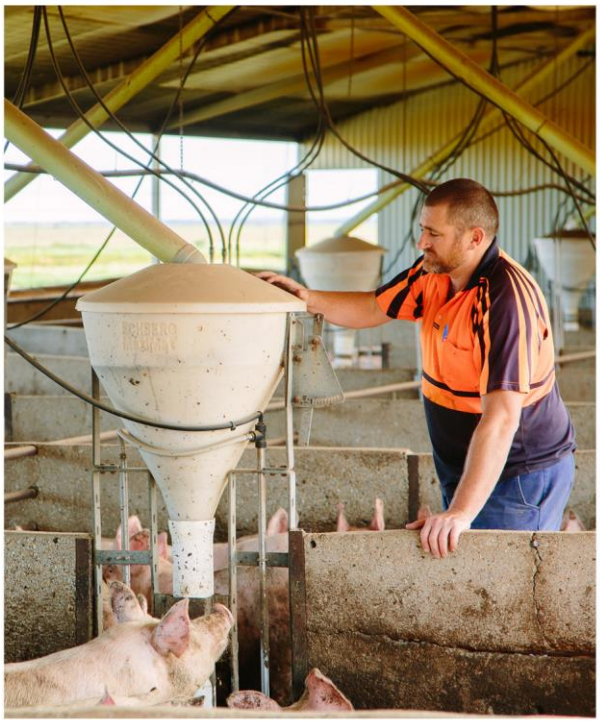
Australian Pork Limited

National Biosecurity Strategy Initial Consultation

December 2021



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1. Executive Summary

Australia's biosecurity system is fundamental to the prosperity of all Australians. It simultaneously underpins 'brand Australia', built on images of vast unspoilt landscapes and unique flora and fauna, which powers our domestic and export industries, and affords 25 million Australians a lifestyle that most can only dream of. Sustainable and strategically aligned investment into this system not only safeguards our economy and the industries that power it, but our complex fabric of environmental, cultural, and social assets that define us as Australians.

In an increasingly complex global environment where international trade and travel continues to grow, biosecurity outbreaks across human, agriculture, environment and marine health continue to rise in speed, volume, and complexity. This trend is compounded by a changing climate and biodiversity loss which may increasingly affect the range, habitat, spread and impact of invasive species – both known and yet to be identified. Changing demographics and patterns of land use are also altering Australia's biosecurity risk profile.

Australian pork producers are only too aware of this heightened risk, facing the dual threat of African swine fever (ASF) and COVID-19 over the past two years. The combination of these two pandemics has destroyed approximately 50% of the global population of farmed pigs and disrupted normal operations across the global pork supply chain, posing significant risks to business continuity and pig welfare. While Australia currently remains ASF free, the ability of the disease to destroy the livelihoods of Australian pork producers, and rural communities, cannot be understated. A study commissioned by APL in 2019 confirmed this fear, showing estimates that the disease would cost the economy approximately $2 billion if established in Australia.

However, the past two years also provides positive learnings and opportunities for strengthening our biosecurity system into the future. Driven by the need to respond to these challenges, a cultural shift toward biosecurity leadership, fuelled by the principles of shared responsibility, partnership, and sustainable investment, has occurred. Representatives from across our industry, including producers, veterinarians, researchers, policy and communications professionals, have joined with officials from all levels of government to align and leverage strategies, investments, tool and resources, and, perhaps most importantly, human networks to strengthen biosecurity from our piggeries through to our international borders and beyond.

Our industry's learnings, tied with those from COVID-19, illustrate just how fragile our biosecurity systems are, but also present the proposition for all Australians to become biosecurity leaders and safeguard our way of life. The challenge, and unique opportunity, for the National Biosecurity Strategy is delivery of genuine cultural change that facilitates a once in a lifetime 'one biosecurity' approach to future proof Australia.

2. Key Recommendations

Recommendation 1

To support the call to action for shared responsibility and partnership, the biosecurity system must be re-defined to ensure it is contemporary, innovative, and transformative, and demonstrates the critical role it plays in safeguarding the environmental, cultural, and social assets that define us as Australians.

Recommendation 2

To deliver the cultural change required to drive a 'one biosecurity' approach, the National Biosecurity Strategy must facilitate ownership amongst a diverse array of stakeholders, including:

- multiple portfolios across all levels of government, including health, tourism, community services and regional development
- critical industry sectors
- indigenous communities
- community groups

Recommendation 3

To ensure success of the National Biosecurity Strategy, the following must be provided:

- a dedicated and appropriately resourced secretariat, preferably maintained within the Department of Agriculture, Water and the Environment
- clear requirements for monitoring, evaluation, and public reporting, underpinned by Key Performance Indicators (KPIs)
- an annual review cycle overseen by a Steering Committee that comprises of representatives of the stakeholders (identified in Recommendation 2)
- direction to respond to seminal biosecurity systems reviews and their relevant recommendations, including, but not limited to, reports from the Inspector-General for Biosecurity, Australian National Audit Office

Recommendation 4

To ensure the broader success of the biosecurity system, establish a sustainable and strategically aligned biosecurity funding solution which is:

- independent of political cycles
- representative of the entire biosecurity system
- funded by both risk generators and risk bearers
- prioritised by risk assessment

Recommendation 5

To manage the threat posed by Emergency Animal Diseases to Australia, industry, government, and Animal Health Australia must maintain a collaborative and innovative partnership approach to pre-existing EAD preparedness and response arrangements under the Emergency Animal Disease Response Agreement which is appropriately resourced by all signatories.

Recommendation 6

To support strategic biosecurity workforce planning, implement a nationally consistent biosecurity capability framework under the National Agricultural Workforce Strategy, informed by a biosecurity capability review and skills audit.

Recommendation 7

To support a collaborative, co-ordinated and robust national diagnostics system, facilitate a review of opportunities to harmonise methodologies, enhance uptake of technology and increase capability and capacity through private networks, under the National Animal Health Diagnostics Business Plan.

Recommendation 8

To support the sharing of data and a collaborative approach to analysis, develop a national legislative data framework that protects the privacy, security and confidentiality of individuals and their data, supported by the appropriate investment into infrastructure and resourcing to encourage data sharing.

3. Australian Pork Limited

APL is the national representative body for Australian pork producers. APL is a producer-owned not-for-profit company combining marketing and export growth, research and innovation, and policy development to assist in securing a profitable and sustainable future for the Australian pork industry.

Our industry is proud of its achievements to date, positioning it as a leader in biosecurity, animal health and welfare, sustainable agriculture, and innovation. Our Strategic Plan 2020-2025 and new APL Sustainability Framework 2021-2030 set ambitious goals for more positive impact.

Biosecurity is a key priority for APL and each year we invest significant pork industry levy funds into biosecurity research and development (R&D), policy, communications and extension, as highlighted in the most recent 2020-21 APL Annual Report[1]. Over the past year, faced with the ongoing threat of African swine fever (ASF), our industry has focused on strengthening biosecurity measures and awareness on-farm, and developing tool and resources to support this in partnership with government through to blue sky R&D aimed at pushing back borders.

APL shares government's vision that enhancing biosecurity capacity and capability is key to delivering on industry growth and sustainability goals, including the Government's Ag2030 plan and $100 billion target by 2030. To support this vision, we welcome the opportunity to provide a submission to the *National Biosecurity Strategy Initial Consultation*. Our submission provides general recommendations based on the significant learnings of the Australian pork industry in mitigating the risk of ASF and COVID-19 over the past two years.

4. Contribution of the Pork Industry in Australia

As the most consumed meat globally and the second most consumed meat in Australia, pork is an important part of our diets. Australia's domestic sow herd numbers approximately 270,000, housed in approximately 4,400 registered sites nationwide. In 2021, the Australian pork industry produced almost 437,000 metric tonnes of pork and of which 9% was exported.

The domestic pork industry plays a vital role in contributing to Australia's food security owing to the restrictions that Australia's biosecurity laws place on the importation and sale of fresh pork from overseas. All fresh pork consumed in Australia is domestically sourced.

In a typical year, the pork industry, including pig production, primary and secondary processing, and wholesale, contributes $5.3 billion in gross domestic product to the Australian economy and supports about 36,000 jobs nationally. The industry is largely based in regional Australia, with the largest volume of production sourced from Queensland, Victoria, and South Australia, respectively.

[1] https://australianpork.com.au/sites/default/files/2021-10/2020-2021-APL-AR.pdf

5. Specific Recommendations

5.1 Shared responsibility, a partnership approach and sustainable investment models

Shared Responsibility

- How can we increase awareness of the important role everyone plays in a modern biosecurity system?
- Are there any gaps/overlaps in responsibilities across government, industry, researchers, environmental groups, and community roles? If so, how can we address this?
- How will our roles and responsibilities change into the future?
- How could we better define and agree these roles and responsibilities?
- Do any additional functions of stakeholders need to be recognised?

Partnership Approach

- Who need to be the key partners in the biosecurity system into the future?
- How can we enhance our partnerships to better position the biosecurity system for the future?
- How can we support ongoing coordination and co-benefits with our biosecurity partners?

Sustainable investment models

- Do our funding and investment models support our system's needs?
- Do our prioritisation frameworks effectively allocate resources to support our system's needs?
- Where does investment need to be allocated to support the long term health of Australia's biosecurity system?
- Are particular investments in certain jurisdictions or geographies required?

APL strongly supports the biosecurity principles of shared responsibility and partnership, and the notion that all Australians can be biosecurity leaders that safeguard our unique environment from pests and diseases. This approach must be underpinned by sustainable and strategically aligned investment models.

Given the strong linkages between the three concepts, the questions outlined in the discussion paper have been considered under one section within this submission.

Redefining the contemporary biosecurity system to influence culture and affect change

Building awareness and understanding of the important role all Australians play within the biosecurity system requires a contemporary redefinition of the biosecurity system that is both relatable and inclusive of all Australians.

Australia's identity is built of images of vast unspoilt landscapes and seascapes, and the unique flora and fauna that inhabit them, as well as the people that have travelled near or far to seek the opportunity and adventure that our unique country offers. This identity is not only used to shape the narrative of our successful economy but influences the very way in which we interact with our environment and go about our every day.

Exploring the complex concepts of Australian identity must drive the redefinition of the biosecurity system from its current narrow depiction as a responsibility of government and the agriculture sector to support a commercial undertaking, to a rich and complex system that supports and safeguards the everyday lives of Australians.

Like other major disruptive events throughout history, the ongoing COVID-19 pandemic has provided a rare opportunity to undertake this exploration, as Australians emerge from two years of lock downs into new social and cultural norms, and the freedom to examine how they chose to live their lives. Adding to this opportunity, is the direct linkage that COVID-19 has provided between all individuals and the concept of biosecurity, a linkage not seen in over a century since the Great Influenza epidemic of 1918. When considered in tandem, the ability to influence a cultural movement of biosecurity leadership and shared responsibility within our community is significant.

The current opportunity associated with COVID-19 in relation to the National Biosecurity Strategy (NBS) is twofold:

1. COVID-19 has clearly illustrated to all Australians the material impact that biosecurity breaches can have on our daily lives, including our health, our wallets, our ability to see our loved ones and undertake the everyday activities that we love.

2. Faced with a major disruptive event, Australians are reconsidering their values and drivers and are open to normative change.

3. As a nation of adventurers, the ongoing impact of COVID-19 restrictions, and associated increased travel costs, has resulted in millions of Australians 'holidaying at home', providing a greater connection with our community and environment, and unprecedented channels for biosecurity engagement and communication.

However, this window of opportunity will not last indefinitely and requires swift investment and action by government, supported by industry and community groups, to reinforce the learnings that good biosecurity is driven by each of us. A case study has been presented below on the *New Zealand Biosecurity 2025 Strategy* which considers, at a high level, some of these themes.

Recommendation 1
To support the call to action for shared responsibility and partnership, the biosecurity system must be re-defined to ensure it is contemporary, innovative, and transformative, and demonstrates the critical role it plays in safeguarding the environmental, cultural, and social assets that define us as Australians.

Partners within a contemporary biosecurity system – a genuine 'one biosecurity' approach?

A redefinition of the biosecurity systems provides the additional benefit of identifying a greater and more accurate number of 'biosecurity partners' who will be critical to the delivery of a strong and robust biosecurity solutions.

Currently the NBS has engaged partners across agriculture (government and industry), trade and logistics and indigenous community groups. However, as the COVID-19 experience has taught us, biosecurity cannot occur in a silo. Critical gaps in the partnership approach taken by the NBS exist across human health, tourism, industry, regional development, and a coalition of community groups involved in biosecurity leadership and delivery at a local level.

To ensure a holistic approach to biosecurity, and endorsement across multiple government portfolios at all levels, development and delivery of the NBS must be based on a stakeholder mapping that is driven by the contemporary redefinition of the biosecurity system called for under Recommendation 1.

Once identified, these additional stakeholders must be engaged in early-stage development of the NBS and retain an ongoing ownership of the NBS to support successful implementation and delivery over the coming decade.

Recommendation 2
To deliver the cultural change required to drive a 'one biosecurity' approach, the National Biosecurity Strategy must facilitate ownership amongst a diverse array of stakeholders, including:

- **multiple portfolios across all levels of government, including health, tourism, community services and regional development**
- **critical industry sectors**
- **indigenous communities**
- **community groups**

Future proofing Australian biosecurity through sustainable and strategically aligned investment

Having redefined the biosecurity system and the key actors within it, the NBS then provides a functional platform to align and leverage:

1. Strategic, operational and innovation plans
2. Sustainability frameworks
3. Investments, tools, and resources
4. Communication and engagement channels

The ability to align and leverage the strategic tools and resources of stakeholders across the biosecurity systems provides untold potential, including:

1. Shared understanding of future challenges driven by integrated human and data networks which in turn drive the development of innovative solutions available to the biosecurity system
2. Mapping of the biosecurity system to determine how funding is applied to the system, supporting increased efficiencies of current available resources, and identification of critical gaps that require additional investment
3. Identification and assignment of roles and responsibilities, and appropriate individuals, organisations or sectors to lead activities and support collaboration and coordination
4. Ability to respond to, and implement recommendations from, to seminal reviews of the biosecurity system (examples include reports from the Inspector-General for Biosecurity, Australian National Audit Office, etc)

For the NBS to effectively provide this platform for coordination and collaboration, it must be appropriately funded and provided with a dedicated secretariat tasked with implementation and delivery over the decade, including ongoing monitoring, evaluation and reporting to an NBS Steering Committee.

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To ensure success of the National Biosecurity Strategy, the following must be provided:

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To ensure the broader success of the biosecurity system, establish a sustainable and strategically aligned biosecurity funding solution which is:

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- **funded by both risk generators and risk bearers**
- **prioritised by risk assessment**

Case Study - New Zealand Biosecurity 2025 Strategy

Increasingly, the New Zealand (NZ) Biosecurity 2025 Strategy is held up as successful biosecurity initiative that may hold important learnings for Australia regarding shared responsibility and partnership approaches. The following case study, developed in consultation with NZPork and the NZ government, briefly outlines the NZ approach.

In 2016, the Biosecurity 2025 Strategy (the Strategy) was launched in New Zealand (NZ) to provide a collective focus for all participants in the NZ biosecurity system to strengthen and safeguard the NZ biosecurity system in the face of increased pressures with the changes to global trade and movements.

A key strategic direction was to build a biosecurity team of 5 million – the entire population of NZ.

The Strategy is a collective effort across NZ to build awareness of the importance of biosecurity, align all activities undertaken by individuals, businesses, and communities across the biosecurity system, and encourage further action. It sought to show all New Zealanders, that they are essential for strengthening the biosecurity system and that every small action towards stronger biosecurity is important.

The first step in establishing the movement was to conduct a baseline of New Zealanders awareness of biosecurity to inform what the strategy would aim to achieve and the design of an independent biosecurity brand. This research showed that while 96% of New Zealanders have a good understanding of biosecurity, only 2% think there are personal consequences for them if a biosecurity incursion happens.

To create a biosecurity team of 5 million, the mission was to develop a brand and creative concept that would emotionally engage and connect with all New Zealanders, allowing ownership and accessibility by individuals, groups, agencies, and organisations across a variety of actions and activities. A key outcome of this brand was the delivery of a story that reflected a shared responsibility and partnership approach to biosecurity risk management.

From this Ko Tātou This Is Us was created.

Ko Tātou This Is Us emphasises that biosecurity helps to protect everything that shapes the NZ way of life, from the food they enjoy eating – and the outdoor environment where they fish, hunt, farm and explore – to the beautiful fauna and flora and biodiversity New Zealand provides. There are several programs that sit under the Strategy and support the focus on biosecurity and collaboration.

One of these is the Biosecurity Business Pledge (Biosecurity Pledge).

The Biosecurity Pledge was established in 2019 and is a partnership between business and Biosecurity New Zealand. The Pledge provides a framework for managing the risk of unwanted pests and diseases (plant or animal) disrupting individual businesses and sectors. The framework is designed to make biosecurity a core part of operational activity and assist businesses to meet their corporate and social responsibilities.

Pledge members agree to:

- *actively seek to understand and manage the biosecurity considerations associated with their business activities*
- *promote a culture of proactive biosecurity management within their operations, across their business, around their board tables, and across their teams*
- *incorporate biosecurity into their procurement policies that guide the selection of goods, travel, logistics, and service providers*
- *take opportunities to support their customers, staff, suppliers and stakeholders to understand the importance of biosecurity and what good biosecurity practice looks like*
- *approach biosecurity with the views that it is everyone's responsibility, that risk is best managed offshore, and that they will actively engage with the Biosecurity New Zealand to support better biosecurity outcomes for New Zealand.*

Through the Strategy and its subsequent programs, New Zealand has been able to create a 'biosecurity team of 5 million'. Supported by both government, industry, business and tourism, the Strategy is an example of a collaborative approach to biosecurity and the positive flow on effects it can have across the biosecurity system and beyond.

5.2 Emergency Disease Preparedness and Response Arrangements

- How can collaborative approaches enhance the emergency preparedness and response resilience of Australia?
- What types of tools can we use to monitor and mitigate threats?

Specific to the animal and livestock sectors, Australia finds itself in the globally enviable position of having developed and implemented the Emergency Animal Disease Response Agreement (EADRA). The plant sector maintains a similar agreement in the Emergency Plant Pest Response Deed (EPPRD) however this submission will focus on the EADRA.

> *The EADRA is a unique contractual arrangement signed in 2002 that brings together the Australian, state and territory governments and livestock industry groups to collectively and significantly increase Australia's capacity to prepare for—and respond to—emergency animal disease (EAD) incursions.*
>
> *The main benefit of the Agreement is the ability to respond quickly and effectively to an EAD incident while minimising uncertainty over management and funding arrangements.*
>
> *All signatories have agreed to work collectively to reduce the risk of emergency animal disease (EAD) incursions and share the approved costs of EAD responses. The EADRA also provides an innovative framework (outlined below) to combine multiple dynamic approaches to combating EADs.*[2]

The EADRA, and service delivery by Animal Health Australia (AHA), provides a pre-existing platform to drive a collaborative approach across industry and government to enhance the emergency preparedness and response resilience of Australia, along with the supporting tools to monitor and mitigate identified risks. However, it is crucial that delivery of the EADRA is appropriately resourced and supported, by all signatories and, where relevant, other biosecurity stakeholders.

To strengthen our ability to manage the threat of an EAD to Australia, industry, government, and AHA must maintain a collaborative and innovative partnership approach to pre-existing EAD preparedness and response arrangements, specifically:

1. Strengthened engagement between supply chain businesses and government to build greater understanding and awareness of each participants role and responsibilities during an EAD incursion
2. Maintenance of the AUSVETPLAN with balanced input from industry and government
3. Prioritisation of key EAD decision making tools, including disease specific modelling and cost benefit analysis which have been informed by industry
4. Enhancement of response capabilities through EAD simulation exercises which are leveraged across all levels of government and include participants from across the supply chain, supported by ongoing strategic training and development opportunities
5. Implementation of collaborative research and development projects and activities which provide technical and extension support (e.g. industry biosecurity standards and plans, 3D, movement processes)
6. Adequate and appropriate resourcing to underpin all aspects of EAD preparedness and response

These specific recommendations should be considered in conjunction with the additional technical sections below that further consider requirements for surveillance and mitigation of risks.

Recommendation 5
To manage the threat posed by Emergency Animal Diseases to Australia, industry, government, and Animal Health Australia must maintain a collaborative and innovative partnership approach to pre-existing EAD preparedness and response arrangements under the Emergency Animal Disease Response Agreement which is appropriately resourced by all signatories.

[2] Emergency Animal Disease Response Agreement - Animal Health Australia

5.3 Skills and workforce requirements to support strong biosecurity

- What are some key emerging skills and capability gaps to be addressed to help us better understand, prepare for, and respond to, emerging threats?
- How can we identify skills requirements across biosecurity stakeholders to better respond to the threat environment?
- How can we improve the skills and capabilities within the workforce? What internal and external activities do we need to undertake?
- What changes should be made in light of the disruptions caused by the COVID-19 pandemic?

Globally, the Australian pork industry is small but at the forefront of science, sustainability and social responsibility. The modern industry relies on a skilled workforce given the technical and specialised nature of pig production and use of technology including for monitoring and reporting animal health.

Pig production systems are becoming more sophisticated, driven by technological advancement, requiring an increasingly skilled workforce and supporting capability, on-farm and in support services.

Effective biosecurity response will continue to require both general and specialist skills. The increasing role of technology and importance of data in biosecurity will require more data science, statistics, risk analysis and ICT skills[3]. APL and the Australian pork industry have made significant investment into technology to safeguard against exotic animal diseases like African swine fever (ASF) and Foot and Mouth Disease (FMD) (discussed further in the sections below).

Focused capability building efforts at the farm level (and support services) will remain important to ensure adequate Emergency Animal Disease (EAD) response.

Capability also needs to be supported by appropriate policies, systems and processes including better documentation and resources at the ground/farm level. While government, veterinarians and peak industries may be supported by AUSVETPLAN, these manuals may not be practical or well understood by farmers and the public in managing, and responding to, biosecurity risks.

The NBS needs to be informed and supported by an up-to-date biosecurity capability and skills audit, and biosecurity workforce capability framework. This should build on:

- Past capability reviews: '*The future of Australia's agricultural workforce*' (Wu et. al 2019[4]), describes decline in specialist biosecurity capability including management, taxonomy, plant pathology, entomology and diagnostics. Findings have been echoed in the *Queensland Biosecurity Capability Review 2015*[5] and through Research, Development and Extension systems in the *National Biosecurity Research and Development Capability Audit 2012*[6]
- Similar capability frameworks e.g. digital capability framework of Growing a Digital Future[7]
- Relevant experiences and strategies in managing and coordinating workforce capability in public health and emergency response sectors.

A best practice biosecurity workforce capability and skills framework should be applied across jurisdictions and institutions to facilitate nationally consistent and coordinated skills assessments and workforce/capability planning. Existing federal and state government skills forecasting efforts (e.g. carried out by the National Skills Commission, Skills Service Organisations their Industry Reference Committees and the rural Research and Development Councils

[3] https://cebra.unimelb.edu.au/__data/assets/pdf_file/0010/3453058/Endorsed-CEBRA-170714-Final-Report-_v1.0.1.pdf

[4] Wu W, Dawson D, Fleming-Muñoz D, Schleiger E and Horton J. 2019. The future of Australia's agricultural workforce. CSIRO Data61: Canberra, Australia.

[5] Brooks R, Glanville R, Kompas T. 2015. Queensland Biosecurity Capability Review. Queensland Government, Australia

[6] Intergovernmental Agreement on Biosecurity – Research, Development and Extension Working Group. 2012. National Biosecurity Research and Development Capability Audit

[7] https://www.crdc.com.au/growing-digital-future

(RDC) should also align with this.

To support this effort, APL supports government implementing the National Agricultural Workforce Strategy 2020 (NAWS) supported by an annual national labour and skills survey. Such a survey should address key national priorities for agriculture including biosecurity.

It is critical that mapping and review of biosecurity capability and skills is regularly undertaken to establish a benchmark and inform workforce planning.

A national capability framework may require supporting specialist registers to support EAD responses across industry and jurisdictions, for example a national register of licensed, unlicensed and retired veterinarians in Australia.

The improvement of skills and capabilities within the workforce requires a multi-pronged approach and is a cooperative program across all levels of government and industry. This should ensure:

- A greater focus on practical biosecurity in tertiary and VET education
- Building technical specialist and training hubs at university, research organisations, other appropriate providers
- Stronger linkages between industry, RD&E organisations and formal education providers to extend best practice biosecurity education

Upskilling strategies should include the following effective techniques:

- Engagement with international counterparts who have had first-hand experience with EADs
- International training such as that of the EuFMD program in Nepal which could be extended to other countries other diseases (e.g. Timor/Papua New Guinea and ASF training). Scholarships should support participation and exchanges.
- National EAD simulations, as well as industry and on-farm simulations.
    - Involvement of a skills or workforce specialist in major industry simulation exercises as an observer could verify and update capability frameworks.
- Training at the farm level and support services (processing, feed mills and transport) to identify threats and recognise pests and diseases (both endemic and exotic)
- Master classes/short intensive courses that involve all stakeholder types to foster relationships and biosecurity leadership.
- Secondments

There are many lessons to be learnt from the COVID-19 pandemic in managing workforce capability and emergency response that can be applied, including those described by Department of Agriculture, Water and the Environment workforce planning and managing uncertainty8.

Other key learning from COVID-19 that should be leveraged include best practice communications and engagement from the COVID public health experience, the importance of prevention and of risk management plans. There is value in adopting farm check-in apps now (and not at the time of an emergency) to build familiarity and data among users and to support existing compliance, risk management and preparedness messaging. A risk management tool is being developed by APL using apps and technology for biosecurity check-in at farm and traceability to processing. Investment in telecommunications infrastructure and connectivity across the country is critical.

Recommendation 6

To support strategic biosecurity workforce planning, implement a nationally consistent biosecurity capability framework under the National Agricultural Workforce Strategy, informed by a biosecurity capability review and skills audit.

[8] https://www.apsc.gov.au/initiatives-and-programs/aps-professional-streams/aps-hr-professional-stream/aps-hr-professional-news/workforce-planning-and-managing-during-uncertainty

5.4 Diagnostics

- How can we build on the current diagnostics approach to support efficiency and effectiveness at the national level?
- What are the operational elements required to ensure an effective diagnostics system?
- What technological improvements can be made to enhance the diagnostics process?

Laboratory diagnostics forms a key component of Australia's animal health system. A robust national laboratory diagnostic system and network is crucial to supporting surveillance for exotic, emerging and significant endemic animal diseases and managing their biosecurity, socio-economic and other impacts. APL invests heavily in antimicrobial resistance and health surveillance testing, in support of the health and biosecurity of the pork industry and Australia more broadly.

The diagnostic testing system for animal diseases in Australia requires a review to streamline processes and enable an innovative system that is efficient, effective, and trusted by government, industry and trade partners. The recommendations from this review should be implemented through the National Animal Health Diagnostics Business Plan (Business Plan) to support a coordinated and collaborative approach across all levels of government and industry.

Specific operational and technical considerations include the following:

Increasing diagnostics operational capacity and capability

Australia is a large country, with a diverse landscape of rural and remote agricultural production systems. Due to the isolated nature of our environment, the collection, transport and testing of animals in these areas is difficult and lengthy. The collection of samples is often required to be undertaken by a government veterinarian, who may be responsible for a large region and therefore may require substantial travel time to visit a property.

Further, the network of laboratories authorised to undertake disease testing are widespread across state and territory borders and samples must travel significant distances under strict temperature-controlled conditions to reach them. Any deviation from the temperature could make the sample non-viable requiring the recollection of samples, further extending the time frames for results. The COVID-19 situation has further exacerbated this issue, as flights are in short supply and trucks and couriers are unable to cross state borders.

To maintain our high biosecurity standards and support our producers, we need a diagnostic system that enables quick, accurate testing of suspected disease agents and allows rapid detection, control and treatment of exotic diseases. The NBS, in the review of the system, should consider the utilisation of private veterinarians and laboratories, in addition to government entities, appropriately certified, to collect and test samples. Not only would this increase the efficiency of the system, but it would also support relationships with producers during a biosecurity response and help to alleviant some of the worry and stress that goes with a detection on-farm.

Harmonisation of laboratory testing methods

The strengthening and streamlining of the national diagnostics system within Australia can be supported by the harmonisation of testing methodologies as outlined in the Business Plan. The Business Plan represents a collaborative approach and commitment by government, universities, private laboratories and industry to maintaining and improving a national diagnostic capability and capacity for terrestrial animals through coordination and collaboration at various levels.

Added to the recommendations regarding operational capacity and capability above, the use of private laboratories could be further supported by the harmonisation of the testing methodology. This would enable consistent testing no matter the laboratory conducting the diagnostic testing and would provide confidence in testing results both domestically and internationally.

APL recognises that the use of private laboratories would need to be supported by a data sharing framework to allow data sharing between the lab and the commonwealth or states. However a data sharing framework to protect privacy and use of data is require for many activities proposed under the NBS.

Application of diagnostic technologies

To maintain and build a national diagnostics system that can adapt to the changes in biosecurity threats, the utilisation of technology is important. Three potential options for considerations under the NBS include:

- Pen side testing: The development of pen side testing could allow faster initial results, which could be followed up by a confirmation test if needed. Testing could be undertaken by accredited and trained skilled

industry members and the results could be reported back to the Chief Veterinary Officer (CVO) or state department as directed by legislation. Any pen side test developed would need to be sensitive but robust enough to handle potential contaminants and travel, as it may be used in a non-sterile area (e.g. piggeries).

- Artificial intelligence and analytics: Where a diagnostic test indicate the presence of a disease, state jurisdictions or commonwealth authorities could use artificial intelligence and analytics to consider the spread of the disease and enable quicker testing of neighbouring properties, assisting in establishing a control area. AI analytics would be particularly beneficial for aerosol or water stable pathogens.
- Resources to support producer diseases identification: The use of apps or paper-based resources could be used to build producer capability and empower them to assist in the diagnosis of their animals. One example is a post-mortem app with a clinical signs checker and the ability to capture and send pictures. This would allow veterinarians to conduct a diagnosis or risk assessment and determine whether further testing or treatment is required and allow them to advise the producer accordingly. This approach could be supported by the development of posters with clinical signs for awareness of diseases. Any resources developed should be shared to all sectors and maintained routinely as we make advances in science and veterinary medicine.

Recommendations:
To support a collaborative, co-ordinated and robust national diagnostics system, facilitate a review of opportunities to harmonise methodologies, enhance uptake of technology and increase capability and capacity through private networks, under the National Animal Health Diagnostics Business Plan.

5.5 Data and Analytics and Technology

Data Analytics

- How can we better use data and analytics to improve risk-based decision making and management? What opportunities are there in the future to expand in this area?
- How can we improve the current data and analytics system?
- What are the challenges with data collection and storage that you foresee? How can these be overcome?
- How could improved data sharing assist with strengthening Australia's biosecurity?

Technology

- Which processes can be enhanced with technological advancements?
- What types of technologies should we invest in?

Given the strong linkages between data analytics and technology, the questions outlined in the discussion paper have been considered under one section within this submission.

Integrated Data Networks

Data collection and storage within Australia is managed on an individual sector basis and currently there is no mechanism that allows for the sharing of data between government and industries. To support the sharing of data and the collaborative approach to analysis, a robust legislative framework that protects the privacy, security and confidentiality of individuals and their data is required, supported by infrastructure and resourcing to encourage data sharing.

This system will support

- Risk analysis: There is a substantial amount of data collected across all sectors, however the data analysis does not produce outcomes that are functional for use, or the outcomes are not utilised to manage biosecurity risks. Additionally, as there is not a framework that supports the sharing of data there is overlap and double up of the data, creating frustrations for participants and not a good use of resources.
- Compliance and enforcement: In line with this the sharing of data will allow all levels of government to manage compliance and regulations of imports, both internationally and domestically. For example, if the commonwealth refuses to grant an import permit due to historical and reoccurring non-compliance by the importer, state authorities with this information could use it to manage and protect their states biosecurity

when it comes to disease management or movement permits.

- Market Access: Effective use of data may strengthen partnerships with trading partners to support market access, and support global management of disease risk and development of novel technologies.
- Efficient and effective business systems: Enhanced use of data supports efficient and effective businesses to drive productivity and profitability gains within industry, supporting the Australian economy and community.

Technological Enhancements

Technology development and utilisation on a national level needs to be driven by a gap analysis of the current system functionality, extended to available technology on a global level.

Two potential options for investment considerations under the NBS include:

- Pushing back the borders: APL is developing an app that allows better data collection that can inform producers biosecurity decision making about their properties. Similar to the Covid-19 Check in app, the app can be used on farm to collect information from visitors on their biosecurity status; whether they have travelled recently, if they had contact with other pigs or birds and if their truck or vehicle has been cleaned. This information can then be used to conduct a risk-based assessment and implement measures to manage the risk and ultimately decide whether to permit the person entry to their farm. Possible extension options include tracing to abattoirs and could be rolled out for other livestock species and be incorporated into the national traceability systems. This would be beneficial during an EAD incursion, as the app would allow traceability for trucks, animals and feed, which would help to control the disease.
- Animal traceability and movements: One area of data collection that requires a review and upgrade is the National Livestock Identification System (NLIS). The current system is quite a manual process that relies on individuals within the supply chain inputting information and for some species is a paper-based system. APL supports, in principle the five recommendations presented to the National Biosecurity Committee by SAFEMEAT to support enhancements to the national traceability system.

Recommendation 8

To support the sharing of data and a collaborative approach to analysis, develop a national legislative data framework that protects the privacy, security and confidentiality of individuals and their data, supported by appropriate investment into infrastructure and resourcing to encourage data sharing.

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