

Quarantine and Biosecurity Review

PIRSA Submission

Background

The Australian Government is conducting an independent review of Australia's quarantine and biosecurity functions. A Select Panel has been formed to undertake this review and is canvassing comments from a wide range of Australian State and Territory governments and other interested parties to provide inputs and comments on a broad range of issues related to this topic. The Select Panel released an issues paper to identify key issues that have been identified for further consultation.

The review has been discussed by relevant PIRSA staff and a summary of comments relating to each of the sections in Part C. of the issues paper is provided below.

Direction of Biosecurity

AusBIOSEC is currently being progressed to allow biosecurity arrangements impacting upon the environment to be implemented consistently across jurisdictions. This will be achieved through greater national coordination on biosecurity policy, regulation, funding and delivery across jurisdictions. Both the Emergency Animal Disease Response Agreement (EADRA) and the Emergency Plant Pest Response Deed (EPPRD) already apply to production agriculture.

Specific coordinated national approaches are being developed for:

- Response preparedness for new incursions and management of established and emerging pests and diseases
- Post-border biosecurity risk mitigation activities
- The sharing of biosecurity data and information systems
- A national framework for biosecurity research
- Biosecurity surveillance strategies
- Harmonisation of quarantine regulations
- Consolidation of diagnostic services

We believe the Select Panel should support the progress being made by the AusBIOSEC mechanism.

Biosecurity in South Australia

Protecting primary industries, the environment and the community is of vital importance to South Australia. Strategic biosecurity programs contribute to a wide range of outcomes for the economy, biodiversity, human health and society.

South Australia has had a historical involvement in biosecurity at a local, state and national level. This involvement has become essential for protection from the increased risk of exotic pest, disease and weed incursions and for maintaining market access. A wide range of pests, diseases and weeds have been successfully contained and eradicated, while prevention programs have decreased the risk of their introduction, establishment and spread.

A biosecurity Strategy for South Australia will complement the National Biosecurity System, establishing high-level directions for state policy and biosecurity activities. The Strategy will provide guidance to meet challenges of the future and deliver the level of biosecurity appropriate to protect South Australia's people, primary production, environment and the economy generally.

An Interagency Committee reviewed and benchmarked current biosecurity arrangements and processes against the outcomes from the draft National Biosecurity System. A number of key objectives were identified to enhance biosecurity for South Australia.

The SA strategy is currently receiving stakeholder comment and we envisage the strategy will be finalised towards the end of 2008.

Government Agencies have significant strengths built up through the experience developed to protect primary production, but these need to be extended to address all biosecurity threats in a much more integrated manner. This may require changes in systems and processes and enhanced linkages and networks.

This strengthened, focused and strongly led approach to biosecurity will enable South Australia to respond more effectively to existing and emerging threats.

Specific responses to key questions identified in the Issues Paper

C1. Risk across the quarantine and biosecurity continuum

- Q1 Maintaining ALOP:
 - Auditing and verification pre-border treatments are inadequate and need strengthening to maintain Australia's ALOP. On a number of occasions imports have come into Australia with the correct documentation (eg fumigation certificates etc) but are not in fact free of insect pests or disease. In some cases fumigation may have been carried out but not to the expected or required standard. Tighter controls are needed offshore.
 - Retain ALOP, but need to introduce benchmarking, as the risk assessment is a qualitative process.
 - There are significant numbers of major and minor quarantine breaches every year suggesting that resources and/or systems are not adequate to maintain the ALOP.

- Q2 ALOP Consistency:
 - There are inconsistencies in the requirements for import permits between different types of biological material. Fungal cultures which will be used in vitro only can be heavily scrutinised while bio-inoculants which pose a much higher risk can be imported with relatively little scrutiny or containment. The risk assessment process is based on the statement of absence of a few known problem organisms. There is little interest in what other organisms might be present in a product and therefore what its true risk might be.
 - The inspection of imported perishable horticultural and floricultural goods by AQIS inspectors is often conducted without the aid of stereo-microscopes. Given the size of many of the pest threats (mites, thrips, etc) this seems inconsistent with the risk and inconsistent with practice within comparable agencies (eg. UDSDA-APHIS).
 - Industry and public understanding of ALOP is poor as it is generally assumed that we operate on zero risk.

- Q4 Benefits of current approach
 - There is some logic in separating the policy setting (Biosecurity Australia) from the operational arm (AQIS) in biosecurity as this allows policy to be set in a more objective manner.

- Q5 Impact on importers
 - Quarantine measures relating to food safety need to be tied to public health and minimise the impost on industry eg the National Food Standards. There is inconsistent application of standards applied to importers and exporters.

- Q6 Policy decision making:
 - The time taken to make import policy decisions, across all commodity sectors is too long – often several years. This is unacceptable. This may also directly impact on domestic stakeholders who depend on imports.
 - The Commonwealth Government's import policy decision-making criteria may be flawed in that they generally adhere to an interpretation of the SPS Agreement that does not allow for generic risks to be considered; rather, focussing on specific pre-identified disease agents. This approach is of particular significance to the aquatic sector because most of the problems faced to date in Australia have been associated with new (previously unknown) diseases - diseases that could have been introduced from overseas. By taking this disease-specific approach, Australia essentially allows high-risk imports because specific diseases of concern have not yet been associated with them (based on import risk analysis - IRA).
 - Another potential flaw is that benefits to Australia are not given consideration in the risk analysis/policy-making process. So, two import commodities posing a similar likelihood of introducing an (equally) unwanted pest or pathogen would be dealt with in the same way despite one being of significant value to Australia and the other not. Again, the basis of this is the SPS Agreement there is need for national debate and again if necessary, representation to change the SPS drivers.
 - Lack of knowledge of the diseases and pests already present in Australia is an impediment to policy development. To implement import barriers to keep a disease out of the country we must first clearly demonstrate that the disease is not already present. In some sectors (eg apiaries) there is insufficient knowledge and no resources to find this information.

- Q8 Australian Expertise:
 - Australia does have the expertise to assess risks to the environment and AusBIOSEC should, when operational, be adequate to manage these risks.
 - The resources within Biosecurity Australia appear to be inadequate to ensure timely development of policy.

- Q12 Importation Policy:
 - During recent years there have been a significant number of instances where pre-border fumigation treatments have been shown to be ineffective following the detection of live insect pests associated with imported products that have been released on arrival.
 - In recognition of this, AQIS is progressing the development of pre-border risk mitigation measures and in particular the Australian Fumigation and Accreditation Scheme (AFAS). Effective pre-border fumigation is seen as vital for wood products given the difficulties in detecting wood boring insects on arrival. The efficacy of the AFAS approach needs to be carefully monitored.
 - To ensure policies etc are practical and workable, there needs to be continual updating of import policy and permit conditions based on experience with their application.

- Q13 Monitoring the continuum:
 - There is a need for regular audit of the quarantine and Biosecurity continuum by an independent auditor with sufficient authority to implement change where necessary.
 - There is considerable data collected by the Commonwealth at both the pre-border and border level. NAQS gathers pre-border pest, disease and weed data whereas AQIS gathers both border and some post entry quarantine data. This information would be utilised more effectively by the state government and industry.

- Q14 Information Sharing:
 - Arrangements for sharing pest and disease information between Commonwealth, states and industry are working well for forest pests and diseases due to the strong network of forest health experts around Australia.
 - Of importance from a State jurisdictional perspective is an ability to access plant pest, disease and weed data to enable an analysis of potential post-border risks. Surveillance (post border) is important to enable early detection of new pest, disease and weed incursions. There are difficulties however in the plant arena in determining the best use of limited resources by State and Territory jurisdictions and industries. This is because of the very large number of plant pests, diseases and weeds that are exotic to Australia and thus a difficulty in determining how best to target surveillance activities.
 - Border interception data has not been available from AQIS in recent years and, if legal or other concerns are an issue, consideration should be given to modifying this data to enable its use to assist the key area of post-border surveillance.
 - There is little or no surveillance post-border on aquatic animal products. Additionally, the minimal information collected by AQIS is not readily released to State Governments, making State management of post-border risks unnecessarily difficult.
 - Information exchange in the area of Animal Health is generally good although notification of border breaches by AQIS is often slow. For example, a recent detection of giant honey bee (*Apis dorsata*) at Adelaide airport was not communicated to PIRSA for several weeks.

- Q15 Response Plans:
 - Australia's emergency response plans are adequate for forest pests and diseases now that Plant plan and the EPPRD are in place. There are still issues with agreement on funding by industry although attempts are being made to address this deficiency.
 - The AUSVETPLAN for Animal Health is adequate although updating the documents is a drain on all jurisdictional resources.

- Q 16 Cost sharing
 - The EADRA cost sharing agreement for Animal Disease incursions withstood the test of EI although not without some problems. Certainly it was an essential requirement for the emergency response and similar agreements should be brokered for other industries.

- Q18 Export certification:
 - The guidelines for issuing statements regarding freedom from a pest or pathogen are not clearly articulated. AQIS has left the interpretation of IPPC guidelines on pest or pathogen status, and freedom from pest or disease up to state departments, or private service providers. As a result, the issuing of additional declarations is inconsistently applied across industries and regions.

- Arrangements for export certification could be improved. For example there have been problems in certification of eucalypt seed for export. It is difficult to prove Australia is free of certain diseases.
- For the most part arrangements for export inspection and certification appear to be effective, however increasingly AQIS is directing the responsibility for the provision of “Additional Declaration” information to jurisdictions and industry. Over time, with a change in direction by many jurisdictions away from the provision of general extension services and to the provision of functions on a fee for service basis, there have been increasing numbers of private providers servicing industry.
- A concern to PIRSA in recent times has been an inability to obtain from AQIS a clear indication of its stance regarding the provision of “Additional Declaration” information by third parties to meet Phyto-sanitary Certification requirements for international exports. This is particularly important when businesses are working across State borders and where up to date pest and disease information is not being sought from the State jurisdictions that hold such information for production areas within their borders.
- Pre-export certification of livestock could be improved to be more consistent. Interpretation of the rules for entry into destination countries is sometimes loose.

C2. The legislative framework

- Q3 Act modernisation:
 - The current *Quarantine Act* 1908 is very outdated and not relevant to current importation and export practices. Interpretation of this Act and Regulations for difficult issues and cases of quarantine breaches is inconsistent, which is not in the best interests of Australia. The act needs to be rewritten and modernised.
- Q4 Human Health:
 - The human health aspects of the Act should be removed and placed into different legislation.
- Q8 Regional Restrictions:
 - Regulations and the interpretation / communication of the same in relation to regional restriction import permits needs to be clarified as it currently creates a level of confusion. There are inconsistencies in roles – AQIS inspectors only manage incoming as regards to national requirements, and take no responsibility (or have no legal responsibility or mandate) to manage State requirements at the international border.

C3. Jurisdictional and institutional arrangements

- Q3 Policy issues:
 - The mechanism for resolving policy issues is not currently working, because matters are not being escalated within AQIS. A process needs to be developed to escalate policy issues in a timely manner to a high enough level to ensure prompt resolution.
- Q4 Appropriate interaction:
 - In the past there has been a good interaction between BA, AQIS and OCPPO with state and territory agencies via national committees eg Plant Health Committee (PHC), the Domestic Quarantine and Market Access Working Group (DQMAWG), and the Consultative Committee on Emergency Plant Pests (CCEPP). However, more recently it has been noticeable that the involvement of AQIS on such groups

has lessened but with no obvious reason. It is important that AQIS maintain a strong presence in such forums given the agency's pivotal role in the biosecurity continuum.

- There is scope to examine alternative service delivery models that enhance communication between AQIS and state jurisdictions.
- Q5 Integration of AQIS, BA and Product Integrity
 - There is value in maintaining policy development at arms length to the operational enforcement of that policy but there is an obvious need for better communication between these groups.
 - The relative role of each of the Federal Agencies is poorly understood and there is apparent misunderstanding around the responsibilities of each agency. These roles and responsibilities are not clearly communicated to the end users creating on many occasions confusion about where issues of concern should be directed for a decision.
 - The roles of AQIS and Biosecurity Australia are not clear. An example of this is a lack of clarity regarding whose role it was to negotiate phyto-sanitary arrangements for the lucerne seed industry, and to define the exact requirements to meet EU requirements for export of lucerne seed.
- Q7 Regulatory Authority:
 - The same regulatory authority should deal with both imports and exports to ensure communication on all matters of quarantine and biosecurity.
 - There are particular cases where inputs are required from a range of agencies for a particular quarantine arrangement can be put in place which creates unnecessary and sometimes costly delays for clients. Examples of inefficiencies – AQIS provide the permits, but BA decides what level of containment is required and whether the goods can be imported in the first place. So if a permit needs amendment or is not correct, it can be passed backwards and forwards between them until the issue is resolved.
- Q10 Import Decision Body:
 - A statutory authority, not an independent public servant should have the power to make decisions on imports and risk policy. A single statutory authority is needed for quicker decisions, but consultation with the State authorities and other stakeholders needs to be retained.
 - A more transparent and accountable system is likely to be achieved if the ultimate decision-making power on these issues is vested in a single statutory authority.
- General comments:
 - There is a lack of proactive facilitation to assist companies wanting to export and needing some professional guidance in relation to export standards.
 - The cost and time involved in the quarantine importation process for germplasm. It can sometimes take 6 to 9 months to get germplasm through quarantine and if this germplasm has previously been commercialised overseas it sometimes difficult to meet the "4 Year rule" when wishing to get Plant Breeders Rights in Australia. This is frustrating when much of the germplasm is already declared disease free following testing in the exporting country. There seems to be a no-risk policy in the quarantine stations in contrast to the "low risk" policy with importing anything else and a reluctance to accept overseas testing results.

C4. Culture, efficiency and resourcing

- Q1 Available resources:
 - The frequent breaches of border security and delays in policy development suggest that resources in AQIS and BA are inadequate.
- Q2 Screening International Passengers:
 - The emphasis on screening international passengers, baggage and mail should be maintained as it is important to have a visible presence to keep quarantine and biosecurity in the public mind. It also shows that government is actively engaged in protecting Australia from incursions of pests and diseases. For example diseases such as eucalypt rust can be brought in on clothing etc.
 - Overseas travellers represent a major risk for introduction of many animal diseases including FMD. The priority given to individual passenger screening is a clear message to the travelling public of the importance of our quarantine barrier.
- Q5 Post-border Monitoring:
 - In late 2006, AQIS decided unilaterally that they would pass the responsibilities for responses to reports of post-quarantine pest detections to the States and Territories. This decision had significant resource implications for jurisdictions that had not previously dealt with such responses. In September 2007, following a significant backlash from jurisdictions, PISC agreed that AQIS would resume this response role pending a review whereby the roles and responsibilities for “first” and “second” tier quarantine organisations was clarified and resolved.
 - It is understood that AQIS has since revised its procedures for initial assessment and response to such reports.
 - Arrangements currently exist for post-border surveillance for exotic plant pests and diseases within the vicinity of first ports of entry for international shipping. This Ports Surveillance program includes monitoring for exotic fruit flies and for Asian Gypsy Moth (AGM). The Commonwealth, through the Office of the Chief Plant Protection Officer, has funded the States to undertake these programs over the past few years. It is understood that there is no guarantee of funding beyond 2007/08.
 - The Urban Hazard Site Surveillance program has also been funded by the Commonwealth, through OCPPO, over the past two years. There is also no guarantee of funding beyond 2007/08.
 - There is a major deficiency in relation to monitoring and surveillance post border regarding aquatic industries. This issue needs to be considered from two aspects:
 - ❖ For ongoing market access there is often a strong emphasis on evidence of freedom from specific pests and diseases, however there is little or no routine surveillance to support our claims in this area. This activity needs to be funded by the Commonwealth as it is a national issue with coordination across the States.
 - ❖ In the instance of the detection of an exotic species, the control and eradication is a state issue and needs to be managed at that level.
 - There is inadequate emphasis on post-border screening and there is inadequate communication between AQIS and state authorities on imported animals and products.
 - State authorities could provide post-border surveillance but would need additional resources and more intelligence from AQIS to do this.

- Q6 Authority's Resources:
 - The issue of the level of cost recovery for the post-entry quarantine growth and screening of imports of plants and restricted seed-lines has long been contentious. While acknowledging a significant level of private benefit from many imports, there has also been recognition that controlled importation and screening in post-entry quarantine, as opposed to smuggling of new plant material, has a significant element of public good. This public good element derives from the very much reduced likelihood of new pests and diseases being introduced by such means.
 - On the basis of the above, consideration should be given to the possibility of moving the post-entry quarantine function from a program with a "high" cost recovery requirement to a program with a level that better reflects the balance between private and public good.
 - Work and funding is required to develop exotic disease response programs for aquatics invasive species as this area has had little attention up to now. The greatest area of risk is in live produce trade (plants, animals, unprocessed products from plant and animal). Monitoring and surveillance post border is vital and needs to have a higher priority.

- Q8 Impact of cost recovery:
 - The impact of cost recovery of state department plant diagnostic services has been to reduce the numbers of samples received, and provide a disincentive to submission of samples. This has reduced the usefulness of plant diagnostic laboratories to provide information which can be used for surveillance (area freedom) information or to record new pests and disease occurrence. A better model would be to have subsidised diagnostic testing within each state and the results could then be used as part of a centralised database regarding pest and disease surveillance.

- Q9 Private facilities:
 - Private facilities should be allowed. The current auditing system is comprehensive but often operationally limiting and not always effective. The science behind some of the regulations and restrictions is not always apparent, if there at all. The auditing function of AQIS needs to be more consistent. Auditors need to have an understanding of the work undertaken in the QAP's they are auditing, and an appreciation of the scientific processes. There are also issues with the level of punitive action taken for apparent breaches of AQIS compliance requirements, and the consistency with which they are applied. Minor breaches may be harshly punished comparative to the level of their risk.
 - The use of private facilities (eg quarantine, laboratories) is cost-effective and appropriate. There should be audited standards set for their management and operation.

- Q10 Import and export certification:
 - The current import and export certification processes are not effective, as there is not a clear understanding of roles and responsibilities between agencies. The accountability and accreditation of private consultants, and private sector laboratories is not clear or uniformly applied. AQIS has not taken a strong enough role in clarifying what information is required for additional phytosanitary declarations.
 - There is lack of consistency, knowledge and effective process in obtaining information for export certification and inspection. Declarations of area freedom and/or testing for pathogens and insects are often required, depending on the importing countries requirements. Exporters can get very frustrated trying to obtain

the necessary requirements for the declarations. Often the AQIS export staff are unaware of who is competent to undertake the tests required for certification, or even whether such tests are possible. They don't do them, so are reliant on external parties.

- The science underpinning the certificates and declarations of area freedom are also often lacking. There are very few surveillance activities enabling declarations of area freedom, and they are done on ad hoc reports of diseases from diagnostic services and databases of host pathogen records, which may be very out of date and not reflect the current status.
 - If the export area was more integrated with an operational stream, with improved skills and a better understanding of the scientific requirements for certification existed, the processes could be better managed.
 - Consistency in determining which species are allowed to be imported and ensuring there are avenues of appeal for prohibited species are areas of concern that need to be clarified.
 - Inconsistencies between results produced by the BA WRA and state WRA eg WAQIS, for example several species in the genus *Lotus*, are not permitted entry to Australia following a WRA by BA, but are permitted by WAQIS, who use the same WRA system. There are also numerous examples of species permitted by BA by rejected by WAQIS. A classic example of inconsistencies in species assessment is *Bituminaria bituminosa* (syn *Psoralea bituminaria*) a widely recognised weedy species (was listed on the original AQIS prohibited list) and has somehow been recently permitted for importation by BA.
 - Inadequacies in dealing with species that fall into the "further evaluate" category due to lack of information or a score of 1-6 on the weed risk assessment. Species in this category are effectively prohibited for importation until more information is gathered, and yet there is no formal mechanism to do this. The original inclusion of a provision for this "third tier" was recognition that there would be circumstances that required it. Currently permission to do further analysis is on a case-by-case basis, under strict quarantine conditions in a glasshouse. However, there remains some question on the validity of glasshouse experiments compared to field-based experiments for some data, and so future development or collaboration on acceptable field-based experimental protocols would be welcomed. Collection of this biophysical data requires flexibility to accommodate a range of plant types, growth requirements (e.g. specific rhizobia), and variability in existing knowledge base, whilst still operating under ALOP of very low but not zero risk.
- Q11 Availability of skills and disciplines:
- There is an acute nation-wide shortage of specialist plant pathologists and entomologists, especially those with diagnostic expertise. There are no university academics in Australia who can supervise post-graduate training in nematology, bacteriology and acarology, and there will soon be no capability for post-graduate training in plant virology. Taxonomic expertise in a number of important insect groups (eg. Sternorrhyncha, Curculionidae) is unavailable in Australia.
 - Taxonomic skills are vital for an organisation like AQIS. Either AQIS needs to recruit and develop staff with a range of fungal, nematode, virus and bacterial taxonomic ability, or they need to ensure core capability exists in complementary Government diagnostic facilities.
 - Lack of transparency in the science or expertise that determines a species PEQ requirement, eg annual *Medicago* species. For example in 1994, AQIS commissioned the Bureau of Resource Sciences to review the evaluation of seedborne quarantinable diseases of temperate pasture legumes. One of the review outcomes recommended that annual medics remain non-quarantinable.

Despite this recommendation and that over 25,000 accessions had already been imported into Australia, a PEQ requirement was legislated in 1996. When questioned AQIS provided no explanation.

- The requisite skills and disciplines available to deliver optimal quarantine and bio-security systems is rapidly declining in Australia as there is no specific undergraduate training providing the required skills. There is currently very limited postgraduate training available in these disciplines and this scenario will continue to impact on the availability of research and scientific expertise to support quarantine and bio-security issues.
 - The level of scientific expertise in AQIS is minimal - this impacts stakeholders because the deficiency limits the sophistication of any import controls and therefore, risk management measures are not necessarily the least trade-restrictive or most effective.
 - There is an international shortage of veterinary laboratory diagnosticians including pathologists, parasitologists and virologists. Steps are in place to address the pathology shortage but not the acute shortage of other specialist diagnosticians.
- Q12 Infrastructure:
- The plant industries have no central diagnostic testing facility for exotic pests and diseases analogous to the AAHL facility. The plant diagnostic services are not well coordinated, and infrastructure and capability for diagnostic testing is variable across Australia. Plant Health Australia and DAFF have been attempting to coordinate diagnostic testing and protocols but, to date, have had little impact. A responsive front line diagnostic laboratory is required wherever there is an international border. This could be either an AQIS run facility, or co located with State Government facilities. Specialist services can then be segregated to 1-2 places. There needs to be high level containment facilities (QC 5.3) to complement the specialist areas, and considering the geographic distance, one east, one west and one north would be a minimum.
 - Infrastructure for animal quarantine is inadequate. Biocontainment laboratories are not located near quarantine stations and most airports have inadequate facilities for isolation of imported animals.

C5. Communication and consultation

- Overarching view:
- The changing environment within the primary production sector that has led to increasing reliance on overseas markets translates to a greater need for the free sharing of information between regulators who manage the biosecurity continuum. There is a need to emulate the strong programs developed with Plant Health Australia and Animal Health Australia, which have led to the development of the Strategic Biosecurity Plan and Industry Biosecurity Plans.
- Q6 Awareness Programs:
- Community awareness of quarantine is vital to minimise the potential impacts of exotic plant pests, diseases and weeds. This awareness should extend, where possible, across the Biosecurity continuum.
 - During the past decade, AQIS is to be congratulated for its willingness to work closely with State and Territory jurisdictions in an effort to maximise the quarantine message for travellers at both the international and the interstate level.
 - However, the current quarantine and biosecurity education and awareness programs could be more effective. Knowledge and understanding about this relatively complex issue is often lacking even within State and Territory agencies

and for the general public programs need to be simple and well focused on the key issues of importance to them.

- Q7 Public campaign:
 - Communication with the public is very important. *The Spotted Anything Unusual* campaign was very effective in raising public awareness.

C6. Research

- General Comment:
 - An excellent initiative is the provision of diagnostic scholarships in forestry that enable Australian researchers to study high risk pests and diseases overseas and enhance their diagnostic capabilities.
- Q1 Effectiveness evaluation:
 - There is no benchmarking to measure effectiveness of research on quarantine and biosecurity. There appears to be no facilitation of research that AQIS require.
- Q2 Research Coordination & Prioritisation:
 - Current R&D in Australia on issues related to quarantine and biosecurity is not integrated and ad hoc in nature (eg aquatics) and as such is not delivering outcomes that are relevant to many of the important national issues. There is a need for a national strategic R&D plan for quarantine and biosecurity, which needs to be implemented within an overarching R&D management framework.
 - There are some relevant R&D activities being undertaken with CRC where there is effective prioritising and monitoring of the activities, but these are developed in isolation and opportunistic in response to issues considered to be important to the CRC participants.
 - Quarantine and bio-security research is currently significantly under resourced which is in part at least driven by a lack of understanding and clarity on the respective roles and responsibilities of the Federal government and the States and Territories in relation to quarantine and bio-security activities.
 - Research on quarantine and biosecurity is too broad an area to make meaningful generalised comments. It could cover anything from epidemiology to public relations or diagnostics.
- Q5 Who will prioritise research:
 - There is an urgent and critical need for the development of a national R&D framework that can effectively guide and direct R&D investment into the most appropriate research programmes. For most of Australia's major industries there are Rural Industry Research Corporations (RIRC's) that have developed comprehensive, national and strategic R&D plans that are used to guide research priorities and investment. Australian quarantine and bio-security needs a similar organisation and process to develop the focused framework that is required to achieve the best possible outcomes from R&D investments. Developed frameworks help to ensure the integration of R&D activities and that is important in efficiently and effectively delivering research outcomes of value to the Australian government and industries.
 - The national R&D framework also needs to take into consideration and effectively consider the needs of and inputs from other related areas like sustainability, trade, diagnostics and import/export requirements. There is the potential for some conflict of interest in this process with other Federal Government Departments like

DAFF and Trade, so the roles and responsibilities of each will need to be clearly defined.

- Plant Health Australia and Animal Health Australia have the appropriate membership to provide some guidance to prioritisation of the research needs.
- Q9 Knowledge gaps:
 - We have observed in some instances that AQIS staff are poorly equipped to deal with the complexity of their job in the current Australian environment. Many staff also appear to have a very limited understanding of the Australian industry situation that may be impacted by their decisions. These observations could be indicators of a lack of relevant core training for staff, poor decisions relating to staff recruitment and education requirements and an unintended impact of the mandatory two-year rotation policy for staff.
 - There is a need to further identify the pests and diseases that are present in Australia and those that are not so appropriate quarantine barriers can be implemented if necessary. Barriers need to be implemented on the basis of keeping out significant diseases and pests. The recent introduction of the bee parasite *Nosema ceranae* is an example of a disease with no effective quarantine barrier in place because its significance to the Australian bee industry is unknown.
- Q10 Research funding:
 - There are many quarantine and bio-research activities that are of strategic general benefit to the Australian community and should be funded from Federal government resources. However, there are certain types of activities that will have strategic benefits to states and/or individual industries and contributory funding for these activities should be expected. It is important that these two options are not mutually exclusive and that guidelines and procedures are developed to ensure fair and equitable co-investments.
 - A clear and strategic commitment to R&D is required with appropriate levels of funding and funding arrangements and agreements with States Governments and industries.
 - Direct beneficiaries need to be made responsible for funding of research on a cost recovery basis.