Plant Health AUSTRALIA

Growing Australian Agriculture inquiry submission

Plant Health Australia

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Improving national biosecurity outcomes through partnerships

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Inquiry into growing Australian agriculture to $100 billion by 2030 submission from Plant Health Australia

On 22 August 2019, the Minister for Agriculture, Senator the Hon Bridget McKenzie, asked the Standing Committee on Agriculture and Water Resources to inquire into and report on growing Australian agriculture to $100 billion by 2030.

The terms of reference are for an inquiry on the opportunities and impediments to the primary production sectors realising their ambition to achieve a combined $100 billion value of production by 2030.

Plant Health Australia (PHA) welcomes the opportunity to provide a submission to the enquiry.

PHA commends the work of the National Farmers' Federation, its partners and supporters in developing the 2030 Roadmap and agrees with the majority of its pillars. It does however recommend that *Biosecurity* be made more explicit in the plan, reflecting the huge importance of maintaining Australia's plant health status for our agricultural industries, our farmers, rural communities, the economy and the natural environment.

The Roadmap to 2030 and beyond needs to be developed with the added objective of achieving a robust and integrated national biosecurity R&D investment portfolio, together with the required capability and infrastructure across industry, government and the private sector to collaboratively support the management of our ever increasing biosecurity risks.

Key points

- **The effective management of biosecurity risks has enabled Australia to increase the value of primary production to $60 billion** and will be a key requirement to increasing our production to $100b by 2030 and beyond.
- **The annual costs of weeds, pests and diseases to Australian agriculture is already in excess of $12b** and significantly affects both agricultural production and commodity quality. Effective integrated disease, pest and weed management by producers, together with Australia's national biosecurity system, is keeping Australia free of additional harmful and costly exotic pests.
- **Further investment in biosecurity is needed to counteract the changing risks posed by exotic pests and diseases** due to growing international passenger, mail and trade volumes, population expansion and increasing dispersal of pests globally and regional infrastructure development.
- **Early detection of exotic pests through effective surveillance** provides the best chance of eradication. The cost of eradication responses is enormous, but if not eradicated, incursions of exotic pests impact industry by cutting production. increasing costs and threatening market access for our products.
- **Australia's trading partners continue to require evidence** from formal surveillance programs to support our claims of area freedom from a range of quarantine pests for market access.
- **Major biosecurity breaches are immanent without a solid foundation of skilled people** in key biosecurity disciplines across inspection, surveillance diagnostics, research and policy development.
- **Maintaining investment and improving our performance in biosecurity is vita**l to provide a safety net for Australian agriculture from the impacts of pests and diseases, while also providing a springboard to advance international markets for our products.

About Plant Health Australia www.planthealthaustralia.com.au

Plant Health Australia (PHA) is the national coordinator of the government-industry partnership for plant biosecurity in Australia.

Our purpose is to help minimise plant pest impacts on Australia, boost industry productivity and profitability and enhance market access.

Since being established in 2000 PHA has since invested over $75m directly in Australia's biosecurity system on behalf of our members.

A not-for-profit company, PHA's main activities are funded from annual subscriptions paid by members, with separately funded pest risk mitigation projects commissioned by individual members, groups of members or non-members.

Our members comprise all major plant industry bodies that represent Australian growers and beekeepers (currently 39), plus all state and territory governments and the Australian Government.

The company drives action to improve policy, practice and performance of the plant biosecurity system to benefit plant industries and the environment by:

- strengthening partnerships
- enhancing the operation and integrity of the Emergency Plant Pest Response Deed
- developing pest management and preparedness programs
- facilitating nationally coordinated surveillance programs
- strengthening the diagnostic system; and
- coordinating the planning and implementation of plant biosecurity RD&E.

For a recent description of PHA's program visit our recently published 2018-19 Annual Report[1].

Importance of biosecurity

Australia's biosecurity system operates in a rapidly changing technical and risk environment. New pests and diseases can devastate our unique ecosystems, reduce social amenity, undermine agricultural production, reduce the sustainability of rural communities, increase the need for chemical use, reduce overseas markets for our produce and significantly damage the economy.

The adage that prevention is better than cure is completely correct. The costs of eradication responses are enormous, and the alternative, living with the new pest is also expensive. Plant pests are often not eradicable, so the impacts of a new pest including loss of market access, damage to the environment, diminishing returns from agricultural production and potentially devastating effects on regions, are long lasting if not permanent.

As such, a good biosecurity system is as important as other fundamental services deliver through public private partnerships such as effective health care, education and transport, and PHA believes that the way that biosecurity is funded should reflect this importance. Visit the most recent National Plant Biosecurity Status Report[2] for a detailed description of Australia's plant biosecurity system.

Financial impact of plant pests on agricultural production

The effective management of biosecurity risks is a key requirement to enable Australia to increase the value of primary production to $100b by 2030 through avoiding losses through reduced production and/or increased costs due to incursions of exotic pests and diseases.

The annual costs of weeds, pests and diseases to Australian agriculture is already in excess of $12b and significantly affects both agricultural production and commodity quality. While these costs are increasing, the rate of increase is being managed by producers through effective integrated disease, pest and weed management, together with Australia's national biosecurity system which is keeping Australia free of harmful and costly exotic pests.

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[1] Plant Health Australia (2019) Annual Report 2018-19

[2] Plant Health Australia (2019) National Plant Biosecurity Status Report 2018

Australia has a comprehensive biosecurity system that undertakes risk reducing activities through a continuum of pre-border, border and post-border. The report[3] on the review of the Intergovernmental Agreement on Biosecurity published in 2017 describes Australia's biosecurity system is a trade and economic asset saying "*It underpins $59 billion in agricultural production, $45 billion of agricultural exports and our $38 billion inbound tourism industry.*"

The report warns that governments and industry are facing, and will continue to face, ongoing resourcing challenges *"The review found that government appropriation funding has generally been static or in decline, while externally sourced funds (cost-recovered funds and levies) have been increasing."*

At the same time the risks posed by exotic pests and diseases continue to change due to growing international passenger, mail and trade volumes, population expansion, increasing dispersal of pests globally and regional development. Compounding these challenges is the need to manage human, infrastructure and financial resources within a complex mix of competing demands.

In recent years the Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES) has published several evaluations of the potential impacts of high priority exotic pests on Australia. The reports provide some insights into the potential economic impact of specific exotic pests and diseases (examples

Box 1. Potential economic impacts of the wheat stem rust strain Ug99 in Australia

In September 2018 ABARES published a report on the potential economic impacts of the wheat stem rust strain Ug99 in Australia. The Ug99 strain is not present in Australia, but it poses a major risk to the $6 billion wheat industry in terms of revenue losses and increased production costs.

The report estimated the economic impact over 10 years of three scenarios for disease spread, ranged from $574 million for wheat-growing areas in the western region, to $1.4 billion if all wheat growing areas in Australia were to become affected.

Disruptions to Australian wheat exports may also result if markets that are sensitive to Ug99 contamination were to ban imports of Australian wheat.

Eradication of Ug99 would likely only be technically feasible if the rust is detected while still contained within a very small area with a light spore load, so it is crucial Australia takes measures to keep Ug99 from entering the country in the first place.

To help manage the risk posed by this significant wheat disease, work is being done in surveillance, monitoring pathogen populations to track potential virulence evolution, and pre-breeding of resistant varieties of wheat.

Box 2. Economic impacts of *Xylella fastidiosa* on the Australian wine grape and wine-making industries

In November 2017, ABARES issued a report[1] on the economic impacts of *Xylella fastidiosa* on the Australian wine grape and wine-making industries.

Now listed as number one on the National Priority Plant Pest List in Australia, the *X. fastidiosa* bacterium affects many plant species. In Brazil it infects an estimated 200 million citrus trees. In California, it causes over $100 million in yearly losses to the grape industry. In Italy, around one million olive trees are estimated to be infected on the peninsula of Salento. There is no cure for the disease—which blocks xylem cells, disrupts water flow and slowly kills affected vines in 1-5 years.

Xylella is transmitted by sap-sucking insect vectors that feed on the xylem sap of plants, and by grafting infected propagation material onto healthy rootstocks. The pathogen and its known vectors overseas are not present in Australia, but native sap sucking insects such as spittlebugs could possibly spread it, were it to enter.

ABARES assessed a range of scenarios and the expected benefits to the wine industry of keeping Australia free of *X. fastidiosa* and its vectors. Three scenarios of progressively smaller habitat suitability were assessed.

Considering three different vineyard suitability scenarios at two different wine grape prices, ABARES estimated that if it enters and establishes in Australia, *X. fastidiosa* could cost Australian wine grape and wine-making industries between $2.2 billion and $7.9 billion in aggregate losses over 50 years, on a net present value (NPV) basis.

ABARES also found that if *X. fastidiosa* is detected early and contained within a region, the aggregate impact on the wine industry would be a fraction of the impact of an uncontrolled spread. Containing the outbreak to either the Murray Darling–Swan Hill or Lower Murray regions, for example, could generate benefits (avoid losses) estimated between $2.0 billion and $2.6 billion, on a net present value basis.

Although this study focused on the Australian wine industry, the modelling framework could be adapted to other perennial crops susceptible to Xylella, including horticultural crops (such as cherries, citrus, nuts, olives and summer fruit), native trees, amenity trees, forests and grasses.

[3] Priorities for Australia's biosecurity system (2017) Final IGAB review report.

summarised in Box 1 and 2 below) and the importance of keeping them out of Australia (example summarised in Box 3).

Biosecurity partnerships

Along with the role played by governments in biosecurity, there is a significant contribution made by industry, the community, PHA and Animal Health Australia (AHA) towards biosecurity in Australia. The Beale Review[4] established the need for this shared responsibility.

The structure of PHA and AHA, and the ongoing partnerships that they have with multiple stakeholders have strengthened our system, including the legally-binding emergency response agreements between industry and government [Emergency Plant Pest Response Deed (EPPRD) and the Emergency Animal Response Agreement (EADRA)]. These partnerships now have significant importance in protecting our achievements in agricultural production from biological threats.

Given that biosecurity activities of industry, the community and government are becoming increasingly entwined, it is important to encapsulate all activities rather than only focusing on government activities, including

- efforts of industry towards biosecurity, since they are progressively increasing contributions to the system, often using levy mechanisms.
- the valuable partnerships and roles played by PHA and AHA to ensure they are supported and extended, further strengthening the system.

The inclusion of PHA and AHA, on behalf of agricultural industries, as members rather than just observers of National Biosecurity Committee, would further embed and develop the partnership approach.

Biosecurity preparedness

Since there are thousands of exotic pests that could make it to Australia and establish here with major impacts, it is very difficult to predict the next exotic plant pest incursion. Given its responsibility for international market access, PHA sees that national prioritisation of pests is a sensible mechanism for allocating Australian Government funding. However, we caution against establishing the same priorities for all stakeholders in the system, neglecting other damaging pests and pest pathways. Focussing only on a list of pests will produce an inflexible system, the opposite of what is needed.

Box 3. A benefit-cost framework for responding to Varroa

In 2012 ABARES published a benefit-cost framework[1] for responding to the Varroa destructor ('Varroa'), a devastating mite pest of European honey bees that Australia remains the only continent to be free of.

Varroa represents a serious potential biosecurity threat to Australia, as honey bee colonies infested with the mite would collapse unless treatments are applied in time. An incursion of Varroa in Australia could seriously affect introduced European honeybee populations that currently provide pollination services to many crops.

If eradication of Varroa was to be technically successful, it is generally accepted that a Varroa incursion would need to be detected early and destroyed while still near a port. Experience from countries such as New Zealand, the United States and Canada suggests it is unlikely that Varroa could be eradicated successfully if it had spread more widely.

ABARES presented a benefit-cost analysis framework to assess the economic feasibility of different biosecurity control measures in the event of a hypothetical incursion of Varroa. Factors considered in the modelling include the spread of Varroa from each of the ports in Sydney, Melbourne and Cairns, whether the spread is unhindered or contained, and the development of a managed pollination industry that increases supply of pollination services in response to increasing demand.

The estimated value of losses to producers and consumers of pollination-dependent crops from an unhindered Varroa spread ranged from $0.63 billion to $1.31 billion over 30 years depending on the port of entry. These losses fell to $0.36 billion to $0.93 billion over 30 years if the spread of Varroa was slowed though containment.

Producer losses could include production losses in the absence of pollination services provided by managed and feral honey bee populations, or increased payments for pollination services required to maintain production. Consumer losses would be driven by higher prices for the products of affected crops and a reduction in the quantities consumed. Incursions from Sydney and Melbourne resulted in higher estimated losses because of the reduced time taken for Varroa to spread and affect the bulk of Australia's horticultural production located in the temperate regions of New South Wales and Victoria.

[4] Department of Agriculture, Fisheries and Forestry (2008) Review of Australia's Quarantine and Biosecurity Arrangements - Report and Australian Government Preliminary Response

- The Australian biosecurity system needs generic preparedness processes and tools including broad diagnostic capacity and general surveillance, which, together with intelligence gathering, will enable a fast response, regardless of which pest makes it through border controls and becomes the next challenge.
- While international market access is a focus for the Australian Government and for some industries such as grains, other stakeholders such as state and territory jurisdictions, agricultural industries that supply domestic markets, or those protecting the environment, rural communities and social amenity will have different concerns.
- With both frequency and risk of incursions increasing in both the plant and animal sectors, Australia needs to invest more in pre-incursion strategies and incursion preparedness and ensure it is delivered. In cases where pests or methods are cross-sectorial, our rural RDC's need to ramp up their collaboration in a timely manner to achieve efficiencies in RD&E effort.

Pest surveillance

The costs of pest eradication is enormous, but early detection of exotic pests through effective surveillance provides the best chance of eradication. If not eradicated, incursions of exotic pests impact industry by cutting production, increasing costs and threatening market access for our products.

Pest and disease surveillance is an essential component of the biosecurity continuum as it maximises the likelihood of early detection of new and emerging pests. and provides data on pest distribution and pest absence to support trade.

Our trading partners are also requiring evidence from formal surveillance programs to support our claims of area freedom from a range of quarantine pests and to ensure that their quarantine requirements are met.

Despite current efforts, protecting the crop and livestock industries from exotic pests remains an increasing challenge. Now more than ever surveillance needs to be undertaken with enough confidence to identify incursions early enough to successfully eradicate them and to defend our pest status claims.

R&D and new technology

Biosecurity science, both funding and research, is distributed across a network of government, industry and university facilities. In fact, a recent PHA study found that in 2015, the majority of plant biosecurity research projects are funded and carried out by RDCs, universities and partnerships of industry and government.

Australian agriculture through its RDCs, its innovative R&D community including the collaborative Plant Biosecurity Research Initiative (PBRI) and government partners need to coordinate investments in developing and fast tracking innovative technologies – such as molecular diagnostics, robotics, 3D X-ray, SMART sensing for pests, disease and weeds (image, pheromone, molecular), and greater utilisation of large data sets (big data) to improve our management of biotic threats.

Recognising this network structure of plant biosecurity research and realising that better coordination could maximise its effectiveness, PHA has in recent years played a central role in linking government, industry and researchers to better coordinate plant biosecurity research activity through the establishment of the PBRI.

Advances in new technology will play a large part of future biosecurity activities – from remote sensing and faster diagnostics through to traveler and cargo profiling and inspection.

While physical plant pest reference collections will remain an essential centerpiece of the plant biosecurity diagnostic system, enhancement of these collections through the development of digital tools such as the Pest and Disease Image Library (PaDIL) will provide quick and easy access to high quality pest images to support identification.

Capability and infrastructure

Major biosecurity breaches in Australia are immanent without a solid foundation of skilled practitioners in key biosecurity disciplines across inspection, surveillance, diagnostics, research and policy development.

Greater emphasis needs to be placed on ensuring that a skilled workforce in both the public and private sector is built and maintained so that Australia has the capacity to check for, diagnose and control high priority exotic pests.

PHA coordinates the National Plant Biosecurity Diagnostic Network and the Plant Surveillance Network Australasia Pacific to promote and improve connections across Australia, New Zealand and neighboring countries and facilitate the sharing of knowledge and experiences. However, more needs to be done to ensure that Australia maintains sufficient biosecurity scientific expertise across all disciplines.

A successful biosecurity system also requires long term access to core infrastructure and technology. Australia's biosecurity system has historically been serviced by a dispersed biosecurity infrastructure base replicated state by state.

Governments have invested in infrastructure to more effectively manage biosecurity risks by conducting the research and diagnostic activities that underpin biosecurity. However, they are now faced with the challenges of maintaining both that infrastructure and the significant human capabilities required to operate them, in an environment of declining government investment over the short to medium term.

If our biosecurity system is going to support Australia's efforts in increasing the value of primary production to $100bn by 2030, it is critical that we have the right capacity and research and quarantine infrastructure.

Conclusion

Australian agriculture has grown significantly over the past decade, with farm gate returns now worth more than $60 billion (NFF 2018). This growth is due to no small part of the partnership in biosecurity and R&D between government and industry together with our world class production systems.

PHA recognises that Australian agriculture will need to continue to strengthen its competitive advantage in order to drive employment and prosperity in our regional and rural communities and enhance its valuable contribution to the national economy.

PHA acknowledges the work of the National Farmers' Federation, its partners and supporters in developing the 2030 Roadmap that sets a course for a more innovative, safe and sustainable industry.

The Roadmap is structured around five pillars describing the various components required for growth including

- Retaining both community and customer trust and building better supply chains;
- Sustainability;
- Unlocking innovation;
- Capable people and vibrant communities, and
- Access to capital and risk management.

Reinforcing partnerships, maintaining investment and improving our performance in biosecurity is vital to provide a safety net to Australian agriculture from the impacts of plant pests, while also providing a springboard to advance international markets for our products.

Our biosecurity system works in a dynamic environment where challenges are rapidly growing and evolving. Instilling biosecurity as a foundational corner stone in our roadmap to 2030 and beyond will be critical in recognising that the operating environment affecting early detection and market access surveillance in the Australia's agricultural industry today is different to that of the past and is unlikely to be the same as that of the future.

It is not just what we do and how we work together to achieve the goal of $100bn by 2030 but it will be the framework that unites us on strategic, operational and tactical challenges so that we can work successfully beyond 2030 and continue to grow value, leadership and agricultures valuable contribution to our national economy.

As outlined in the roadmap, the NFF will report on key industry trends and progress against key metrics embedded in the plan allowing them to hold themselves and other stakeholders to account. The National Plant Biosecurity Status Report is one of several tools that could assist the NFF in monitoring continuous improvement in the plant biosecurity system.

PHA would be pleased to hold further discussions with the Standing Committee On Agriculture And Water Resources on the issues raised in this submission or any other matter relating to growing Australian agriculture to $100 billion by 2030 and its impact on plant industry biosecurity activities in Australia.

If you would like to hold further discussions with PHA please contact Ms Mandy Gyles, Communication Manager, on 02 6215 7700 or email mgyles@phau.com.au

I look forward to seeing the outcomes from this important piece of work.

Yours sincerely

G.S. Fraser

Executive Director and CEO