

A Submission by Plant Health Australia on

DRAFT 2016 National Research Infrastructure Roadmap

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As the coordinator of the plant biosecurity partnership between government and industry in Australia, Plant Health Australia (PHA) welcomes the opportunity to provide input to the Draft 2016 National Research Infrastructure Roadmap.

PHA [members](#) include all Australian governments, the majority of plant industry bodies and the key plant biosecurity RDCs. PHA's structure enables staff to bring all the relevant parties together to broker solutions for technically complex and politically sensitive issues. Activities include coordination of plant biosecurity research.

Comments on the draft roadmap

PHA commends the panel on effectively presenting the research infrastructure issues that need to be addressed in the coming decade, and the company agrees with the majority of the key recommendations of the roadmap.

It is pleasing that biosecurity is one of the nine recommended focus areas, reflecting the huge importance of maintaining Australia's biosecurity status for our agricultural industries, our farmers, rural communities, the economy and the natural environment.

PHA is also glad to see the report recommend that the [National Plant Biosecurity Strategy](#) be used as a guide for biosecurity research infrastructure future directions.

Below are our comments on the reforms that the panel recommends, on PHA's current role in these areas, and where the company might be able to assist with improvements.

Skilled workforce

The panel is right to emphasise the need to focus on ensuring that a skilled workforce is built and maintained so that Australia has the capacity to check for, diagnose and control plant pests. PHA also sees declining expertise in plant biosecurity as a risk that needs mitigation. Ongoing commitment to training and career progression is needed, as the roadmap recommends.

PHA has also worked to establish the National Plant Biosecurity Diagnostic Network under the National Plant Biosecurity Diagnostic Strategy, which coordinates activities and professional development opportunities nationally. Through the network, specialists can liaise with one another and PHA undertakes capacity audits and facilitates training and placements to broaden skills and expertise.

However, more needs to be done to ensure that Australia maintains sufficient plant biosecurity scientific expertise. PHA is aware of several senior diagnosticians close to the end of their careers, who will be lost to the system over the next decade. While there are younger diagnosticians with experience with the latest molecular diagnostic tools, they lack experience with crops in the field or with the industry. For example, diagnosticians providing advice on how to manage the Panama Tropical Race 4 incursion in north Queensland had to be taken to a plantation to see how commercial production operates.

There is an opportunity to bring these issues to the attention of agricultural Ministers through the Agricultural Senior Officers Research and Innovation Committee (AGSOC R&I). PHA, as the leader of the National Plant Biosecurity RD&E Strategy and with links to the key biosecurity committees under the National Biosecurity Committee (NBC), is well placed to assist. Support for that work through the National Research Infrastructure Roadmap would be advantageous.

The roadmap rightly notes that international collaboration will assist plant biosecurity capacity locally and globally, and PHA's new strategic plan for 2016-2021 incorporates a role for the company to connect with overseas biosecurity agencies. This effort began in 2015-16, with initiatives with China, New Zealand and the U.S. The U.S. visit by PHA's Stephen Dibley to address the US National Plant Diagnostic Network has established connections that will strengthen cooperation between the two countries.

Coordinating plant biosecurity research and innovation

PHA was established to coordinate the major players in the plant biosecurity system and we do that in many areas in order to manage the threat of new plant pests.

Research and innovation coordination is one of those areas. The panel is correct in noting that plant 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. The panel should note the annual collation of research projects that PHA publishes in its [National Plant Biosecurity Status Report](#) each year.

Recognising the 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. PHA is well placed to do this since we have several RDCs, the PBCRC and CSIRO as associate members with whom we are very active in conjunction with other members.

The company provides executive support to, and chairs, the [National Plant Biosecurity RD&E Strategy Implementation Committee](#), the group tasked with providing strategic oversight and direction to the implementation of the National Plant Biosecurity RD&E Strategy. The committee is undertaking inventories of current research in three key areas: fruit flies, diagnostics and northern Australia.

On behalf of the committee, in 2016 PHA hosted a major workshop, the [Plant Biosecurity RD&E Priorities Forum](#) and another focusing on whiteflies and whitefly vectored viruses. Other events are planned including workshops on diagnostics, policy considerations and extension regarding pasture pests.

Since PHA leads the plant biosecurity RD&E strategy and participates in National Biosecurity Committee meetings and meetings of its subordinate committees (which together constitute the basis of government plant biosecurity policy and management across Australia) the company is uniquely positioned to promote, facilitate and coordinate plant biosecurity RD&E both in terms of infrastructure and human resourcing.

An example of how PHA has worked with this structure to improve coordination is the agreement by PHC to include a session on plant biosecurity policy and regulatory RD&E needs at each of its face to face meetings. Outcomes will be relayed to the NPBRD&ES and ultimately to the AGSOC R&I committee or the appropriate RDC for funding. This is currently the only structured priority setting mechanism for plant biosecurity RD&E in Australia.

Review of national biosecurity capability and of current investment

PHA supports the proposal for reviews of investment in biosecurity research, to examine whether investment is directed appropriately, based on contemporary needs. The balance of funding between plant and animal biosecurity would be one area to investigate.

The company also supports the need for a stocktake of facilities and skilled staff to ensure that the system is well served and that capacity is in the right location.

Making use of digital technology including digitised collections

The panel is right to acknowledge that advances in digital technology can be embraced with good results in the biosecurity arena. PHA has been making use of innovative technology to provide significant improvements in various aspects of plant biosecurity.

AUSPestCheck is a notable example, where a major advance has been made to make effective use of existing on-farm surveillance activities to build a regional and national picture of pest status.

The new platform was developed with funding provided by an Australian Government National Landcare Program Innovation Grants initiative. AUSPestCheck is functioning but needs to be progressively expanded, including more stakeholders and more pests. It provides opportunities for research?

Physical plant pest reference collections remain an essential centrepiece of the plant biosecurity diagnostic system, as highlighted in the National Reference Collections Framework. Enhancement of these collections through the development of digital tools is championed by PHA. For example, we are the administrator of the Australian Plant Pest Database, which allows searching and analysis of all major reference collection databases in a single consolidated view.

PHA is also a founding partner in [PaDIL](#), which provides access to high quality pest images to support identification. PaDIL facilitates rapid diagnostics of significant pests by providing high quality images that can be coupled with key taxonomic text to allow a skilled diagnostician to make a determination in the absence of the reference collection specimen. In emergency management this rapid diagnosis is an essential factor that contributes to a higher probability of a successful eradication program. PHA has sought approval from the Australian Government to take over hosting of PaDIL.

Expansion into northern Australia

Finally, PHA confirms the panel's concerns about the biosecurity challenges posed by any expansion into northern Australia. PHA is represented on the government Northern Australia Biosecurity Framework Reference Group to keep informed about developments and provide advice as required.

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