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Plant Biosecurity Cooperative Research Centre

Submission to the Intergovernmental Agreement on Biosecurity (IGAB) Review

February 2017

The Plant Biosecurity Cooperative Research Centre

The Plant Biosecurity Cooperative Research Centre (PBCRC) is successfully delivering new science and building capability to safeguard Australia, its plant industries and regional communities from the economic, environmental and social consequences of invasive plant pests and diseases. It is the shared responsibility of 27 agencies including the Australian Government, state governments, industry groups and research partners. The partnership is funded by the Commonwealth Cooperative Research Centre's Programme and the 27 participant agencies.

The Plant Biosecurity Centre is the national research agency for plant biosecurity; leading, coordinating and allocating over $160 million of resources in a six year period from 2012 to 2018. PBCRC is due to wind up next year in June 2018. It is incumbent upon PBCRC to lead the conversation around the development of an enduring and sustained plant health RD&E system for the long term, firstly because of the importance of biosecurity to Australia's agricultural industries and economy, the necessity of biosecurity being built on quality science, and lastly because PBCRC is contracted to do so through its Commonwealth Agreement.

This submission, while making some general comments, will accordingly focus on the importance and role of science and innovation in supporting the IGAB and Australia's biosecurity, and our proposal for an enduring biosecurity research and innovation system.

THE IGAB

The IGAB is a strong framework which can underpin Australia's biosecurity system for the long term provided it continues to evolve as the biosecurity system and the nature of our risks and opportunities evolve. It is well documented, including in the Draft Report, that our biosecurity risks are increasing largely through increased globalisation. Receiving less attention is the opportunity for increased market access for agricultural produce that can come from a robust and science-based biosecurity system, giving us a competitive advantage that is both certified and evidence based.

The Draft Report provides a strong and comprehensive basis for a final report to Australian Agriculture Ministers.

Knowing and owning our roles and responsibilities

Feedback request 1 **The Review Panel seeks feedback on the draft roles and responsibilities of national biosecurity system participants.**

PBCRC strongly supports the concept of shared responsibility. Implicit in this is a need for greater articulation of the Roles and Responsibilities of all stakeholders in biosecurity. The Table proposed in the Draft Report provides a good starting point for a more detailed conversation, which must include articulation of the financial aspects of managing biosecurity ie. who pays!

PBCRC also believes the concept of shared responsibility applies to the research and innovation effort that underpins biosecurity. The funding and input to scientific priorities and investments must come from all stakeholders in a collaborative model. The Commonwealth and state governments are the critical component, as noted in the National Commission of Audit (2014) and the Draft 2016 National Research Infrastructure Roadmap: "governments need to fund research and development associated with their own core functions such as defence technology and **biosecurity**" (p 11).

Recommendation 1 **The NBC and the proposed Industry and Community Advisory Committee, through an open, transparent and collaborative process, should lead the**

development of a draft National Statement of Intent for public consultation that outlines:

- **a vision, goal and objectives for the national biosecurity system**
- **principles for managing biosecurity**
- **the meaning and application of 'shared responsibility'**
- **the roles, responsibilities and commitments of participants, including accountability measures**
- **governance arrangements for the national biosecurity system.**

The process should involve government (including local government), industry and the community.

We support this recommendation, with the addition that the process must include the biosecurity research community.

Market access is key

Recommendation 4 **Jurisdictions' biosecurity surveillance activities should include pests and diseases that pose the greatest threat to our export markets.**

Identification of market access priorities for plant and animal industries must be driven by each industry sector, and supported by government, to inform government negotiators of the commodities that represent the best return for Australian industry. There are already well developed and highly functional models to guide this thinking, particularly in the export grain sector – Australia's most valuable commodity export sector. The review could include the key principles that have been adopted by the export grain industry (Grain Industry Market Access Forum) to identify, prioritise and collaborate with government to secure and maintain market access (www.gimaf.com.au/about/strategic-plan/).

Nationally coordinated and managed surveillance systems, particularly the recording of nil detection for identified pests, are fundamental to market access. The stewardship and governance arrangements to maintain these data sets need to be nationally agreed by the National Biosecurity Committee (NBC), noting the market sensitivity of this data. An effective general surveillance system has the added benefit of detecting new records of pests that have recently entered Australia, either by natural means or via trade/tourism. The research community must also be involved in these discussions to support existing and new market access opportunities. Science is the currency of biosecurity, providing the evidence base for trade and market access of agricultural produce.

PBCRC is undertaking the project Pathways and Risk Assessment Framework for High Impact Species (www.pbcrc.com.au/research/project/1109) which may contribute to the Panel's thinking. This project is analysing past pest invasions in both Australia and New Zealand to identify the pathways of high impact pests. This will allow more targeted surveillance and detection.

Stronger environmental biosecurity

The Draft Report sets out some key principles supported by PBCRC to improve Australia's capacity to address environmental biosecurity threats. Environmental biosecurity must be strongly supported with both funding, policy, process and governance.

We support the recommendation to create a new position of Chief Environmental Biosecurity Officer, which will strengthen the focus on Environmental Biosecurity. The creation of this position will also require a clear scope which defines the parameters of environmental biosecurity. The International Plant Protection Convention has established internationally agreed parameters for biosecurity activities, including consideration of the effect of pests on the environment, as a component of risk analysis. Consideration of the IPPC rules and standards should be added to the list of guiding principles for the functions of the Chief Environmental Biosecurity Officer, irrespective of which portfolio hosts this position.

The creation of the new position also highlights the importance and value of underpinning scientific research to identify and prioritise environmental biosecurity threats. In the absence of such research, it will be difficult for the Chief Environmental Biosecurity Officer to deliver the impact in this new role that is envisaged in the Draft Report.

Similarly, we endorse greater or explicit roles for Animal Health Australia and Plant Health Australia in environmental biosecurity as described. Alternatively, the Review Panel may consider the establishment of an Environment Health Australia, complementary to Animal and Plant Health Australia, or a single combined entity, acknowledging the similar roles of each and the efficiency gains that would arise from a single entity. From a research perspective, having one or more agencies with clearly articulated responsibilities for environmental biosecurity would fill a current gap that provides a key driver of research priorities and a critical 'impact pathway' for new environmental biosecurity science.

PBCRC is undertaking a number of projects in which may contribute to the Panel's thinking (www.pbcrc.com.au/research/projects-summary).

Building the national system

PBCRC supports a more comprehensive national system for high priority pests. Any such system must include the research community as key players – providing information to both support planning and prioritisation, and to provide robust scientific data to underpin the subsequent response and management plans, and their implementation.

Research and innovation

There is a broad range of Reviews, Strategies and Reports that articulate the need for and importance of government funding of nationally effective, efficient and coordinated biosecurity research and innovation (see Australasian Collaborative Plant Biosecurity Science Institute proposal, page 5 and online http://www.pbcrc.com.au/smartbiosecurityscience/proposal). Indeed, Schedule 8 of IGAB reflects the same message.

To this end, national coordination is paramount: it reduces competition, duplication and administration, and maximises efficient and effective use of resources, from basic research to delivering real impact for the end-users and beneficiaries of the research, namely industry and government.

PBCRC and its predecessors, the CRCs for Tropical Plant Pathology (1992–99), Tropical Plant Protection (1999–2006) and National Plant Biosecurity (2005–12), have been an integral component of Australia's biosecurity research system. The first two CRCs focused on tropical plant pests and disease and had just six and nine partners respectively. The latter two CRCs have encompassed the plant biosecurity continuum across multiple sectors, firstly building a strong domestic network with 23 partners, then an expanded national and international network with 27 partners in PBCRC. The growth in this CRC partnership with government agencies and industry, and expansion of research scope, reflects the evolution of the biosecurity system. Furthermore this expansion has resulted in significant leverage for all parties: for every $1 invested by the Commonwealth, PBCRC participants will invest $4; for an industry Participant like GrainCorp or HIA, every dollar invested is leveraged by more than 50.

PBCRC will end in 2018. The evolution of biosecurity research and innovation must continue, and must take a cross-sectoral view.

In the last two years PBCRC, through and with its partners, have undertaken a project investigating 'A Sustainable and nationally co-ordinated plant biosecurity RD&E system for Australia' (www.plantbiosecuritycrc.com.au/smartbiosecurityscience).

Consultation demonstrated overwhelming stakeholder support for an enduring and dedicated entity to provide national leadership with the following principles:

- The authority and leadership to deliver on an agreed strategic direction – it is widely recognised that authority to provide leadership and make research investments is needed, and that a coordination committee without authority is ineffectual in delivering significant co-ordination.
- Significant Commonwealth Government investment to guarantee collaboration – the Commonwealth is a key end-user of biosecurity research and innovation, and a key element of any shared responsibility model. Commonwealth funds provide the glue and leverage for other agencies, including States and industry, to invest.
- Cross-sectoral, balanced portfolio that covers the full biosecurity continuum – the major gap in the agricultural innovation system following the end of PBCRC will be cross sectoral and strategic research and innovation, including the dedicated entity to cover the whole biosecurity continuum in a balanced portfolio of work. Strategic research is critical to ensure technological breakthroughs are delivered over the long-term.

- Close partnerships with industry, government and research providers, which is vital in delivering biosecurity research – research programs should be designed and delivered with government and industry end-users engaged in the process of priority setting, program and project design, and delivery to maximise efficiency and impact.
- Strong international linkages – stronger international linkages in plant biosecurity research is critical from a strategic perspective (understanding pre-border risks, early warning, pathways assessment, and enhancing biosecurity capacity of near-neighbours and trading partners) and from a scientific perspective (developing and partnering with the best researchers in the world).
- Evolve without duplication in order to achieve outcomes – any entity must be strongly connected to other research investors and providers, with its scope clearly articulated to ensure resources are used most effectively, without duplication. Implicit in this is the ability to 'grow the business', both through attracting funds for 'research services' and through commercialisation of IP.
- Agreed and actioned immediately – there is overwhelming support to see a new entity to follow PBCRC (if not earlier) to ensure the research and innovation capability does not fall into decline at the end of PBCRCs term.

Feedback request 3 **The Review Panel seeks feedback on the following options for a new entity for cross-sectoral biosecurity R&I:**

- **Option 1: Establishing a new stand-alone entity for cross-sectoral biosecurity R&I.**
- **Option 2: Addressing cross-sectoral biosecurity R&I within an existing RDC (for example, the Rural Industries RDC).**
- **The Panel also seeks feedback on the funding options and would welcome alternative suggestions.**

PBCRC unequivocally supports the Draft Report in stating that "a new biosecurity R&I entity is needed to provide the co-ordination necessary to drive cross-sectoral research, technological developments and behavioural change" (pviii).

PBCRC strongly believes that any such dedicated entity must be funded appropriately, commensurate with the scale and importance of biosecurity. In this regard, the Draft Report states:

> "Australia's biosecurity system is a trade and economic asset. It underpins $54 billion in agricultural production, $44 billion of agricultural exports and our $38 billion inbound tourism industry. Equally, national biosecurity efforts protect human health and social amenity, and help maintain our unique, biodiverse, natural environments" (pvii).

Various estimates suggest spending on biosecurity activities by jurisdictions is $650m pa (p78, Draft Report): much less than just 1% of the value of the 'trade and economic asset'. Research and innovation expenditure by the RDCs (the dominant funder of all biosecurity research) "is estimated at around $49 million" (p54, Draft Report); and when combined with PBCRC expenditure (about $25m pa) equates to much less than 0.01% of the value of the trade and economic asset.

This funding will fall by a third when PBCRC is wound up in June 2018, with the loss of the Commonwealth funds triggering a loss of other partners funds (as has happened with other CRCs).

Research and innovation funding of less than 0.01% of the economic value that it underpins is a gross underspend and inadequate for the current and future biosecurity system of Australia. PBCRC strongly recommends significantly increased investment in biosecurity R&I, commensurate with the important role it plays in maintaining and growing the ~$100 billion 'trade and economic asset'.

Furthermore, PBCRC believes that Australia's agricultural innovation system, while strong, has gaps beyond cross-sectoral research; namely international linkages, strategic research, capacity building, post-farm gate and environmental management – all applicable to biosecurity, and all currently being addressed by PBCRC.

Addressing cross-sectoral biosecurity R&I within an existing RDC assumes "a smaller scale" (p57, Draft Report) of funding - this will be inadequate for our current biosecurity system, let alone future needs, and is not supported by PBCRC.

PBCRC strongly agrees that addressing cross-sectoral biosecurity R&I through a committee structure has to date failed: "the strategies implementation committees … have no authority to prioritise R&I or direct funding or resources" (p49). This is consistent with the principles identified during our wide consultation (see above).

Addressing cross-sectoral biosecurity R&I through any other committee structure (e.g. a committee of RDCs) is similarly unlikely to succeed.

The committee model does not address the principles agreed during consultation: no shared responsibility/partnership of R&I funding, no authorisation, a lack of strategic research and a lack of international linkages. Equally we believe such a model would not deliver a balanced portfolio of investments (applied focus), nor deliver the long term capacity building necessary for our future biosecurity system.

Consistent with the Draft Report, PBCRC has proposed to the Commonwealth Government that a new entity with a 'sustainable funding platform' (p56, Draft Report), the Australasian Collaborative Plant Biosecurity Science Institute, should commence before or at the end of PBCRC's term. The proposed Institute would:

- Build upon an existing and very successful national program;
- Be funded using a shared responsibility model, including Commonwealth and state governments, industry and others (e.g., research partners, non-RDC levy paying industry partners, and others), providing significant leverage to all partners;
- Address weaknesses in Australia's plant biosecurity R&I system, particularly international linkages, strategic research, capacity building, post-farm gate, environmental and social R&I;
  Provide authorised national leadership and co-ordination with the resources to invest;
- Be a collaborative, virtual entity, with minimal overheads;
- Have a clear mandate to grow its business, through commercial activity and research services;
- Place Australian biosecurity R&I as a regional and global leader;
- Successfully address a multitude of relevant national Reviews, Reports and Strategies;
- Ultimately provide greater opportunity for Australian agriculture and regional communities, and help protect the unique Australian environment.

Furthermore, the model could be expanded to include other biosecurity aspects. In particular the Panel should consider expanding the proposal to include either animal and/or marine biosecurity (with a commensurate increase in funding).

Capacity

The draft review is strong on the subject areas of governance and institutional reform, and information management systems but needs to include commentary and recommendations around the importance of personnel capacity and capability. The most significant risk to Australia's biosecurity system is the lack of appropriately qualified capability, especially in frontline biosecurity staff and the tools they use. There are two areas of significant concern:

1. The technical skills, motivation and qualifications (and tools) of frontline biosecurity staff, both at the border and in incursion response and ongoing management, particularly to support the risk-based approach now enshrined in legislation. This applies to both Commonwealth and state employees directly engaged in biosecurity activities.
2. The technical capacity that is in decline due to funding cuts (as described in the Draft Report (p3)) and impending retirements (age profile), combined with the lack of capacity building activity for both research and operational biosecurity.

The establishment of a stand-alone Research and Innovation entity, as considered by the Draft Report and proposed by PBCRC (the Australasian Collaborative Plant Biosecurity Science Institute) would address this risk by building capacity for both frontline biosecurity personnel and the research capacity of Australia and the region.

Furthermore, the proposal for a new Institute explicitly recommends the development of professional training resources for developing countries in the region, which when implemented would reduce biosecurity risk to Australia. For example, PBCRC has established digital remote microscope networks, with supporting capacity building, in multiple countries in South East Asia. In addition, we have coordinated a very successful capacity building program in sub-Saharan Africa. Both these activities reduce Australia's biosecurity risk by improving our early warning and risk assessment, and reducing the likelihood of pest and disease entry due to improved phytosanitary systems in neighbouring and importing countries.

PBCRC also has partnerships in China, New Zealand and the US, and with CABI, a UK-based international agency that operates in many developing countries.

Summary

Science is the currency of biosecurity: it provides the evidence base for all trade and market access, and protects agricultural productivity, regional communities and the environment. PBCRC strongly believes an increase in the current level of research and innovation funding across all key agencies is required. The proposed Australasian Collaborative Plant Biosecurity Science Institute, potentially expanded to include animals and marine biosecurity, is the most efficient and effective R&I model within Australia's agricultural innovation system, providing a dedicated and specialist entity that would deliver impact across multiple sectors in an increasingly bio-insecure world.

Addendum

The PBCRC includes this addendum to its submission in response to correspondence received from the Commonwealth Government on 27 February 2017.

The PBCRC supports an expanded version of the proposed Australasian Collaborative Plant Biosecurity Science Institute to include animal and marine biosecurity R&I, with a complementary increase in funding. This would undoubtedly deliver more efficient use of limited resources by including complementary research, and savings due to economies of scale in administration. We recognise that the benefits of national co-ordination and efficiency of the R&I effort applies similarly to animal and marine biosecurity. However, the model for their inclusion would need to mirror that for plant biosecurity i.e. shared responsibility and collaboration between government agencies, universities and animal and marine industries.

Please note 'Strategic Options' on page 25 of the full proposal for the Australasian Collaborative Plant Biosecurity Science Institute.

We note, however, that consultation with many biosecurity stakeholders over the last two years indicated a preference for the proposed Institute to focus on plants, either due to perceived funding constraints, significant differences in the type of research required or the scale of the existing research effort in animal biosecurity focussed on CSIRO's Australian Animal Health Laboratory (AAHL).

Please note discussion p3, p9, S3.3, p19, S6.4, S9 in Keogh M and Goucher 2016 'A sustainable and nationally coordinated plant biosecurity R,D&E system for Australia. A Research Report' Australian Farm Institute (www.pbcrc.com.au/sites/default/files/managedfiles/AFI%20-%20Sustainable%20Plant%20Biosecurity%20RDE%20FINAL.pdf).

In response, PBCRC will explore the key R&I priorities for animal and marine biosecurity in coming months in consultation with experts from those sectors.

The Australasian Collaborative Plant Biosecurity Science Institute is a dedicated entity to be built on shared responsibility and collaboration, building off the significant success of the PBCRC model. All key biosecurity end-users, government and industry beneficiaries, research investors, and research providers are proposed to be partners of the Institute. The proposal includes that the Commonwealth government, State governments, the RDCs, industry organisations (both private companies and industry organisations), Plant Health Australia (and Animal Health Australia if animal biosecurity is included), CSIRO, universities, and others as part of the structure, either providing cash or in-kind resources, and being part of the advisory panel system. The shared responsibility model in PBCRC has ensured that research investors and end-users have significant input to strategic directions and R&I investment decisions. For example, the Department of Agriculture and Water Resources, Plant Health Australia and Grains RDC are all partners in the PBCRC and essential members of the PBCRC Advisory Panels – all providing guidance on strategic priorities, research proposals, and delivery of research outputs to maximise impact. This structure is proposed again for the Institute.