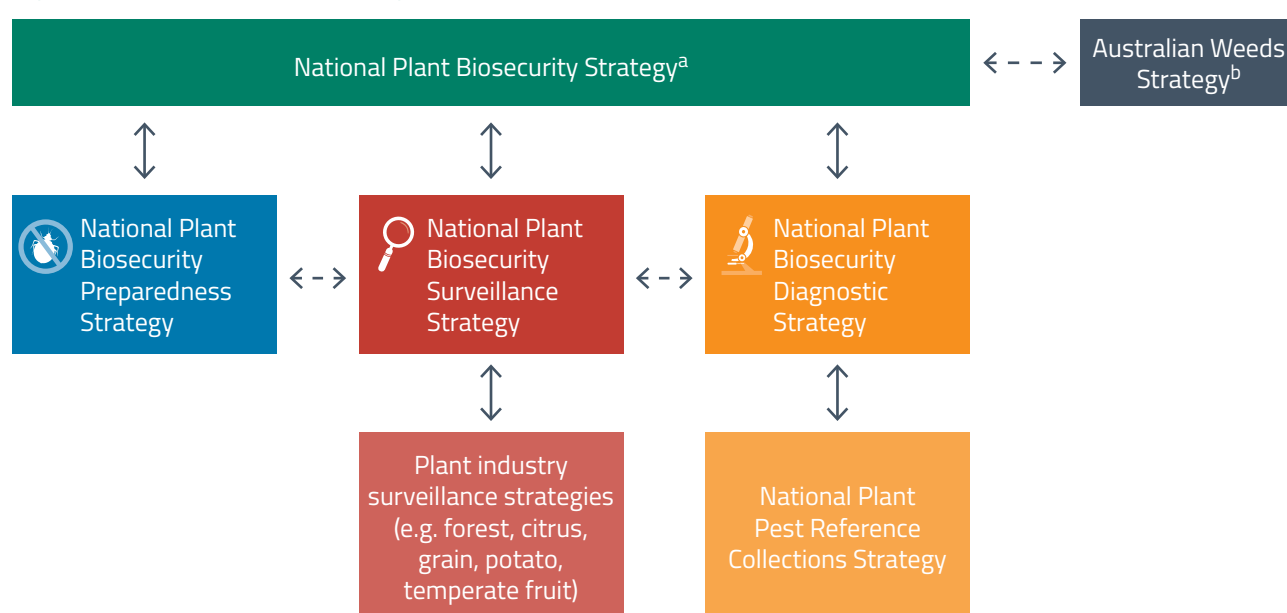
This strategy aligns with the IGAB and brings together components of the national sub-strategies on

preparedness, surveillance and diagnostics that sit under this strategy and support its implementation. It also compliments and supports aspects of other key strategies and plans to further strengthen plant biosecurity arrangements over the next decade. These strategies and plans include the following:

- Australia's Biosecurity Future
- Australian Weeds Strategy
- Commonwealth Biosecurity 2030
- Decadal Plan for Agriculture
- National Environment and Community Biosecurity Research, Development and Extension Strategy
- National Fruit Fly Strategy
- Plant Biosecurity Research Initiative Strategy
- Plant industry surveillance strategies
- State and territory government biosecurity strategies.

Figure 1 shows the relationship between some key plant biosecurity strategies at the national level. Alignment of the National Plant Biosecurity Strategy with the national sub-strategies on preparedness, surveillance and diagnostics is provided in Appendix 2 – Alignment with national plant biosecurity sub strategies.

Figure 1. Some key national strategies relevant to plant biosecurity.



^a The National Plant Biosecurity Strategy Implementation Group has oversight of the National Plant Biosecurity Strategy and its three sub-strategies on preparedness, surveillance and diagnostics

^b The Environment and Invasives Committee has oversight of the **Australian Weeds Strategy**

Scope of the strategy

This strategy focuses on improved outcomes for the national plant biosecurity system and applies to plant pests and weeds that impact Australia's plant industries, environment and community.

For the purpose of this strategy, plant pests are defined as any species, strain or biotype of invertebrate or pathogen injurious to plants, plant products or bees.

The application of the strategy to weeds primarily covers exotic weed species and declared weed species not known to be established in a particular jurisdiction, which pose high potential impacts. It supports those aims of the Australian Weeds Strategy. Weeds are also included in this strategy where they may be important vectors, reservoirs and alternative hosts for plant pests.

The strategy does not identify resourcing or funding sources to deliver the strategic priorities and actions. Guidance on the specific tasks required for each action, including organisations and/or groups with responsibility for implementing each task, resources required and timeframes, will be provided in detailed action plans to support implementation of the strategy.

Guiding principles

The strategy is guided by the following principles which together help ensure the national plant biosecurity system manages risks to Australia's plant industries, environment and community while supporting trade and market access:

1 >

An effective biosecurity continuum

An effective biosecurity system manages the pre-border, border and post border elements (the biosecurity continuum) to mitigate risks and support exports/interstate trade.



2 >

Collaboration

Biosecurity is a responsibility shared by all Australians, built on partnerships between governments, plant industries, natural resource managers, land custodians or users, and the community.



3 >

Evidence-based

Biosecurity activities are undertaken according to a cost-effective, science based and risk-managed approach.



4 >

Coordination

Biosecurity activities are well coordinated to ensure resources are targeted towards agreed national priorities.



5 >

Investment

Funding and investment for biosecurity activities is sustainable in the long-term with a focus on areas of greatest impact.



Strategic direction to 2031

The vision to 2031 is supported by four interconnected strategic priorities essential to create the best possible outcomes for the national plant biosecurity system. Each strategic priority is supported by a series of actions and expected outcomes that are outlined in this section.



Strategic priority



STRONGER TOGETHER



Domestic and international connections will remain critical to supporting our plant industries, economy, environment and community from plant biosecurity threats. This includes linkages within and across the broader system and collaboration with other sectors.

The ability to grow productive and mutually beneficial partnerships will help with intelligence gathering and best practice knowledge sharing of pest biology, ecology, behaviour and management. It will also facilitate greater cooperation during a response to a plant biosecurity incursion.

Efforts to improve participation in plant biosecurity activities will be equally important to ensure the wide range of system participants are more aware of plant biosecurity risks and acknowledge their responsibilities.



Action	Expected outcomes
1.1 Establish a shared and agreed understanding of roles and responsibilities for plant biosecurity.	<ul style="list-style-type: none">▪ Biosecurity is adopted as a shared responsibility by governments, plant industries, the broader supply chain and the community.▪ Improved governance across the national plant biosecurity system.▪ Collaborative linkages and networks exist for sharing intelligence, new technology, tools and processes.▪ Increased stakeholder participation in plant biosecurity activities through a greater awareness of risks.▪ An enabled and aware community that plays a greater role in plant biosecurity activities.▪ Resources across the system are leveraged to maximise return on collective investment.
1.2 Strengthen domestic and international connections across the national plant biosecurity system.	
1.3 Improve participation and adoption of plant biosecurity practices.	
1.4 Develop education and awareness campaigns to better manage plant biosecurity risks.	
1.5 Create opportunities to enhance community and citizen science contributions to plant biosecurity.	

Strategic priority

2

SUSTAINED SUPPORT



The ability to manage plant biosecurity risks and retain Australia's favourable biosecurity status relies on skilled and responsive participants across the entire system.

In order to ensure the people that underpin our system are effective in their roles, there is a need to have a clear understanding of risks and the capacity and capability requirements across the system. In addition, there is a need to build and retain expertise in key areas of risk to ensure appropriate and sustainable resourcing is available to meet current and future needs.

The delivery of positive biosecurity outcomes is also dependent on appropriate systems, policies and infrastructure such as laboratories, specialist equipment, consumables and other resources. It is important that these aspects are effectively coordinated and used appropriately to support surveillance, early detection and response activities.



Action	Expected outcomes
<p>2.1 Establish a common understanding of plant biosecurity risks and management options in the Australian context.</p> <p>2.2 Develop an ongoing understanding of capacity and capability gaps across the national plant biosecurity system.</p> <p>2.3 Develop the skills and knowledge required to support the ongoing needs of the national plant biosecurity system.</p> <p>2.4 Ensure systems, policies and infrastructure are available for all aspects of plant biosecurity.</p> <p>2.5 Use appropriate investment allocation models to fund and coordinate plant biosecurity system and reform efforts.</p>	<ul style="list-style-type: none"> ▪ Greater understanding of plant biosecurity risks and adoption of appropriate management options by participants ▪ Appropriate levels of skilled people to meet current and future biosecurity challenges and opportunities. ▪ Skills within the national plant biosecurity system are enhanced, retained and shared. ▪ Comprehensive support (systems, policies and infrastructure) is available to support plant biosecurity activities. ▪ Activities across the national plant biosecurity system are appropriately resourced and coordinated.

Strategic priority

3

FUTURE READY TOOLKIT



The availability and use of new tools, technologies, policies and processes is essential to drive action that safeguards and supports trade while protecting our way of life. This is particularly important given the growing risks we face.

Continually improving Australia's biosecurity toolkit will make for more effective and efficient ways to detect and manage plant biosecurity risks across the system. Different mechanisms for response and strengthened recovery and relief arrangements are also needed to ensure plant industries, the environment and communities recover rapidly and fully after a plant biosecurity incident.

Efforts should be backed by working towards clear and effective legislation and policies that are harmonised across Australia, where possible, and enable implementation of international standards and agreements.



Action	Expected outcomes
<p>3.1 Encourage the early adoption of new technologies to improve the detection, identification and prioritisation of plant pests and weeds.</p> <p>3.2 Develop and maintain decision-making tools, policies and processes to manage plant biosecurity risks.</p> <p>3.3 Enhance arrangements to protect production and environmental assets and improve market access.</p> <p>3.4 Strengthen national response, recovery and relief arrangements for plant biosecurity incidents.</p> <p>3.5 Support efforts to enhance the adoption of best practice plant biosecurity related legislation and regulation.</p>	<ul style="list-style-type: none"> ▪ Improved efficiency and effectiveness of import and export operations by using new technologies to reduce clearance times and increase detection capability. ▪ Stakeholders are able to make rapid, informed, and risk-based decisions through the use of fit for purpose tools. ▪ Better treatment options to support market access and response issues. ▪ Greater confidence in the quality and consistency of data generated from surveillance and diagnostics. ▪ Reduced impact of plant biosecurity incidents through strengthened preparedness arrangements. ▪ Plant industries, the environment and communities recover and are more resilient after a plant biosecurity incident. ▪ Legislation and regulation is not an impediment to the delivery of plant biosecurity activities.

Strategic priority



IMPACT THROUGH INNOVATION



Innovation is key to allow our system to function efficiently and effectively. By working smarter, faster and better, we will be better placed to meet current and future biosecurity challenges and opportunities.

Coordinated investment in innovative approaches and technologies across the system will help better connect participants and facilitate the fast and secure sharing of information to guide decision making. It will also support the modernisation of systems and play an important role in managing plant biosecurity risks on farm as well as at industry and regional levels.

As the availability and reach of innovative solutions continues to grow, the effective use of technology platforms to monitor the performance of our system could also provide value for the benefit of all participants. This will improve accountability and provide an accurate and tangible measure of performance that helps to develop a greater awareness of key gaps and successes.



Action	Expected outcomes
4.1 Implement and maintain interoperable and integrated national knowledge and information management systems.	<ul style="list-style-type: none">▪ Contemporary and fit for purpose systems and processes.▪ Improved intelligence and analytics to support risk identification, resource allocation and response.▪ Improved decision making and operational efficiency and effectiveness.▪ Enhanced effectiveness of on-farm biosecurity practices through the use of new approaches and technologies.▪ Science and research outputs are applied to address key knowledge gaps and developing pressures in plant biosecurity.▪ Increased capacity to measure and demonstrate the performance of the national plant biosecurity system.
4.2 Enhance analytics capability for plant biosecurity decision making.	
4.3 Drive the adoption of research, development and extension activities across all aspects of plant biosecurity.	
4.4 Measure and assess the performance of the national plant biosecurity system by engaging stakeholders from across the biosecurity spectrum.	

Governance

The National Plant Biosecurity Strategy Implementation Group (implementation group) will ensure continued alignment and complementarity across the suite of national plant biosecurity strategies by overseeing implementation, reporting and review of the strategy suite.

The implementation group will be coordinated by Plant Health Australia and include representatives from the following groups:

- Plant Health Australia
- Australian Government Department of Agriculture, Water and the Environment
- Plant Health Committee
- Subcommittee on Plant Health Diagnostics
- Subcommittee on National Plant Health Surveillance
- Plant Biosecurity Preparedness Working Group (or similar)
- Environment and Invasives Committee
- Plant Industries Biosecurity Committee
- Plant Biosecurity Research Initiative
- A non-government organisation with environmental and/or community interests.

Representatives, with support from Plant Health Australia, will be responsible for integrating and influencing the work of the group they represent in delivering or supporting delivery of the actions identified in the strategies.

Action plans

Implementation of the strategy will be supported by detailed action plans to ensure a more coordinated and focused approach.

The action plans will outline the specific tasks required for each action to achieve the outcomes and vision in the strategy. These plans will also identify organisations and/or groups with responsibility for implementing each task, resources required and timeframes. To ensure tasks achieve the intended quality, value and applicability, a program logic approach could be used that includes process and outcome components of how the implementation measures the impact of actions.

Development of the action plans will be guided by the implementation group in consultation with relevant plant biosecurity stakeholders, national committees and/or working groups.

Review and reporting

The implementation group will monitor and review progress in implementing the strategy. Annual evaluation reports will be developed with a comprehensive review of implementation will be undertaken on two occasions, in the fourth and the eighth year.

The annual evaluation reports and findings from the reviews will be presented to the implementation group and made publicly available. This information will be used by the implementation group to refresh the strategy and action plans to ensure national, regional and local effort in delivering the ten-year vision remains agile and responsive to changing priorities and a changing biosecurity context.

Glossary

Biosecurity continuum	Describes the range of locations where biosecurity risks may arise and where biosecurity activities take place – pre-border, at the border and post border.
Commonwealth	The Commonwealth of Australia, including its external territories.
Declared weed species	Weeds that are regulated under legislation due to their threat to primary industries, the natural environment and public safety. Plants are declared under the provisions of an Act or Local Law relating to their movement, sale, notification and control.
Diagnostics	Processes and standards associated with the accurate identification of a pest or host.
Environment	Includes: <ul style="list-style-type: none"> (a) ecosystems and their constituent parts, including people and communities; and (b) natural and physical resources; and (c) the qualities and characteristics of locations, places and areas; and (d) the social, economic and cultural aspects of a thing mentioned in paragraph (a), (b) or (c).
Exotic plant pest	A plant pest that does not normally occur in Australia.
Exotic weed species	A plant that does not naturally occur in Australia which has become naturalised or a plant not yet known to be in Australia which has been identified as a threat to the economy, the environment, plant industries and social amenity.
Incursion	An isolated population of a pest recently detected in an area, not known to be established, but expected to survive for the immediate future.
Jurisdiction	A state or territory or the Commonwealth.
Naturalised	Introduced and reproducing itself without human assistance.
Pest status	Presence or absence, at the present time, of a pest in an area, including where appropriate its distribution, as officially determined using expert judgement on the basis of current and historical pest records and other information.
Plant biosecurity	A set of measures which protect the economy, environment and community from the negative impacts of plant pests and weeds.
Plant biosecurity system	The combination of all measures, programs and services delivered by government, plant industries, the community and other stakeholders that enables the protection of plants, plant products or bees from significant exotic, endemic and established plant pests and weeds.
Plant industries	Covers agriculture, horticulture, forestry, honey bees and amenity plants and plant products.
Plant pest	Any species, strain or biotype of invertebrate or pathogen injurious to plants, plant products or bees.
Post-border	In relation to the biosecurity continuum: region's inside Australia's border.
Pre-border	In relation to the biosecurity continuum: region's outside Australia's border.
Preparedness	Activities undertaken in advance of a plant pest incident to decrease the occurrence, impact, extent and severity of the incident and to ensure more effective response, continuity and recovery activities.
Regional	A geographic region within Australia (which may include a state, territory or agricultural zone).
Shared responsibility	Everyone can make a meaningful contribution to a successful national plant biosecurity system.
State and territory governments	The state and territory governments of Australia.
Surveillance	Processes which collect and record data on pest presence or absence through survey, monitoring or other procedures.
Weed	A plant that requires some form of action to reduce its negative effects on the economy, the environment, plant industries and social amenity.

Appendix 1.

Stakeholder consultation

Organisation
Organisation/group
Adelaide Markets
AgForce Queensland
AgNova Technologies
AgriFutures Australia
Almond Board of Australia
Animal Health Australia
ANJ Container Services
Apple and Pear Australia
Association of Biosafety Australia and New Zealand
Australian Banana Growers' Council
Australian Blueberry Growers' Association
Australian Centre for International Agricultural Research
Australian Container Freight Services
Australian Forest Products Association
Australian Fresh Produce Alliance
Australian Ginger Industry Association
Australian Grape and Wine
Australian Honey Bee Industry Council
Australian Horticulture Exporters Association
Australian Local Government Association
Australian Lychee Growers' Association
Australian Macadamia Society
Australian Mango Industry Association
Australian Melon Association
Australian Network for Plant Conservation
Australian Olive Association
Australian Plants Society
Australian Processing Tomato Research Council
Australian Seed Federation Limited
Australian Sweet Potato Growers
Australian Table Grape Association

Organisation
Australian Tea Tree Industry Association
Australian Truffle Growers Association
Australian Walnut Industry Association
AUSVEG Limited
Avocados Australia
Beechworth Honey
Blue Ribbon Group
Botanic Gardens Biosecurity Network
Bowen Gumlu Growers
Brisbane Markets
Bunnings
Canegrowers
Canned Fruit Industry Council of Australia
Centre for Invasive Species Solutions
Centre of Excellence for Biosecurity Risk Analysis
Cesar Australia
Cherry Growers of Australia
Chestnuts Australia
Citrus Australia
Coles
Cotton Australia
Cotton Research and Development Corporation
Council of Australasian Weeds Societies
Dreamtime Wholesale Nursery
Dried Fruits Australia
Far North Queensland Growers
Forest and Wood Products Australia
Fruit Growers Tasmania
Fruit West Co-operative
Grain Producers Australia Limited
Grains Research and Development Corporation
Greenlife Industry Australia
Growcom

Organisation
Hazelnut Growers of Australia
Horticulture Innovation Australia
Invasive Species Council
Landcare
Local Government Association of Queensland
Melbourne Markets
National Landcare Network
Natural Resource Management Regions Australia
Northern Territory Farmers Association
Onions Australia
Passionfruit Australia Incorporated
Peri-urban Environmental Biosecurity Network
Perth Markets
Pistachio Growers' Association
Plant Biosecurity Research Initiative
Plant Health Australia
Price and Speed Containers
Protected Cropping Australia
Quintis
Raspberries and Blackberries Australia
Reid Fruits
Ricegrowers' Association of Australia
Southern Gulf NRM
Steritech
Strawberries Australia
Sugar Research Australia
Summerfruit Australia
Sustainable Timber Australia
Sydney Markets
University of the Sunshine Coast
University of Wollongong
Urban Plant Health Network
Victorian Farmers Federation
Vinehealth Australia
Western Australia Local Government Association
Wine Australia
Wine Tasmania
Woolworths

Organisation
Government agencies
Australian Government
Australian Pesticides and Veterinary Medicines Authority
CSIRO
Department of Agriculture, Water and the Environment
Australian Capital Territory Government
Environment Planning and Sustainable Development Directorate
New South Wales Government
Department of Planning, Industry and Environment
Department of Primary Industries
Department of Regional NSW
Northern Territory Government
Department of Environment and Natural Resources
Department of Industry, Tourism and Trade
Queensland Government
Department of Agriculture and Fisheries
South Australian Government
Department of Primary Industries and Regions
Tasmanian Government
Department of Primary Industries, Parks, Water and Environment
Victorian Government
Department of Jobs, Precincts and Regions
Western Australian Government
Department of Biodiversity, Conservation and Attractions
Department of Primary Industries and Regional Development
New Zealand Government
Ministry for Primary Industries
Fiji Government
Biosecurity Authority of Fiji
Timor Leste Government
Plant Quarantine Timor Leste

Appendix 2.

Alignment with National Plant Biosecurity sub-strategies

Strategic Priority	Actions	Alignment
1 Stronger together	1.1 Establish a shared and agreed understanding of roles and responsibilities for plant biosecurity.	<p>National Plant Biosecurity Preparedness Strategy</p> <ul style="list-style-type: none"> ▪ Action 1.1 Establish a shared and agreed understanding of roles and responsibilities of stakeholders involved in the national plant biosecurity system <p>National Plant Biosecurity Surveillance Strategy</p> <ul style="list-style-type: none"> ▪ Action 1.1 Establish a shared and agreed understanding of roles and responsibilities of surveillance stakeholders
	1.2 Strengthen domestic and international connections across the national plant biosecurity system.	<p>National Plant Biosecurity Preparedness Strategy</p> <ul style="list-style-type: none"> ▪ Action 1.2 Establish ongoing forums for stakeholders to focus on plant biosecurity preparedness activities <p>National Plant Biosecurity Surveillance Strategy</p> <ul style="list-style-type: none"> ▪ Action 1.3 Establish coordinated surveillance programs to maximise the effective detection of plant pests and weeds ▪ Action 1.4 Establish and enhance regional, national and international networks and partnerships <p>National Plant Biosecurity Diagnostic Strategy</p> <ul style="list-style-type: none"> ▪ Action 1.1 Develop the NPBDN to be the central coordination point for all activities within the national diagnostics system ▪ Action 1.2 Extend membership of the NPBDN to better connect the broader diagnostic system ▪ Action 1.3 Foster global partnerships and connections with different sectors to encourage collaboration and increase responsiveness

Strategic Priority	Actions	Alignment
	1.3 Improve participation and adoption of plant biosecurity practices.	National Plant Biosecurity Preparedness Strategy <ul style="list-style-type: none"> ▪ Action 2.3 Address barriers and establish incentives to improve engagement and the adoption of plant biosecurity practices ▪ Action 3.3 Support efforts that recognise and celebrate stakeholder contributions to the national plant biosecurity system National Plant Biosecurity Surveillance Strategy <ul style="list-style-type: none"> ▪ Action 3.1 Improve the protection and support for stakeholders reporting plant pests and weeds ▪ Action 3.3 Establish mechanisms to integrate surveillance for priority plant pests into existing monitoring practices and systems
	1.4 Develop education and awareness campaigns to better manage plant biosecurity risks.	National Plant Biosecurity Preparedness Strategy <ul style="list-style-type: none"> ▪ Action 3.1 Develop material to promote awareness of obligations and responsibilities of stakeholders across the national plant biosecurity system ▪ Action 3.2 Implement national education campaigns to increase awareness of plant biosecurity risks, management actions and the principle of shared responsibility National Plant Biosecurity Surveillance Strategy <ul style="list-style-type: none"> ▪ Action 2.4 Develop communication and engagement mechanisms to increase stakeholder awareness and uptake of surveillance activities
	1.5 Create opportunities to enhance community and citizen science contributions to plant biosecurity.	National Plant Biosecurity Surveillance Strategy <ul style="list-style-type: none"> ▪ Action 3.2 Establish and promote initiatives to improve surveillance for exotic and regionalised plant pests and weeds in urban and peri-urban areas National Plant Biosecurity Diagnostic Strategy <ul style="list-style-type: none"> ▪ Action 3.4 Enhance community and citizen science contributions to diagnostics

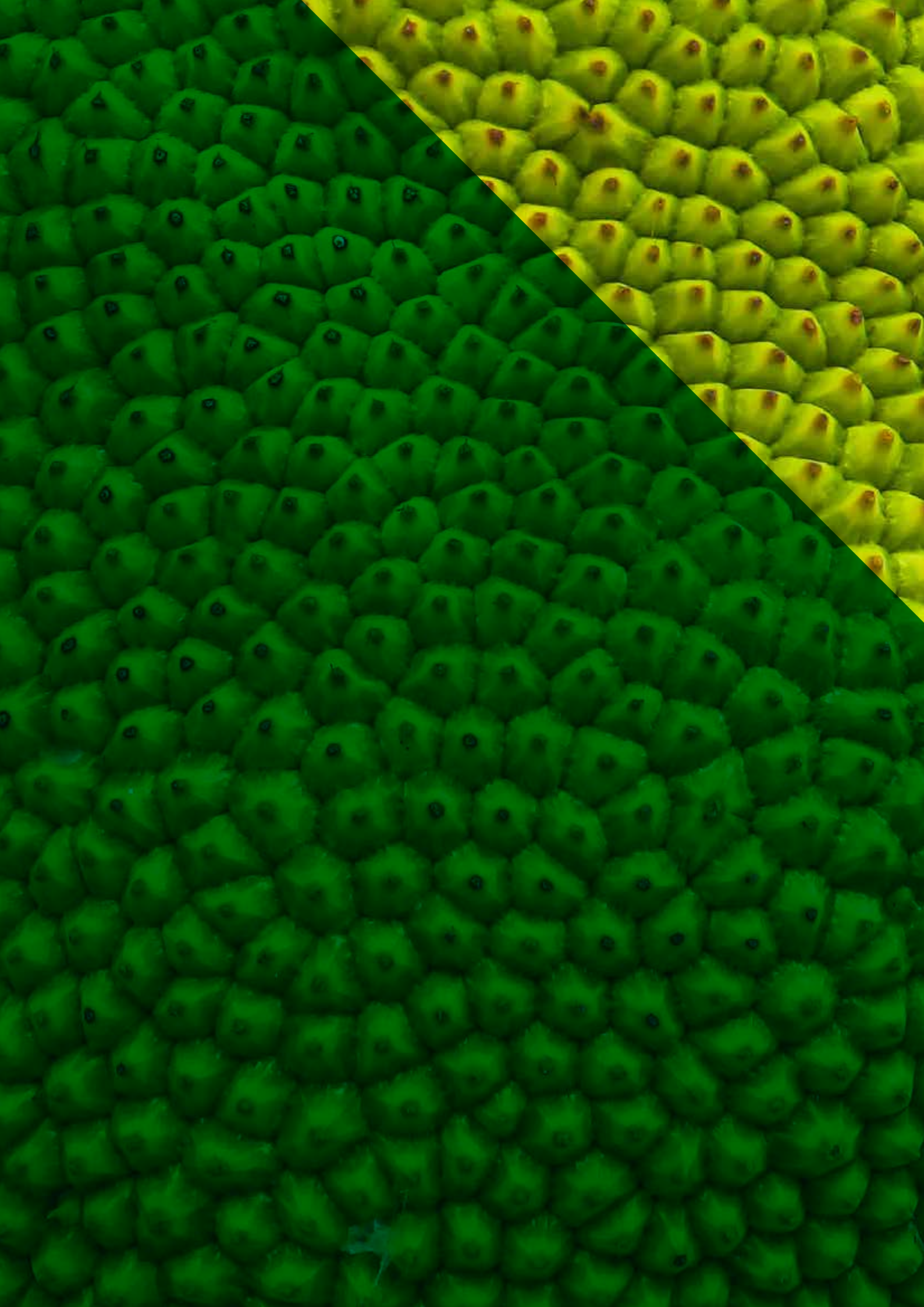
Strategic Priority	Actions	Alignment
2 Sustained support	2.1 Establish a common understanding of plant biosecurity risks and management options in the Australian context.	National Plant Biosecurity Preparedness Strategy <ul style="list-style-type: none"> ▪ Action 1.3 Grow partnerships to prevent the entry of plant biosecurity threats and identify control and management options relevant to the Australian context National Plant Biosecurity Surveillance Strategy <ul style="list-style-type: none"> ▪ Action 1.2 Define surveillance priorities that stakeholders will work on collaboratively to achieve national surveillance goals
	2.2 Develop an understanding of current and emerging capacity and capability gaps across the national plant biosecurity system.	National Plant Biosecurity Preparedness Strategy <ul style="list-style-type: none"> ▪ Action 2.1 Identify and address current and emerging capacity and capability gaps across the national plant biosecurity system National Plant Biosecurity Surveillance Strategy <ul style="list-style-type: none"> ▪ Action 2.1 Identify and address current and emerging capability gaps for people involved in surveillance National Plant Biosecurity Diagnostic Strategy <ul style="list-style-type: none"> ▪ Action 4.1 Design and adopt a framework to assess the current and future needs of the diagnostic system in terms of human resources, skills and infrastructure ▪ Action 4.2 Establish the critical and appropriate resource requirements for the national diagnostic system
	2.3 Develop the skills and knowledge required to support the ongoing needs of the national plant biosecurity system.	National Plant Biosecurity Preparedness Strategy <ul style="list-style-type: none"> ▪ Action 2.4 Develop and deliver training and simulation exercises to test preparedness to biosecurity incidents National Plant Biosecurity Surveillance Strategy <ul style="list-style-type: none"> ▪ Action 2.2 Coordinate training and professional development pathways to support the ongoing needs of the national surveillance system ▪ Action 2.3 Increase national surveillance biometric capability and build data literacy across surveillance practitioners ▪ Action 2.5 Establish and maintain diagnostic skills, expertise and resources to support surveillance National Plant Biosecurity Diagnostic Strategy <ul style="list-style-type: none"> ▪ Action 2.1 Address current and emerging gaps in the capacity of the national diagnostic system ▪ Action 2.2 Deliver professional development pathways for diagnosticians

Strategic Priority	Actions	Alignment
	<p>2.4 Ensure systems, policies and infrastructure are available for all aspects of plant biosecurity.</p>	<p>National Plant Biosecurity Diagnostic Strategy</p> <ul style="list-style-type: none"> ▪ Action 5.1 Implement and maintain proficient quality laboratory and management procedures for the diagnostic system ▪ Action 5.2 Develop and maintain appropriate national reference standards ▪ Action 5.3 Ensure access to equipment, consumables and other resources to deliver reliable diagnoses ▪ Action 5.4 Develop improved processes to facilitate the collection, storage and rapid transfer of positive controls (including live) and suspect samples
	<p>2.5 Use appropriate investment allocation models to fund and coordinate plant biosecurity system and reform efforts.</p>	<p>National Plant Biosecurity Surveillance Strategy</p> <ul style="list-style-type: none"> ▪ Action 1.5 Develop and maintain a national framework for funding and coordinating surveillance activities across Australia <p>National Plant Biosecurity Diagnostic Strategy</p> <ul style="list-style-type: none"> ▪ Action 4.3 Identify and implement appropriate funding and resource allocation models

Strategic Priority	Actions	Alignment
3 Future ready toolkit	3.1 Encourage the early adoption of new technologies to improve the detection, identification and prioritisation of plant pests and weeds.	<p>National Plant Biosecurity Preparedness Strategy</p> <ul style="list-style-type: none"> ▪ Action 2.2 Develop and implement tools to improve the detection, identification and prioritisation of plant pests and weeds <p>National Plant Biosecurity Surveillance Strategy</p> <ul style="list-style-type: none"> ▪ Action 4.1 Develop and implement a framework to assess the suitability of tools, technologies and approaches for the national surveillance system ▪ Action 4.2 Identify and implement new tools, technologies and approaches to improve the detectability of plant pests and weeds ▪ Action 4.3 Identify, assess and promote laboratory and in-field diagnostic methods to support surveillance <p>National Plant Biosecurity Diagnostic Strategy</p> <ul style="list-style-type: none"> ▪ Action 3.1 Develop and implement a framework to assess the suitability of tools, technologies and approaches for the national diagnostic system ▪ Action 3.2 Identify, assess and promote laboratory and in field diagnostic methods that increase diagnostic capacity and support surveillance activities
	3.2 Develop and maintain decision making tools, policies and processes to manage plant biosecurity risks.	<p>National Plant Biosecurity Surveillance Strategy</p> <ul style="list-style-type: none"> ▪ Action 5.1 Establish a framework to identify priority plant pests, weeds, commodities and conveyances, and high-risk areas for surveillance ▪ Action 5.2 Develop, update and endorse National Surveillance Protocols for priority and emerging plant pests ▪ Action 5.3 Develop nationally agreed guidelines to support surveillance design and analysis during and following emergency responses to plant pest incursions <p>National Plant Biosecurity Diagnostic Strategy</p> <ul style="list-style-type: none"> ▪ Action 3.3 Develop, update and endorse National Diagnostic Protocols and facilitate the use of non NDP resources for priority and emerging plant pests

Strategic Priority	Actions	Alignment
	3.3 Enhance arrangements to protect production and environmental assets and improve market access.	National Plant Biosecurity Preparedness Strategy <ul style="list-style-type: none"> ▪ Action 4.1 Develop and maintain contingency material and/or environmental asset management plans for plant biosecurity risks ▪ Action 4.2 Establish domestic market access arrangements prior to the detection of exotic plant pests ▪ Action 4.3 Establish pre-emptive arrangements for the containment and control of exotic plant pests and weeds
	3.4 Strengthen national response, recovery and relief arrangements for plant biosecurity incidents.	National Plant Biosecurity Preparedness Strategy <ul style="list-style-type: none"> ▪ Action 5.1 Develop and maintain a national model for funding recovery efforts for affected communities, businesses, industries and the environment ▪ Action 5.2 Develop and maintain capability to provide immediate relief to affected communities, industries and the environment during a response ▪ Action 5.3 Develop national partnership arrangements for responding to Emergency Plant Pests that are not (or unlikely to be) technically feasible to eradicate
	3.5 Support efforts to enhance the adoption of best practice plant biosecurity related legislation and regulation.	Implementation will primarily be through delivery of this strategy and/or other key strategies and plans

Strategic Priority	Actions	Alignment
4 Impact through innovation	4.1 Implement and maintain interoperable and integrated national knowledge and information management systems.	National Plant Biosecurity Surveillance Strategy <ul style="list-style-type: none"> ▪ Action 6.1 Implement and maintain an interoperable and integrated national surveillance information management system to collate, share and analyse surveillance data National Plant Biosecurity Diagnostic Strategy <ul style="list-style-type: none"> ▪ Action 6.1 Implement and maintain an interoperable and integrated national diagnostic information management system to capture, share and analyse data
	4.2 Enhance analytics capability for plant biosecurity decision making.	National Plant Biosecurity Surveillance Strategy <ul style="list-style-type: none"> ▪ Action 6.2 Evaluate and enhance the quality of general surveillance data captured for the national surveillance system National Plant Biosecurity Diagnostic Strategy <ul style="list-style-type: none"> ▪ Action 6.2 Ensure capability for best practice management of diagnostic data within the NPBDN ▪ Action 6.3 Enhance the quality and accessibility of reference collections across Australia
	4.3 Drive the adoption of research, development and extension activities across all aspects of plant biosecurity.	Implementation will primarily be through delivery of this strategy and/or other key strategies and plans
	4.4 Measure and assess the performance of the national plant biosecurity system by engaging stakeholders from across the biosecurity spectrum.	National Plant Biosecurity Surveillance Strategy <ul style="list-style-type: none"> ▪ Action 6.3 Develop and implement a process for measuring and reporting the effectiveness of surveillance programs




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