



Australian Government
Department of Agriculture,
Water and the Environment

COMMONWEALTH BIOSECURITY 2030

A strategic roadmap
for protecting
Australia's
environment,
economy and
way of life



MINISTERIAL FOREWORD

Australia's natural environment is at the heart of who we are as Australians. Unique flora and fauna, productive agricultural land and spectacular waterways are foundational to making Australia the greatest place in the world to live, work and play.

Many of the things we take for granted as a constant of Australian life are at greater risk than ever before. Exotic pests and diseases are spreading around the world and putting unprecedented pressure on our border.

As we continue to work our way through the COVID-19 recovery, it is critical we do everything we can for Australia to quickly and sustainably rebound, and that our environment, economy and society are protected from threats to that rebound.

Australia's biosecurity system is a central pillar of our defence, helping us to prepare for, mitigate against and respond to risks to our environment, economy and way of life.

I am proud to launch Commonwealth Biosecurity 2030 – our latest step in responding to a rapidly changing environment to ensure we have the controls, partnerships, tools, processes and networks to manage current and future threats.

This is not a job for the Australian Government alone and I call upon state and territory governments and key industry partners to make a meaningful and sustained investment in our national biosecurity system.

By working smarter and more collaboratively – and bringing the best data, tools and capability to the table – Australia will rise to the biosecurity challenge of increasingly complex global and local threats, supporting our environment and jobs, and protecting the Australian way of life into the future.

A handwritten signature in black ink, appearing to read 'David Littleproud'.

The Hon. David Littleproud
Minister for Agriculture, Drought
and Emergency Management

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Cataloguing data

This publication (and any material sourced from it) should be attributed as: Commonwealth Biosecurity 2030, Department of Agriculture, Water and the Environment, Canberra, May. CC BY 4.0.

ISBN 978-1-76003-415-3

This publication is available at awe.gov.au/publications.

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PURPOSE OF COMMONWEALTH BIOSECURITY 2030

This document outlines the Commonwealth’s biosecurity roadmap through to 2030.

Australia is part of a complex, diverse and changing world. Commonwealth Biosecurity 2030 seeks to ensure that our biosecurity system continues to protect our interests and way of life.

It provides a clear and practical roadmap to direct and guide projects, initiatives and investments associated with the Australian Government’s biosecurity remit. Annual action plans will be developed to guide its delivery and ensure transparency in our efforts. It recognises the role of the Department of Agriculture, Water and the Environment (the department) in the biosecurity system and acknowledges that it operates in a much broader environment with numerous stakeholders and partners contributing to protecting Australia. This document forms the basis for further engagement with those stakeholders, including states, territories, research and tertiary institutions, industry and the community, to develop a national biosecurity strategy.

Biosecurity risk cannot be reduced to zero at our border. Responding to emerging threats will require a strong and resilient national biosecurity system. A national biosecurity strategy will align current and future efforts of key stakeholders across the system in a common purpose, enhancing the long-held commitment to shared responsibility with a clear and transparent commitment to action and investment.

Commonwealth Biosecurity 2030 looks to build on live strategies, plans, reviews and other documentation to inform strategic actions and key priority areas.

These documents include (but are not limited to) the Intergovernmental Agreement on Biosecurity (IGAB), the National Biosecurity Statement, the Australia’s Biosecurity Future report, the Craik (2017), Beale (2008) and Nairn (1996) reviews and reviews by the Inspector-General of Biosecurity.

It will be reviewed every five years or sooner if there is a significant change to the threats and opportunities facing our biosecurity system, or to the broader environment in which it operates.



Mr Andrew Metcalfe AO
Secretary, Department of Agriculture,
Water and the Environment
Australian Director of Biosecurity



Mr Andrew Tongue PSM
Deputy Secretary, Biosecurity and
Compliance Group, Department of
Agriculture, Water and the Environment
Co-chair, National Biosecurity Committee

“Australia’s biosecurity system relies on strong partnerships across government, industry, the community and with other countries to help manage pest and disease risks. We must also continue investing in our people as they underpin our entire system. It is more important than ever that we work together to prepare and respond to increasing biosecurity threats.”

.....
Andrew Metcalfe AO

“The biosecurity risks facing Australia are increasing and becoming more complex and harder to manage. More mail and cargo will arrive this decade than ever before, while devastating pests and diseases are moving closer to our shores. The only thing standing between us and these risks is a smart, strong, multi-layered biosecurity system.”

.....
Andrew Tongue PSM

PROTECTING OUR ENVIRONMENT, ECONOMY AND WAY OF LIFE

Our land, seas and waterways shape our prosperity and way of life. While globalisation has opened doors to growth and opportunity for Australia, it has also brought more exotic pests and diseases to our doorstep. Australia's biosecurity system is our defence against these threats. We all have an important role to play in our biosecurity system to continue to protect Australia – overseas, at our border and within Australia.



Recent studies show Australia's biosecurity system is worth

\$314 billion

over 50 years
(in present value)

PROTECTING SOME OF OUR MOST VALUABLE ASSETS AND INDUSTRIES

\$5.7 trillion

in environmental assets
(modelled over 50 years
in present value)

\$51 billion

in agricultural, forestry
and fisheries exports
(2020-21 forecast)

1.6 million

jobs across
the agricultural
supply chain

\$50 billion

direct tourism contribution
to Australia's GDP
(2019-20)

\$71 billion

in gross value agricultural,
forestry and fisheries
production (2020-21 forecast)

RESPONSE, MANAGEMENT AND RECOVERY COSTS ARE MUCH GREATER THAN PREVENTION

Recent studies have shown that the estimated cost to our economy would be (in present value):



\$45 billion

over 30 years if the spread
of red imported fire ant
was left uncontrolled (2016)



up to
\$1.3 billion

Cost of varroa mite on our
producers and consumers
of pollination-dependent
crops over 30 years (2012)



up to
\$51.8 billion

over 10 years following a
foot-and-mouth disease
outbreak (2012)



\$7.9 billion

Cost of *Xylella fastidiosa* on
our grape and wine industries
over 50 years (2015)



\$15.5 billion

over 20 years if khapra beetle
became established (2020)



\$4.8 billion

estimated annual cost of
established vertebrate pests
and weeds to production



\$740 million

estimated spend by Australian
governments in efforts to
eradicate red imported fire ant
between 2001 and 2027

PRESSURES ON THE SYSTEM ARE INCREASING

CLIMATE
CHANGE



MAJOR
GLOBAL
DISRUPTIONS

ILLEGAL
ACTIVITY



GREATER VOLUMES
AND MORE COMPLEX
SUPPLY CHAINS



EXOTIC PESTS AND
DISEASES ARRIVING
AT OUR REGIONAL
NEIGHBOURS AND
TRADING PARTNERS

INCREASED MOVEMENT VOLUMES ARE EXPOSING US TO MORE RISK



Estimates of containers
circulating the
world range from

20 to 30 million

equating to approximately
800 million movements
through global ports.
These carry over
10 billion tonnes of goods
(based on 2017 figures)

In 2019, Australia received about:



2.5 million
containers



122,000
air and sea vessels



22 million
international travelers



144 million
mail items (letter articles,
packages and parcels)

OUR ROADMAP FOR THE COMMONWEALTH'S BIOSECURITY SYSTEM

Implementing Commonwealth Biosecurity 2030 will help to protect us from current and future biosecurity threats. We will achieve our goal for the biosecurity system by focusing on five enablers and implementing our strategic actions.

GOAL

A risk-based biosecurity system that effectively, efficiently and sustainably protects Australia's health, economic, environmental and national security interests against the threats of today and tomorrow, consistent with our Appropriate Level of Protection.

ENABLERS



GOVERNANCE

A strong, ongoing commitment by governments, industry and the community to carry out their evolving roles and responsibilities as part of the biosecurity system



PEOPLE

A workforce that has the capacity, skills and flexibility to prepare for and respond to emerging biosecurity risks, challenges and opportunities



TECHNOLOGY

An integrated, secure, data-driven and technology-enabled biosecurity system overseas, at our border and within Australia



REGULATION

A regulatory environment that supports us to respond to current and future biosecurity challenges and opportunities



FUNDING

A funding and investment model that is sustainable for the long-term

STRATEGIC ACTIONS

ACCELERATE OUR EFFORTS WITH KEY PARTNERS TO CREATE A STRONG, FUTURE ORIENTATED AND EFFICIENT NATIONAL BIOSECURITY SYSTEM

The success of the national biosecurity system in protecting our environment, economy and way of life relies on the efforts of all parties. We will work across the Commonwealth and with governments, industry, research institutions and community groups to implement improvements across the system to efficiently and effectively manage biosecurity risk.

INCREASE PARTNERSHIP ACTIVITIES WITH OUR NEAR-NEIGHBOURS TO BUILD THEIR RISK MANAGEMENT CAPABILITY AND CONTINUE OUR ENGAGEMENT WITH KEY INTERNATIONAL BODIES

Mitigating biosecurity risks before they reach Australia is important, as is supporting neighbouring countries in their efforts to grow their economies and protect their environment. Regional pest and disease pressure is growing. Building on our established relationships, we will partner with neighbouring countries to improve regional capability to identify and mitigate biosecurity risks. We will also work with international bodies to strengthen regional and global biosecurity frameworks and practices.

ROLL OUT ADVANCEMENTS IN DETECTION TECHNOLOGIES AND BUSINESS PRACTICE INNOVATIONS

New and emerging technologies are revolutionising how governments and industry operate. We will continue to explore and adopt these tools and ways of working, in partnership with industry and others where appropriate, to help us mitigate biosecurity risks and improve system efficiency for the benefit of all.

LIFT OUR NATIONAL PREPAREDNESS, RESPONSE AND RESILIENCE TO EXOTIC PEST AND DISEASE INCURSIONS

The biosecurity threats to Australia will continue to change. Even with our best efforts, no system can reduce our risk to zero. We will invest in domestic preparedness, response, recovery and resilience planning and arrangements to help minimise potential impacts and disruptions.

ALIGN OUR FUNDING AND INVESTMENT MODEL TO EMERGING SYSTEM NEEDS

Governments, businesses and community groups invest in Australia's biosecurity to protect our collective interest in avoiding and mitigating the considerable and ongoing costs associated with exotic pests and diseases. We will work toward ensuring our funding and investment strategies are fit-for-purpose and sustainable for the long-term, and that biosecurity partners contribute equitably. This will involve consultation with our key system partners and participants.

EXPAND OFFSHORE ASSURANCE ARRANGEMENTS AND OVERSEAS SUPPLY CHAIN INTEGRATION

Addressing biosecurity risks before they reach our shores is a strong mitigant to preventing incursions and to minimising the scale and cost of border interventions. We will implement a range of initiatives to increase offshore compliance with our import requirements while supporting faster clearance of commodities at our borders where it is safe to do so.

INVEST IN A SKILLED AND RESPONSIVE WORKFORCE SUPPORTED BY IMPROVED REGULATORY TOOLS AND INFORMATION

Our staff, together with those people working under third party arrangements, will remain critical to managing biosecurity risk. As biosecurity threats change and grow, and technology offers new ways of doing business, our workforce needs to be equipped to respond. We will grow the capacity and skills of our people, together with the critical regulatory tools and information systems supporting them. This will increase our effectiveness, responsiveness and resilience as regulators and deliver digital transformation.

GENERATE GREATER SHARED RESPONSIBILITY THROUGH IMPROVED AWARENESS AND UNDERSTANDING

Everyone can play a part in protecting our economy and environment from biosecurity risks. We will seek to enhance engagement, awareness and understanding of biosecurity risks across the Australian community and business sectors.

INCREASE OFFSHORE INTELLIGENCE, RESEARCH AND DATA SOURCING TO SUPPORT RISK-BASED INTERVENTIONS, PREPAREDNESS AND RESPONSE

We will build our overseas strategic and operational intelligence, and associated analytics capability. This will assist us to quickly identify current and emerging trends and risks to inform future planning, ensure timely and appropriate border assurance and interventions and support preparedness planning, including for possible incursions.

BACKGROUND AND ENVIRONMENT

A nation's way of life sustained by its diverse lands

Australia's natural assets and ecosystems have shaped our way of life for thousands of years. First Nations Australians have been caring for country and trading with regional neighbours, with their interactions with Indonesian fisherman trading sea cucumbers, or 'trepang', serving as our first documented example of bilateral trade.

While the scale, complexity and scope of how Australia plays in the global economy is unrecognisable from those beginnings, our success continues to be built on our natural resources and ecosystems. As other countries experience their own biosecurity challenges, including some of our closest neighbours, Australia's maintenance of an effective biosecurity system has never been more important.

Australia has a global reputation for delivering high-quality and safe agricultural goods, which is underpinned by our natural environment. It allows us to access export markets, justify premium prices and integrate ourselves within international supply chains. Domestic farms, fisheries and forestry prosper from our diverse lands and waterways, and must continue to do so if we are to reach the agriculture sector's ambition for \$100 billion in farm gate output by 2030.

Our domestic and international tourism sectors' success is also built on Australia's natural landscape and unique and spectacular flora and fauna. Direct tourism's contribution to Australian GDP was \$50 billion in 2019-20.

Australia's ability to keep out pests and diseases by maintaining an effective biosecurity system has repercussions for our environment, economy and way of life. While COVID-19 provides a human health example of how interdependent different sectors across Australia are, incursions in other countries demonstrate how the impact can be strikingly similar even when the direct threat is to plants or animals. The 2001 outbreak of foot-and-mouth disease in the UK placed restrictions on people movement and business activity across affected areas as responders tried to prevent further spread, not dissimilar to that seen as part of the response to COVID-19.

Australia's environmental assets were valued at a staggering \$5.7 trillion in August 2020 over 50 years (in present value) and are irreplaceable. They underpin a forecast \$71 billion in gross value agriculture, forestry and fisheries production and a forecast \$51 billion in agricultural, forestry and fisheries exports in 2020-21. The agricultural supply chain is estimated to support 1.6 million jobs. The value of Australia's biosecurity system was estimated to be \$314 billion over 50 years (2020).

A world-leading biosecurity system

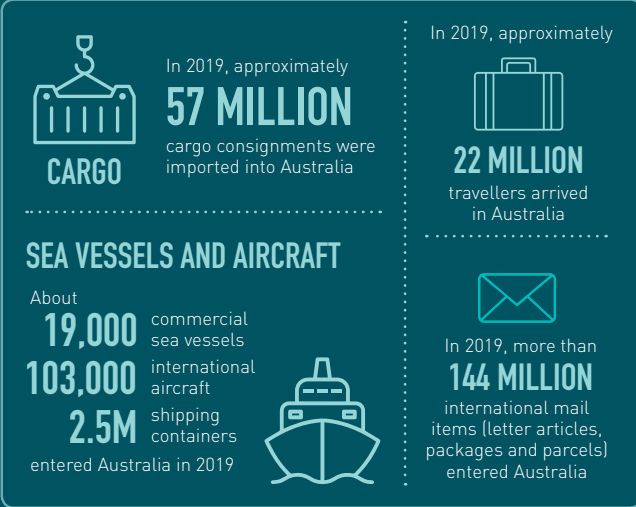
Australia remains a world leader in biosecurity, with mature controls in place offshore, at our border and within Australia.

We have thus far managed to keep out many of the pests and diseases that are taking an ever-increasing environmental, economic and social toll on other countries.

We continuously assess and improve the current system, including through reviews by Craik (2017), Beale (2008) and Nairn (1996), the Inspector-General for Biosecurity (nine completed reviews since 2019) and the CSIRO (2020).

We have established frameworks for investment in new and emerging technologies, including eDNA technology, 3D X-ray and automated detection algorithms. We continue to employ new tools that can help us more effectively and efficiently prevent, predict, identify and respond to biosecurity threats. The power and potential of data and analytics to assist with optimising our deployment of resources and assessing risk continues to grow exponentially.

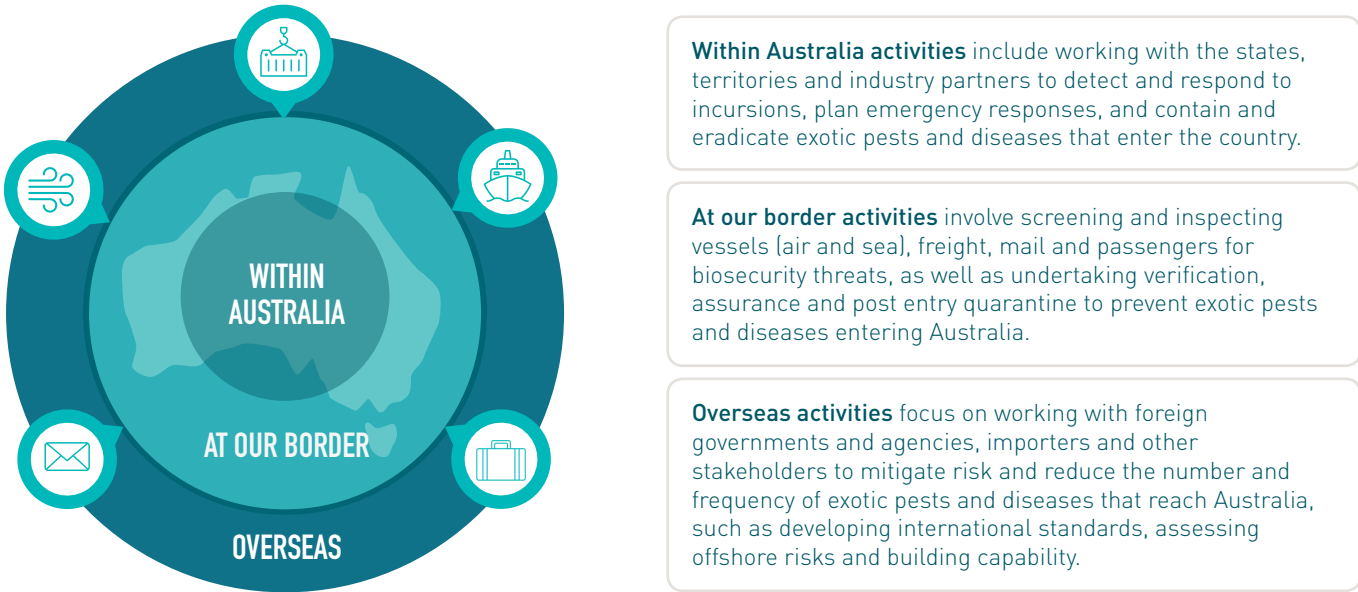
Relationships have been built over a long period of time between the Australian Government, states and territories, business, industry, research organisations and international jurisdictions. These relationships have helped to define respective roles and responsibilities in the biosecurity system and provide a community for sharing intelligence, new technology, tools and processes.



THREE LINES OF BIOSECURITY DEFENCE

Australia's biosecurity system consists of three focus areas for preventing or responding to the incursion of pests and diseases: overseas; at our border and within Australia.

Across these three focus areas, the department undertakes a range of policy, operational and compliance functions, supported by a series of third party agreements, authorisations and programs, together with research, intelligence and data analytics, and implements a range of education, awareness and communication campaigns.



PATHWAYS

There are five main pathways through which a pest or disease can reach Australia:

CARGO	SEA VESSELS AND AIRCRAFT	INTERNATIONAL TRAVELLERS	POST AND MAIL	NATURAL PATHWAYS
Considered the most complex pathway as it is divided into numerous transport modes and commodity groups including (but not limited to) nursery stocks, live animals, fresh produce and machinery. In 2019, approximately 57 million cargo consignments were imported into Australia.	Can harbour 'hitchhiker' pests and diseases within cargo containers and in the vessel itself. About 122,000 air and sea vessels and 2.5 million shipping containers entered Australia in 2019.	Travellers who enter Australia by sea or air. Before the global effects of COVID-19, about 22 million travellers arrived in Australia per year (2019).	Monitored alongside Australia Post and the Department of Home Affairs. More than 144 million international mail items (letter articles, packages and parcels) entered Australia in 2019.	Involve harmful pests and diseases entering Australia through the natural environment without human involvement, such as wind and sea currents or the migration of wild birds.

It is not feasible to inspect every vessel, container and passenger arriving in Australia. Our biosecurity system will increasingly rely on technology-enabled processes, supported by smart risk assessment to address increasing volumes and risk in the face of finite resources.



photo attribution: Kerry Trapnell

THE CHANGING BIOSECURITY ENVIRONMENT IS DRIVING THE NEED TO ACCELERATE REFORM

Australia’s relative success at keeping threats at bay means we have even more to lose if a new exotic pest or disease was to establish itself here. The urgency for accelerating reform is driven by the impacts of globalisation, which continues to rapidly change and add complexity to the environment in which our biosecurity system must operate.

Higher trade, travel and international freight volumes are increasing the number of opportunities for pests and diseases to hitchhike into Australia. There are also more stakeholders involved in global supply chains than ever before, making it more complex to identify potential risks.

While COVID-19 has temporarily halted most passenger arrivals, the average annual growth rate for international passengers is forecast to be 4.9 per cent between 2015 and 2034. At the same time, COVID-19 has seen a significant increase in mail and cargo arrivals. The increase in international travel and freight are an integral part of the Australian economy, but they also bring additional biosecurity risks.

EMERGING BIOSECURITY RISKS



An ever-changing global landscape is constantly influencing how our biosecurity system needs to function to be effective. This includes significant economic and population growth across the Indo-Pacific, and new or changing trade agreements between multiple jurisdictions. All of these factors are permanently and constantly shifting demand for goods and their related supply chains.



Exporting our premium products to the world relies on maintaining our strong biosecurity system. Local agriculture, fisheries and forestry industries aim to be worth \$100 billion in farm gate output by 2030. Australia’s ability to achieve this significant growth target and continue to export premium products relies on keeping out exotic pests and diseases.



A fast-changing environment and the occurrence of global events requires a responsive system. COVID-19 has shown the potential for global events to cause sudden and significant changes to operations, supply chains and natural pathways. Our biosecurity system is often balancing multiple competing priorities or threats from a resourcing and investment perspective.



The increasingly lucrative illegal plant and animal trade is seeing more sophisticated smuggling techniques being used by organisations and individuals to avoid detection. In 2016, the global illegal wildlife trade was worth an estimated US\$7-\$23 billion per year.



Varying approaches to biosecurity and the increasing number of pests and diseases present in our near-neighbours and trading partners are making it harder to mitigate risk offshore. For example in Papua New Guinea, African swine fever (ASF) has spread from three provinces in May 2020 to six provinces in January 2021. Many of our Indo-Pacific neighbours have limited capacity to prevent and control exotic diseases once they are present.

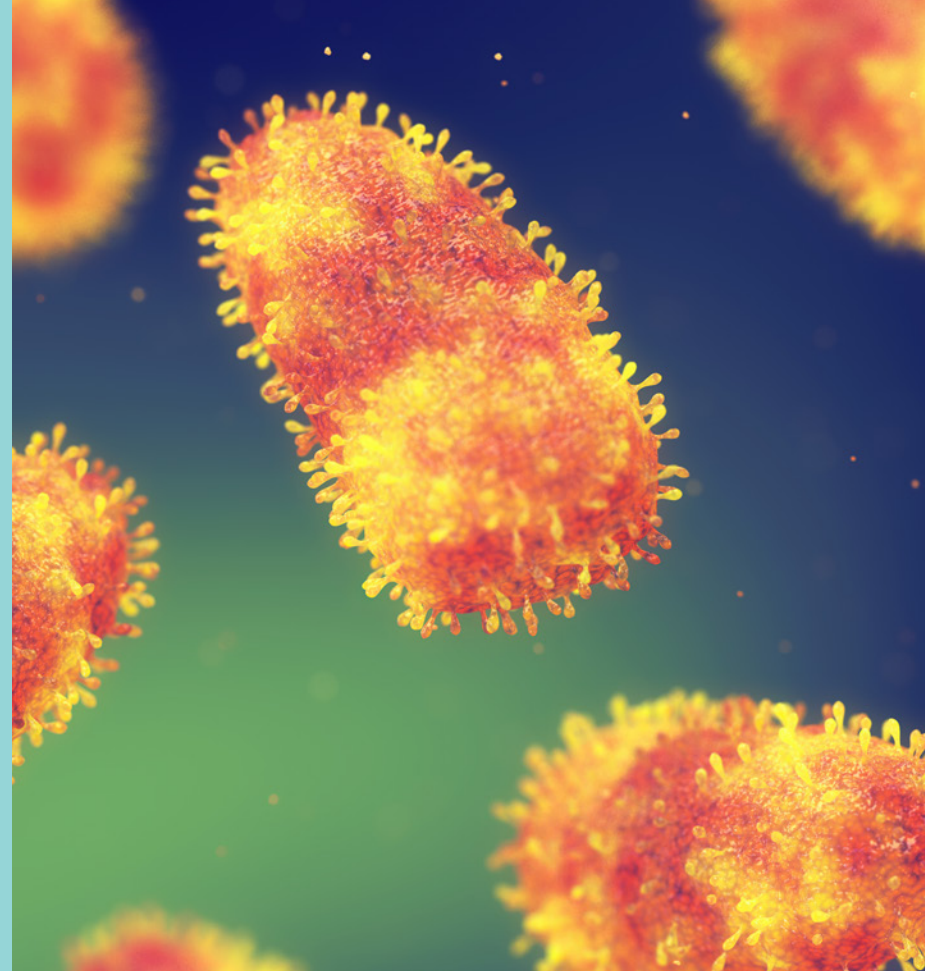


Climate change is altering the range, ease of spread and impact of pests and diseases around the world, and we are still learning about the effects it will have on Australia. Australia’s isolation is the basis of our unique natural environment and has been a fundamental asset to preserving our natural resources from offshore risks. Altered seasonal weather patterns due to climate change are creating the potential for invasive pests and diseases to spread to and within Australia. For example, we have already seen fall armyworm (*Spodoptera frugiperda*) cross our border through wind pathways and spread rapidly.

RABIES

Rabies is a serious viral disease that affects the central nervous system of warm-blooded mammals, including humans. The virus is transmitted by contamination of a flesh wound with infected saliva, usually by the bite of a 'rabid' animal. Once clinical signs have appeared rabies is almost always fatal, killing more than 60,000 people worldwide each year.

Australia is currently one of the few countries that is free of rabies, the establishment of which would have a significant impact on human and animal health and lead to significant response and recovery costs. The global cost of rabies is estimated at US\$8.6 billion per year.



XYLELLA

Xylella (*Xylella fastidiosa*) is a bacterial disease, originating from the Americas, which weakens and kills a wide range of plants. Modelling suggests that an outbreak of Xylella could cost Australia \$7.9 billion in aggregated losses to the grape and wine industry alone over a 50-year period (present value as at 2015).

Xylella would threaten more than 350 native, commercial and ornamental plant species if it were to arrive in Australia and there is no known treatment. For these reasons, it is at the top of Australia's National Priority Plant Pests list.



VARROA MITE

The varroa mite (*Varroa destructor*) is a parasite which weakens and eventually kills European honey bees (*Apis mellifera*), as well as spreading other bee diseases. Varroa could cost Australia up to \$1.3 billion over 30 years (present value as at 2012) due to the effects it would have on pollination-dependent crops.

Australia is currently the only inhabited continent to remain free of varroa and researchers concede it will be difficult to keep it out. Studies in the US and Europe have shown that varroa kills 95-100 per cent of unmanaged hives within three to four years of infestation.



AFRICAN SWINE FEVER

ASF is a contagious viral disease that poses a major risk to the Australian pork industry. A multi-state incursion is estimated to cost the local pork industry, the majority of which is made up of small-scale family businesses, up to \$2 billion over five years (2019) and would impact access to global markets.

In 2018, the first case of ASF was detected in China, which has the largest pig farming industry in the world. Since then, more than 11,600 outbreaks across Asia have devastated the pork industry, with in excess of 800 million pigs worldwide estimated to have been killed by the virus.



PATHWAYS



CARGO



SEA VESSELS
AND AIRCRAFT



INTERNATIONAL
TRAVELLERS



POST
AND MAIL



NATURAL
PATHWAYS

IMPACT



ENVIRONMENT



LIFESTYLE



AGRICULTURE

THE TIME FOR ACCELERATING REFORM IS NOW

In this increasingly complex environment where we are facing an array of diverse exotic pests and diseases, Australia's biosecurity system will not continue to provide the same level of protection by simply scaling existing resources. While it isn't possible to run a zero-risk system, on our current trajectory, modelling projects even a tripling of investment into intervention will still see higher residual risk levels for Australia in 2025 than at 2014-15.



Dr Gabrielle Vivian-Smith, Australian Chief Plant Protection Officer

"Every day, Australia is faced with the prospect of plant pests hitchhiking on imported cargo or infected plant material or seeds. Our import conditions and offshore treatments help to manage the risk of these pests and diseases reaching Australia. We must continue to strengthen our biosecurity system to address the growing risks we face."



Dr Robyn Cleland, Australian Chief Environmental Biosecurity Officer

"Australia's natural environment is a rich, diverse and unique living system. We depend on a healthy environment for fresh water, safe and nutritious food and to sustain our way of life. Maintaining a strong focus on environmental biosecurity will protect our landscapes, wildlife and cultural assets now and into the future."



Dr Mark Schipp, Australian Chief Veterinary Officer

"We have seen a number of significant exotic animal diseases emerging for the first time in our region in the past three years. These biosecurity threats are increasing due to a range of complex and challenging global drivers. The performance of our biosecurity system is therefore more critical now than ever before."

We know the biggest challenges that we must solve within our biosecurity system:

- Our technology systems were not built for today's complex supply chains.
- Our working relationships with Australian and foreign governments, agencies and businesses can do more to reduce the pressure on screening at the Australian border.
- We cannot extract the full value from available data to help us make better, more informed decisions.
- We cannot just keep adding people to our current systems without considering the right balance of capability, tools and techniques in a changing environment.
- The speed of change in the biosecurity space means the regulatory environment hasn't always kept up.

Focusing on these key challenges underpins Commonwealth Biosecurity 2030.

COMMONWEALTH BIOSECURITY 2030

GOAL

Our goal for the Australian Government's biosecurity system captures its critical importance in maintaining the health, wellbeing, prosperity and lifestyle of all Australians:



A risk-based biosecurity system that effectively, efficiently and sustainably protects Australia's health, economic, environmental and national security interests against the threats of today and tomorrow, consistent with our Appropriate Level of Protection.



ENABLERS

To realise this goal, the Australian Government will focus on **five enablers**:



REGULATION

A regulatory environment that supports us to respond to current and future biosecurity challenges and opportunities



GOVERNANCE

A strong, ongoing commitment by governments, industry and the community to carry out their evolving roles and responsibilities as part of the biosecurity system



FUNDING

A funding and investment model that is sustainable for the long-term



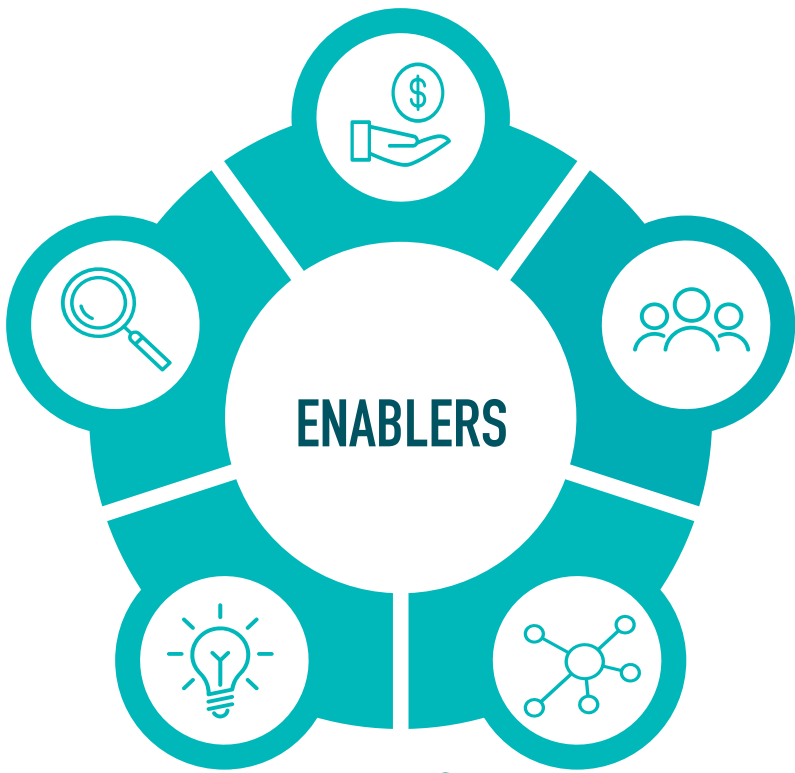
PEOPLE

A workforce that has the capacity, skills and flexibility to prepare for and respond to emerging biosecurity risks, challenges and opportunities



TECHNOLOGY

An integrated, secure, data-driven and technology-enabled biosecurity system overseas, at our border and within Australia



MOVING TO A NATIONAL BIOSECURITY STRATEGY

Australia’s biosecurity depends on a wide range of stakeholders, all with specific roles to play, working collaboratively and proactively towards a common goal. That collaboration is essential so that we harness everyone’s strengths and capabilities, to shape and deliver a national biosecurity strategy and the annual action plans that will guide delivery of this roadmap.

Biosecurity risk cannot be reduced to zero at our border. Responding to emerging biosecurity threats will require a strong and resilient national system, spanning from overseas assurance programs to on-farm biosecurity arrangements in Australia. A national strategy will align current and future efforts of key stakeholders, reinforcing our dedication to shared responsibility with a strong and transparent commitment to action. This is a clear next step to the National Biosecurity Statement and, for governments, to progress the national response to the Craik review.

A NETWORK OF KEY STAKEHOLDERS

Supporting Australia’s biosecurity system is a network of key stakeholders:

AUSTRALIAN GOVERNMENT

There are multiple departments and agencies that play a critical role in supporting biosecurity activities overseas, at our border and within Australia.

STATE, TERRITORY AND LOCAL GOVERNMENTS

Other levels of government support operations within Australia by containing and eradicating threats that arrive in their jurisdiction. While each state, territory and local area has some consistency in their biosecurity priorities and processes, they also face different threats with varying potential impacts.

INDUSTRY AND REPRESENTATIVE BODIES

This broad set of stakeholders includes businesses and the industry bodies that represent them, as well as environmental, natural resource management and community groups.

RESEARCH ORGANISATIONS

Organisations such as the CSIRO, Research and Development Corporations and tertiary institutions progress research and provide intelligence to better understand pests and diseases, new tools and approaches that can improve operations and the impacts of the broader environment on the biosecurity system.

INDIVIDUALS

As individuals, every Australian has a role in our biosecurity system; our behaviours can create and mitigate risks, from traveling internationally and ordering goods from overseas, to identifying and reporting exotic pests and diseases within Australia.

We have a vested interest in the effectiveness of our biosecurity system – it protects our home and our way of life. To foster this in our diverse range of system partners – including governments, industry, industry and environmental bodies, land managers and the broader public – we need to engage each in a way that makes sense to them.

We will build on our strong existing relationships and consult broadly to develop the annual action plans to deliver this roadmap and a national biosecurity strategy. This will see us working through and strengthening our formal and informal engagement channels.

- Biosecurity Futures group
- Department of Agriculture, Water and the Environment industry consultative committees
- National Biosecurity Committee and its sub-committees
- National Management Group (emergency outbreaks)
- Australia-New Zealand Biosecurity Cooperation
- Animal Health Australia
- Plant Health Australia
- Simplified Trade System Industry Advisory Council
- National Committee on Trade Facilitation
- CSIRO
- Charles Sturt University
- Centre of Excellence for Biosecurity Risk Analysis

SUPPORTING AUSTRALIA’S EFFORTS TO KEEP OUT THREATS TO HUMAN HEALTH

The biosecurity system protects Australians from the potential health impacts of exotic pests and diseases currently not present in Australia. There are a number of exotic animal diseases that can be transferred to, and transmitted by, people (called zoonotic diseases). Some prominent examples include rabies, certain strains of avian influenza and more recently COVID-19. The global One Health Initiative, in which Australia is a strong participant, aims to better understand and manage zoonotic diseases.

Certain pest animals, weeds and plant diseases can also have health impacts. Exotic mosquitoes can spread existing and new diseases; red imported fire ants are associated with anaphylactic responses in some people, while various diseases of plants may create allergic reactions.

The department also undertakes activity, on behalf of the Commonwealth Chief Medical Officer, associated with significant human diseases presenting at our border. This includes applying pre-arrival reporting requirements to international vessels on the health status of their crew and passengers along with human health screening, supported where necessary by trained human biosecurity officers.

The COVID-19 pandemic has delivered valuable lessons around the need to continuously assess the effectiveness of our systems in keeping people safe from global pandemics or incursions of serious zoonotic diseases. Improvements are already underway but this will remain an important focus for our ongoing efforts to improve management systems, pest and disease research and preparedness planning, and our intent to fully test the readiness of the national biosecurity system to respond to a significant outbreak.

THE VITAL ROLE OF THE PUBLIC IN SUPPORTING AUSTRALIA’S BIOSECURITY SYSTEM

In August 2020, Canberra residents Brett and Donna Burdett noticed unusual insects in their new refrigerator. The insects were identified as khapra beetle – Australia’s number two national priority plant pest and the number one plant priority pest for grains.



“The live beetle larvae were congregated in the polystyrene packing at the base of the packaged fridge, and we only discovered them after removing the plastic packaging that covered the whole fridge,” Mr Burdett said.

“I took a photograph and enlarged it to see if I could identify them. I searched images of larvae on the net to see if I could find a match and when I came up blank, my wife and I decided to collect them for analysis by Biosecurity.

“I emailed the department and they arrived soon after to collect the samples for identification.

“Upon the beetles being identified, departmental officials arrived and explained the situation, collected and bagged the fridge packaging and sprayed all of the areas where the khapra beetles might have escaped.

“When I heard khapra were one of the top pests needing to be kept out of Australia, I wasn’t surprised at the response.”

Australia is currently free from khapra beetle, a plant pest that poses a major threat to Australia’s grain industry and market access. An outbreak could cost Australia \$15.5 billion over 20 years through revenue losses from damaged grain (2020).

STRATEGIC ACTIONS TO REALISE OUR GOAL

Our goal will be realised by taking
nine strategic actions:

ACCELERATE OUR EFFORTS WITH KEY PARTNERS TO CREATE A STRONG, FUTURE ORIENTATED AND EFFICIENT NATIONAL BIOSECURITY SYSTEM

The success of the national biosecurity system in protecting our environment, economy and way of life relies on the efforts of all parties. We will work across the Commonwealth and with governments, industry, research institutions and community groups to implement improvements across the system to efficiently and effectively manage biosecurity risk.

- Collaborate with our key partners to develop a national biosecurity strategy to guide our collective efforts through to 2030
- Work with state and territory governments to ensure fit-for-purpose national biosecurity agreements, legislative frameworks, infrastructure and system funding
- Increase our efforts with importers and the logistics sector to deliver more integrated business process solutions, with an early focus on co-designing, piloting and rolling-out initiatives supporting faster, safe clearance of cargo
- Deliver more seamless at-border outcomes by working with border agencies and port operators to streamline clearance processes, through enhanced operational collaboration and information-sharing
- Work toward fully integrating our biosecurity systems with government and industry partners, with digital services that offer a more seamless experience for importers
- Support efforts to deliver joined-up product and transport tracing capability within Australia to support rapid response to exotic pest and disease incursions, including overseas trading partner assurance
- Partner with governments, research organisations and industry groups to grow and better align biosecurity research, and supporting delivery of the new Agriculture Innovation Agenda biosecurity priority and an investment prospectus by Agriculture Innovation Australia.

EXPAND OFFSHORE ASSURANCE ARRANGEMENTS AND OVERSEAS SUPPLY CHAIN INTEGRATION

Addressing biosecurity risks before they reach our shores is a strong mitigant to preventing incursions and to minimising the scale and cost of border interventions. We will implement a range of initiatives to increase offshore compliance with our import requirements while supporting faster clearance of commodities at our borders where it is safe to do so.

- Expand our offshore treatment provider assurance programs with a focus on priority hitchhiker pests, building on arrangements in place for brown marmorated stink bug and khapra beetle
- Accredited further quality control systems for higher risk overseas ports
- Implement additional supply chain assurance systems for trusted importers and major commodity pathways
- Increase our integration with importer digital supply chains, starting with system solutions to support more seamless use of industry data to meet biosecurity import requirements
- Champion efforts towards an internationally accepted sea-container hygiene standard, improved container design and global container tracing, with a focus on hitch-hiker pests
- Partner initiatives with targeted assurance and compliance frameworks, backed by enhanced intelligence, data analytics and system investment, and appropriate penalties for non-compliance.



INCREASE PARTNERSHIP ACTIVITIES WITH OUR NEAR-NEIGHBOURS TO BUILD THEIR RISK MANAGEMENT CAPABILITY AND CONTINUE OUR ENGAGEMENT WITH KEY INTERNATIONAL BODIES

Mitigating biosecurity risks before they reach Australia is important, as is supporting neighbouring countries in their efforts to grow their economies and protect their environment. Regional pest and disease pressure is growing. Building on our established relationships, we will partner with neighbouring countries to improve regional capability to identify and mitigate biosecurity risks. We will also work with international bodies to strengthen regional and global biosecurity frameworks and practices.

- Increase Indo-Pacific regional engagement to raise collective awareness regarding current and emerging biosecurity threats
- Support near-neighbours to build their pest and disease preparedness, response and containment capability, focusing initially on Papua New Guinea and Timor-Leste
- Implement industry preparedness programs, building on previous approaches
- Work with Pacific Island countries on bilateral biosecurity partnerships, together with the Department of Foreign Affairs and Trade
- Expand support to near-neighbours to establish and meet other importing country requirements through information sharing, training and technical assistance to benefit their economies
- Strengthen our own and regional engagement with the World Organisation for Animal Health, the International Plant Protection Convention, Food and Agriculture Organization and Quarantine Regulators Meeting forum.

INVEST IN A SKILLED AND RESPONSIVE WORKFORCE SUPPORTED BY IMPROVED REGULATORY TOOLS AND INFORMATION

Our staff, together with those people working under third party arrangements, will remain critical to managing biosecurity risk. As biosecurity threats change and grow, and technology offers new ways of doing business, our workforce needs to be equipped to respond. We will grow the capacity and skills of our people, together with the critical regulatory tools and information systems supporting them. This will increase our effectiveness, responsiveness and resilience as regulators and deliver digital transformation.

- Refresh our regulatory frameworks, policies, practices and training, while strengthening our connection to national regulatory communities of practice to ensure our approaches are best practice
- Build our technical, scientific, strategic intelligence and analytics capability, including establishing a pipeline for future needs
- Grow a culture of data-driven decision-making and invest in the effective collection and use of quality data, information and intelligence to support business needs and risk-based decision-making
- Deliver modern information systems to support our regulatory outcomes and efficient workflow management
- Strengthen our approach in northern Australia, reflecting its unique biosecurity risk profile, including the Indigenous Rangers biosecurity program
- Routinely assess our legislation to ensure it is fit-for-purpose and propose legislative amendments, where appropriate, and strengthen compliance enforcement action
- Implement a performance and evaluation framework, and prepare annual reports detailing our efforts to address system issues identified by the Inspector-General of Biosecurity and in other independent reports.



photo attribution: Kerry Trapnell

ROLL OUT ADVANCEMENTS IN DETECTION TECHNOLOGIES AND BUSINESS PRACTICE INNOVATIONS

New and emerging technologies are revolutionising how governments and industry operate. We will continue to explore and adopt these tools and ways of working, in partnership with industry and others where appropriate, to help us mitigate biosecurity risks and improve system efficiency for the benefit of all.

- Continue our biosecurity innovation program directed at early discovery and rigorous piloting, with a priority focus on technology, systems and practices to manage risks associated with containerised sea cargo and travellers
- Build our investment in auto-detection screening technology across international traveller, mail and air cargo pathways, offering increased and more accurate inspection rates
- Increase our research, validation and adoption of new diagnostic techniques, supporting faster and more accurate border clearance, incursion response efforts and building the diagnostics capability of system partners
- Strengthen technology-driven surveillance and detection efforts, including in the marine environment using remotely operated vehicles and automated image capture to detect biofouling on vessels
- Investigate further opportunities to incorporate automation, machine learning and remote decision-making technologies into biosecurity operations.

GENERATE GREATER SHARED RESPONSIBILITY THROUGH IMPROVED AWARENESS AND UNDERSTANDING

Everyone can play a part in protecting our economy and environment from biosecurity risks. We will seek to enhance engagement, awareness and understanding of biosecurity risks across the Australian community and business sectors.

- Deliver and sustain an effective Biosecurity Australia brand
- Enhance community engagement and communication on the impact of exotic pest and disease incursions and ways everyone can help support our biosecurity system

- Build awareness, networks and response capability with key stakeholders in the import supply chain, both overseas and within Australia
- Roll out data driven targeted campaigns around specific pests and diseases focused on high-risk pathways and cohorts
- Evolve an active, accessible and informative national biosecurity.gov.au website for industry, community and environmental biosecurity issues.

INCREASE OFFSHORE INTELLIGENCE, RESEARCH AND DATA SOURCING TO SUPPORT RISK-BASED INTERVENTIONS, PREPAREDNESS AND RESPONSE.

We will build our overseas strategic and operational intelligence, and associated analytics capability. This will assist us to quickly identify current and emerging trends and risks to inform future planning, ensure timely and appropriate border assurance and interventions and support preparedness planning, including for possible incursions.

- Access and use more offshore information, data and intelligence, including container movement data, scientific intelligence and web scraping, to inform risk analyses and decision-making
- Strengthen global and regional networks and systems for biosecurity stakeholders to share information and intelligence on threats
- Undertake research and modelling to improve our understanding of the changing global distribution of priority pests and diseases, including zoonotic diseases
- Collaborate with Australian Border Force, the Department of Home Affairs, the Department of Foreign Affairs and Trade and the national intelligence community to enhance overseas risk identification, intelligence generation and information sharing
- Uplift our offshore strategic and operational intelligence capabilities, and integration with domestic intelligence, to better support risk-based decision-making.

LIFT OUR NATIONAL PREPAREDNESS, RESPONSE AND RESILIENCE TO EXOTIC PEST AND DISEASE INCURSIONS

The biosecurity threats to Australia will continue to change. Even with our best efforts, no system can reduce our risk to zero. We will invest in domestic preparedness, response, recovery and resilience planning and arrangements to help minimise potential impacts and disruptions.

- Develop and maintain preparedness plans for priority exotic pests and diseases, supported by enhanced simulation modelling capability to support surveillance and response planning
- Establish further detection and incursion response capability within Australia, including a near-border response policy with states and territories
- Stress test national biosecurity system readiness to respond to a significant incursion, including through national and regional scale preparedness exercises
- Support industry and allied sector preparedness, building on recent approaches for African swine fever
- Strengthen national pest and disease surveillance outcomes, with a view to better integrate government and industry programs and information systems
- Develop nationally consistent port monitoring arrangements for biofouling
- Increase diagnostic capability and capacity for priority environmental pests and diseases at departmental and other critical partner laboratories
- Support the emergence of effective control tools, along with national and regional coordination, for on-ground management of exotic pests and diseases established in Australia.

ALIGN OUR FUNDING AND INVESTMENT MODEL TO EMERGING SYSTEM NEEDS

Governments, businesses and community groups invest in Australia's biosecurity to protect our collective interest in avoiding and mitigating the considerable and ongoing costs associated with exotic pests and diseases. We will work toward ensuring our funding and investment strategies are fit-for-purpose and sustainable for the long-term, and that biosecurity partners contribute equitably. This will involve consultation with our key system partners and participants.

- Assess broader underlying system cost and efficiency drivers
- Examine current and possible future cost recovery arrangements, including consistency with Australian Government and international trade policy and law
- With states and territories, compile annual biosecurity funding by jurisdiction to provide transparency to stakeholders about governments' commitment to invest in biosecurity
- Mature co-funding and investment strategies with key system partners, to build the strength of the national system.

AS INITIAL STEPS TO IMPLEMENTING THESE STRATEGIC ACTIONS, BY THE END OF 2021, WE WILL:

- Progress a national biosecurity strategy with states, territories, industry and the community
- Finalise our first annual action plan to deliver against this roadmap, following consultation with key partners
- Deliver our first annual report on our progress implementing the Inspector-General of Biosecurity's recommendations to enhance our risk-based biosecurity approach
- Develop a strategy to support our Pacific Island biosecurity partnerships and engage two dedicated engagement officers
- Work with the states and territories to implement the Northern Australia Biosecurity Strategy
- Co-design national preparedness exercises and commence workshops to agree on critical national practices
- Undertake an assessment of the need for a livestock genetics preservation arrangement
- Design and deliver up to three pilots with the import sector to test streamlined clearance arrangements, with a view to reducing regulatory costs for compliant importers and producers
- Introduce three new 3D X-ray machines into international mail centres
- Pilot offshore (remote) screening of international passenger luggage
- Progress an integrated biosecurity clearance, assurance and response model for Australian port precincts, involving government and industry, starting with case studies in key air and seaports
- Agree on early regulatory changes to biosecurity and imported food control legislation to remove unwarranted legislated constraints and administrative burden for government and industry
- Release an updated regulatory practice statement and compliance policy, together with tailored legal training to support our staff in their regulatory role
- Refresh the national biosecurity website to improve awareness and information-sharing
- Review our existing biosecurity cost recovery arrangements
- Scope the critical elements of an integrated biosecurity import system, which is interoperable with government and industry systems.

