# National Biosecurity Funding and Investment

# A Discussion Paper

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## EXECUTIVE SUMMARY

At the first Australian Biosecurity Symposium held in June 2019 a major issue identified was the need for a sustainable biosecurity funding model for Australia. This paper sets out some ideas for how this may be achieved.

Biosecurity in Australia, including funding arrangements, is very much a product of its history, which goes back at least to the 1850s. However, the purpose of the biosecurity function has changed dramatically since those times, originally seeking to protect domestic agricultural production at a local level, but now focussed primarily on national issues such as preventing and responding to exotic pest and disease outbreaks, as well as supporting trade.

Unfortunately, the organisational arrangements have not kept pace with these changes. We now have an ad hoc and uncoordinated system where 9 independent investors (governments), responding to their own political and social pressures and stakeholder demands, allocate funds independently of each other. This results in asynchronous waxing and waning of funding according to budget and election cycles and fiscal pressures of each sovereign jurisdiction. Further, the current mix of investments across the biosecurity spectrum of prevention, surveillance, preparedness, response and asset protection is now unbalanced, particularly in terms of underinvestment in the areas with a higher return on investment – prevention, surveillance and preparedness.

Our forefathers at federation could not have foreshadowed how radically the biosecurity needs of Australia would change over the first century of its existence. The formation of Animal Health Australia and Plant Health Australia occurred in recognition of this problem and has resulted in brokering of Commonwealth, state/territory and industry funding for a number of national programs that deliver clear benefits not hitherto achievable. However, understandably, they have not been able to overcome the fundamental flaws in the biosecurity system. In the face of these issues, we consider that the biosecurity funding system requires a fundamental redesign.

In this paper we examine previous (one-off) funding mechanisms that have worked well, as well as existing mechanisms that could be adapted to our current and future needs. Two major possibilities fall out of this analysis: (a) nationalising the biosecurity system; and (b) developing a national cost sharing agreement for surveillance and preparedness. We suggest that a national conversation needs to occur to decide on how we wish to manage the system into the future.

Irrespective of which mechanism is chosen for future funding of biosecurity nationally, there would also be significant benefit in Australia having an agreed national biosecurity investment strategy in place. One approach for the collective national funding of biosecurity activities might be to look at this as being a national investment portfolio. Like any investment portfolio, it would start with an acceptable or agreed total annual investment, which would then be apportioned according to risk and return across a suite of investments. A key feature of this approach would be collaborative decision making, with all investors having their say.

# 1 BACKGROUND AND PURPOSE

At the first Australian Biosecurity Symposium held in June 2019 a major issue identified during the final plenary session was the need for a sustainable biosecurity funding model for Australia. This is not the first time that the existing funding arrangements for biosecurity in Australia has been identified as a significant constraint to the effectiveness of the overall system. However, complexities within the existing system have made change very difficult to negotiate and implement. Despite this, the mood at the Symposium was that now is an appropriate time to make a concerted effort to redesign the system with the future in mind.

The authors of this paper each have around 40 years of experience working within Australia's biosecurity system at operational, management, leadership and policy levels. We have little to gain individually from addressing this issue but having contributed a major portion of our careers to the system and experienced both its advantages and disadvantages. Hence, we are keen that some of the vulnerabilities of the system are addressed for the benefit of future biosecurity practitioners and Australia as a whole.

We also note the findings of the 2017 report, 'Priorities for Australia's biosecurity system - An Independent Review of the Capacity of the National Biosecurity System and its Underpinning Intergovernmental Agreement' – commonly referred to as the Intergovernmental Agreement on Biosecurity (IGAB) review. The IGAB review makes a range of recommendations to improve Australia's biosecurity system. However, it does not suggest a fundamental redesign of organisational and funding arrangements. This paper suggests that perhaps a more radical approach is required. We hope that current decision makers within Australia's biosecurity system find it useful.

Although we have both worked across all areas of biosecurity, our background is in animal health, hence we acknowledge that the examples we have used may tend to be drawn from that sector. However, the principles should be applicable more generally.

The conclusions and suggestions contained in this paper are those of the authors and do not represent government or industry policy.

# 2 CURRENT SITUATION

There should be little argument that if Australia was to start from scratch and design a new, 'fit for purpose' biosecurity system, it would bear little resemblance to what we have now. The system has many anomalies and inefficiencies built in via a plethora of funding and delivery mechanisms. These stem largely from the constitutional distribution of powers and responsibilities between the Commonwealth and State/Territory governments.

Currently, biosecurity capability in Australia lies mostly within the Australian government and the State[1] jurisdictions. The Australian government focusses primarily on border protection and national policy, while the States look after most post-border issues. Other providers include Animal Health Australia, Plant Health Australia, local government, Universities & other research institutions, industry organisations, community organisations, natural resource management groups, Ranger organisations etc. However, in terms of the overall quantum of resources, the bulk lies within State and Australian government agencies (see section 2.2), hence the major focus will be on these primarily. Further, it is on government capability that Australia is generally judged internationally.

## 2.1 SOME HISTORY

The existing system is largely a product of its history; hence it is instructional in the context of this paper to briefly explore the key elements of this history.

Biosecurity is a relatively new term, having emerged during the 1990s in this country. However, the various functions that make up biosecurity have been around since well before Federation. Following colonisation, agriculture quickly became an important part of the Australian economy and disease and pest issues also soon became an important factor affecting productivity, particularly animal diseases. The diseases of concern had generally been introduced with the livestock and were essentially common endemic pests / diseases in the originating countries. This led to the establishment of government disease control functions. For example, sheep scab inspectors were appointed in the colony of NSW (which included Queensland) in the 1850's and sheep scab was eradicated relatively quickly (by 1866 in Queensland). The first Chief Inspector of Stock was appointed in the (now separate) colony of Queensland in 1868 (pre-dating the formation of the Department of Agriculture in 1887).

During the 1800s classic exotic disease outbreaks as we now think of them were relatively rare, although there was an outbreak of the much-feared foot-an-mouth disease in Victoria in 1872 (and possibly other earlier outbreaks). However, it is somewhat ironic that many of the now widely established invasive species that cause significant economic and environmental issues in Australia were deliberately introduced during this period through individuals and organisations such as the Acclimatisation Society.

Upon federation in 1901 the States continued to manage most domestic animal and plant health issues within their borders. At that time, these functions were important for the development of productive agricultural industries and had little if any focus on surveillance and other functions directly supporting international trade. The Australian Constitution is

[1] Note: the use of the term 'State' in this document should be taken to mean 'States/Territories' unless otherwise indicated.

largely silent on the issue of biosecurity, apart from providing the Australian Parliament with the power to make legislation in relation to 'quarantine' (Section 51), although the term is not defined. The first Quarantine Act was introduced in 1908 to manage risks associated with the inward movement of goods across the Australian border. Given that the Commonwealth had minimal resources at the time, and the States employed animal and plant health professionals, the quarantine operations function was 'contracted' by the Commonwealth to the States under a 'gentlemen's agreement'. This arrangement continued until 1995 when the Commonwealth took over all the planning, policy and operational functions associated with border quarantine. A closer assessment of the arrangements supporting this 'purchaser/provider' arrangement is provided later in this paper.

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The twentieth century saw very significant investment into research and control of endemic pests and diseases. The States' laboratory services were well resourced to investigate important endemic diseases, develop control methods etc. This underpinned the evolution of a very effective system for investigation and recording of disease outbreaks, that we now refer to as our passive (or general) disease surveillance system.

Some major animal diseases were also tackled through regulatory initiatives, including eradication of bovine pleuropneumonia (completed in the 1960's) and the brucellosis and tuberculosis eradication campaign (BTEC - completed in the early 2000's). Endemic diseases also subject to government regulatory controls included ovine footrot and lice in the southern states and cattle ticks in the northern states. These programs were all implemented by the States, with coordination and funding in some cases at the national level (industry and government funding for BTEC – see later). These major animal health programs meant that animal biosecurity dominated the scene, compared with plant biosecurity, throughout most of that century.

There were also some significant achievements, as well as some disasters, in the invasive species area. For example, *Cactoblastis cactorum* was first introduced in 1925 from Argentina, where it was spectacularly successful as a biological control agent for Opuntia cacti (prickly pear), a major invasive weed that rendered large tracts of agricultural land useless. However, buoyed by this success, the cane toad was introduced to control the sugar cane beetle, which it failed to achieve, becoming a major pest in its own right.

Apart from the quarantine function performed by the States on behalf of the Commonwealth, national funds for eradication programs and research grants, most of the biosecurity functions performed within the States were funded by the State (note further detail in section 2.2). This was relatively easy to justify from a policy perspective, as the diseases being tackled had significant productivity impacts for the State. However, as the major diseases were eradicated and research efforts provided industry with the mechanisms to control endemic pests and diseases, it became more difficult to justify this ongoing expenditure. Further, the overall priorities of the biosecurity system began to change in two major ways:

- Starting in the 1990's we saw a significant increase in the need for emergency responses to animal and plant pest and disease outbreaks. Critical to mitigating the size and impact of exotic incursions was surveillance for early detection, not

previously a focus of state programs nor the state industry stakeholders who influence budget decisions.

- Global trading arrangements started to place new demands on the system to support trade, for example, the need for better data to support our claims of pest and disease freedom.

Hence, we now have a biosecurity system very much focussed on national issues, particularly prevention of invasive pest and disease outbreaks, surveillance for early detection and demonstration of our favourable status, preparedness for responses to outbreaks, as well as a significant number of nationally cost shared responses. It seems certain that none of these functions now strongly influencing the role and the responsibility of states, were in the minds of those who drafted the Constitution.

Given the above, the Biosecurity function that we see now in the various States of Australia has evolved significantly over the past 30 years. All states have more or less an integrated biosecurity system that handles animal health, plant health, invasive species, control of use of Agvet chemicals, and in some jurisdictions, animal welfare. Although funding tends to be somewhat cyclical, the trend over time has been that all jurisdictions have experienced a gradual decline in actual biosecurity resources over time. For example, there are now roughly 30% less people in Biosecurity Queensland than there were 10 years ago and their responsibilities have changed little over this time. This followed years of 'belt tightening' since the early 1990's. A similar situation is evident in all other states.

How we have got to this point is complex, but in summary:

- Government animal health resources began declining following the wind-up of the nationally cost shared, $1 billion brucellosis and tuberculosis eradication campaign (BTEC) in the early 1990's. BTEC underpinned animal health in Australia for at least two decades. It was recognised nationally in the 1990's that declining resources was a growing problem and this was a primary driver for the formation of Animal Health Australia (AHA); and later Plant Health Australia (PHA). Concurrently, Australia experienced a significant increase in exotic and newly emerged disease outbreaks, as well as a growing trend for export markets to require higher standards of assurance of the pest and disease status for agricultural produce. This led to development of a plethora of nationally focussed animal health assurance programs. However, there was not a clear "line of sight" between development of many of these programs and the primary funding source for animal health, that is, state appropriations. At the same time, state governments have had to deal with a whole new range of other priorities, which has put pressure on state budgets across the board. Hence, the gradual decline in resources for animal health (and biosecurity more generally) has continued.
- Plant biosecurity grew more out of production agriculture and associated research programs. When the first large, nationally cost shared, pest incursion occurred in the 1990's (papaya fruit fly - PFF), the system was found wanting. Hence, more formal arrangements were established but based on existing resources that have remained largely inadequate (for example, in Queensland the Agricultural agency developed a significant budget submission for increased plant biosecurity resources as the PFF program wound down, but this was not approved). The demand on the plant biosecurity system has grown exponentially in recent years (arguably, more than animal health) owing to a significant increase in pest and disease incursions as well as market

access certification requirements. Integration of the biosecurity system has helped the plant biosecurity function overcome the structural deficiencies (cross subsidisation), but the system remains under significant stress.

- The invasive species functional area originated in natural resource management and environmentally focussed agencies that were brought into biosecurity agencies in the 2000's primarily for efficiency reasons and to encourage consistent approaches. These areas have tended to focus on management of established pests that impact on agriculture or the environment. In Victoria and other places, their incorporation into a broader biosecurity agency has tended to dilute these resources, as their activities are generally less "urgent" so they can be utilised to fill gaps in other areas such as plant biosecurity. The other driving factor has been a general policy move towards land owner responsibility in managing established pests. There have been a number of national initiatives to fund action on major invasive species. However, the task is enormous given the sheer number of established species, their spread and the long-term nature of eradication methods.
- Funding for recognised Commonwealth functions (national policy and border controls) has been less problematical given the taxation powers exclusively held by the Australian government, and to a lesser extent, their clearer role within the Constitution. However, there seems to have been a reluctance on the part of the Commonwealth to address the new national priorities beyond the border outlined above (apart from shared funding of new responses).
- AHA and PHA, although originally established in the 1990's to address better coordination and funding of animal and plant health programs, have only been partially successful in this regard. More recently they seem to have started moving away from their original purpose to some extent (for example, delivery of programs, including overseas, rather than the brokering and coordination role they were originally established to deliver).

In summary, we now have a biosecurity system in Australia that is not fit for purpose. There is a demonstrable lack of appropriate resources in many areas, there are a variety of (ad hoc) delivery mechanisms and most importantly, there is a lack of a strategic and sustainable funding mechanism that is driven by biosecurity priorities.

## 2.2 Current Investment and Funding Sources

As reported in the IGAB review, the formal national investment in biosecurity was around $900 million in 2015-16.

The Australian Government directly invested approximately $181 million, with an additional $440 million in external funding through cost recovery, the latter largely in the area of border operations. The Australian Government also manages the levy mechanisms established to fund industry's share of cost shared eradication responses, as well as, industry contributions to programs managed by AHA and PHA.

At the State and Territory level, the direct allocated expenditure by governments in 2015-16 totalled $244 million with an additional $131 million in external or co-funding. The relatively high proportion of consolidated revenue funding is partly a function of the history of these services, as well as difficulties with revenue raising at the state level. However, it is

noted that this proportion had reduced significantly over the three years reported in the IGAB review.

Some states have developed systems for industry to contribute to the biosecurity function, particularly for animal health. Possibly the most significant of these is the NSW Local Land Services (formerly Rural Lands Protection Boards) that funds a significant number of field animal health staff through a land capacity-based levy system. These are resources provided by state departments of agriculture in all other jurisdictions. States such as Victoria, SA and WA introduced transaction-based levies for livestock to fund some specific programs. Queensland had a livestock stamp duty, but this was abolished in the 1970s following a successful constitutional challenge (it was deemed to constitute an excise – a Commonwealth only power) and no broadly-based industry funding mechanism now exists in that state.

Formal, direct funding by agricultural industries includes approximately $8.5million through AHA and PHA. However, as acknowledged in the IGAB review, the total financial contribution by industry to the national biosecurity system is unknown, as the operational expenses and in-kind contributions made by industry are not documented. For example, some industries conduct their own monitoring and surveillance activities, as illustrated by 136 programs in the grains and horticulture industries alone. Further, industry contributions are more than just the amount reflected in government fees and charges.

The level of biosecurity-related Research & Development (R&D) investment is elusive and depends on what is included as 'biosecurity'. For example, significant R&D funds go into Integrated Pest Management for the plant industries, but this is essentially the far-right hand side of the invasion curve (see figure 1) involving endemic pests and diseases. We would argue that this is the very soft end of biosecurity as it is low return on investment for governments (taxpayers). Our perception is that national R&D investment in the left hand side of the invasion curve is relatively low, with the possible exception of Commonwealth investment in the Australian Animal Health Laboratory (AAHL).

For emergency or high priority responses to new pest or disease incursions a number of national cost sharing Deeds are in place: the Emergency Animal Disease Response Agreement (EADRA); the Emergency Plant Pest Response Deed (EPPRD); and the National Environmental Biosecurity Response Agreement (NEBRA). An aquatic emergency animal disease response agreement is currently close to finalisation.

The primary function of these agreements is to lay out the arrangements for cost sharing of responses to nationally significant emergency pest and disease events. Costs may be shared by the state and Australian governments, as well as affected industries. However, it should also be noted that not all responses are cost shared under one of these agreements, for example: a jurisdiction may choose to respond purely under State arrangements; there may be no national agreement that the disease is eradicable but the jurisdiction may respond (perhaps) with the assistance of the Commonwealth; or for invasive species where there is no clear agreement, there may be a one-off arrangement negotiated.

Some important principles common to these arrangements include:

- They are generally only applied to pests or diseases that are considered (a) beneficial to eradicate (either on a cost : benefit or other basis), and (b) eradicable (technically feasible).
- States / territories are responsible for managing responses within their jurisdictions. However, other stakeholders, such as affected industries also have responsibilities under the generally agreed principle of "shared responsibility".
- Where appropriate, industries contribute their share of costs through national levy arrangements (described later in this report). These levies may be set at $0, with the industry share of incursion response costs underwritten by the Commonwealth and repaid post-response by striking an appropriate levy rate.
- To mount a significant response, it is recognised that a state agency will not have all of the resources required and so recruitment of additional, appropriately skilled people and resources can occur.
- The costs that are shared do not represent the total cost of the response. In essence, "eligible costs" are the marginal (additional) costs of conducting a response.
- Agencies and industries have an obligation to maintain the capability and capacity to detect and respond to suspected or confirmed emergency invasive species promptly and appropriately. This is referred to as their "normal commitment" or "baseline capacity". However, this remains ill-defined despite a number of processes aimed at providing clarity and consistency with respect to these terms and the obligations of jurisdictions.
- There are distinct phases to an emergency response – investigation and alert (incident definition), operational (emergency response), proof of freedom and stand-down (relief & recovery). Cost sharing generally only applies to the operational and proof of freedom phases. Hence jurisdictions can incur significant costs before cost sharing is agreed, and in recovery phases.

The actual expenditure under these arrangements can vary enormously year to year depending on individual responses. The largest current response is the national fire ant eradication program, with funding of $411.4 million over ten years recently approved. The single largest response in a single year was the equine influenza response of 2007-08 with cost shared expenditure in the vicinity of $100 million.

# 3 PAST MODELS FOR/EXAMPLES OF NATIONAL FUNDING

## 3.1 NATIONAL QUARANTINE ARRANGEMENTS 1908 – 1995

From the time the Commonwealth Quarantine Act first came into being in 1908 until 1995, the States delivered quarantine operations on behalf of the Commonwealth. The state operations were funded by the Commonwealth and the activities were a carried out under Commonwealth legislation. It is valuable in the context of this paper to consider in more detail the arrangements under which the Commonwealth and States operated the national border biosecurity function in direct partnership for close to a century.

### *3.1.1 NATIONAL QUARANTINE POLICY*

National Policy was developed through a collaborative process involving the 'Chief Quarantine Officers' (usually the Chief Veterinary Officer – CVO and Chief Plant Health Manager - CPHM) of the Commonwealth and state departments, meeting formally twice per year at the Chief Quarantine Officers Conference. The CQOC (one for animals and one for plants) considered and agreed on all policy and high-level operational protocols, which all parties committed to adopt and implement. Unlike recent decades, there was a singular national position strongly supported by all jurisdictions on import policies and commodity import protocols. Since 1995 there has not been any equivalent body or process for border biosecurity policy and import protocol development, often with a consequent disconnect between the Commonwealth and state/territory governments.

### *3.1.2 ROLES AND RESPONSIBILITIES*

The states carried out the service delivery role for the national border quarantine function as 'agents' of the Commonwealth, and in doing so had a clear responsibility to adhere to national policies and protocols. This role included the inspection and certification of live and commodity exports. Quarantine officers at ports and airports, cargo and bond stores, approved premises etc were all employed by the relevant state or territory. These officers were authorised under the Commonwealth *Quarantine Act 1908*, meaning that a single piece of legislation was in force across the nation. The states undertook this national function alongside and closely imbedded within their animal and plant health services/Departments of Agriculture. Services that needed to be delivered in regional areas were undertaken by Departmental regional staff as and when needed.

### *3.1.3 FUNDING*

As a national function clearly operating to serve the national interest, funding was provided by the Commonwealth, (although there were not-insignificant 'in-kind' contributions from the states). Funds were provided to the states/territories to cover direct operational costs including salaries of full-time staff dedicated to the quarantine function and an estimate of ad hoc or occasional services by Departmental staff such as in regional areas. This was a highly cost-efficient arrangement; the Commonwealth virtually had the full services (management, field and laboratory) of the State Agriculture departments at their disposal to carry out all quarantine and export operational functions as required. Specialised infrastructure (such as at airports) was funded directly by the Commonwealth, but most infrastructure including office accommodation was provided by the states at existing Departmental operational sites.

## 3.2 Brucellosis and Tuberculosis Eradication Campaign

Although efforts to control these two diseases had been underway for many decades, the national brucellosis and tuberculosis eradication campaign (BTEC) commenced on 1 January 1970. BTEC was nationally coordinated and worked under nationally agreed guidelines, with the goal being the eradication of *Brucella abortus* and *Mycobacterium bovis* from Australia's cattle and water buffalo populations. Brucellosis and TB were tackled concurrently, with Australia exceeding equivalence to World Organisation for Animal Health (OIE) recognition of freedom from disease in 1989 and 1997, respectively.

Although the program was largely administered and delivered by state governments under state legislation, the direct involvement of industry in the funding and management of BTEC played a critical role in its success, particularly during the latter phases of the program. This led to a strong and constructive relationship between government and industry. However, this was not always the case, with industry playing a relatively minor role in decision-making during the initial stages of the program. This changed fundamentally in 1984, following strong industry opposition to the use of mass destocking in difficult northern areas. Following federal intervention at that time, industry subsequently played a central role in BTEC decision-making, on the national BTEC committee, on state and regional advisory committees, and on teams tasked to review approved property programs.

From a very early stage, industry was a major financial contributor to BTEC, commencing with the introduction of national slaughter and live export levies in 1973. This was replaced by a transaction levy in 1991, covering live sales, as well as for slaughter. Cost-sharing evolved during BTEC, and in 1988 it was formally agreed that industry would cover 50 per cent of the program costs, with the states paying 30 per cent and the Commonwealth 20 per cent. These costs covered operations, compensation and additional assistance measures.

Detailed forward planning became a key feature of BTEC, including the development of multi-annual strategic plans and annual operational plans underpinned by legal agreements between the Australian government, state or territory governments and relevant industry organisations. These plans included long-term goals, interim targets, likely activities and associated budgets. This process proved critical in engaging both government and industry, and allowing ongoing critical review of progress.

The overall success of this approach is demonstrated by the fact that there are few other international examples of the successful eradication of these diseases from a national cattle population.

## 3.3 EXANDIS

'EXANDIS' is an abbreviation of 'EXotic ANimal DISease Consultative Council' (with independent Chair, Robin Ritchie), which had oversight of the program that operated from 1990 to 1995. Its purpose was to improve Australia's preparedness for exotic animal diseases. Although it was a much smaller program that the two detailed above, it is a good example of how targeted national funding tied to agreed outcomes can achieve an excellent result.

EXANDIS provided direct Commonwealth funds for the national Exotic Diseases Sub-Committee, various working groups and to the States. This provided for a dedicated 'foreign diseases unit', operational funds, a full-time training and planning officer in each State, and support for training programs, study tours and exercises. During this time preparedness for dealing with exotic animal diseases within the states and territories was improved markedly. Significant in-kind contributions were made by the States also.

There was also significant activity at the national level, with much in-kind effort on the part of government and industry personnel across the country (supported by EXANDIS operational funds). Development and publishing of AUSVETPLAN was the major achievement of EXANDIS - a most remarkable output that is widely respected, as well as used and copied, globally. The funding to bring the best minds and experienced people together to write and edit was critical.

EXANDIS is a great example of how targeted funding, linked to agreed outputs, can leverage significant human resources that exist within various organisations, particularly State biosecurity agencies. This demonstrates that significant outcomes can be achieved when the Commonwealth provides funds to the States to support nationally consistent activities across the nation.

# 4 CURRENT FUNDING ARRANGEMENTS

Broadly, biosecurity activities can be described along a continuum as:

Pre-incursion activities
(a) Prevention;
(b) Preparedness; and
(c) Surveillance (for early detection and proof of freedom).

Incursion response/management
(a) Eradication; and/or
(b) Containment

Ongoing management of established pests and diseases (to protect assets at risk)

In this section we summarise the various and differing funding arrangements that apply across the continuum to those activities.

## 4.1 PRE-INCURSION ACTIVITIES

### *4.1.1 PREVENTION*

Much of biosecurity deals with preventing the removal, escape or transfer of invasive species either from one geographic area to another or from one host/agent to another. This is most obvious as the basis for quarantine and border controls between countries, but also includes a range of other post-border strategies. Biosecurity prevention activities are characterised by a high level of both public and private benefit, and a very high return on investment.

The predominant prevention activity is the quarantine border operation conducted by the Australian Government. This includes the conduct of import risk assessments, the setting of import policies and protocols, and managing quarantine operations. The Australian Government applies a structured cost recovery regime to the quarantine border program, with a significant proportion of funds sourced from 'users', many of whom could be considered as 'risk creators' (e.g. importers of goods).

Beyond the border, a number of biosecurity preventative activities and programs are operated, mostly by the states/territories. Examples include the Ruminant Feed Ban (RFB) (prohibition of feeding of restricted animal materials to ruminants) and associated compliance activities aimed at preventing BSE; and swill feeding bans (aimed at preventing the establishment of FMD and other exotic diseases of pigs). While the RFB is part of a structured, (partly) cost-shared program (the TSE Freedom Assurance Program), few other post-border preventative activities, while clearly conducted in the national interest, are the subject of organised national programs/partnerships.

### *4.1.2 (B) PREPAREDNESS*

Preparedness can encompass a wide range of actions and activities, including: policy development, planning strategy, funding and logistics, management systems, analysis and intelligence systems, operational and laboratory surge capacity, staff training, simulation exercises, and establishing stakeholder relationships. Good preparedness means that incidents can be brought under control more quickly, thus minimising the impact.

Biosecurity preparedness activities are in general characterised by:

- very high private/industry benefit and public good.
- a high return on investment compared to managing established pests/diseases.
- the absence of a consistent or structured approach or framework for cost sharing.
- some specific aspects conducted through AHA and PHA are funded via members' subscriptions (most industries pay for subscriptions through national levies).
- some states/territories have industry co-funded programs/projects at the individual jurisdictional level – but there is no nationally consistent approach to this.

### *4.1.3 (c) Surveillance and Diagnostics (for proof of freedom and early detection)*

The objectives of surveillance depend on the context. In the absence of an invasive species, surveillance may aim for early detection of an incursion, and proof of freedom. An important biosecurity principle is that the earlier an incident can be detected, the more readily it can be dealt with. In the presence of an invasive species, surveillance is conducted to determine incidence, prevalence, and/or geographic distribution, for informing policy decision makers, prioritising actions and supporting trade. Surveillance activities are generally characterised by:

- A very high private/industry benefit and in many cases a high public benefit.
- A high return on investment.
- Clear benefits in limiting or mitigating the liability of parties as set out in the response agreements (described below);
- The absence of a nationally consistent or structured approach or framework for investment and cost sharing by governments and industries.
- They are conducted and funded primarily by state/territory governments.

There are some 'targeted' surveillance programs that are formally structured and cost shared. Examples include:

- the surveillance component of the TSE Freedom Assurance Program, managed through AHA;
- the National Plant Health Surveillance program managed through PHA (government funded only);
- the National Significant Disease Investigation Program, managed through AHA;
- the national arbovirus monitoring program (NAMP);
- the National Grains Biosecurity Program managed through PHA.

A *"National Framework for Surveillance and Diagnostics"* has been developed pursuant to the IGAB in recognition of the national importance of this activity, and funding considerations and principles have been articulated within the Framework. These principles recognise the importance of the 'beneficiary pays' approach to funding when there is a strong private good. The Framework dictates that each sector (e.g. plant health, animal health and invasive plants and animals) develops a national surveillance strategy, and a national surveillance business plan that operationalises the sector strategy. However, the Framework has not resulted in any new national funding arrangements for surveillance functions, which are mostly performed by the States.

Diagnostic capability is an essential element of surveillance capability, particularly for early detection. There is no structured national approach, program or framework for the management and funding of national diagnostic capability to support surveillance in the

national interest. Again, diagnostic funding falls almost entirely on the states/territories, with a high reliance on user pays/fee to support this function and thus is vulnerable to market failure.

## 4.2 INCURSION RESPONSE/MANAGEMENT

### *4.2.1 ERADICATION*

This is the only area of post-border biosecurity activity where there are formal, structured, agreed arrangements in place nationally to share funding and decision making across all jurisdictions and, where relevant, national industries (see also section 2.2).

These arrangements are set out in the Response Deeds (EADRA, EPPRD and NEBRA), and provide for eradication responses to incursions of nominated pests and diseases of national significance, where such responses are agreed to be in the national interest.

The 'Deeds' transparently set out the management and operational arrangements for cost sharing and decision-making.

The fundamental funding principle underpinning the Deeds is "beneficiary pays", with pests and diseases categorised according to the level of public and private benefit accruing from their eradication. Industry parties source their funding shares for EADRA and EPPRD responses through specific Commonwealth levies (generally set at zero pending incursions).

It should also be noted that the 'normal commitments' model described earlier applies. Only those additional costs directly attributable to a response will be covered. For example, overtime costs for existing staff and the cost of employing additional staff are eligible for cost sharing, but the salaries of public servants already employed are not eligible (irrespective of which agency employs them). The funding flowing from the Deeds also only covers the actual incursion response, not early detection, many early actions, or emergency response planning and preparedness, or the development of response capability and capacity prior to or between responses (i.e. response readiness).

<u>Important gaps in incursion response funding</u>
Some industry sectors are not party to these arrangements, e.g. aquaculture (aquatic animal diseases) and some plant industries. Many invasive plants and animals of high economic and production impact may also not be covered by the Deeds. These are important gaps for which there has been recent recognition, and some are subject of national considerations between relevant parties. For example, it is understood that an 'Aquatic Deed' is close to finalisation.

The Deeds do place significant potential liabilities on the signatory parties. These can be mitigated through activities such as preparedness, early detection, and rapid, planned response. However, these liability-mitigating activities are not systematically or consistently undertaken across governments and industries, and are not the subject of similarly structured and formal arrangements as exist for the active incursion response. This too, is a highly significant shortcoming in our national biosecurity system, further discussed below.

### *4.2.2 CONTAINMENT*

There are few if any post-incursion containment programs in place in Australia.

The current Red Imported Fire Ant Program in Queensland is, in effect, a containment program but the objective of eradication continues to be applied, and the principles of the NEBRA are being followed. The Exotic Fruit Fly in Torres Strait Response Plan. although officially an eradication response, in effect, is really a containment program.

No explicit structured funding arrangement currently exists for national containment programs, although a 'Transition to Management' framework that incorporates cost sharing principles into its management and funding arrangements has been endorsed in principle. Containment as a temporary or transitional measure may be a component of a "transition to management' program. However, permanent or long-term containment programs for some high impact invasive species may well be in the national interest, but there is currently no formal mechanism to establish such a program.

## 4.3 ONGOING MANAGEMENT OF ESTABLISHED PESTS AND DISEASES (TO PROTECT ASSETS AT RISK)

No formal, structured arrangement has been in place for the national management of endemic pests and diseases. Where national programs for, or approaches to established pest/disease management have been instituted, this has been on a case by case basis, with funding and management arrangements set up on an ad hoc basis.

A "*Framework for the Management of Established Pests and Diseases of National Significance"* has been developed under the IGAB, and funding considerations and principles have been articulated within that Framework. These principles recognise that established pest and disease management is generally an activity that benefits the owners of the assets normally impacted by established pests and diseases – be they public or private assets. The framework sets out that in general, governments will not invest in established pest/disease management to protect private assets in the absence of investment by the private beneficiaries. Increasingly over the past decade, governments have withdrawn from the historically high levels of funding for, and regulatory management of, endemic pests/diseases (although for some historical programs, withdrawal by government can be very difficult from an agri-political perspective). Private individuals, and industries collectively, are best placed to decide on how much to invest in asset protection activities associated with endemic diseases/pests.

# 5 CURRENT FUNDING MECHANISMS

There is no formal or consistent framework for funding and management of the continuum or suite of post-border biosecurity activities undertaken in the national interest (see also section 2.2).

Eradication of incursions of nationally significant exotic pests/diseases is the only activity for which formal, structured funding and management arrangements are in place. However, not all beneficiaries are parties to these arrangements.

The approach to important risk mitigation (and liability limiting) activities such as early detection surveillance and response preparedness is ad hoc at best.

There is also no over-arching framework to guide investment decisions in the national interest.

## 5.1 GOVERNMENTS

Governments contribute to biosecurity resourcing through:

- taxation revenue (consolidated revenue)
    - Annual appropriation ("ongoing" funds)
    - fixed term "initiative" funds (typically of 3 or 4 year term)
    - ad hoc one-off funding allocations/treasury advances
- fees and charges on individuals/businesses
    - registrations/ permits
    - fee-for-service and other user charges

Government funding for biosecurity in Australia is essentially characterised as resulting from an ad hoc and uncoordinated system where 9 independent investors (governments), responding to their own political and social pressures and stakeholder demands, allocate funds entirely independently of each other. This results in asynchronous waxing and waning of funding according to budget and election cycles and fiscal pressures of each sovereign jurisdiction. State Treasuries are generally unmoved by arguments that providing more biosecurity funding is in the *national* interest. Indeed, it is difficult to think of a less appropriate system for funding national biosecurity programs and obligations. Again, our forefathers of the federation could not have foreshadowed how radically the biosecurity needs of the new country would change over the first century of its existence. Perhaps more extraordinary is that in the face of these changes, the biosecurity funding system remains essentially unchanged today. The formation of AHA and PHA has, understandably, not been able to overcome these fundamental flaws in this 'system', although they have been able to broker Commonwealth, state/territory and industry funding for a number of national programs and deliver clear benefits not hitherto achievable.

## 5.2 INDUSTRY/STAKEHOLDER CONTRIBUTIONS

There are a range of mechanisms in place at Commonwealth and at state/territory levels by which biosecurity stakeholders raise and contribute funds for biosecurity programs. These represent a mixture of beneficiary pays, risk creator pays and simple user pays approaches

These include:

- Agricultural industries as 'collectives'
    - National levies collected under Commonwealth legislation
    - State schemes
        - Stamp duty schemes
        - Transaction levies
        - 'Industry Development Orders' schemes
        - local government or local board 'rates' on landholders (eg LLS)
        - Other

- Private Individuals/Businesses
    - Payment of fees for service and other user charges
    - Payment of registration/permit fees and charges
    - by conducting (at own cost) activities otherwise carried out by government
    - In addition, there may be a significant 'in-kind' contribution across a range of stakeholders (not quantified)

## 5.3 COST-SHARING APPROACHES

Where there is a clear role for government in providing biosecurity services, cost-sharing may be appropriate where there are both public and private benefits. There are generally three different ways of approaching cost-sharing arrangements.

### *5.3.1 USER PAYS*

A user-pays principle operates when the direct users of a given good or service fund all or part of the cost of providing it.

Where practical, it can be appropriate to charge individual users who consume goods or services relating to biosecurity management. Many activities, such as certification, accreditation, audit, inspection and diagnosis, are currently charged on a fee-for-service basis in most jurisdictions. The advantage of this is that it leads to the service being used only where it provides net benefit to the user and thus provides a signal to providers about the level of demand. This helps in designing an efficient supply of services.

However, for many biosecurity management activities, a user-pays mechanism is impractical, as it is impossible for users to determine what tangible benefits they gain individually from many types of 'service'. It can also operate to reduce desirable activity, such as passive surveillance, by imposing a financial disincentive on an otherwise desirable use of the 'services'. Significant market failure can result.

### *5.3.2 BENEFICIARY PAYS*

The beneficiary pays principle allocates costs according to the 'beneficiaries' of a good or service. For example, the public will be expected to pay (e.g. via taxes) where there are public goods or community-wide spill overs, such as environment and health impacts. Where the biosecurity issue is expected to impact on an industry, the industry would be expected to pay for activities which mitigate that impact. Often a particular project will have a mix of public and private beneficiaries and co-funding is then appropriate.

In some cases it may not be possible or desirable to share or recover costs, for example when the cost of developing and implementing funding arrangements is excessive relative to the costs recovered by government.

### *5.3.3 RISK CREATOR PAYS*

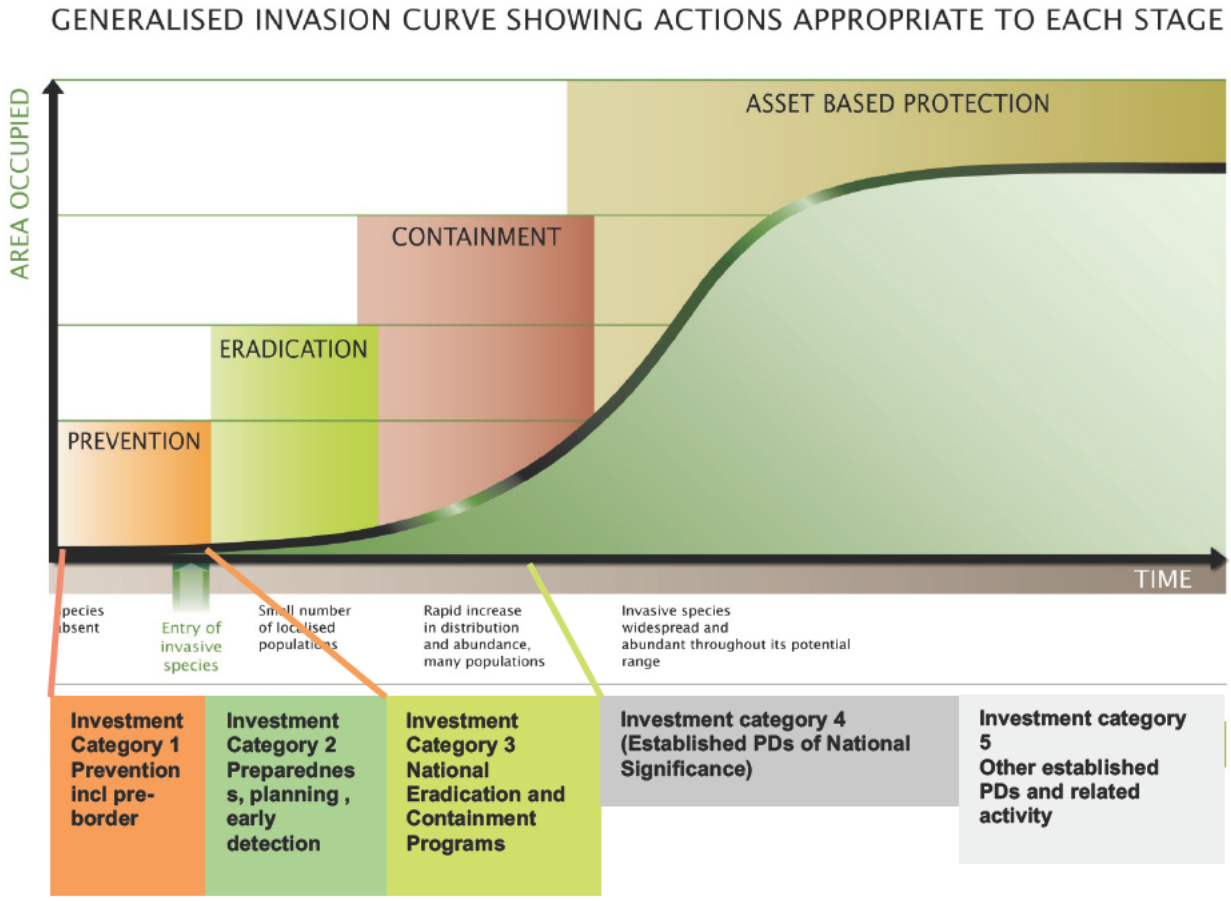
Risk creator pays occurs when the person or business who is responsible for creating a risk bears the costs of managing that risk. The risk creator pays either by incurring the direct costs of undertaking necessary risk mitigation activities, or by being charged or levied to meet the cost of risk mitigation activities carried out by others (e.g. by government). An obvious example is importers of goods into Australia.

Policies to deal with risk creation will have the greatest chance of success where the risk creator can be easily identified. However, sometimes the ultimate cause of recently-emerged risk was legal at the time (e.g. a plant becoming an environmental pest years after introduction) and the responsible business may be unidentifiable or no longer exist. Where this occurs, risk creator pays is not a viable policy mechanism.

# 6 CURRENT INVESTMENTS ACROSS THE INVASION CURVE.

When assessing current levels of investment, as well as who is investing, it is instructional to consider the investment categories recently developed by NBC and reported in the IGAB review across the generalised invasion curve as set out in Figure 1. It is generally accepted that investments towards the left hand side of the curve represent a higher return on investment and are more easily justified from a government investment perspective. Investments on the right hand side of the curve are generally within the province of industry or other stakeholders (the owners of the assets at risk and the beneficiaries of asset protection). However, it is also recognised that a balanced approach across the curve is ideal.

**Figure 1. The Generalised Invasion Curve and investment categories as developed by NBC and reported in the IGAB Review.**

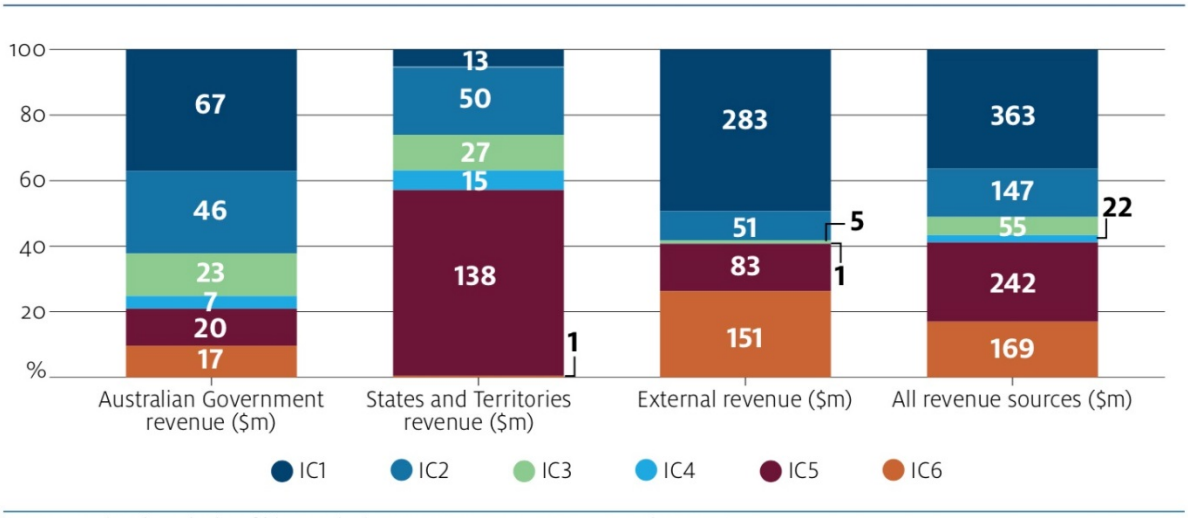



Note – there is also an additional category, IC6 = Export facilitation (Australian Government only)

Figure 2 below shows approximate investments across the invasion curve derived from a national funding stocktake completed by jurisdictions. The general picture is not expected to be significantly different today. Some relevant observations include:

- There is relatively low investment by stakeholders in preparedness, planning and early detection (and insufficient investment overall – separate observation by the authors based on conducting consultancies within a number of jurisdictions in recent years).
- There is relatively low investment in national eradication programs, despite a general perception that investment in this area has been high in recent years.
- Stakeholders' investment in national eradication programs is low, although this may be a reflection of the very high investment in fire ant eradication, which is solely government funded.
- Investment in established pests and diseases of national significance is very low and almost solely by government.
- There is very high investment in other established pests and diseases, with the proportion of government funding higher than would be expected from a purely policy perspective (the authors experience is that many of these programs are historical and tend to become political when there are suggestions of government dis-investment).

**Figure 2. National biosecurity investment stocktake 2015–16 results by investment category and source of funds ($ million) – reproduced from IGAB Review.**

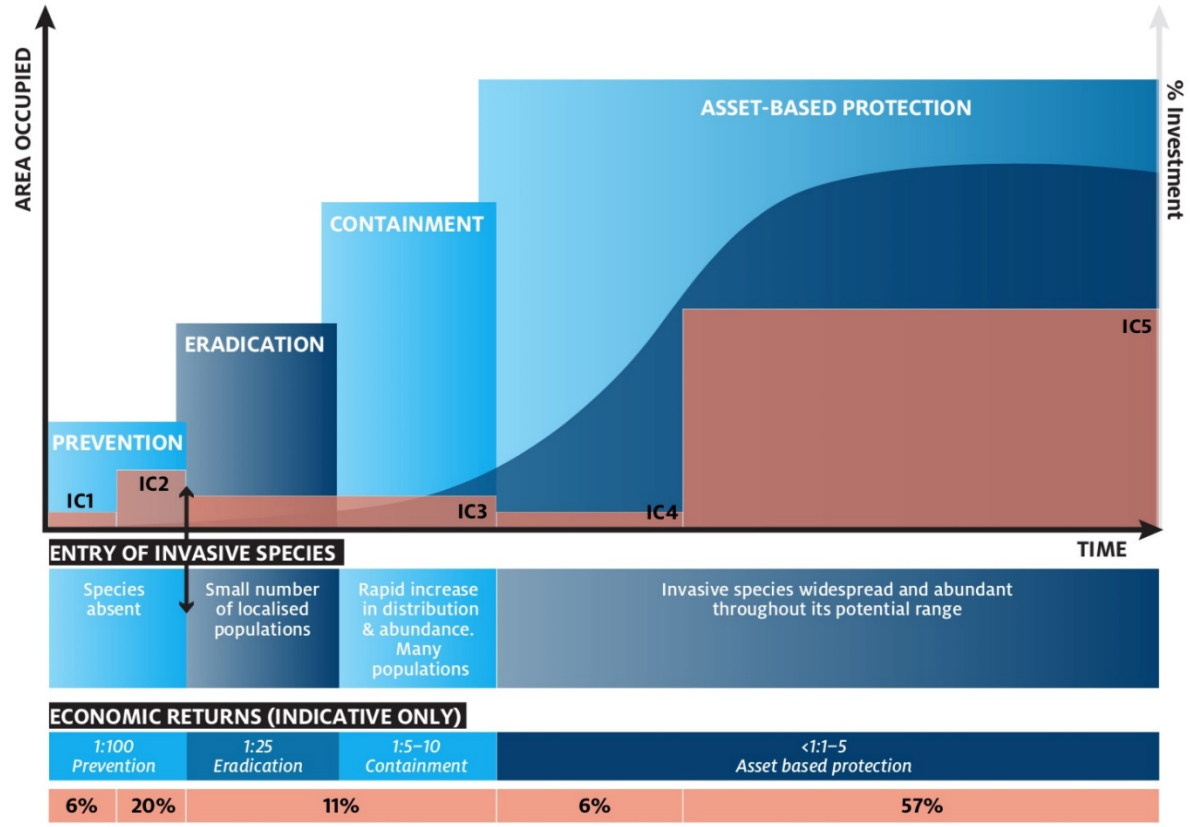



Source: National stocktake of biosecurity investment 2013–14, 2014–15 and 2015–16.

Note – IC6 = Export facilitation (Australian Government only)

Figure three below presents this information in graphical form.

**Figure 3. State and territory government biosecurity investment in 2015–16 – reproduced from IGAB Review**




Source: 2015–16 national stocktake of biosecurity investment.

## 6.1 IGAB COMMITMENTS

The IGAB review makes a number of recommendations in relation to the investment mix, investment process and funding sources for biosecurity. The relevant recommendations are reproduced in attachment 1 and these in our opinion are all worthy of implementation. However, there are no recommendations that address the fundamental structural problems inherent within Australia's systems as outlined throughout this paper. In fact, recommendation 31 highlights these inherent problems – '*To provide greater system stability, Australian governments' appropriations funding for biosecurity should be maintained at 2016–17 levels (in real terms) or more until after completion of the next review of the IGAB*'. It is most unlikely that 9 independent jurisdictions will implement this recommendation uniformly. Further, they are all in different stages in their funding cycles, with considerable variation in the balance of their overall investments.

## 6.2 SUMMARY

When viewed from a purely investment perspective (return on investment), Australia's current biosecurity investment falls well short of what would be considered appropriate. Better mechanisms are required that will ensure Australia has a truly national biosecurity system, with appropriate and sustained investments by all investors.

# 7 ANALYSIS

## 7.1 WHAT IS THE CASE FOR CHANGE?

It is clear from the preceding information that the current national biosecurity system, particularly funding arrangements and associated decision-making processes, is not ideal. In fact, it is remarkable that the system performs as well as it does; largely owing to a great deal of goodwill on the part of the various players and investors. However, cracks are appearing in the system. Our own experiences performing consultancies within various jurisdictions in recent years indicate suboptimal capability, particularly in areas like surveillance and preparedness, as well as sub-optimal capacity for a large response.

There has been considerable discussion in various forums around Australia in recent years about the decline in biosecurity resources / capability. PHA/AHA have established a number of cost-shared programs, but these have never been applied to baseline resources and have generally not addressed the underlying problem of (a) agreeing on an acceptable 'baseline' of resources and (b) putting in place a sustainable resourcing model.

The fact that a high proportion of post-border biosecurity priorities originate at the national level while most resources come from State appropriations has not helped the issue. This is because State Treasury officials are generally not well linked into this national system. It is generally up to State agricultural officials to argue these resourcing requirements at the Treasury level, with varying (by jurisdiction and year) success (see also section 5.1).

At the Australian government level, the national agricultural agency tends to 'stick to its (constitutional) knitting', that is pre- border and border operations and international trade and engagement. However, we consider that the Commonwealth could do a lot more in terms of facilitating national priority actions post border. Indeed, the Beale Report in 2008 recommended that the Commonwealth 'extend its reach' to play a stronger role in (including investment in) post border biosecurity functions. A fundamental re-examination of the role of the Australian government is warranted, given that:

(i) biosecurity responsibilities are not really laid out in the Constitution; and
(ii) until now, the term 'quarantine' in the Constitution has been very narrowly interpreted; and the whole purpose of the biosecurity system has changed dramatically since Federation, with mostly national priorities driving the system. This is discussed further in Section 8 of this report.

Another contributor to the overall problem is that agricultural industries and other stakeholders invest minimally in the underlying biosecurity systems (e.g. surveillance, particularly passive surveillance; and preparedness) that underpin market access and early detection of, and rapid planned response to, emergency pests and diseases.

A pointer to the future is that the one area where access to State resourcing for new initiatives is generally not a problem is cost-shared responses. These are agreed at Ministerial forum level and Treasuries tend to see cost sharing as a positive, bringing additional resources into the State. The State is also formally and legally bound by cost sharing agreements that have been signed at First Minister level. Exotic incursion responses

represent a 'clear and present danger' and funding is in general readily advanced once 'the balloon goes up'. Treasuries are also more likely to find funds when the state is not the sole investor.

The problem appears to be that no such agreements are in place for activities in the areas of prevention, surveillance and preparedness which underpin the biosecurity system. Additionally, it is much more difficult to demonstrate to Treasuries that a 'clear and present danger' exists when preparedness and surveillance are suboptimal, particularly when such ongoing investment competes with health and hospitals, education and law and order which are the subject of daily media discussion.

There are great examples from the past where tied Commonwealth funding, linked to defined outcomes, was provided to the States, but these now seem to be the exception rather than the rule. Possibly the best example was EXANDIS in the 1990's discussed in section 3. Under this program, most of the AUSVETPLAN system was originally developed.

The Government Industry Agreement (GIA) in New Zealand, the equivalent of Australia's cost sharing (response) Deeds, operates as a partnership between primary industry and government to manage pests and diseases that could badly damage New Zealand's primary industries, economy, and environment. The GIA was negotiated with primary industry groups in New Zealand to cover both "readiness" (preparedness) and response.

Under the GIA, parties can develop an Operational Agreement for the cost sharing, management and implementation of a biosecurity program. Operational Agreements provide for joint decision-making and investment between Deed Signatories, in order to achieve specific outcomes for enhanced readiness and response. They involve the Ministry for Primary Industries and one or more industry Signatories and focus on achieving agreed biosecurity outcomes. There is no obligation on Deed Signatories to enter into an Operational Agreement - it is not a requirement for signing the GIA Deed. Deed Signatories can enter into one or more Operational Agreements, or they may choose not to enter into any. An Operational Agreement will describe operational arrangements to achieve outcomes related to:

- Specific unwanted organisms
- Groups of unwanted organisms
- Activities that improve overall biosecurity readiness and/or response

In short, the GIA provides a clear and consistent mechanism for joint funding and decision making to support national programs of preparedness and surveillance should parties wish to do so. There is no such mechanism in Australia, except through the two companies, where case by case brokering and a (perceived) lack of an agreed industry funding source invariably makes this process slow and difficult.

When discussing this problem, there has been a trend in thinking in many forums that there must be significant resources, knowledge and data elsewhere in industry, universities and the community that will largely solve this problem if we can establish mechanisms to tap into or incentivise these resources. While this should be pursued, it likely does not answer the fundamental problem of maintaining an appropriate baseline capacity and capability. This has been starkly demonstrated recently in New Zealand, which has widely promoted its

aspiration for "A biosecurity team of 4.7 million" – which aims to make all New Zealanders aware of the importance of biosecurity and to get them involved in pest and disease management. However, a recent survey to poll the sentiments of NZ citizens showed that just 2% of citizens think biosecurity threats affect them. This is a very disappointing result. However, achieving a biosecurity-aware citizenry, while an important goal, does not solve the problems of insufficient and inconsistent investment in biosecurity preparedness and surveillance by government and industry.

On a more positive note, New Zealand's National Biosecurity Capability Network (https://www.mpi.govt.nz/protection-and-response/biosecurity/national-biosecurity-capability-network/) is a great initiative that Australia should seriously consider mimicking to assist resourcing of large biosecurity responses.

## 7.2 WHAT INVESTMENT IS MISSING, INADEQUATE OR UNBALANCED?

As demonstrated in section 6, investment across the invasion curve does not seem to follow sound investment principles and this was highlighted in the IGAB review. In particular, investment in post border prevention, surveillance and preparedness are all demonstrably inadequate, as well as being unbalanced against other components of the system. For example, figure 3 indicates that States' collectively invest 57% of expenditure in asset-based protection, with only 26% in prevention, surveillance and preparedness.

What does this mean on the ground? If we look at FMD, arguably Australia's most feared exotic pest or disease, during consultancies over recent years we have observed:

- Very limited, and generally low, levels of education and enforcement of the swill feeding legislation, our primary post border prevention mechanism.
- A very significant reduction (compared with historical levels) in passive (general) surveillance samples being processed through laboratories – our primary early detection method.
- Extreme cycles in the level of investment in response preparedness. For example, in one jurisdiction there had been no preparedness training conducted for 18 months prior to an independent capability assessment being conducted about 5 years ago. This was followed by three years of significant investment to improve capability, which has now been reduced, albeit well above the previous levels that had been totally inadequate. This waxing and waning of preparedness activities does not serve Australia well.
- Further, the 'smaller' jurisdictions find it difficult to invest in these activities generally. The urgent most often takes precedent over these important, but less urgent activities.
- There is a lack of formal surge capacity arrangements across Australia to the extent that would be required during a very large response. This remains a major risk for the conduct of a significant FMD response. Australia has not invested in anything like the New Zealand's National Biosecurity Capability Network mentioned above.

The current Deeds do place significant potential financial liabilities on the signatory parties, liabilities that can be mitigated through activities such as preparedness, early detection, and rapid, planned response. However, these liability-mitigating activities are not systematically or consistently undertaken across governments and industries, and are not the subject of

similarly structured and formal arrangements as exist for the active incursion response. This too, is a highly significant shortcoming in our national biosecurity system, further discussed in Section 10.

# 8 REACH OF COMMONWEALTH POWER FOR BIOSECURITY (INCL LEGISLATION)

The Australian constitution is largely silent on the issue of biosecurity apart from providing the Australian Parliament with the power to make legislation in relation to 'quarantine' (Section 51), although the term is not defined. Related Constitutional powers include international trade and foreign policy, both highly relevant to biosecurity in the 21st century.

That the term 'quarantine' had/has a wide constitutional meaning is evidenced by provisions in the original *Quarantine Act 1908* that allowed the Commonwealth to exercise quarantine controls over the movement of goods 'from one part of Australia to another' in order to control 'quarantinable diseases'. Whilst never enacted in practice, this provision serves to demonstrate that the Commonwealth 'quarantine' (now referred to as biosecurity) power or legislative reach clearly extends beyond the border. This 'extended reach' is now firmly established in the new *Biosecurity Act 2015* in the form of biosecurity emergency powers. Under the new Act, the Governor-General can declare a biosecurity emergency when the Agriculture Minister is satisfied that a disease or pest poses a severe and immediate threat or harm on a nationally significant scale to animal or plant health, the environment or related economic activities.

The Act currently intends that these emergency powers will only be used in limited circumstances to manage biosecurity risk on a nationally significant scale, such as:

- where the response exceeds the capability of state, territory and Commonwealth powers;
- where a rapid, nationally consistent response is required to manage a severe and immediate threat and prevent or control the establishment or spread of a disease or pest.

However, it seems clear that if the government parties were all in agreement, the legislation could be further amended to allow biosecurity powers to be used for a wider range of circumstances other than emergency response activities, including biosecurity activities normally undertaken by the states in the national interest. It would arguably follow that if the Commonwealth has the constitutional power to do this, it has the authority to assume responsibility also, should Australia's governments all agree. We return to this possibility later in Section 10.

# 9 INDUSTRY/STAKEHOLDER FUNDING MECHANISMS FOR BIOSECURITY

As indicated earlier there are a range of mechanisms in place at Commonwealth and at state/territory levels by which agricultural industries may contribute funds for programs of benefit to them. These include stamp duty / transaction levy schemes, industry development orders, local government or local board 'rates' on landholders, and of course, the national levies collected under Commonwealth legislation.

There can be no doubt that funding mechanisms for national programs delivering outcomes that serve the national interest should operate at the national level and apply uniformly and consistently across industries in all parts of the nation. While there are a range of industry funding schemes in place in some states, it is not sensible to attempt to build a national funding system based on a patch-work quilt of differing funding arrangements. Indeed, this is at the heart of the problems with public funding mechanisms for national biosecurity outcomes as discussed above. National (Commonwealth legislated) industry levies are thus the optimum mechanism for providing industries with funds for investment in biosecurity. This was the clear finding of a comprehensive assessment of industry funding mechanisms undertaken for the Victorian government by Frontier Economics in 2008. Frontier Economics concluded that adapting the existing national levy collection model would be the preferred approach, as it does not involve the extra complexities, compliance and administrative costs associated with the development of new mechanisms in each State/Territory that would be necessary to utilise a state-based approach.

A common misconception is that, while there are Commonwealth levies in place to allow industries to fund biosecurity responses under the EADRA and EPPRD, there are no existing levy mechanisms in place for funding other biosecurity activities such as preparedness and surveillance. The reality is that the existing national levy mechanisms do provide agricultural industries with an appropriate and available source of funds with which to negotiate wider biosecurity partnerships or agreements with government without the need for new or amended Acts.

Previous studies (Peter Bailey pers comm[2]) have confirmed that it is possible to introduce a national biosecurity, industry funding framework based on the existing national levy legislation which would enable animal and plant industries to raise funds for investment in animal or plant biosecurity initiatives such as preparedness and surveillance without the need to amend the current levy- related Acts. The existing national legislation allows imposition, collection and distribution of levies raised on animals, animal products, plants and plant products.

The scope of this legislation is broad. By example, the AHA Act provides a series of priorities for the expenditure of funds raised from the imposition of EADR 'charges' or 'levies', which AHA has received from the Commonwealth. One such expenditure priority allows for AHA to direct EADR 'charges' or 'levies' funds for "*the promotion or maintenance of the health of animals to which the animal product relates*" in accordance with the wishes of the industry

[2] Mr Peter Bailey, former Executive Director Biosecurity Victoria, undertook an internal review in 2001 of national industry biosecurity contributions (levy) legislation and arrangements.

organisation representing those that paid the levy. There can be no argument that promoting and protecting animal health is synonymous with biosecurity.

On this basis, we understand that an agreed framework to raise funds for national and regional biosecurity programs/projects could be implemented by only amending the existing regulations to vary current levies. This would enable animal and plant industries to fund national (and regional) programs/projects, with funds being managed and distributed through AHA and PHA. Industry sectors wishing to use the proposed framework would need to satisfy the Commonwealth Government's Levy Principles and Guidelines when seeking to introduce or vary the appropriate EADR/EPPR levy or AHA/PHA 'charge/levy'.

To initiate this funding arrangement would require all jurisdictions, national primary industry organisations, AHA and PHA to cooperate and support the introduction of such an initiative and agree in-principle that funds should be raised by amending the appropriate regulations to vary the national 'biosecurity' levies that are currently imposed on livestock and plant industry producers. This could be approached in an 'industry by industry' manner based upon individual industry initiatives, or as a collective national process involving all industry members of AHA and PHA.

An existing example of the use of national industry levies in this way is provided in the form of the Grains Farm Biosecurity Program (GFBP) an initiative to improve the management of, and preparedness for, biosecurity risks in the grains industry at the farm and industry levels. Launched in 2007, the program is managed by PHA and funded by growers (via the EPPRD levy) through Grain Producers Australia together with the New South Wales, Queensland, South Australian, Victorian and Western Australian governments. Grains Biosecurity Officers in these five states develop and deliver materials to raise awareness and training to growers, consultants and other industry stakeholders. PHA manages the national program and assists officers to deliver key messages by producing communication tools such as farm gate biosecurity signs, fact sheets, media releases and pocket guides.

# 10 Biosecurity Investment Principles

With the current fiscal constraints facing governments and increased risks from exotic, new and emerging pests and diseases, a consistent approach to biosecurity risk prioritisation and investment is needed at the national level

With this in mind, and consistent with the IGAB, the following broad investment principles could be used to guide decision making and investment by governments in biosecurity activities that are in the national interest:

1. National interest guides investment and prioritisation when needed.
2. National effort is targeted under a risk return approach towards areas where the greatest biosecurity outcomes can be achieved.
3. Investment decisions are evidence based and operationalised to be consistent with overall policy objectives.
4. Roles and responsibilities are clearly articulated.
5. Governments invest where there is a market failure or public benefit.
6. Risk creators and beneficiaries contribute to national activities (this could include both financial and in-kind contributions).
7. All investors in national activities can participate in the decision-making process.
8. Legislation and clear processes underpin co-investment strategies.
9. Decision-making processes are robust and transparent.

However, these principles may not achieve the desired result in the absence of an overarching funding or investment model, as they could be applied independently to each investment, case by case, project by project. There also needs to be a focus on investment balance and return across the whole suite of biosecurity programs and activities.

A more considered and holistic approach is needed given the current significant quantum of funds being invested by governments, albeit in an inconsistent and asynchronous manner.

# 11 National Investment Portfolio Model

As indicated above, the existing national levy mechanisms provide agricultural industries with an appropriate and 'immediate' source of funds with which to negotiate partnerships with government under a National Biosecurity Investment Portfolio approach or model.

Under this model, industry could adjust existing levy investment to effect a change in investment proportions (balance) by activity, without the need for additional funds or alternatively, through a levy increase. This would also provide a greater return as more funds directed to preparedness and surveillance to prevent establishment of new pests/diseases would see a comparative reduction in future costs for ongoing disease management.

This would also enable industries to come to the table empowered with a known quantum of funds to negotiate genuine partnerships with government. Both governments and industry would therefore have a structured mechanism to co-fund national biosecurity

activities. New proposals could be funded with new funds (increasingly difficult to acquire) or by rebalancing the biosecurity investment portfolio within the existing total investment envelope. This would stimulate much more productive discussions and negotiations concerning cost sharing national activities than has tended to be the case in the past.

The investors could of course also consider redirecting investments from outside the portfolio – e.g. industry could change the balance of levy investment between R&D, marketing and biosecurity.

One approach or model for the collective national funding of biosecurity activities might be to look at this as being a national investment portfolio. Like any investment portfolio, it would start with an acceptable or agreed total annual investment, which would then be apportioned according to risk and return across a suite of investments.

The portfolio would need to consider investment across all of the key components of the biosecurity continuum – for instance by using the Generalised Invasion Curve (GIC) model or approach as a guide to government investment return (refer figure 1)

While cost sharing proportions, and roles and responsibilities might change along the 'curve', the portfolio would include investment in prevention, preparedness, response (already nicely structured in accordance with the Deeds) and asset protection (from established pests/diseases), as well as the supporting activities such as surveillance, information management, and investment support tools.

The investment balance is all important. Within the fixed total investment envelope, decisions from time to time would mostly involve changing the balance between high and low risk, high and low return, and short and long term investments. This could mean investing more in an activity, or in a new activity, using in the first instance, funds re-directed from another, presumably less rewarding investment.

The investment portfolio could be described in a National Biosecurity Business Plan (NBBP) which would be managed on a rolling 4-year basis. An annual 'investors conference' could discuss the portfolio and agree on any desirable changes to be reflected in the next year's component of the 4-year rolling Plan. In practical terms, there may need to be an NBBP per sector, although for government the significant overlap in some areas such as preparedness, response capability building etc might justify a single Plan, with sector specific components. Clearly, industry funding partnerships would need to be sector based.

# 12 Improving National Biosecurity Funding

## 12.1 "Big Picture' changes to roles and responsibilities – "nationalise" the biosecurity function

As has been stated earlier, the strict division of responsibilities for biosecurity, generally attributed since Federation to the Constitution, does not fit with what is now a national function operating predominantly in the national interest.

One long term option for addressing the current complex and regionally inconsistent government funding of post border biosecurity is to effectively 'nationalise' this function, or at least those functions directly attributing to the national interest, i.e., (i) preparedness, planning and maintaining response capability for biosecurity emergencies, and (ii) surveillance for early detection of emergency pests and diseases and necessary for providing pest/disease information for proof of national pest/disease freedom to support market access and trade and to protect Australia's international reputation.

Such a change would require very significant reform and a willingness by all government parties at First Minister level to support and embrace change. There are a number of models by which a truly national biosecurity system could be achieved, the simplest being for the Australian government to assume responsibility for national policies and protocols, developed in partnership with state and territory governments, with the state/territory role being for operational delivery of activities and services on behalf of, and funded by, the Australian government (and of course industry and other appropriate stakeholders/beneficiaries/risk creators). Australian government funding could be direct to the 'contracted' jurisdictions or via AHA and PHA where industry partnership co- funding would be brokered.

The purpose of this paper is not to describe any particular models, but to generate consideration and discussion on such a major reform option. There are several examples in the relatively short time since Federation where the Commonwealth and States have agreed on arrangements or reforms to the way 'national' functions and services have been managed and delivered.

### *12.1.1 Example 1 - Delivery of quarantine services 1908-1995 (States as agents of the Commonwealth)*

There is a substantial precedent in Australia for a highly effective (and efficient) arrangement whereby the Commonwealth and States work in close partnership in the clear national interest, in a manner unlikely to have been envisaged by the fathers of Federation. This is described in detail in section 3.1. The key features of this arrangement were funding provided by the Commonwealth for agreed services that were complementary with other State services. Policies and priority setting were achieved through a partnership approach.

In some ways this arrangement was more complex from a management perspective than the current single service arrangement. However, there were many advantages in terms of a more integrated biosecurity system.

#### *12.1.2 Example 2 - Nationalisation of AgVet Chem registration*

For many years Australia's regulation of agricultural and veterinary (AgVet) chemicals was a mixture of State and National arrangements, with most powers residing within the States. Hence, there was significant duplication of effort, particularly in the area of assessment and approvals for usage.

A single national framework for the regulation of AgVet chemicals has now been developed through the States conferring powers to the Commonwealth.

The Commonwealth through the Australian Pesticides and Veterinary Medicines Authority (APVMA) now regulates AgVet chemicals in collaboration with the states and territories. The APVMA approves chemicals for supply, sets conditions for their import, manufacture, supply and use and enforces compliance up to the point of retail sale. The states and territories control the use of chemicals after they are sold according to the conditions for their use set by the APVMA under model national legislation. The APVMA also ensures the chemicals that are sold meet appropriate standards.

While some may argue that the system has not been perfect, it is sufficient for the purposes of this paper to simply recognise that there is a precedent for the states transferring long held functions and powers to the Commonwealth to create a national system, while recognising and retaining a complementary role for both levels of government.

### 12.2 Developing a national cost sharing agreement for surveillance and preparedness

#### *12.2.1 Commonwealth/States & Territories/Industry share based on agreed formula/e*

An alternative option for securing more consistent and sustainable funding for nationally important post-border biosecurity functions is to develop and implement a national cost-sharing agreement for these functions. Such an agreement could utilise many of the features of the existing emergency response cost sharing agreements, (e.g. defined shares based on beneficiary analysis with governments and industry as the parties, agreed operational plans and budgets, definition of eligible costs and so on) with management and decision making involving all funding parties.

Stewardship of these arrangements could be undertaken by AHA and PHA – indeed this would be a natural fit with the objectives of the two companies. While in theory this could be achieved through an extension of the scope of the response agreements (to make them 'readiness and response' agreements), this would likely be problematic (or at least complicated), as funding arrangements under these Deeds are very disease/pest specific, while the functions in question (emergency response planning and preparedness and surveillance) tend to be more generic and broadly directed at all or many emergency pests and diseases. Unlike the current Deeds, there may be an opportunity to consider a single national cost-sharing agreement for these functions across animal and plant biosecurity.

One key difference for industry with respect to a 'readiness' cost-sharing agreement is that funding would need to flow from the beginning – i.e. levies to fund industry shares could not be set at zero and only activated when needed. However, there has been previous study and review of national industry levy arrangements that indicate that no new levies

need be introduced to fund activities outside the current Deeds, but only changes in the levy rates for the various industries/commodities. This has been set out in some detail in Section 9 of this paper.

In short, implementation of this option mostly requires a collective will, as the 'way' is already there.

An example of how this arrangement could work in practice is the BTEC example provided in section 3.2.

#### *12.2.2 Using existing levy legislation (EPPRD and EADRA levies) for industry to raise funds*

Section 9 of this paper sets out a summary of the existing industry levy mechanisms and legislation. It is the strong belief of the authors that the legislative levy mechanisms for industries to fund their shares of a national 'readiness' agreement already exist. It seems that no amendment to existing levy imposition, collection and distribution Acts are required, only changes to Regulations that set the rate of levies for the various commodities. In essence this is because the levy disbursement legislation sets priorities for the use of the EADRA and EPPRD levies that go beyond just emergency response.

While the development of a national cost sharing agreement on 'response readiness' provides a sound basis for industry to further utilise the national levies already legislated for, it is open to one or more (or all) industries to strike a rate for their EADRA/EPPRD levies to provide a funding source for other biosecurity activities (such as the grain industry has done). Having such a funding stream places industries in a strong negotiating position with government to broker joint funding of biosecurity initiatives where there is a strong industry and public benefit.

### 12.3 Develop and introduce a National Biosecurity Investment Strategy (necessary regardless of the funding model/s in place) which complements a National Biosecurity Strategy.

Regardless of the funding models or arrangements operating from time to time, there would be significant benefit in Australia having an agreed national biosecurity investment strategy in place. The recent IGAB Review recommended a national biosecurity investment strategy be developed, and some scoping work had been earlier undertaken by the NBC, although no final strategy emerged at that time, pending the IGAB review.

Such a strategy could provide the blueprint to guide collective national investment in biosecurity. Ideally such a strategy would facilitate more lined-up and consistent investments by all the investors (i.e. balance of investments rather than quantum by any one party, as discussed in section 11). It would also assist to identify the optimum activities in which to invest more when an investor has new funds, or to invest less in during periods of fiscal constraint (activities of lower return), or to better balance a static investment to optimise return.

A national investment strategy would provide a vehicle to provide structure to the necessary focus, reinforced in the IGAB, on improving investment return, and over time,

optimise the return on the investment of public funds, whether that be by governments (alone) or jointly with beneficiaries such as agricultural industries.

The Strategy would assist in promoting national coordination and collaboration across jurisdictions, with the Commonwealth, States and territories sharing a common, medium to long term strategic approach to biosecurity investment (and changes up or down to that investment) that meets the national interest.

The Strategy would provide a transparent basis to support the need for government to play an enabling role in assisting industry to put revenue mechanisms in place to co-invest in biosecurity activities also in the national interest. (e.g. a dedicated national biosecurity levy stream for all agricultural industries).

There has been considerable work by the NBC since IGAB version 1 to develop investment principles, cost recovery and cost-sharing policies and principles, and a portfolio approach to biosecurity funding. A strategy would connect these policies and principles and set them out in one place.

Importantly, a national Strategy would provide stakeholders, funding partners and potential co-investors with a clear and transparent statement, and thus understanding, of how governments will approach decisions about biosecurity investment, and co-investment, that serves the national interest.

Ideally, the investment strategy would complement a national biosecurity strategy, but in the absence of the latter, would be an influential and effective instrument in its own right. Indeed, the process of crafting, workshopping and obtaining national agreement on an investment strategy would in itself be of significant value.

# ATTACHMENT 1. IGAB REVIEW RECOMMENDATIONS IN RELATION TO BIOSECURITY INVESTMENT AND FUNDING.

**Recommendation 27**

The NBC and the Industry and Community Biosecurity Committee, in consultation with other key stakeholders, should review the National Framework for Cost Sharing Biosecurity Activities to enable its practical application and make it public.

**Recommendation 28**

The NBC, in collaboration with key industry and non-government partners, should agree uniform and fully inclusive categories of activity, including investment categories, for the national biosecurity system.

**Recommendation 29**

All governments should review their current biosecurity expenditure with a view to redirecting funding to areas that provide the greatest return on investment to producers, industry and the community. This approach will require a planned and coordinated strategy of engagement and communication.

**Recommendation 30**

The Risk Return Resource Allocation model should be extended to include all jurisdictions and their investments, with the Australian Government providing technical assistance to jurisdictions to build national capacity.

**Recommendation 31**

To provide greater system stability, Australian governments' appropriations funding for biosecurity should be maintained at 2016–17 levels (in real terms) or more until after completion of the next review of the IGAB.

**Recommendation 32**

State and territory governments should agree a common biosecurity cost-recovery framework and review their biosecurity cost-recovery arrangements to ensure they are nationally consistent, appropriate and transparent.

**Recommendation 33**

All levels of government could help meet their budgetary challenges by reviewing biosecurity levies and rates/charges currently or potentially applying to biosecurity system participants. These should be commensurate with agreed national cost-sharing principles.

**Recommendation 34**

Funding for the national biosecurity system should be increased by:

- implementing a per-container levy on incoming shipping containers of $10 per twenty-foot equivalent unit and a levy of $5 on incoming air containers, effective from 1 July 2019
- increasing the Passenger Movement Charge by $5, effective from 1 July 2022, with the revenue generated hypothecated to the Australian Government agriculture department for use nationally to enhance activities across Australia's biosecurity system

- more widespread implementation by states and territories of land-based levies, with each jurisdiction to determine the magnitude of a levy based on its circumstances, but to include properties of two hectares or greater.

The revenue raised by these mechanisms should be directed to those areas of the national biosecurity system that are currently most underfunded, with a priority for strengthening environmental biosecurity activities, national monitoring and surveillance activities, R&I and national communications and awareness activities.

**Recommendation 35**

AHA and PHA should coordinate an industry stocktake of national biosecurity system investments and make the results public.

**Recommendation 36**

The Australian Government should enact legislation to put in place a universal emergency response levy, with its activation for any particular industry group to be at the discretion of the Minister for Agriculture. The legislation should provide the Minister with discretion to set a positive levy rate to build an emergency response fund for an industry in advance of an incursion. The legislation should require that, for industries covered by an existing emergency response deed, the Minister is to comply with the requirements of the relevant deed in making any decisions.