Chapter 3

Environmental biosecurity

3.1 This chapter examines whether there is currently sufficient focus on environmental biosecurity as distinct from industry-focused biosecurity, including agricultural, horticultural and aquacultural biosecurity. This chapter also examines proposals to improve the management of environmental biosecurity. These issues are addressed through a discussion of the following matters:

- the distinctive features of environmental biosecurity;
- the economic valuation of environmental health;
- the lack of emphasis on environmental biosecurity;
- the proposal to establish Environment Health Australia; and
- alternative proposals to strengthen environmental biosecurity.

Distinctive features of environmental biosecurity

3.2 Evidence received by the committee emphasised some essential differences between environmental and industry biosecurity. Submitters and witnesses stated that environmental biosecurity presents greater challenges than industry biosecurity with regard to both detection and intervention.

3.3 With regard to detection, the number of species and the complexity of the ecosystems involved in environmental biosecurity far exceed those of concern in agricultural biosecurity. Furthermore, surveillance of the environment in general is more difficult as it covers vastly greater territory and areas which are often sparsely inhabited or difficult to access. Finally, industry biosecurity, by its nature, involves stakeholders with a strong interest in the health of particular species and ecosystems who provide a dedicated surveillance system, whereas environmental biosecurity does not have this advantage.

3.4 With regard to intervention once an invasive species is detected, whether that be attempted eradication, control and containment or long-term management, environmental biosecurity also faces particular challenges. Once again, the size and complexity of the natural environment make interventions more difficult. Furthermore, as the goal of environmental biosecurity is to protect existing species and ecosystems, the interventions available are generally more restricted than those available in an agricultural setting.

3.5 The Invasive Species Council explained the distinctive challenges facing environmental biosecurity as follows:

> Although there are many overlaps with industry biosecurity, environmental biosecurity is more challenging, with a greater scale and complexity of threats, fewer management options and more limited resources. Conservation requires protecting hundreds of thousands of species and complex ecosystems with irreplaceable value, while organisms of value to industry are relatively few. Much less is known about biodiversity than

> agricultural assets, and there are high levels of uncertainty about the environmental impacts of invasive species. Fewer management options are available and environmental biosecurity relies on government and community investment for the public good, while commercial incentives drive industry biosecurity.[1]

3.6 The Australian Network for Plant Conservation (ANPC) made a similar statement:

> Whereas agricultural biosecurity is mainly focused on excluding or managing exotic biota (weeds, pests, diseases) that affect a relatively narrow range of crop or livestock species and varieties or production landscapes, with a definable economic value, environmental biosecurity as part of Australia's overall conservation effort must focus on the whole range of native biota and their associated ecological communities and ecological processes. Estimates vary, but this native biota may encompass as many as 650,000 non-microbial species of plants, fungi and animals (in contrast to the few dozen species in most agricultural systems, or the several hundred that make up the bulk of the horticulture industry). The native biota and ecological relationships are essential, in their totality, to the overall ecological health of the continent, including its production systems.[2]

3.7 The ANPC also emphasised the difficulty inherent in managing invasive species in the natural environment:

> The 'assets' at stake in conservation are not replaceable – each species and ecosystem is important, and are legislatively recognised as such. A very large number of these 'assets' are involved, their spatial distribution does not lend itself to easy or standardised management, interventionist management is far more problematic and expensive, and we are in any case still ignorant as to the biology, and ecology of very many native species (and of the biological detail of the invasion process by exotic organisms). Selective breeding for a more robust response to invasive threats is seldom an option, is very expensive, and 'return to the wild' of improved genotypes is highly problematic.[3]

3.8 Others agreed with this assessment. For example, Dr Andrew Burbidge stated that the 'environmental system has very many more species of concern than we have in agriculture'.[4] He also suggested that there are many species which may potentially cause an environmental problem, but 'trying to predict which species might be a risk to Australia's biodiversity is extremely difficult'. He explained that it is difficult to

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1 Invasive Species Council, *Supplementary Submission 74.2*, p. 1; see also *Submission 74*, p. 6.

2 Australian Network for Plant Conservation, *Submission 49*, p. 3.

3 Australian Network for Plant Conservation, *Submission 49*, p. 4.

4 Dr Andrew Burbidge, *Committee Hansard*, 8 October 2014, p. 15; also see Australian Network for Plant Conservation, *Submission 49*, p. 3.

'predict whether a species is going to establish and, if it establishes, whether it is going to become widespread and have an impact'.[5]

3.9 Mr Richard Stoklosa also emphasised the complexity of environmental biosecurity compared to industry biosecurity, and that this situation is not helped by the lack of knowledge about specific organisms that may pose a threat:

> Environmental biosecurity, I would say, is a step change in terms of complexity above agricultural biosecurity. I think agricultural pests are pretty well described for the types of commodities or the types of plants and animals that are being cultivated. I would have to say that agricultural businesses see biosecurity as almost their lifeblood, and they do it really well. There are a lot of lessons to be learned from that group. But I think that, when you get into environmental biosecurity, you are talking about probably a plethora of organisms that are not already on a pest or disease species list, which you start needing to consider. Again, the way to do that is to do a proper risk based threat analysis and start to look at how to group, prevent, detect and eradicate organisms that fall into different categories.[6]

3.10 A further point raised in evidence about the relationship between industry and environmental biosecurity was that, historically, many invasive species have been deliberately introduced to Australia for agricultural or horticultural purposes without due weight being given to their potential environmental impact. This history points to the differing priorities of agricultural and horticultural biosecurity, which have primarily economic aims, and environmental biosecurity, which has primarily a conservation focus.

3.11 The committee received evidence that many of Australia's most environmentally damaging weeds have been deliberately introduced for agricultural and horticultural reasons. For example, the Wet Tropics Management Authority observed that:

> …many of our worst weeds have been deliberately introduced for horticultural and agricultural purposes and the interests of these industries appear to be given greater weight than the impacts on the environment. Some are still actively being promoted for pasture feed or biofuel crops, for instance, without effective consideration of their current or potential weed impacts.[7]

3.12 Ms Anna-Marie Penna, Vice President of the Australasian Council of Weed Societies, clarified that the term 'deliberately introduced' covers a variety of circumstances, including cases where the best available scientific advice recommended such introductions:

> 'Deliberate' can be 'under the best possible advice that we have at the time you should be using this species to control erosion, even though it is an

5 Dr Andrew Burbidge, *Committee Hansard*, 8 October 2014, p. 14.

6 Mr Richard Stoklosa, *Committee Hansard*, 10 November 2014, p. 17.

7 Wet Tropics Management Authority, *Submission 23*, p. 5.

> exotic not a native to that area'—those sorts of things. That was the case with buffel grass being introduced on Barrow Island back in the sixties. The CSIRO advised what was then called the WA Oil Company to sow buffel around the airport for erosion control, and now it is a significant problem on Barrow, because it takes a long time to control buffel.
>
> There is 'deliberate' in terms of people not understanding that garden plants can be problematic once they escape outside their gardens; people dumping over the fence into the neighbouring nature reserve and those sorts of things. And there is 'deliberate' in terms of people who do not care. There is also accidental release, through lack of knowledge, or just stuff coming off abandoned properties and things like that.[8]

3.13 Associate Professor Driscoll of the Centre of Excellence for Environmental Decisions at the ANU also submitted that 'Australia has one of the worst records globally of major environmental impacts caused by plants introduced for pasture', and cited the introduction of Gamba grass for pasture as an example. He further noted that his research team had identified the 'development of new varieties of existing introduced pasture species as having a high risk of worsening Australia's environmental weed problem' and that 'similar risks are inherent in the biofuel, carbon sequestration, forestry and horticulture industries.'[9]

3.14 The Australian Network for Plant Conservation further emphasised the role agriculture and land management have played as motivating factors in the introduction of environmental weeds:

> It is also the case that a significant proportion of Australia's serious environmental weeds were deliberately introduced as agricultural or land management plants – Tall Wheat Grass, African Lovegrass, and Buffel Grass being examples – without assessment of their environmental impacts, which have become severe.[10]

Economic value and environmental biosecurity

3.15 Several submitters pointed to a further distinction between environmental and agricultural biosecurity: the difficulty in developing an agreed method by which to calculate the value of biosecurity impacts on the environment. The Australian Network for Plant Conservation argued that the difficulty in valuing 'ecological services' arises not only from the complexity of environmental biosecurity but also from the fact that, in its view, the health of the natural environment cannot be adequately expressed in monetary terms:

> Various attempts to place dollar values on these 'ecological services' have rarely succeeded in adequately capturing their scope and importance over intergenerational time-frames, and in any case miss the point. Just as

8 Ms Anna-Marie Penna, Vice President, Australasian Council of Weed Societies, *Committee Hansard*, 8 October 2014, p. 20.

9 Associate Professor Don Driscoll, ARC Centre of Excellence for Environmental Decisions, Australian National University, *Submission 46*, p. 1.

10 Australian Network for Plant Conservation, *Submission 49*, p. 3.

> indices of human health as a component of society's well-being cannot be meaningfully reduced only to dollar values, but are nevertheless recognised as a fundamental social priority, so too the health of the natural environment.[11]

3.16 Dr Lori Lach emphasised this difficulty in reducing agricultural and environmental damage to a common unit for the purposes of comparison:

> I would say…that agricultural losses and cost are much easier to quantify. When you are trying to get things down for comparison, you want to get them down to the same unit. If that unit is dollars and you can only get the agricultural side down to dollars it is pretty hard to compare. How many more extinctions would we need to have from yellow crazy ants before somebody says, 'Actually, this is a big cost.' How do you put a dollar amount on the Cairns bird wing butterfly going extinct?[12]

3.17 The Australasian Network for Plant Conservation also commented on this aspect of environmental biosecurity:

> The value of native biota cannot be quantified in economic terms, except in limited aspects. This last factor alone means they are often undervalued when biosecurity priorities are decided. It does not however mean that they are without recognised national value – the whole trend, over several decades, of public opinion and of government environmental and NRM policy, confirms the recognised importance of the natural environment. The question is how to give this recognised social value more effect in the biosecurity area, where the under-emphasis on environmental considerations remains systemic.[13]

3.18 This problem is not of merely theoretical interest as decisions made under the NEBRA regarding whether or not to undertake a national biosecurity incident response require the preparation of a benefit-cost analysis.[14] As noted by the Queensland Government, Schedule 4 of the NEBRA includes a national framework for biosecurity benefit-cost analysis. The framework acknowledges the difficulty of incorporating environmental considerations into such analyses:

> The significance of 'non-market' (environmental and public health) assets impacted, which will require application of environmental valuation techniques, will place greater challenges on the analysis.[15]

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11 Australian Network for Plant Conservation, *Submission 49*, p. 3; see similar points made by Dr Carol Booth and Mr Andrew Cox, Invasive Species Council, *Committee Hansard*, 11 November 2014, pp 32-33.

12 Dr Lori Lach, *Committee Hansard*, 11 November 2014, p. 62. See also discussion of benefit-cost analysis at Dr Lori Lach, *Supplementary Submission 76.1*, pp 4–5.

13 Australian Network for Plant Conservation, *Submission 49*, p. 4.

14 NEBRA, part 5, 6.1, p. 16.

15 NEBRA, schedule 4, attachment 4A, s. 3(c), p. 44; The Hon Dr John McVeigh, *Submission 29*, p. 4.

3.19 However, beyond this general acknowledgement in the NEBRA benefit-cost framework there is no methodology agreed between jurisdictions for assessing environmental impacts of invasive species. The Queensland Government submitted that for invasive species that affect the natural environment this 'reduces effective prioritisation of resources to these species compared to those that affect the economy and to a lesser extent social amenity, where methodology to assess costs are well established.'[16]

3.20 The joint submission of the departments of agriculture and the environment also acknowledged the lack of an agreed methodology for valuing the environment in economic terms:

> While it is possible to determine the economic cost in terms of adverse effects on production; at present there is no agreed model to measure the ecological cost to the environment of exotic pests and diseases in economic terms.[17]

3.21 The Department of Agriculture provided a description of the various approaches ABARES currently uses to conduct benefit-cost analyses involving environmental impacts. In most cases ABARES 'considers environmental benefits qualitatively using a constructed scale (negligible, low, moderate)'. Where suitable data is available, 'ABARES has estimated environmental impacts quantitatively (in monetary terms)'. The department's response included examples of the benefit-cost analysis approach used with regard to Siam weed, black striped mussel and red imported fire ant incursions:

> Where relevant data are available, ABARES quantifies the environmental impacts. For example, in the Siam Weed BCA [benefit-cost analysis], ABARES valued the environmental impacts using the loss of grazing value in environmental areas because of competition from Siam Weed, and the expenditure by environmental managers to mitigate such impacts.
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> In some studies, if it appears that environmental impacts are large and likely to exceed the costs of management options, ABARES employs cost effectiveness analyses to identify the least-cost management option. The recently published Black Striped Mussel BCA is an example.
>
> If it is not possible to quantify any of the environmental impacts because of insufficient data, ABARES identifies the particular environmental assets under threat and provides a qualitative assessment of the impacts. The BCA conducted for the red imported fire ants (RIFA) incursion in South East Queensland is an example of this approach. [18]

3.22 The Department of Agriculture cited the benefit-cost analysis conducted for the red imported fire ant incursion in south-east Queensland as an example where

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16 The Hon Dr John McVeigh, *Submission 29*, p. 5.

17 Department of Agriculture and Department of the Environment, *Submission 59*, p. 7.

18 Department of Agriculture, *Answer to question taken on notice No.8*, 31 October 2014 (received 18 November 2014)

expenditure on an eradication effort was supported by a quantitative estimation of the market benefits of such action and also by a qualitative assessment of the impact on identified environmental assets.[19]

3.23 Finally, with regard to benefit-cost analysis and environmental impacts, Mr Rodney Turner, General Manager Risk Management at PHA, explained that even very expensive eradication programs can be amply justified when weighed against potential damage to the environment at large:

> In an agricultural environment, if the cost of eradicating the pest—these are arbitrary numbers—is $100 million and the benefit is only $2 million or $3 million, then the industries and the government parties would be very unlikely to commit that sort of funding. Using that same principle, when you take into account environmental considerations and you look at the whole of the Australian environment, the benefits would generally be very large. So, even if it were $100 [m]illion to eradicate, you would probably have a multibillion-dollar benefit and therefore you would go ahead…[20]

The lack of emphasis on environmental biosecurity

3.24 Throughout the inquiry there was considerable discussion of the emphasis that is placed on agricultural biosecurity in comparison with that placed on environmental biosecurity. Most submitters and witnesses stated that agricultural biosecurity is far better resourced than environmental biosecurity and that this situation has arisen because of the readily identifiable economic impacts of agricultural biosecurity threats.

3.25 Other submitters and witnesses put forward the view that it is not possible to fundamentally separate biosecurity matters into environmental and agricultural threats and that, for this reason, it is not correct to see environmental biosecurity as receiving less attention than agricultural biosecurity. The following discussion deals with these positions in turn.

3.26 The 2008 Beale review acknowledged that:

> In the past, the environment—terrestrial and aquatic—has received less priority than agriculture…a more significant effort is needed in these two areas in the future…[21]

3.27 The Beale review also noted that a number of submissions had linked the low priority given to environmental biosecurity to the fact that there are no stakeholders with a direct economic interest in protecting the environment from biosecurity threats:

> …Australia has a relatively poor knowledge of the biosecurity threats to its natural environment. This is largely a function of the absence of

19 Department of Agriculture, *Answer to question taken on notice No.8,* 31 October 2014 (received 18 November 2014).

20 Mr Rodney Turner, General Manager Risk Management, Plant Health Australia, *Committee Hansard,* 31 October 2014, p. 48.

21 Beale, Roger et al, *One Biosecurity: a working partnership,* September 2008, p. xxiii.

> commercial incentives to research and monitor environmental pests and diseases. As a result, the principal responsibility for biosecurity research as it relates to the natural environment lies with governments and the community. These activities have not received a high priority for funding. Unlike incursions that impact on primary production, where active engagement by business is motivated by self-protection, the effort required to respond to an incursion affecting the environment must be provided primarily by governments.[22]

3.28 A similar argument was put to the committee during its inquiry. The Invasive Species Council submitted that 'environmental biosecurity lags behind that for industry' and that Australia needs a stronger focus on environmental biosecurity. The Invasive Species Council was concerned that 'approaches to environmental biosecurity tend to be tacked onto existing biosecurity structures that prioritise industry interests'. The Invasive Species Council acknowledged that 'many invasive species affect both agricultural and environmental assets and warrant a joint approach', but nevertheless considered that 'protecting nature differs in many ways from protecting industry assets'.[23]

3.29 Dr Burbidge stated that 'better coordination is definitely needed between agriculture and environmental biosecurity' and that:

> There is a different emphasis in the two. Agriculture tends to concentrate on the effects on a limited number of species of agricultural importance in Australia and the things that may impact them, whereas environmental biosecurity has a much wider requirement. Ideally, both would be exactly the same and the objective would be to prevent the introduction of any non-indigenous species into Australia. But in reality, with limited resources, that is not the case, I think, at the moment.[24]

3.30 He noted that cost recovery is also an issue:

> …the concentration on agriculture where there is cost recovery required by the Department of Agriculture, in most cases for their biosecurity work, does not benefit environmental biosecurity, where there is obviously no body that they are going to cost recover from except the taxpayer.[25]

3.31 The Plant Biosecurity CRC submitted that:

> There is currently a lack of capacity and clear articulation of responsibilities in the environmental area. This has led to a reliance on agriculturally focussed organisations to lead responses when both environmental and agricultural expertise must be employed in a timely and effective manner.[26]

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22 Beale, Roger et al, *One Biosecurity: a working partnership*, September 2008, p. 144.

23 Invasive Species Council, *Submission 74*, p. 67.

24 Dr Andrew Burbidge, *Committee Hansard*, 8 October 2014, p. 11.

25 Dr Andrew Burbidge, *Committee Hansard*, 8 October 2014, p. 11.

26 Plant Biosecurity Cooperative research Centre, *Submission 32*, p. 3.

3.32 The Plant Biosecurity CRC also stated that, in the case of environmental biosecurity, 'it is difficult to identify individual stakeholders who have a very strong vested interest and the money, resources or time to invest in those problems.' This has led to a situation in which, 'despite all the agreements and so on, most of the operational capability is in the agricultural sector and most of the surveillance that is done is associated in some way with the agricultural sector.'[27]

3.33 The CSIRO gave evidence that its capacity to conduct biosecurity research is largely restricted to areas in which stakeholders possessed the capacity to co-invest:

> …as a collaborative and cooperative research body which tends to do the majority of its research through co-investment with clients of all backgrounds, our capacity to do research is very limited by what the market is interested in supporting. Certain aspects of environmental biosecurity have effectively been in decline over recent years as a result of that.[28]

3.34 The CSIRO also submitted that the capacity of government departments to effectively address environmental biosecurity is not adequate:

> Government departments and agencies responsible for the environment are struggling with reduced capacity to take full responsibility in decision-making and responses to new incursions that affect the environment. This area has traditionally been under the responsibility of Departments of Agriculture or Primary Industries. These agencies are however primarily focussed on direct agricultural, aquaculture and forestry threats. There is clearer overlap with responsibility for the environment in native forestry and fisheries management, but agricultural industry and Research Development Corporation investment in environmental biosecurity remains extremely low, as it is seen to be beyond their remit except for the Rural Industries Research and Development Corporation. There is no longer an RDC focused exclusively on natural resource management as was the role of Land & Water Australia in the past.
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> There are currently few resourced institutional arrangements for environmental biosecurity to underpin a timely, coordinated and collaborative approach to prevent and reduce the adverse impacts of invasive species in Australia.[29]

3.35 The committee also received evidence and submissions expressing views contrary to those described above. Both the Commonwealth departments of agriculture and the environment, as well as the Western Australian Department of Fisheries, put forward the view that biosecurity cannot be usefully divided into industry and environmental elements. They stated that in the vast majority of cases an invasive pest or disease will have both environmental and agricultural impacts and, as such, biosecurity threats ought to be addressed by a unified system.

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27 Dr William Roberts, Principal Scientist, Plant Biosecurity Cooperative Research Centre, *Committee Hansard*, 31 October 2014, p. 11.

28 Dr Andy Sheppard, Research Director, CSIRO, *Committee Hansard*, 11 November 2014, p. 17.

29 CSIRO, *Submission 48*, p. 13.

3.36 Ms Victoria Aitken, Biosecurity Section Leader, Western Australian Department of Fisheries, told the committee that, from their perspective, the environmental aspects of biosecurity cannot easily be separated from the agricultural and other aspects:

> Our biosecurity is very much focused on that whole picture, rather than separating out the two. There are very few pests we have identified that would impact in only an economic or agricultural way and not in other ways. There are several pests that impact environmentally but that might not directly impact on an economic factor, but it is very easy to see the connections between them.[30]

3.37 Dr Klumpp, General Manager, Biosecurity Tasmania, stated that it was a strength of its system that it dealt with all biosecurity matters within one agency as this allowed a greater proportion of staff to be dedicated to front-line work:

> The division has branches…which are devoted to the science, risk assessment, project program development et cetera. But we actually have to have people on the ground to do things. So we have various program branches: we have an animal biosecurity branch, which essentially deals with the primary industries—the livestock industries. We have a plant biosecurity branch, which essentially deals with the plant industries—the plant agricultural industries. We have an invasive species branch which essentially deals with environmental biosecurity. And we have an operations branch that actually gets out on the ground and do things to implement these programs. One of the advantages of doing it the way we are doing it and in an integrated way is that that operations branch is the majority of our division—around 100 people. One of the advantages of doing it this way is that, on any given day, that ground force can be directed to a particular element. If we were fragmented they would be specifically targeting their individual area, and we would have to find ways to integrate that.[31]

3.38 In a similar vein, Ms Rona Mellor, Deputy Secretary of the Department of Agriculture, told the committee that their biosecurity work 'does not just cover agriculture' and that 'biosecurity risk is biosecurity risk':

> We analyse risk from the perspective of risks to Australia. That includes risks to human health, plant health and animal health and how they play out in production and in our way of life. In doing that, the environment is a key consideration…[32]

3.39 The departments of environment and agriculture submitted that it is not desirable to manage specific sectors of biosecurity threats in isolation from others:

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30 Ms Victoria Aitken, Biosecurity Section Leader, Department of Fisheries, Western Australia, *Committee Hansard*, 8 October 2014, p. 29.

31 Dr Robert Klumpp, General Manager, Biosecurity Tasmania, *Committee Hansard*, 10 November 2014, p. 52.

32 Ms Rona Mellor, Deputy Secretary, Department of Agriculture, *Committee Hansard*, 31 October 2014, p. 22; see also p. 23.

> The biosecurity system is complex, and operates in an environment characterised by the continual movement—in and out of the country—of living things and goods. It is not possible or desirable to manage biosecurity risk to one sector in isolation of another, or without a strong network that includes different levels of government, industry, non-government organisations and the community working together to achieve a common objective—one biosecurity. Zero risk is not achievable—however biosecurity threats are effectively managed using a risk-based approach.[33]

3.40 Further, Ms Mellor stated in evidence that 'from the perspective of the responsibilities of the departments we think that the environmental biosecurity issues are well managed'.[34]

3.41 The CPSU also stated that, in terms of the activities of the front-line staff in the Department of Agriculture, agricultural and environmental biosecurity are 'one thing':

> We are trying to stop pests and diseases in the environment, in agriculture and human health. There is no real focus on one or the other.[35]

Proposal for Environmental Health Australia

3.42 The Australian Government is currently a party to three formal agreements detailing response arrangements, including cost-sharing, for exotic pests and diseases that are detected in Australia and have the potential to affect animal, plant or human health or the environment. The three agreements are the:

- Emergency Plant Pest Response Deed (EPPRD);
- Emergency Animal Disease Response Agreement (EADRA); and
- National Environmental Biosecurity Response Agreement (NEBRA).[36]

3.43 The Department of Agriculture and the Department of the Environment noted that these response deeds and agreements by no means cover all sectors of biosecurity risk. There are currently no nationally agreed response mechanisms for weeds primarily affecting agriculture, aquatic diseases primarily impacting on aquaculture industries and pests and diseases impacting on pastures of production.[37]

3.44 In addition, these agreements do not address situations where a pest or disease is found not to be eradicable but it remains in the national interest to continue to act. The departments cited the myrtle rust and Asian honey bee incursions as examples of this situation. In these cases 'transition programmes were piloted to undertake

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33 Department of Agriculture and Department of the Environment, *Submission 59*, p. 1.

34 Ms Rona Mellor, Deputy Secretary, Department of Agriculture, *Committee Hansard*, 31 October 2014, p. 30; see also p. 22.

35 Ms Marian Blake, Agriculture Section Secretary, Community and Public Sector Union, *Committee Hansard*, 31 October 2014, p. 4.

36 Department of Agriculture and Department of the Environment, *Submission 59*, p. 33.

37 Department of Agriculture and Department of the Environment, *Submission 59*, p. 35.

activities to allow industry and/or the community to adapt to living with the particular pest.'[38]

3.45 To address this transition phase after a pest has been found to not be eradicable, an IGAB working group has developed a national transition program policy framework and consultations are underway about including this framework in both the EPPRD and the EADRA.[39]

3.46 Both the EADRA, signed in 2001, and the EPPRD, signed in 2005, are contractual arrangements between the Commonwealth, state and territory governments and, respectively, livestock and plant industry groups. These two agreements set out management and funding responsibilities for emergency responses to animal diseases and plant pests.

3.47 The share of costs to be borne by industry and government to implement response plans under the EADRA and EPPRD vary from 100 per cent government funding to 20 per cent government funding and 80 per cent industry funding, depending on the extent to which the disease or pest affects the environment, human health and national trade interests or specific industry assets.[40]

3.48 Plant Health Australia (PHA) and Animal Health Australia (AHA) are also parties to these agreements and act as their custodians.[41] As outlined in the previous chapter, both PHA and AHA are themselves jointly funded by Commonwealth, state and territory governments and industry groups and their focus is primarily on biosecurity to protect and enhance the prospects of the livestock and plant industries.[42]

3.49 The departments of agriculture and the environment described the roles of AHA and PHA as follows:

> Animal Health Australia and Plant Health Australia's roles are to facilitate a national approach to enhancing Australia's animal and plant health status, through government and industry partnerships for pest and disease preparedness, prevention, emergency response and management. These companies, and the emergency response agreements they administer… ensure that national responses to emergency animal diseases and plant pests

38 Department of Agriculture and Department of the Environment, *Submission 59*, p. 35.

39 Department of Agriculture and Department of the Environment, *Submission 59*, p. 35.

40 Emergency Plant Pest Disease Response Deed, p. 20, http://www.planthealthaustralia.com.au/wp-content/uploads/2014/08/EPPRD-4-August-2014.pdf (accessed 8 December 2014); Emergency Animal Disease Response Agreement, p. 20, http://www.animalhealthaustralia.com.au/wp-content/uploads/2011/04/EADRA_Version_14-01_100714.pdf (accessed 8 December 2014).

41 Department of Agriculture and Department of the Environment, *Submission 59*, p. 33.

42 See further Plant Health Australia, http://www.planthealthaustralia.com.au/ (accessed 17 September 2014) and Animal health Australia, http://www.animalhealthaustralia.com.au/ (accessed 17 September 2014).

> are facilitated and that uncertainty over response management and funding arrangements is minimised.[43]

3.50 The NEBRA was not established until 2012 and was 'developed to address the gaps which existed in relation to responses to pests and diseases with primarily environmental and social amenity impacts, for example weeds and marine pests.'[44] It sets out emergency response and cost-sharing arrangements between the Australian and state and territory governments.

3.51 In contrast to both the EPPRD and the EADRA, the NEBRA is an agreement between the Commonwealth and state and territory governments only; it does not include industry groups. Furthermore, it is not overseen by a body equivalent to PHA or AHA.[45] It is in this context that the Invasive Species Council put forward a proposal that a national body entitled 'Environmental Health Australia' (EHA) be established, along the lines of the existing PHA and AHA.

3.52 The Invasive Species Council suggested that such a body would 'improve Australia's biosecurity preparedness, responses, capacity, and collaboration'. The council proposed that the functions of EHA could include promoting more ecologically informed approaches to biosecurity, enhancing community involvement, and monitoring and reporting on biosecurity progress.[46] The Invasive Species Council explained:

> With no body to take the lead on essential planning for priority threats, environmental biosecurity currently suffers from a lack of contingency planning for environmental threats. In contrast, the Australian federal and state/territory governments have invested many millions of dollars in developing plans and strategies to improve industry biosecurity – more than $20 million over the past five years. Given how far environmental biosecurity lags behind agricultural biosecurity, there is good reason for the federal government to invest even more in an equivalent environmental body. A dedicated environmental body is needed.[47]

3.53 The Invasive Species Council further detailed this proposal in evidence:

> Our proposal, which we first assembled in 2012, is to focus on the prevention of new biosecurity risks which impact on the natural environment. So, in itself, the body would be a collaborative body bringing together state and federal governments and the community, in its many forms. That is quite broad. We are talking about researchers, environmental land managers, Indigenous land managers, Landcare and Bushcare groups,

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43 Department of Agriculture and Department of the Environment, *Submission 59*, p. 16.

44 Department of Agriculture and Department of the Environment, *Submission 59*, p. 34.

45 Council of Australian Governments, *National Environmental Biosecurity Response Agreement (NEBRA)*, http://www.coag.gov.au/node/74 (accessed 12 November 2014).

46 Invasive Species Council, *Submission 74*, pp 66–69; see also Invasive Species Council, *Submission 74*, Attachment 2.

47 Invasive Species Council, *Supplementary Submission 74.2*, p. 3.

> advocacy groups like our own and also the industry, which has a stake in this too. We are talking about bringing all these together at the table so that we are all together identifying a way forward in a systematic way. The best model for us is to look at Plant Health Australia and Animal Health Australia currently. That work is excellent but it is focused on diseases and pests of plants and diseases of animals. That work is not being done in a substantial way for the full range of environmental risks.[48]

3.54 The Invasive Species Council provided the committee with its 2012 proposal regarding the establishment of EHA. This document contains further details on specific functions it proposes EHA could carry out.[49]

3.55 The Invasive Species Council proposal was both supported and criticised by other submitters and witnesses to the inquiry.[50] For example, the Wet Tropics Management Authority supported the concept of:

> …a stand-alone environmental biosecurity body to work alongside the established Plant Health Australia and Animal Health Australia. This body should be appropriately resourced and empowered to focus on public-good environmental values.[51]

3.56 Other witnesses and submitters considered the proposal to establish a body such as EHA worthy of discussion but raised difficulties. For example, the Invasive Animals CRC pointed out that there is no equivalent in the environment sector, in terms of resources and organisation, to the industry groups that are members of AHA and PHA:

> You are trying to ensure a coordinated national prevention and surveillance capability as well as innovation capability. I think a key point of difference is that Plant Health and Animal Health have their genesis in trying to work out a cost-sharing arrangement between industry and government. In the case of, say, the proposed Environmental Health Australia, the market failure…is that there are no obvious industry beneficiaries. That would therefore mean there would need to be some sort of cooperative arrangement between the Commonwealth and the states.[52]

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48 Mr Andrew Cox, Chief Executive Officer, Invasive Species Council, *Committee Hansard*, 11 November 2014, p. 29.

49 Invasive Species Council, *Submission 74*, Attachment 2, p. 8.

50 The committee notes that the Invasive Species Council submission was itself endorsed by 30 environment, national park and conservation groups. For details see Invasive Species Council, *Supplementary Submission 74.1*, p. 3. The proposal was also endorsed in the following submissions WWF-Australia, *Submission 56*, p. 1; Victorian National Parks Association, *Submission 66*, p. 1; Nature Conservation Council of NSW, *Submission 25*, p. 2; Australian Network for Plant Conservation, *Submission 49*, pp 5-6; Dr Andrew Hingston, *Submission* 6, p. 1.

51 Wet Tropics Management Authority, *Submission 23*, p. 4.

52 Mr Andreas Glanznig, Chief Executive Officer, Invasive Animal Cooperative Research Centre, *Committee Hansard*, 31 October 2014, p. 11.

3.57 The departments of agriculture and the environment opposed the EHA proposal. The departments submitted that, although PHA and AHA primarily focussed on primary production, 'environmental biosecurity considerations are integral to their role.'[53]

3.58 The departments further stated that, rather than establishing another entity to manage preparedness, response and consultation for exotic pests and diseases impacting on the environment, it would be preferable to improve on existing institutional structures:

> Rather than establishing a new entity and funding stream, however, a more effective approach is to continue to integrate environmental issues into existing governance structures, functions and activities and to strengthen collaboration and consultation with relevant stakeholders, including community members. This approach builds on already strong arrangements through the National Biosecurity Committee, its sectoral committees and other relevant organisations, rather than creating a separate system.[54]

3.59 The Department of the Environment expanded on this position in evidence by explaining that the present approach is the result of careful consideration of how best to address environmental biosecurity given the limited available resources:

> Back in the late 2000s and early 2010s, there was quite a deep consideration within the National Biosecurity Committee about the right way to deal with environmental biosecurity. This was at the time that the NEBRA was being developed. In fact the NEBRA was an outcome of those discussions, more or less. We were looking at the challenges around dealing effectively with environmental biosecurity in our national preparedness and response arrangements. We drew the conclusion that going down the path of creating a bespoke environmental biosecurity system would be a mistake when we had enormous capacity that already existed in plant and animal health under the national arrangements and that the better path, including because we were in a cost-constrained environment, was to make the national biosecurity system work more effectively to deal with environmental biosecurity by having the various component parts of the national biosecurity system dealing substantively with environmental biosecurity in equal consideration with production and human health. Since that time, there has been a very comprehensive effort in the NBC [National Biosecurity Committee] to make that transformation, and I think our progress has been good.[55]

3.60 Opposition to the EHA proposal was also expressed by PHA and AHA. PHA stated that it looked at plants in general, rather than at agricultural and environmental plants, and that it is difficult to identify pests and diseases that do not have impacts in both areas. Furthermore, PHA stated that it works with Commonwealth and state

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53 Department of Agriculture and Department of the Environment, *Submission 59*, p. 16.

54 Department of Agriculture and Department of the Environment, *Submission 59*, p. 16.

55 Mr Stephen Oxley, First Assistant Secretary, Wildlife and Marine Division, Department of the Environment, *Committee Hansard*, 31 October 2014, p. 25.

departments of agriculture and environment and looks at both agricultural and environmental impacts in its research:

> We look at plants in the broad concept of plants. If you look at a number of the activities, it is often quite difficult to find specific examples of environmental pests that do not have an implication for agriculture as well. For example, we have been involved in myrtle rust, which I know you heard about this morning. We managed the program. We worked with the Commonwealth Department of Environment, we worked with Queensland, New South Wales, Victoria departments of environment as well as with the agriculture agencies in managing that program. There are a whole raft of pests such as Asian gypsy moth, sudden oak death, Siam weed and Mexican pepper grass, which was also mentioned this morning, which cut across agriculture and the environment. We often take all of those into consideration when we are doing our research.[56]

3.61 AHA agreed, stating that the introduction of a stand-alone environment biosecurity body would add 'another potentially bureaucratic level' without adding to the 'biosecurity continuum'.[57]

3.62 The committee notes that, although PHA's constitution does contain the following reference to environmental biosecurity within its objects, 'contribute to the sustainability of Australia's plant industries and native flora', AHA's constitution contains no such explicit reference.[58]

3.63 The committee further notes that PHA expressed support for the establishment of an independent body focused on environmental pests in its submission to the Beale review:

> For environmental pests there are many more stakeholders across government, industry and the community than is the case with commercial specific pests. Major challenges lie ahead in forming links and partnerships between these groups and along the continuum. Trust, goodwill and impartial decision making will be important and consideration needs to be given to establishing an independent body similar to Plant Health Australia to create the framework and coordination for partnerships to operate.[59]

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56 Mr Rodney Turner, General Manager, Risk Management, Plant Health Australia, *Committee* Hansard, 31 October 2014, p. 41.

57 Ms Plowman, Animal Health Australia, *Committee Hansard*, 31 October 2014, pp 43–44.

58 Constitution of Plant Health Australia, p. 6, http://www.planthealthaustralia.com.au/wp-content/uploads/2013/02/PHAConstitutionAmended14Nov2012.pdf (accessed 9 December 2014); Constitution of Animal Health Australia, pp 2–4, http://www.animalhealthaustralia.com.au/wp-content/uploads/2011/01/Constitution-as-amended-10-November-2004.pdf (accessed 9 December 2014); also see discussion with Invasive Species Council at *Committee Hansard*, 11 November 2014, p. 36.

59 Plant Health Australia, Submission to the *Australian Government Quarantine and Biosecurity Review*, April 2008, p. 24, http://www.planthealthaustralia.com.au/wp-content/uploads/2012/12/Submission-Quarantine-Biosecurity-Review-May-2008.pdf (accessed 9 December 2014).

3.64 Finally, objections to the establishment of EHA were raised on the grounds of funding. As noted above, PHA and AHA are jointly funded by industry and governments. The Invasive Species Council stated in its 2012 proposal that funding would have to be provided by Commonwealth, state and territory governments.[60] The Invasive Species Council also suggested in evidence that a levy on industries that pose a threat to environmental biosecurity—for example, industries that import risky plant species—might be considered, and that some philanthropic funding could also be pursued.[61]

3.65 The Invasive Species Council also submitted that, given the extent of government funding devoted to PHA and AHA, which are primarily focused on industry interests, it would not be unreasonable for an equivalent level of government funding to be devoted to environmental biosecurity, which is a public good.[62]

3.66 By contrast, Nursery and Garden Industry Australia strongly opposed the EHA proposal on the grounds that, in its view, the EPPRD and the NEBRA can 'cover all aspects of risk identification and or management' and that:

> The drive or expectation by some 'Non Government Agencies' that a new body 'to look after environment' needs to be established and that it will be supported by Industry contributions as occurs with Plant Health Australia is ludicrous.[63]

Alternative proposals to strengthen environmental biosecurity

3.67 As noted above, several submitters expressed the view that, although environmental biosecurity appears to be neglected when compared to industry-focused biosecurity, the establishment of another body, such as EHA, may not be the best way to address this problem.

3.68 Dr Sophie Riley provided the committee with information on institutional arrangements for environmental biosecurity in the United States and Great Britain and argued that having a single peak body to implement an invasive alien species biosecurity regime is important:

> I argued that these bodies are well-placed to consider the 'big picture' and take the lead in implementing initiatives that can draw IAS [invasive alien species] regimes together, including: developing overarching policy, defining an IAS, providing services such as one-stop information portals, and fostering community engagement.[64]

3.69 In evidence, Dr Riley explained how such peak bodies work in the US and Great Britain:

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60 Invasive Species Council, *Submission 74*, Attachment 2, p. 16.

61 Dr Carol Booth, Invasive Species Council, *Committee Hansard*, 11 November 2014, p. 32.

62 Invasive Species Council, *Submission 74*, Attachment 2, p. 16.

63 Nursery and Garden Industry Australia, *Submission 55*, p. 6.

64 Dr Sophie Riley, *Submission 8*, p. 6.

> The way that this works in America, in the USA, is really different. In America, for example, their National Invasive Species Council only works on matters that the federal government has an interest in. For example, it applies to federal agencies; it applies to work that the federal government does, federal areas. It does not directly apply to anything where the states are interested. The federal government can select anybody that they like to sit on that, but the actual ramifications of that council are only relevant for the federal government.
>
> Where it becomes important for the states is, it sets an example and it also facilitates dialogue, so you have always got the invasive-species issue on the agenda. In the UK, because it is a different parliamentary system and you have not got the same state governments, if you like, that applies more directly to what happens in the UK. That is much more of a hands-on approach. I do not think that would work in Australia, because of the fact that we do have the state and territory governments. That was put in there just as an example of another model. I think the US one would be more appropriate for our parliamentary system. For example, I could not see that it would be effective for the federal government to take over what the states are doing. They have got expertise, for example; you have staff that have got expertise. I think there would also be political tensions there as well.[65]

3.70 In the light of these discussions on the importance of centralised coordination, Dr Riley commented with regard to the EHA proposal:

> If it gives the environment equal status, I think that is good. At the end of the day, however, you still need something that coordinates all these bodies. The problem is how you balance them.[66]

3.71 Dr Judy Fisher, Theme Leader, Ecosystems and Invasive Species, IUCN Commission on Ecosystem Management, suggested that we need to think carefully about how the biosecurity system can be better coordinated.[67] She suggested that we need a coordinated body that encompasses both biodiversity and agriculture:

> We all need to be working together on this topic. It should not be segregated…Segregating it is continually a reason for not doing anything.[68]

3.72 Dr Fisher also told the committee that environmental biosecurity is often 'sidelined' and that agricultural bodies often do not want to take responsibility for environmental biosecurity.[69] At the same time, she expressed caution about 'segregating' these issues:

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65 Dr Sophie Riley, *Committee Hansard*, 11 November 2014, p. 3.

66 Dr Sophie Riley, *Committee Hansard*, 11 November 2014, p. 5.

67 Dr Judy Fisher, Theme Leader, Ecosystems and Invasive Species, IUCN Commission on Ecosystem Management, *Committee Hansard*, 8 October 2014, p. 4.

68 Dr Judy Fisher, Theme Leader, Ecosystems and Invasive Species, IUCN Commission on Ecosystem Management, *Committee Hansard*, 8 October 2014, p. 6.

69 Dr Judy Fisher, Theme Leader, Ecosystems and Invasive Species, IUCN Commission on Ecosystem Management, *Committee Hansard*, 8 October 2014, p. 1.

> From my years of experience, by separating this topic out, nobody is ever going to be a winner. That is what I have seen happen here in this state [Western Australia] for 20-odd years. Our department of agriculture says that they are the lead agency for biosecurity, but they say, 'We're not a biodiversity agency', and the biodiversity agency says…'Well, we're not the lead agency; they are'—the department of agriculture is the lead agency—'so it's not our responsibility'.[70]

3.73 The Wet Tropics Management Authority was supportive of the EHA proposal but also saw the dangers of further fragmenting the governance of biosecurity in Australia:

> Our submission endorses the notion of an entity called 'Environmental Health Australia' that would sit alongside Plant Health Australia and Animal Health Australia, and have similar roles. And I guess that is the advice that we are giving formally. I am alive, though, to the countervailing view: that there is then the risk that environmental biosecurity issues will be assigned to a new body which would be marginalised. I confess to being somewhat in two minds about that. In some ways the best outcome might be for the existing entities to strengthen their capacity and commitment to achieving good outcomes for the environment alongside of plant health and animal health issues they have for industry.[71]

3.74 In response to questioning on this issue, Dr Burbidge cautioned that, while there needs to be something that brings the 'environmental side of biosecurity together with the agricultural side and make both more efficient', he 'would not support anything that fragments existing departmental arrangements'.[72]

3.75 Dr Burbidge also acknowledged that:

> …the same sorts of rules that apply already in the agricultural area are really effective in the environmental area as well. It is just upping that level a little bit more that is required.[73]

3.76 As noted above, the Department of Agriculture and the Department of the Environment did not favour the EHA proposal as they believed it might in fact make the biosecurity system worse. Ms Mellor, stated:

> My view would be that most of the issues, from our perspective of what we manage, are about plant and animal health and how we assess those from a way of life, environment or a production perspective. I would venture this concern: that if you disaggregate that to a different governance model, you might cause harm. So you actually would need to weigh up the risks and benefits of both a different model that is being proposed by others and the

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70 Dr Judy Fisher, Theme Leader, Ecosystems and Invasive Species, IUCN Commission on Ecosystem Management, *Committee Hansard*, 8 October 2014, p. 3 and see also p. 6.

71 Mr Andrew Maclean, Executive Director, Wet Tropics Management Authority, *Committee Hansard*,31 October 2014, p. 19.

72 Dr Andrew Burbidge, *Committee Hansard*, 8 October 2014, pp 11–12.

73 Dr Andrew Burbidge, *Committee Hansard*, 8 October 2014, p. 15.

> risk of disaggregation of capability that does not distinguish science risk to each of those three things as a different perspective. It looks at the plant and animal health risks.[74]

3.77 In light of the departments' position that a better approach is to strengthen existing arrangements rather than create a new body, the committee raised with PHA and AHA the prospect of taking on a greater role in environmental biosecurity. PHA responded that it would be possible with additional funding:

> As long as there was adequate funding available because, obviously, like most organisations, we haven't got any spare funds at the moment. Funds are a necessity. As far as weeds go, it would also have to be exotic weeds. There are so many different bodies looking after endemic weeds and trying to remove them in Australia at the moment that that would just be reinventing the wheel.[75]

3.78 PHA further stated that although the objectives of the company include contributing 'to the sustainability of Australia's plant industries and native flora', as noted above, no governance arrangements currently exist to undertake such work.[76]

3.79 In response to questions about altering the structure of AHA and PHA so as to allow involvement of environment and conservation groups, and perhaps even to afford them voting rights alongside the current government and industry memberships, PHA responded that this would entail some major organisational changes:

> That would mean changing our whole constitution, because there are no conservation industries that are members at the moment. We would have to think through that. One consideration would be to include weeds in the Emergency Plant Pest Response Deed, which is an avenue that we perhaps would not go down because of existing signatories to that deed. We would think more about a new deed perhaps for weeds, based very much on the existing deed. But there obviously are differences. Industry is not involved so much. It is more the environment. That is basically where we are at the moment in our thinking and our discussions.[77]

3.80 Mr Thompson, First Assistant Secretary, Sustainability and Biosecurity Policy Group, Department of Agriculture, also clarified that, although the departments of agriculture and the environment believed that strengthening existing arrangements was preferable to creating a new body, this should not be taken to mean that the burden of improving environmental biosecurity should fall entirely on AHA and PHA:

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74 Ms Rona Mellor, Deputy Secretary, Department of Agriculture, *Committee Hansard*, 31 October 2014, p. 31.

75 Mr Michael Milne, Acting Chief Executive Officer, Plant Health Australia, *Committee Hansard*, 31 October 2014, p. 43.

76 Mr Michael Milne, Acting Chief Executive Officer, Plant Health Australia, *Committee Hansard*, 31 October 2014, p. 44.

77 Mr Michael Milne, Acting Chief Executive Officer, Plant Health Australia, *Committee Hansard*, 31 October 2014, p. 44.

> In the submission when we talk about not favouring Environmental Health Australia, some people may interpret that that somehow means that Animal Health Australia and Plant Health Australia could do that job alone. The way we were trying to express it in our submission was: there is a role for Animal Health Australia, there is a role for Plant Health Australia, there is a role for the environment department, there is a role for the agriculture department, there are consultation mechanisms, there is research funding. It is that whole system which, together, can enable us to work in the environment space, not just say that Plant Health Australia and Animal Health Australia will do it alone. We were not implying that.[78]

3.81 With regard to other bodies that could play a more substantial role in the environmental biosecurity system, both the Invasive Animals and Plant Biosecurity CRCs argued that their research organisations could form the institutional basis for long-term focus on environmental biosecurity, with suitable expansion of their mandates, as they have brought together a great deal of expertise. However, both groups noted that CRCs are funded for a finite period and there is no guarantee that they will continue to exist beyond their present terms. For these bodies to play a long-term role in environmental biosecurity along the lines suggested in the proposal for EHA both their scope and funding arrangements would have to be altered.[79]

3.82 Further discussion of the funding arrangements for biosecurity research organisations is contained in chapter 6.

Conclusion

3.83 Evidence presented to the committee suggests that Australia's environmental biosecurity capacity lags behind that of industry biosecurity. There appear to be several causes for this situation, including: the greater complexity of environmental biosecurity; the historical emphasis on industry biosecurity; difficulties in translating environmental impacts into economic terms, and the lack of stakeholders with economic resources that can be drawn on.

3.84 Conflicting evidence was presented about the proposal to establish a new body, Environment Health Australia, to address these apparent shortcomings in environmental biosecurity. Proponents suggested that such a body could, if provided with sufficient resources, implement a more coordinated approach to environmental biosecurity. Opposition to the proposal focused on its potential cost and the danger that it might further fragment the biosecurity system, which is already very complex.

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78 Mr Ian Thompson, First Assistant Secretary, Sustainability and Biosecurity Policy, Department of Agriculture, *Committee Hansard*, 31 October 2014, p. 31.

79 Mr Andreas Glanznig and Dr William Roberts, *Committee Hansard*, 31 October 2014, pp 11–12.