

Quarantine and Biosecurity Review

Submission Paper

To

Quarantine and Biosecurity Review Panel

28 April 2008

PART A – INTRODUCTION

A1. Quarantine and Biosecurity Review

1 My submission to the review of Australia's quarantine and biosecurity arrangements.

2 to 11 Introduction

Among the primary roles of Quarantine, one is keeping exotic pests and diseases out of Australia and its territories whilst facilitating the international flow of trade and people. It is essential for Australia, both in terms of trade and domestic welfare, to maintain its highly favourable human, animal and plant health status. Our way of life and our environment need to be safeguarded. The natural resource base on which we are critically dependent on as a nation must be preserved with care.

The last quarantine review (Nairn 1995) advocated a need to re-focus on a shared responsibility and the continuum of quarantine; that is, pre-border, border and post-border activities. The Government has not only provided additional resources to improve the most aspect of quarantine and to coordinate a national response to pest and disease incursions if and when they occur. To achieve this it advocated the greater use of a risk management approaches to quarantine activities.

Incursion discussions

Incursions of exotic pests and diseases are a natural event and have been occurring before European settlement in 1788 and probably before the first Aboriginal settlement in Australia. Natural incursions occur via wind or water especially across the natural island land bridge, now called the Torres Strait Protection Zone (TSPZ). The natural rate of incursion is unknown and has not been studied in the Australian context. Incursions are a two way event, in that Australia's native flora and fauna can and do migrate into Papua New Guinea causing incursions in that country. Incursions into New Zealand from Australia have also been recorded.

There is a natural lag in entry time from the first entry into Australia and establishment, to being officially recorded as an incursion. This lag time can be as short as a week or, in some cases, over 100 years.

On a pristine island it has been shown that incursion follow a standard bell shape curve of the number of incursions per year is plotted over time. As Australia is an island it may be inferred that a normal distribution of incursions may be expected. In Australia, our environment has been heavily disturbed, firstly by man's activities and latterly, by climate change and shift, creating many more and new niches for exotic organisms to thrive in. It may be assumed that the normal distribution is, in fact, biased or skewed. On top of this dynamic we are imposing quarantine.

Recent published studies and unpublished papers clearly demonstrate that Australia is behaving in the manner of a classical island, ripe for colonising.

The best Australia can hope to achieve is to exclude significant exotic pests and diseases that are deemed to have a deleterious effect on humans, animals, plants or the natural environment. Non-significant endemic pests and diseases still need to be recorded and tracked for a risk management approach for Australia.

Table 1 below contains a snap shot of endemics in Australia. The data are summaries from Public Domain information and are not complete, just what is readily available.

Table 1 Endemics recorded in Australia.

Year	Eradicated	False	Endemics	Pending	Transient
Pre Nairn	212	166	5026	44	156
Nairn Data					
1971- 1995	143	80	1892	24	189
Since 1996 to Present	46	800	1037	66	6602
Total	401	1046	7952	134	6947

Eradicated endemics are those that disappeared either naturally or with human intervention

False records, records in error, mistaken identifications etc. were only kept for about 3 years (2000 to 2003).

Endemics are those that are so far been recorded. This is an incomplete record and it is estimated that some 9,000 are probably present in Australia. The records from 1996 onwards are deficient in the animal disease area.

Pending records are probably endemics but insufficient information is known about them. These are organisms which are usually not fully identified

Transient records have only been really recorded since 2000.

Table 2 gives a guide to the rate of accumulation of endemics for the Nairn review period and since the Nairn review. This show a 15% increase in the rate. This leads weight to the fact the Endemic number are independent of both traffic and AQIS.

Table 2 Endemics record per year in Australia.

Year	Endemic per year
Nairn Rate	82
Since Nairn rate	95

PART B – CONTEXT AND BOUNDARIES

B1. Quarantine and biosecurity

- 12 It is very important to define the terms for the purposes of this review.
- **Biosecurity** is the protection of the economy, environment and human health from the negative impacts associated with entry, establishment or spread of exotic pests, diseases and weeds.
 - **Quarantine** is the system of measures which are used to manage risks of the entry and establishment of pests or diseases which threaten animal, plant or human health.
 - **Exotic pests and diseases** are those pests and diseases which are not yet present in Australia, or which have yet to become established. Examples include Equine Influenza, Citrus Canker, Bovine Spongiform Encephalopathy (BSE or “mad cow disease”) and Siam Weed (*Chromolaena odorata*).
 - **Endemic pests and diseases** are those pests and diseases which are established in Australia. Examples include sugar cane smut, Ovine Johne’s Disease, Bridal Creeper and cane toads.

There is already a reference standard listing of terms and definitions with specific meaning for Phytosanitary systems worldwide. It has been developed to provide a harmonized internationally agreed vocabulary associated with the implementation of the International Plant Protection Convention (IPPC) and International Standards for Phytosanitary Measures (ISPMs). Australia is a signature to IPPC.
(See ISPM No. 5 Glossary of Phytosanitary Terms ,2007)

All of DAFF must defer to the IPPC definitions and not create their own definitions
Note that the term “Pests” includes “diseases”.

eg. Siam weed is not an “**Exotic pest**” as it has been present in Australia as a weed since 15 July 1994.

I believe that there problem with the present case definition of “Established” especially “continues to spread” and “unlikely to be eradicated”.

USDA studies of Endemic pests have found that 30% of these pests have not spread beyond the initial area in which they were found. The factors for spread have not been present. USDA is concerned that climate change could precipitate the change in conditions necessary for spread.

By “unlikely to be eradicated, I believe you mean “by human intervention”. Pests, like natives, become extinct, (eradicate naturally), when conditions for their survival are not met.

That exotic pests do breach the Australian quarantine barrier all the time, (called “**Transients**” in IPPC terminology) is beyond doubt. These “Transient Pests” are a third important group from which “Endemic Pests and Diseases” can arise.

New native pests are often reported as new endemic pests. DAFF has to provide resources and coordinate them as if they are new endemic pests.

Scope of the Review

13 The objective of serving the national interest through a science-based process that manages the risk is admirable. This is usually achieved through the process, loosely termed “Peer Review”, which is essentially an intentional process of the gathering of consensus information and evidence about the effectiveness of the processes. It is ideal which should ensure that the process is above reproach and correct. However, in practice, it really ensures the peer’s view is the one supported and excludes as much of the constructive critical scrutiny as possible.

Governments and Departments are often seen to use the “Peer Review” process to promote only restricted viewpoints. They can go as far as only promoting, funding, rewarding, etc. only staff that fully support those views. They are known to use a full repertoire, including, bans, exclusion, cancelling, deleting, withholding, etc. to eliminate the possibility of anything that they consider constructive criticism from within the ranks. This is known locally as the “Flat Earth Policy” and pervades Department and AQIS thinking.

Data

According to the Nairn Committee, much of the criticism about the effectiveness of AQIS cannot be supported by facts. The Committee commissioned four studies on plant and animal incursions over the past 25 years (1971 to 1995) plus used the Clark report already commissioned by BRS.

1. Hanold; A Record of Recent Incursions of Plant Pathogens 1970-1995

- . Clearly demonstrates little understanding of an Exotic, Endemic and Transient Pests and Disease in the data.
- . It tried to made comparison of endemic pests over time and found basically little change.
- . Not acceptable for publication, however, available on the WWW at APP website.

2. Dudzinski et al.; Recent Incursions of Forest Pests and Pathogens

- . It lists recent endemics and earlier endemics over time.
- . This report has highlighted the risks facing Australian forestry
- . Made no attempt to do endemic comparisons over time.
- . Limited distribution of this report was made.

3. Groves; Recent incursions of weeds into Australia 1971-1995.

- . Data appears to be manipulated to give desired outcomes for researchers.
- . Implies an explosion of exotic weeds coming in to Australia
- . Published 1998

(This lists only 290 endemics over 25 years, 11.6 incursions per year. Compare this to an average of 15 incursions per year since 1788. The truth is that about twice the average number of incursions occurred in this period of time compared to that listed in this publication.

4. Foreman; Recent incursions of Animal Disease.

- . Covers all endemics, but has some problems differentiating between Exotic, Endemic, Transient and Native Pests and Disease in the data.
- . It probably should not have included new native pests with endemic pests in the data.
- . Diagnostic technologies improve and our endemic disease situation has becomes clearer with the passage of time. It is therefore not surprising that we should describe more diseases already present in the country, detect more diseases on entry and find evidence of more diseases in quarantine.
- . A slight increasing trend in incursions was implied.

Others BRS

Clark; Exotic insects in Australia: Introduction, Risk and implications for Quarantine.

- . Only covers mainly significant insect incursions.
- . The data shows a significant increasing trend over time.
- . Many recommendations were many in the report.
- . Not published, but widely circulated.

From the reports it is clear that some authors had problem what certain definitions used, such as Barrier (Quarantine Barrier), “Transient Pest”, “Endemic pests and diseases”, Native, etc. This is especially true of “Transient Pest” which is defined as an exotic pests or diseases that has breached the quarantine barrier, has been found sometime latter in the original good that it was imported in and subsequently eradicated. There are several thousand “Transient Pest” incursions occurring each year with only a percentage reported.

Databases

Pest and Disease Information database (PDI) (BA)

The PDI database is referred to in a number of reports as the source of Quarantine data. It contained 2 primary modules. “Interceptions” which held “Commercial in Confidence” data relating to exotic pests intercepted at the quarantine barrier on both imported commodities and goods to be exported. The second module was the Pest and Host module that held information that is mainly in the public domain. It contained data that was collected over 20 years from published records both from Australia, which was used to inform overseas county on presence and absence of pests within Australia (IPPC function) and overseas records which was used when developing pest lists for the PRA process. PDI ceased to function in April 2006.

The PDI Quarantine “Interceptions” data is now replaced by the AQIS “incidents” database into which staff input, at their choice, at least one day’s records as representative of a weeks findings. The other module has not been replaced.

Incident Management Program (IMP) (PIAPH)

The IMP database contained corrected Nairn data from the above commissioned reports plus further data up to the 2003 when it ceased to operate. It was deleted in 2006 by order by the head of PIAPH, due lack of support and being perceived as not

needed as this function has been transferred to APPD. IMP contains a 50 year plus snapshot of all endemic and transient pest' species activity within Australia and its Territories.

APPD – Australian Plant Pest Database (PHA/PIAPH)

PHA has developed a framework for a nationally coordinated database of plant pests and diseases. This is a closed private system and received major funding by PHA/DAFF. Both the ANIC and the WA databases are available separately on the Web. ANIC database is also available through Global Biodiversity Information Facility (ABIF/GBIF).

Most of the state pest information up to the 1980's is published and in the public domain. However, these comply with the individual states standards only. It can be assumed that the state information is not up to the DAFF and GBIF standard of complying with Species 2000 (SP2000) and less than 5% error rate.

In determining State pest status, Tasmania and Western Australia have separate sources and don't necessarily use their own databases. Tasmania uses its own published public pest list and Western Australia uses the draft Poole list. It appears that Victoria is working on a similar list. It also appears that some states don't have confidence in the APPD. DAFF encourages and even orders some groups to use APPD exclusively.

DAFF Standards

DAFF has always had standards for scientific information, databasing, technical terms, etc. These are a requirement as a signatory to the IPPC, Convention on International Trade in Endangered Species (CITES), etc. These agreements provide agreed definitions as well as names in the case of CITES.

International Codes of Nomenclature

In order to have a standard system of naming Organisms, international meetings among taxonomists of major groups of organisms have been organized on regular intervals (about 4-5 years) to establish / adopt international codes of nomenclature for these organisms. There are four such codes, namely:

1. International Code of Zoological Nomenclature,
2. International Code of Botanical Nomenclature,
3. International Code of Nomenclature of Bacteria and Viruses, and
4. International Code of Nomenclature of Cultivated Plants.

Scientific names are Latin (or Latinized) names assigned to particular organisms, living or extinct, based on binomial system of nomenclature. Although only one scientific name is valid for a given organism at a given time, certain organisms may have multiple other scientific names, known as synonyms, which are still valid in context (and useful) for a given period of time. The real problem is in determining the current valid name to an acceptable standard, such as Index Kewensis, SP2000, GRIN, etc.

The next problem is to correctly relate synonyms in an historical context to current accepted usage so that the widespread duplication of records under synonyms can be rationalised in terms of current accepted standards

Under these nomenclatural codes, a valid name needs a description and supporting evidence, such as, physical specimens, drawings, photographs, DNA, etc. or combinations. The Department follows this standard, but many individuals take this to an extreme and insist that a valid record must be based on a minimum of valid published description plus mandatory physical specimens. A vast amount of Department resources goes into “specimen validated” collection and the APPD data base that is associated with it.

Specimen collections have some inherent problems including;

- High cost of creation and maintenance
- Damage by insects and fungi
- Fading on colours and patterns
- Chemical treatment (DNA damage)
- Age (DNA damage)
- Ownership

The newer systems based on DNA and Bar-code of life (BOLD) hope to overcome these limitations by including with reference to specimens;

- DNA
- DNA bar-code
- Photographic reference and diagnostics.

The only external DAFF approved image library is bugwood (www.bugwood.org). This library has contributions from USDA, Ag Canada, MAFF NZ and 129 from DAFF. AQIS and DAFF run an internal library that apart from OCPPO makes no images available from this scientific library for community use.

The majority of funds are for private commercial operations such as “weed deck” or PadiL. (www.padil.gov.au). Funds from DAFF are via Government contracts which make the images copyright, and apply no DAFF scientific standards. PaDiL receives the vast majority of DAFF image funds and is a non DAFF approved image library. Statements on the websites stating images are copyrighted, but free for non commercial uses are frequently wrong. The terms of contracts with the image creators actually will have to be changed to allow all images to remain Public Domain. As well, the DAFF images may need to be stored in approved sites, at least, the internal and external library.

One of the side effects of the Nairn review was to split the old AQIS into three different divisions and hence, with three different standards and agendas. The following show plant references standards in use over time as well as other groups partly funded by DAFF.

Table 1 Plant Reference Standards

Time	A lined Plant Standard for DAFF
Cites	Cites
Up to 1995	Kewensis
1995 to 2002	Kewensis, ITIS, Tropicos
2002 onwards	SP2000
DAFF internal	
AQIS	Old version of Kewensis, ITIS, Tropicos
BA	Own standard
PIAPH	No standard
Department of the Environment, Water, Heritage and the Arts internal	
Weeds	SP2000
Natives	Own standard
CSIRO	Own standard
CRC Weeds	Randall standard
WA Department of Agriculture and Food Weeds	Randall standard
NSW DPI weeds	GRIN

Over time, most plant names remain the same, but some are changed, due to changing understanding of relationships and not insignificantly, correction of past misunderstandings and errors. Standards may not have been a high profile issue in the nineties, but today they are major issue and cost in research projects.

14 That this Review will focus on exotic pests and diseases may be short sighted. I understand there is no need to review interstate quarantine. However this review must look at the quarantine between Australia and its external territories which are separate quarantine entities in their own right. The IPPC definition may need to be clarified as at time, Australia included Nauru.

Also there is a need to look into the status of Transient Pests as AQIS appears to be devolving the responsibility to the states. To fumigate goods infected with Transient Pests can cost approximately \$50,000 for a house and contents, and many times over for a warehouse, depending on size. These are an urgent need to resolve who is responsible and give them the resources necessary to do the job.

15 The risks posed to human health, agriculture, forestry, fisheries and the environment by exotic pests and diseases are all included.

Nairn incursion response

According to the Nairn Committee, much of the criticism about the effectiveness of AQIS cannot be supported by facts. The Committee commissioned four studies on plant and animal incursions over the past twenty five years. These did not suggest any significant change in the rate of incursions in recent years, except for weeds.

However three reports concluded that there is a slight but significant increase in incursions. Only the probably flawed Hanold report contained data indicating no change in Endemics.

AQIS has a saying “Information is on need to know basis and you don’t need to know”.

Since the Nairn report there has been a very significant increase in government financial support over the 12 years. This has lead to no change in this prognosis. Four of the worst years for incursion are in this century even without animal incursion data included.

At the present time neither DAFF nor the States can indicate how many new Endemics there are, or list them. DAFF and Australia has an obligation under International and National Treaties and laws to report these new Endemics

Under IPPC, Australia, like all members, must report all new and eradicated endemics. This includes status change within Australia.

In relation to Australia’s Biological and Toxin Convention, report of Confidence Building Measures 2007, Daff submitted about a dozen new species of Endemics as Plant pests. If there were 150 new endemics during 2007 (list not exhaustive), then one must ask how confident could one be are in the DAFF systems to detect new endemics. Of more particularly interest, can we reliably detect Biological Warfare agents in Australia?

According to the World Health Organization, there are more than 40 human diseases today that were unknown a generation ago. Some 1,100 world wide epidemic events have been verified by the WHO in the past five years. The risks of Malaria and Haemorrhagic Dengue Fever are on our doorstep

16 The rapid growth and changing patterns in international trade should mean Australia faces increased risks that exotic pests and diseases being introduced. The evidence in an unpublished paper implies those new endemics are independent of trade.

The review on endemic beetles found that;

- Pressure (number) of exotics increased the likelihood of finding them as transient pest.
- Endemics are normally detected as exotic at the quarantine barrier after they are already been recorded as an endemic pest.

This means that AQIS has as an inability to identify exotic pests at Quarantine barrier and we assume that possibly these pests are recorded in the large unidentified group

Working out real risk in pathways to Australia is impossible without better identification of exotic pests at the quarantine barrier. No Quarantine inspection system is 100% safe, Transient Pests will always occur in any inspection system. The problem is to know and understand the processes.

17 The Review will also consider the possible arrival, establishment and spread of exotic pests and diseases through natural pathways, such as bird migration, wind, water, etc. In plants, I know of no study on the natural rates arrival of new endemics. However, human assisted arrival, both deliberate and accidental, will far outstrip the natural rates.

Natural new endemic arrivals in Australia have occurred prior to European settlement and are hard to determine. These possibly include *Acacia farnesiana*, *Colocasia esculenta* and other food plants. An exception is Tamarind which arrived with the Malaccan trades around 1700. Cats and their associated diseases arrived via early shipwrecked explorers.

18 No comment on the level at which Australia has set its **appropriate level of protection** (ALOP)

AQIS identifies approximately 250 “incursions” each year. AQIS defines incursions as transient pests that are already endemic pests in Australia. When incursions involve organisms which have major new characteristics such as pesticide resistance (or antibiotic resistance), then a whole new minefield is created. This has caused a major political storm between WA Agriculture and AQIS when new pesticide resistant organisms entered the country, thus adding to Australia’s growing problem of pesticide resistant endemics.

19 Genetically Modified Organisms and chemical residue regulation should be considered.

Genetically Modified Organisms (GMO) can potentially easily breed with local weed species to create a new class of GMO super weeds. At present USA has 10 such super weeds to deal with. Australia has at least five herbicide resistant weeds at present. This is not to discount the impact of herbicide resistant crops considered as weeds in their own right where they have impact as reservoirs for pests and disease as well as intrinsic weediness.

B2. Australia's system

International obligations

20, 21, 22 Australia as a signature to these WTO agreements, binds both DAFF and the State government to adopt the agreements. This means all including IPPC definitions and not allowing each group, branch and division in DAFF to have the freedom to invent their own definitions.

There are other obligations on DAFF in reporting new Endemics and keeping track of them. DAFF has an obligation to report all major failures in Australian Quarantine back to the importing country.

Appropriate Level of Protection

24 From my limited experience, it is very clear that, at the time of my exposure, that there were more views within the department than there were employees. It was common, in reading the files, to find that in five sequential documents regarding the same set of circumstances, that there would be five different interpretations, all by the same senior officer. I find it ironic that the superior officer that I felt had the greatest grip on decision making was dismissed from the service because of corrupt practice.

The single most disappointing thing I encountered was the demonstrated inability to READ THE MANUAL by senior officers. It seemed at the time, that everyone wanted shortcuts rather than go through the clearly defined procedures in place to minimise risk. The lack of technical expertise was a problem then, I suspect that, from my experience since, that it is a greater problem now. The problem, to my mind, is not one of lack of knowledge, rather one of mindset. Knowledge is power, to make knowledge freely available is to dilute power. There is also an apparent lack of due process.

The Quarantine and Biosecurity Continuum

29 Australia's quarantine and biosecurity system is a continuum, from pre-border to border and post-border activities. This is one aspect grasped by the Nairn review.

30 At the **pre-border** level I believe more could and should be done to facilitate Australian presence in overseas jurisdictions, to gain first hand knowledge of potential serious pests and equally importantly, to facilitate rapport between staff which engenders co-operation rather than competition. I am aware that there has been vigorous activity to oppose this concept, which has stifled significant international co-operation in a number of areas.

32 DAFF targeted approach to Post Border activities is piece meal, shoddy and in urgent need of review. Less than one hundred incursions of new endemics and transient pests were reported in 2007, whilst 1641 are known. This means that only one half percent are actually reported with the actual figure possibly being much higher. This may involve the problem of discretionary reporting but also reflects a mindset of “what you don’t know won’t hurt you”. The failure to understand the use of statistical techniques, data collection, validation and interpretation is manifest within the organisation.

DAFF and AQIS approach to “Transient Pest” (Quarantine barrier exotic breach) needs to be looked at and resourced appropriately. Under the new arrangement all Pests are deemed endemic Pests and are reported via the appropriate State Governments to PIAPH. AQIS was responsible for ensuring their eradication in the old arrangement, but who is responsible now. The pests are reclassified in PIAPH.

General surveillance can be divided into several groups thus;

- Urban Surveillance
- Port Surveillance
- Sentinel surveillance
- State surveillance
- Volunteer programs.

The cost of programs to DAFF

Program	Cost
Urban Surveillance	100% DAFF (2 year program)
Port Surveillance	50:50 DAFF and the States
Cattle Sentinel surveillance	AHA 100% industry
Plants Sentinel surveillance	Test program shared between DAFF project funds and States
Bee Sentinel hives	Coordination only, Proposed to transfer to PHA.
Mosquito	AQIS (costing unknown)
State surveillance	Zero DAFF
Volunteer program	Traps, lures and postage only

There have been many and varied complaints mainly over the cost of programs. In some States where the same person is working on Volunteer, Urban and Port Surveillance, they are recompensed differently depending on the program. Volunteers were not happy to find some States being fully paid to duplicate their voluntary

contributions. While most volunteers would accept full cost recovery as fair recompense for their efforts, others want to be paid fully for all the surveillance.

Several Nairn scientific reports raised concerns about *Chysomya bezziana* (screw worm fly). These flies have regularly been found on aboard livestock vessels in Australian ports. There is a need to develop better trapping and perform more intensive port surveillance. Why has this not been pursued?

There are problems regarding bee sentinel hives and the Small Hive Beetle. There is an urgent need to develop other methods of surveillance for this problem in relation to the feral bee health and subsequently, commercial apiaries. Another real problem relates to Asian honey bees in the port areas. The volunteer program with CSIRO funding, ACIAR, has done some preliminary work in the area. Some spectacular successes and failures occurred in the initial work on trapping in the Solomon Islands. Much more work need to be done on surveillance in Australia as well as in likely points of origin.

Port surveillance appears to be a failing system. States appear unwilling to provide and more money and dedicated staff time/expertise. Ports can be not always be trapped effectively due to various consideration such as cyclonic damage and vandalism. It is widely inferred that some States ports are partly trapped or just not trapped and data sent in without being trapped. I have even seen traps that totally failed due to heavy contamination with coal dust. Other trapping programs generate reports that are statistically questionable, inferring a falsification of data on a significant scale. It seems that senior management give the appearance of not caring about these programs.

CRC has a program to development new electronic traps. As a volunteer, I helped test some of the new traps and trapping techniques. I was astounded that the organiser had to provide materials and information, but was refused permission to participate in the complete trial. Another case of the groundwork done by a highly technically competent person being hijacked by a senior ranking clerk.

Commonwealth arrangements

33 A very simplistic to the split between the DAFF divisions.

34 Eminent scientist group – Given the community concern regarding a number of contentious areas under review, I feel that there may well be room for a broader perspective within this group, if only to articulate the realities in a more publicly accessible language .

35 I am aware of one incident which I believed, should have had more scrutiny. With the introduction of rabbit flea as a vector for Biological Control Agents, no account appears to have been taken of the fact that the rabbit flea is a vector which increases the virulence of Rickettsial organisms which are important human

pathogens. I have a personal interest in this particular problem and given that the Rickettsias are an emerging risk, it seems short-sighted.

I also find it strange that there was apparently no investigation of endemic Caliciviruses prior to the premature release of this agent as a control measure for rabbits

36 AQIS is involved in Post-Border monitoring of Mosquitos, Transient Pests, and NAQS in surveillance in Northern Australia. AQIS/NAQS do surveys of external territories. Basically AQIS operates across the continuum of quarantine.

There is a need to clarify tasks and make a more meaningful split of the tasks between each division. See also my comments in the section 47 -48 Border review of incorporation AQIS into border agency.

Shared responsibility

37, 38, 39 The Nairn Committee was convinced that a partnership approach by industry, government and the wider community was the key to achieving the objectives of quarantine in light of pressures emanating from world trade, tourism and international obligations. This is the right way to go, but there are other considerations.

In the mid 1980's there was a tightening up of import controls on Biological Control Agents (BCA). Up to this time, very few endemic BCA were found that were not coming in through the correct channels. Since then, there has been a significant increase of illegal BCAs appearing in Australia. It appears that as there is an increase in controls and costs, there is a corresponding increase the incidence of illegal importation.

There is a great need in balance between controls and costs, if you wish to successfully regulate the quarantine trade. It is a constant complaint from horticulturists that the costs of dealing with small importations appear to be greatly overstated. It would appear that the costs are apportioned on a minimum cost per item basis rather than a per consignment basis. This is seen as oppressive.

There is also evidence that the methods of establishing the validity of prosecutions for illegal importation may need review.

B3. Changing operating environment

41, 42. There has always been expansion and change in our international trade and travel. The biggest change is the speed at which people and commodities move. New and emerging diseases can emerge in one part of the world and be in Australia within hours.

The term is Quarantine derived from the Latin for 40 Days and it was the long sailing times that help protected Australia in the early days. Cramped condition ensured that any diseased plants and animals were promptly removed over board. Such behaviours are largely are a thing of the past (except , perhaps, in the live animal export trade).

43 Identification of organisms as well as product requires highly specialised skilled technicians. The costs of identification keep going up with typical costing of several hundred dollars per assessment. However there is an emerging technology of Bar-code of Life (BOLD) which uses probes to analyse the DNA. The cost of a result using this technique is in the order of \$10.00 per specimen with the promise of the procedure becoming faster and cheaper.

Why does DAFF appear to be spending all its resources on old technology?

Australia has no BOLD laboratory on home soil. My specimens, as with those of other volunteers, are being sent to Canada for this international collaborative program. On the grounds of both cost and speed, this technique is promising to revolutionise identification. It is my prediction that this will be the identification tool of choice in international quarantine.

It appears significant that the implications of new understandings in the area of taxonomy will have repercussions, not only in the ways that legislation and regulations are framed, but also, particularly, in the day to day activities of field staff.

B4. Parallel and previous reviews

Parallel reviews

44, 45, 46 Equine Influenza Inquiry

The parallel reviews of the Equine Influenza Inquiry (a major new exotic pest in Australia) and homeland and border Security.

The question must be ask why just this failure? Why not review all major failure of the quarantine system. It is the failures that highlight the weakness of AQIS systems. It must be the Chief Scientific Officers role, at least, to investigate failures.

Aethina tumida (Murray) the Small Hive Beetle (SHB)

The small hive beetle was found in Australia in October 2002 in one apiary at Hawkesbury Agricultural College, NSW (across the road from Richmond RAAF base. Hawkesbury Agricultural College has a number of collaborative projects with commercial beekeepers.

AQIS has a sentinel bee hive at the Richmond RAAF base. AQIS official response was that there is no evidence that the sentinel bee hive contributed as a vector highway for the introduction of the Small Hive Beetle. However sentinel procedures state that all the sample material from hive shall be kept for one year. This material has been destroyed (deliberate or otherwise) so there is no evidence that it did or didn't have a role in the beetles' introduction. It is obvious that Quarantine and monitoring procedures failed. The sentinel bee hive program has now been taken over by PIAPH. AQIS still retains the sentinel mosquito program, whilst much of the other sentinel and surveillance programs are handled by PIAPH.

47, 48 The **Homeland and Border Security Review** is to consider the roles, responsibilities and functions of departments and agencies involved in homeland and border security. AQIS role in quarantine is not as clear cut as the quarantine and biosecurity review suggests. Whilst not pre-empting this review, one must consider that the border functions should probably be carried out by one agency. AQIS non quarantine border activity is given to BA and PIAPH as appropriate including operating procedures.

Previous reviews

49 This must include the Nairn commissioned reports. Why were these reports not finalised and published?

ANAO reports of quarantine effectiveness, especially money allocated to Nairn spending program. A few programs were never undertaken at all, whilst some like Nairn 27 were stopped by AQIS when the initial data did not meet their expectations (or perhaps preconceptions).

PART C – ISSUES FOR CONSIDERATION

C1. Risk across the quarantine and biosecurity continuum

53 Definitions are at variance with IPPC which uses **Pest Risk Analysis (PRA)**

OUTLINE OF REQUIREMENTS

The pest risk analysis (PRA) process is a technical tool used for identifying appropriate phytosanitary measures. The PRA process may be used for organisms not previously recognized as pests (such as plants, biological control agents or other beneficial organisms, living modified organisms), recognized pests, pathways and review of phytosanitary policy. The process consists of three stages: 1: Initiation; 2: Pest risk assessment; and 3: Pest risk management.

This standard provides detailed guidance on PRA Stage 1, summarizes PRA Stages 2 and 3, and addresses issues generic to the entire PRA process. For Stages 2 and 3 it refers to ISPMs No. 3, No. 11 and No. 21 dealing with the PRA process.

(From **INTERNATIONAL STANDARDS FOR PHYTOSANITARY MEASURES ISPM No. 2**)

- **Risk assessment** is the process of identifying and estimating the risks associated with a proposed import and evaluating the consequences of taking those risks.
- **Risk management** is the process of identifying, documenting and implementing measures to reduce risk and its consequences.
- **Risk communication** is the process of interactive exchange of information and opinions concerning risk between risk managers, trading partners, industry participants and the general community.

54 ALOP discussion

- Australia's quarantine and biosecurity systems are not appropriate to maintain its ALOP low risk. However, even if trade and people's movement are stopped, new endemics will appear due to natural pathways and the lag effect in discovery and , particularly, identification of the pests.
- ALOP appears not well understood and applied.
- There is a need for consistency in ALOP
- The main aim of Australia's current approach to quarantine and biosecurity is to keep out significant pests. This system appears to have little or no influence on keeping out the other minor exotic pests. It probably is not cost effective to substantially alter this approach.
- It appears that the Australian community has a fair understanding of quarantine concepts and the measures that need to be applied. Notwithstanding, there needs to be greater transparency in horticulture to alleviate some of the possible misperceptions held by some portions of the learned amateur community or to correct the problems if the perceptions are,

in fact, correct. Heaven help us if harmonisation with New Zealand should involve adopting NZ standards regarding seed imports.

- There is a need to review Australia's risk assessment procedures competently and comprehensively. They appear to be not sufficiently timely due to each assessment being apparently done from scratch. It appears that different groups can come up with different assessment outcomes and there seems to be a need to standardise the system and to facilitate outcomes, perhaps by use of templates.
- The Eminent Scientists Group needs more than scientific expertise in assessing political contentious problems such as importation of apples from New Zealand, a fireblight risk. (While the fortuitous discovery of low virulence fireblight infestations in Melbourne and Adelaide by New Zealand plant health officers may be coincidental, it is not perceived this way in the wider community).
- Australia's marine environment and fisheries problems arising from bio-fouling on ships' hulls and organisms in ballast water may probably be best handled as they currently are, by quarantine and biosecurity framework. However, greater scrutiny and better event tracking are perceived as necessary by some. The current problems are not going to get any better, any additional incursions may be catastrophic. The mass deaths of pilchards attributed to the high risk importation of bulk feed fish for the farmed tuna industry is an example.
- Risk analyses, import policy determinations and permit conditions need to be regularly and probably frequently updated through monitoring of actual experience in the application of risk management measures. At present it seems that there is no good feedback or reliable information
- There appear to be no appropriate feedback loops existing and DAFF appears more inclined to cover up problems than to fix them. Only major failures are not covered up (Equine Influenza) .
- Finds of exotic insects in domestic trade only, wholesale nurseries which don't import or buy imported plants were reported to AQIS with the possible source being hitch hikers on illegal imports. It appears that incidents of this nature are considered minor or investigation is unsupported
- AQIS appears not to consistently implement risk management. There have been many cases of AQIS releasing infected goods against scientific advice. One manager actually pleaded for the release of a plant known to be a weed in 52 overseas countries after being refused import permission on scientific grounds. The manager was a personal friend of the importer. There have also been cases of adjusting the risk assessment finding so plants could not be imported due to a personal dislike of the importer.
- Auditing and verification of pre-border, border and post-border measures to ensure that policy determinations and permit conditions, including arrangements for co-regulation with industry, are in fact meeting the appropriate standard needs to be independent of AQIS. The Chief Scientific Officer should be responsible to audit significant failures of the quarantine system. For example, Citrus Canker, Small Hive Beetle, Red Imported Fire Ant, etc.
- Auditing of quarantine and biosecurity continuum (pre-border, border and post-border) to ensure that the system functions properly. This needs to be at arms length, independent of the branch responsibility.

- Are the arrangements for sharing pest and disease information between the Commonwealth, the states and territories and industries totally failsafe? APPD appears to be a highly expensive and mostly inadequate service. AQIS refuses to share data even with ACERA and CRC. Most of the potentially useful data is no longer collected and databases appear to be no longer maintained or just deleted. For general Pest information Google is far superior to APPD.
- Are Australia's emergency response plans for exotic pest and disease outbreaks are adequate only for pests currently considered significant? There is a basic need to identify and track all endemics. Australian databases are totally lacking a basic list of about 9,000 endemics that are probably currently present in Australia. Many of these may well, in the light of climatic change, attain significance.
- The current cost-sharing arrangements between Commonwealth, state and territory governments and affected industries, that apply to select pests was possibly adequate. The problem is that it may now need to be broadened to cover all the other exotic pests (includes weeds) to deal with changing circumstances.
- The arrangements for the identification, documentation, risk assessment and control of new endemic pests appear totally inadequate. The detection, recording and tracking of new endemic pests appears to have ceased. The impact on the environment of new endemic pests cannot be ascertained if there is no available knowledge of which endemic pests are present, let alone new additions. There appears to be a willingness to trade off the risk of a few known significant endemic pests against a large number of minor endemic pests. Without adequate databases and statistical analyses, this is shooting in the dark.

C2. The legislative framework

55, 56, 57, 58 While the Commonwealth government can not implement International standards and definitions in DAFF, what chance is there is having such standards adopted across other Commonwealth department and across State and local governments.

Much of the DAFF funds are spend with no obligation on the contractor to comply with DAFF nominal requirements such as nomenclatural standards, internationally agreed definitions, copyright, etc. It appears that Government requirements appear to be forgotten in the haste to spend Government money (especially at the approach of the end of the accounting period).

An example is the **CRC for Australian Weed Management publication** "The introduced flora of Australia and its weed status". This was paid for by Commonwealth money and uses Randall's standard for naming plants rather than the international standard. Among the introduced plants, it contains native weeds and native plants other than weeds. Some plants appear several times in the list under various synonyms. The main thing this publication got right is that there are 28,000 exotic and endemic plants in Australia. (Interestingly, this figure considerably exceeds the number of indigenous plants listed in the Census of Vascular Plants (15638). It just fails to name them accurately, and in accordance with the International Codes. Also missing are some very important risk factors relating to the project. It doesn't tell you;

- How long have the plants been present in Australia?
- Where are the plants found? (Research stations, Botanical gardens, abandoned farmland, forestry areas, National Parks. Distribution, (contracting or expanding) etc.)
- Whether plants have been recorded as a weed in Australia and been eradicated.
- Whether it covers weeds in the Australian external territories.
- Whether Government agencies were responsible for importing them? If the Government is solely responsible then will they be responsible for any cost of eradicating them?

The rush to publish and to report an organism present and not state full details regarding circumstances may give a reader and overseas governments the wrong impression. This report could encourage and empower importers to attempt to import a potentially weedy plant because there is a record that it is present already in Australia (*Imperata cylindrica* is a case in question, to add to the genetic diversity of this significant weed is very questionable). Whether the record is valid may well be a consideration. Conversely, there are many prohibited plants which are so low risk that the prohibition is laughable and the plants could be freely available without problems.

A high weed status plant may be only in a Botanical or research institute for breeding purposes or other research. These organisms are highly restricted in their distribution and availability. The risk to Australia, in these circumstances, will be minimal. Also some prohibited plants have been wide spread in Australia for over a hundred years without becoming a weed.

59 The Commonwealth has preferred to work by cooperation, and appears to have failed, with State, Territory and local governments, to implement its international obligations and national policies. The States are required by deeds to comply with Commonwealth and DAFF requirements and Standards. In relation to many Commonwealth grants and contracts, the States ignores such fundamentals as Department Standards, International standards, copyright, etc.

- Whilst most current roles and responsibilities of the Commonwealth and the states and territories well understood, some functions are not. Who pays for AQIS barrier inspection mistakes?
- The **Quarantine Act 1908**, as amended, was relevant and reasonably effective to meet Australia's past quarantine and biosecurity needs. In the newer amendments in the areas of seed and nursery stock there are significant numbers of invalid names including synonyms. This leaves loopholes to import plants against the spirit of the Act (despite the concerns of many, that the list is too proscriptive). Having permitted plants on the list that take skilled botanists to tell apart from prohibited plants leaves significant problems for inspectors.
- Perhaps the human health aspects of the Act be removed and placed into a separate (new) Act administered by the Department of Health and Ageing.

- Australia’s legislative arrangements designed to manage relevant environmental and marine threats probably are effective. They appear to fail when it comes to paying for remediation of damage and restoration of the environment (particularly marine problems).
- The Commonwealth doesn’t have to consider drafting legislation and framing its subordinate legislation for compliance with and implement the SPS Agreement, as it already has the power. What the Commonwealth lacks is willpower to enforce DAFF to apply the terms of the agreement. It apparently has been common practice for some considerable of time not to put enforceable DAFF standards in contracts with the States.
- Import permits could, and perhaps, should used to restrict a product from importation into Tasmania if it is determined on a scientific basis, that Tasmania is free of a particular pest or disease, while still allowing general access to the Australian main market. This must occur to keep fruit flies out of Tasmania and thus ensure Tasmania’s continued access to certain, highly restricted, export markets. This would apply to external territories as well

C3. Jurisdictional and institutional arrangements

60

- Is the division of roles and responsibilities between government, industry and individuals appropriate? Are they working well in practice?
- What measures should be used to ensure their effectiveness?
- What other administrative models could be considered to implement quarantine and biosecurity policy?

“quis custodiet ipsos custodes”

Is there appropriate interaction between Biosecurity Australia, AQIS and the Product Integrity, Animal and Plant Health Division and other relevant Commonwealth and state and territory agencies?

Certainly the difficulties have been highlighted in the press.

61 The Australian Government approach of having AQIS, Biosecurity Australia and the Product Integrity, Animal and Plant Health Division as partially separated agencies has advantages and disadvantages

Advantages

- Separation of function to show independence and intellectual freedom
- Focus of attention to areas of concern
- Reduces abuse of powers

Disadvantages

- Implementing own scientific standards

- Separate agendas and priorities.
- Post border split is fractured surveillance, split between AQIS, NAQ and PIAPH.
- Pre Boarder split surveillance is mainly AQIS, with PIAPH working overseas countries.
- Internecine warfare?
- The responsibility for Transients is split between States, AQIS, PIAPH, Other Commonwealth agencies, etc. The main work is performed AQIS, but it appears that they may want to get out of cleaning up after barrier breaches due to cost and unfavourable publicity.
- There is a question of policy differences between BA and AQIS.

Overall the split may make sense if one group takes responsibility for function.

- The Post-border and Pre-border surveillance should be in one agency, PIAPH. Animal surveillance is out sourced to AHA, but PIAPH must audit it for effectiveness.
- Pricing and policy on surveillance needs careful consideration. Failure by contractors to perform surveillance needs stringent penalties. The Commonwealth/ States relationship is so cosy that the Commonwealth has not been known to hold States to account on default or failure

62 The creation of Biosecurity Australia as a “prescribed agency” in 2004 to and underlining its role of providing science-based advice independent of pressures will not and can not change perceptions. The politics will not allow it to change and could have the opposite effect of highlighting perceived political interference.

63 New Zealand and the United Kingdom have a more formally integrated structure and it may work better than Australia’s current approach. The current approach may only work if it is intended to hive off AQIS quarantine Border activities to a new Border Security Agency.

Similarly it appears to make no sense to have the SPS Capacity Building Program; the Regional Plant Health Program in PHIAPH/OCPPPO should probably be in the DAFF International Branch. The funding of this group is by outside agencies such as AusAID and ACIAR.

64 Australian arrangements have on occasion, been subject to claims by trading partners that they give the appearance of being subject to political pressure relating to considerations precluded under the SPS Agreement. This is not likely to change when vested parties have big interests in Political Parties (some things never change).

65 When DAFF is publicising the “significant” new importations it may be seen by some giving the impression to the general public that they don’t care about environmental issues. The plants which have been in the Australian Nursery trade greatly outnumber natives. The weed (endemics) now reached 10% of the total

number of plant species in the Australian environment. The weeds will eventually reach about 20%.

66 It is impossible to avoid the perception that decisions are tainted by matters not relevant under Australia's treaty obligations and domestic legislation. Peer pressure and "Peer Review" have continued to taint decisions. It would seem that the present management of the division have quickly accepted going their own way. In Quarantine the management has been divided into two groups.

- The strong managers who acquire information and share it, trying to achieve understanding.(can't recall many)
- The weak managers who refuse to share information in the hope that the problem might go away. These managers invent new definitions such as incursion meaning only economically significant incursions of exotics.

DAFF only has very few recorded new endemics, as most of the others appear they are called "non exotics" or "non endemics". Consequently, the discussions at weed meeting are only in terms of current perceived economic significance. In a recent national weed meeting the discussion included only one new weed for Queensland. Unfortunate the weed was new to Queensland in 2007, but had been present in Victoria for nineteen years previous.

Possible Answers

- The current approach, which separates the roles and responsibilities of AQIS, Biosecurity Australia and the Product Integrity Animal and Plant Health Division, is very much in need of reappraisal.
- AQIS functions in all three areas of pre, post and border.
- The split between the groups is not clean and gives rise to much confusion.
- NAQS operates much like the old integrated AQIS.
- Either
 - The quarantine and biosecurity function should be integrated within DAFF

Or

- AQIS border functions are integrated in Customs (Border Security) and what is left be integrated mainly into BA and some into PIAPH.
- By splitting most of the policy into BA, AQIS can either accept or disregard their advice. This leads to confusion and may lead to mistakes.
- A statutory authority should never be considered as Commonwealth policy (on the grounds of diminished responsibility?).
- A regulatory agency dealing with both exports and imports is relatively split in function. There needs to be commonality of standards to bind the two sections into a cohesive whole. The question that is more important is whether to include AQIS border function into a Security Border Protection Department.
- It may be appropriate for the Director of Animal and Plant Quarantine to be more closely tied to the FAS of the Department of Agriculture, Fisheries and Forestry. This is standard policy in company governance that the Secretary

should be on all boards he is responsible for. The Secretary is responsible for consistency in policy and direction over the whole Department.

- The ultimate decision making power on risk policy shall be the Minister acting on advice from Public Servants. The answers on risk and risk assessment are always going to be political as there will rarely be consensus despite increasing use of sophisticated modelling techniques.
- Import and export permits possibly should be a more accessible to the general public. There is a perception of being out of reach of small players.
- The application of the National Interest test is usually dependent on the nature of government of the day. It is important to have in place, unambiguous guidelines that are apolitical and bi-partisan.
- The application of consistency with regard to international obligations and standards must rest with the Departmental Secretary. Currently, it appears the case with DAFF, that each section does its own interpretation of standards. It happens where each division goes complete their own way.

67 AQIS should not be both regulator and facilitator as conflicts can and do arise. The facilitator roles need to be seen as independent. The Ombudsman has found that an AQIS manager facilitated a friend's exports while hindering the opposition through the application of excessive and false conditions. While this case dates back 15 years, one must be mindful that conflicts can happen when the two functions are not separated.

C4. Culture, efficiency and resourcing

68 A question arises regarding whether the cost of recovering service costs for small transactions does not outweigh the value of the service, especially in the light of the minimum charge levies, which have been referred to previously. The possibility of waiving excessive charges for non-commercial transactions deserves examination

69 Cost-recovery was first introduced for AQIS in 1979. Cost-recovery is a two edged sword. The need to charge for government services related to export inspection and quarantine means that the service is valued and efficiently used. This is provided that the service is satisfactory, consistent and not too expensive.

In relation to Biological Control Agents (BCA), as costs and restrictions increase so does the temptation to import illegally. There has been a big increase in illegal BCA agents turning up as new endemics. Several complaints have been received when BCAs turn up illegally in Australia. The most famous was blackberry rust in Gippsland.

Also, there are functions which the Commonwealth and States must perform despite no possible method of cost recovery, particularly in the area of human health.

70 Australia approves some private facilities for use in the management of quarantine and biosecurity risk. These have standards which must be complied with and be audited. It is fundamental that AQIS should not be auditing their own PEQ.

The recent outbreak of equine influenza indicates that internal auditing is subject to catastrophic failure.

AQIS initially approved then ordered the destruction of eggs of the exotic Giant African Snail and Golden Apple Snail housed in the CSIRO high Security Facility at Black Mountain. The snail eggs from were taken from the exteriors of shipping containers during quarantine inspections. The short project was intended to find if the snail eggs were viable, and to quantify the risk. AQIS ruled that the snail were too high risk to allow in an Australian facility. Six months later, an officer of the AQIS Scientific Group was found to be rearing the same types of snail in shoe boxes in office desk draws. The snails were seized and destroyed.

The point is that whatever the rules are, AQIS has to be seen to be applying the same rules to private facilities as to its own. If DAFF doesn't uphold uniform application of rules then it could be argued that the AQIS is victimising the CSIRO scientists.

71 Quarantine border inspection has intervention targets. Statical analysis is used in cost-recovery pre-border inspection to indicate with a confidence of 95% that the inspection will be effective. This is the same for Export inspection.

The Nairn 27 project was the first attempt to look at risk by comparing AQIS and Customs data. The project was trying to qualify where quarantine problems exist and areas of concern. Apparently the project was cancelled by AQIS and nothing was formally published, but it was circulated internally.

Intervention targets

72 At the border, AQIS performs its functions alongside, and in some cases as an agent for, other agencies, particularly the Australian Customs Service, Department of Health and Ageing, Department of Immigration and Citizenship, and Food Standards Australia New Zealand. The question is why not have one agency do the inspection?

Why not scan containers for Quarantine, Customs, Narcotics, etc. once. It would seem to be much more efficient.

73 In response to major out breaks like Foot and mouth overseas, Australia took increasingly intensive measures to deal with the threat. This will become more common as more major disease arise like SARS, etc which present a high level of threat. The Commonwealth will have to accommodate to a changing world disease pattern and a highly mobile population by institution of well founded disaster planning procedures which are publicly visible. The threats to human health possibly pose a greater risk than traditional risks to our agricultural economy

Changing technology of electronic scanning of baggage, containers will become more automated and the costs will decrease. There will only be one machine to scan for all problems.

74. The Government introduced intervention and effectiveness targets to measure the success. What does this mean? Does measurement of AQIS effectiveness depend on how much they scan or on what they find? The problem may be that AQIS is

having to meet higher scanning targets at a cost lower quality of information. Scanning becomes the be all to end all.

Effectiveness can only be measured by how much AQIS miss in their work. Measures could include Transient Pest numbers per year. You can't use new endemics per year to measure AQIS efficiency as these appear independent of AQIS inspection system, policy, income, trade, etc.

75 AQIS has no freedom in some aspects of its intervention strategies, AQIS is required by directive of Government to screen 81 per cent of incoming air passengers regardless of where they come from. This strategy doesn't comply with Risk Analysis and Science based intervention policy. There is probable over inspection some flights while not checking enough of high risk flights.

It appears flights from Norfolk Island are getting the same inspection as flights from Africa. This doesn't make sense.

Amnesty bins in international airports collected only 4g per passenger in the mid 1990's. Are our travelling public more aware now and not bringing prohibited items onto aircraft or are they walking out of the airport with them?

76 The current level of passenger screening is not required for risk management purposes. Some arrivals could, if data is made available, be reduced in line with the risk imposed. Resources are not being optimally deployed to enable AQIS to best manage risk. Also risk is not constant throughout the year. The start of the University year would be a high risk with large numbers of new overseas students coming into Australia for the first time. The "Moon Festival" also increases the risk of moon cakes being brought in. It requires an understanding of where the risk is.

77 In Risk based deployment there is an opportunity to put the effort in where the greatest risk is.

- Resources are not available to Australia's quarantine and biosecurity authorities deployed across all areas of the continuum. The highest areas of highest risk are in post border. Resources will need to be increased in handling the problems of Transient Pests. Also in Quarantine facilities, urban and port surveillance.
- Is the emphasis on screening international trade consistent with risks? As stated previously, air passengers are screened by an 81% quota. Also inspection of good is based on type risk not on country risk.
- There can never be sufficient pre-border intelligence.
- There opportunities for greater alignment between pre-border application and information requirements for all agencies. Custom actual has a better open provision of information while AQIS appears totally closed. Many of AQIS systems rely on information coming out of Customs as to Risk Analysis of imports by commodity. Country of origin is not really considered. One of the biggest risks is in incorrectly or falsely declared dunnage. There would be opportunities for greater rationalisation of staff, IT systems and screening investments. BA to provide risk profiles based on goods and country of origin.

- Totally insufficient priority is given to monitoring and surveillance post-border. This need to be monitored nationally and to be provided by States functions and resources. States need to contribute something towards this as in Port surveillance. Where States are not performing correctly than penalties need to apply. NAQS post and pre boarder function should come under PIAPH.
- Probably the arrangements to recover costs of aspects of the quarantine and biosecurity system appropriately reflect the balance between public interests and private benefits. Exceptions are in BCA, human and environment health.
- Cost-recovery has an impact on the ability of AQIS staff to deliver public good outcomes in the area of BCA.
- Cost-recovery limits monitoring of pests and diseases at the border where the high cost of identifying exotic pest that are found. Exotic pest groups like flies, bees, wasps, bacteria, etc. are mostly not identified. How can risk at barrier be ascertained? The identifications are not done due to cost-recovery limits. There is a national need to start using DNA via BOLD to reduce cost and give Australia an idea of what we are really finding in imported goods. Presently what AQIS finds at the barrier tells us something about endemics and nothing about future endemics.
- Obviously that the current monitoring, auditing and supervision arrangements for public and private quarantine facilities are not effective. How can the regulator and auditor be the same Agency? It appears to be too easy for AQIS PEQ to cover up non compliance until something like Equine influenza has escaped. The facilities need auditing independently of AQIS. Unannounced random surveys of surrounds may need to be performed also.
- Private facilities in the quarantine and biosecurity system are acceptable for very low risk commodities. They need to be very well separated from normal production facilities and not just a screen and a couple of metres distant. Bulbs from Netherlands are not low risk as the Dutch import bulbs from all around the world and sort them into grades for resale and export. There is no real knowledge where the bulbs were actually grown and what the real risk is. Many diseases appear to have come through this risky unacceptable system.
- Are the current certification processes based on international standards and are staff competently and comprehensively trained to implement them? The process of inspection and auditing can only be as good as the officers involved and their training.
- The highest priority areas are the fast and accurate identification of the exotic pests. An accessible BOLD facility must be of the highest priority. Cost of identification using BOLD (\$10.00?) will always be more effective than reliance on reference to experts (who may in fact, be overseas).

C5. Communication and consultation

81 Quarantine matters are very important, relying on community education and awareness campaigns. These campaigns need to continue. They should be seen as extremely important to Australia, DAFF and quarantine in general.

There are issues with some of the small elements of the program.

- The webpage, Australian Insect Common Names (AICN) was initially funded then dropped (last updated, 16th May 2005) It is CSIRO third most visited website, viewed especially by amateur entomologists and the public. It enabled informal reporting of new endemic insects in Australia. Many in DAFF would like to see it closed down because of this.
- There are problems with identification tools currently being produced and used mainly internally in quarantine. Some of those that I have seen (eg. South African citrus thrips) have technical articles with content reproduced from scientific publications. Nowhere is there any statement that DAFF has permission to reproduce the articles? Are these in breach of the Copyright Act?
- Plant Health, Resource Compact Disk for Australia 2002. Produced once only and distributed to all schools in Northern Australia and DAFF road show. This was up to date at the time, but the world and DAFF has moved on. Much of this information has never been updated nor is available on the DAFF website.
- Quarantine Handbook, NAQS strategy. (Available on Plant health CD and in hard copy. It doesn't appear on either the AQIS or DAFF web site any longer. It is a good concept and should have been extended.
- Quarantine leaflets. Older and more technical than the handbook, are not produced or updated any longer.
- Quarantine Matters! School Compact Disk was a great concept. Selling the CD to schools to get the message across defeated the purpose. This information was reproduced on the Plant Health CD for free.
- International publications on various quarantine topics are being produced by DAFF from funding by other Government agencies such as ACIAR, AusAID, etc. These are sub contracted out. DO THESE PUBLICATIONS COMPLY WITH DAFF STANDARDS and PRACTICES? Who is auditing this process?

There is an urgent need to produce, at the least, a more comprehensive publication on exotic pests to use for both in raising awareness and as a definitive reference. This needs take into consideration the target audience in relation to both content and style and also to comply with the Copyright Act in having permissions to reproduce material of by the use of Public Domain material (or even better, Copyleft). (**Copyleft** is a play on the word copyright and describes the practice of using copyright law to remove restrictions on distributing copies and modified versions of a work for others and requiring that the same freedoms be preserved in modified versions)

In the same vein, there is scope for the use of open source software to significantly reduce costs and thus improve accessibility (note the precedents set by the Chinese Government in this area).

A new Quarantine Matters CD or Plant health CD needs to be produced for free distribution. The aim must be to get the message out to schools. The World Wide Web is getting better for distributing this type of material, but CDs are great as a publicity tool at road shows, schools. Free and open must be the goal.

Much of the funding on technical material is spent on propriety and copyrighted material. A lot of the systems used are closed propriety formats. Examples were the weed decks which the DAFF contracted out. The contractor owns the final product.

82 The “Spotted Anything Unusual” program is great in concept, However when people report the unusual, these must be followed up. Red Imported Fire Ant (RIFA) is classic example of this program failing. The public were reporting RIFA for 2 years before workers were hospitalised and an investigation made. It is very important that such reports are assiduously followed up.

Answers

- Australia’s ALOP is not understood by, or relevant to the community. It is important that, in the case of significant breaches, they are investigated openly and not have AQIS display a fortress mentality (Small Hive Beetle incursion as an example or the Equine Influenza issue). The public need to see more and smaller independent investigations, carefully conducted and not have to see Judicial Enquiries or Royal Commissions. A model, a little like Air Crash Investigation, where an independent group investigates and publicly reports the outcome. Currently if OCPPO, BA and the States report possibly illegal imports, AQIS can and does override other groups to have any review cancelled in AQIS best interests. Unfortunately this is not in Australia’s best interest.
- Under or treaty obligations Australia must report all new endemics. This information needs to be open to the public and our overseas trading partners. Websites like AICN are really not the ideal method for our trading partners finding out about these pests.
- Is the Quarantine and Exports Advisory Council an effective forum for advising the Minister and Director of Animal and Plant Quarantine of quarantine and biosecurity issues? It seems all information not in the DAFF and AQIS interests is filtered out. Validated collections and summaries of DAFF and AQIS data need to go directly and expeditiously to this group. How would they react to 2007 being the worst year for new endemics in Australia? There is no excuse, given the ease with which computers manage data, that monthly summaries of significant data should not be available on the next working day after the end of the month. The Council needs to get results investigations of breaches directly and unmassaged and therefore action could be taken to stop major failure of the quarantine system.
- Quarantine and biosecurity education and awareness programs effective need to be more coordinated and long term, especially in relation to technical and

training information. This information need to be more open and accessible for groups like amateur entomologists, public interest advocates etc.

- Existing communication tools to encourage the reporting of suspected exotic pests and diseases are not effective. Reports are directed straight to the relevant States who don't have the necessary systems in place (including financial) to handle them. This reported information is getting through the states to DAFF. About 100 reports were received in DAFF. This new system was designed to greatly limit what is reported and appears far worse than the system closed (IMP) in 2003 in providing information. The OCPPO website has lists the significant Emergency Plant Pests and has not been updated since 2006. (<http://www.daff.gov.au/animal-plant-health/pests-diseases-weeds/plant/incursions>)

C6. Research

83 The debasement of plant taxonomic research in Australia has significant implications for quarantine, even if it is only the loss of expertise. There are long-term problems associated with this loss, including the inability to respond in a timely fashion to new plant introductions.

84 Research priorities are coordinated by committees and working groups through the Plant Health Australia. There really are problems in co-ordination and independence. There does not seem to be arms length oversight of conflicting interests. It appears that the same representatives can appear in the committees granting monies, on the research programs spending the monies and in the auditing systems that ensure the monies are wisely spent. This may involve so called "Peer Review" but it ends up with no independent view.

85 The problems with CRCs might lie in the fact that they are too big, toe the Company line and look at problems in response to perceived pressures.

86 CSIRO has many divisions which are relevant to Quarantine. Some like AHL are well staffed with a vital role. Others, such as Entomology, are run down, poorly funded and almost irrelevant to quarantine. The poorer divisions are constantly searching for funding and have to charge for any quarantine work. The better funded and connected States are better at plundering the research money pool.

The emphasis on research which has a monetary gain has severely impacted on a number of programs (especially in Entomology) which I believe, will prove to be detrimental to quarantine issues in the future.

There is an urgent need to rebuild and build this national body. Australia needs a new Bar-code of life (BOLD) facility and these could be part of plant diseases laboratory as both works intensively on DNA for identification using specific probes.

As diagnostic technologies improve and our endemic pest situation should becomes clearer with the passage of time. It is therefore not surprising that we should detect more pests in Australia. Many diseases are symptomless in normal circumstances or

seed and trash borne, but show up many years later. Now we have better diagnostic tests using biotechnology it is reasonable that we should use some of these tests to gain a different perspective on risk by closer co-operation with our trading partners.

88 While levies in the animal industries support research and developments including peri-urban and port surveillance, no such levy from plant industries is available. One reason is that the cost of surveillance is far greater than the levies that could be obtained. It requires a national approach and the Commonwealth and States will still have to contribute. So areas such as the Australian External Territories are a problem, especially TSPZ.

89 OCPPO commission work by the CSIRO in France on host acceptability of the moth, *Lymantria dispar*. Our top five Eucalyptus forest species ranked two to six on the preferred host list. Work like this has to be commissioned and is usually conducted overseas because of the risk.

We desperately need knowledge regarding native populations with closely related exotic pests. We need to know how they respond to lures, baits, traps, etc. and where they are distributed in Australia. For example, moths like native *Lymantria* and *Adoxophyes* species has to be done in the field and not in a cosy laboratory. This work is essential for diagnostic purposes and for response planning. It is currently undertaken by a large group of volunteers around Australia. While I am not objecting to doing my part in this worthwhile undertaking, I question the excessive funds poured into prematurely producing diagnostic and response plans and while volunteers are acquiring the basic information. The failure to adequately fund the acquisition of good taxonomic data on Lymantrid moths in Australia and their relationship with exotic species of pest potential is of great concern. How can these plans be any good whilst the technical research is still being undertaken? What does this say about DAFF's understanding of the scientific basis of this work? Is DAFF not including this work and expertise in response planning?

90 ACERA has been set up to undertake Risk Analysis. As I understand it, to perform risk analysis you need data and/or staff to obtain the data. With many of the departmental databases cancelled or destroyed, AQIS data labelled "Commercial and in Confidence" not to be released and DAFF refusing the release of staff (who could find some of this missing data), how do ACERA and DAFF intend this to work?

I believe ACERA has been forced to use data from other countries such as Canada, New Zealand, USA, etc. On past practices Australian data tends to be incomplete and in a wide variety of standards. However, some of the data could be run against the more complete sets to validate and to check relevance to Australia. If some validation is not done the unwarranted assumption has to be made that the Australian situation is behaving like that in overseas countries.

What does it say about the level of co-operation of elements within DAFF?

Answers

- The effectiveness of research on quarantine and biosecurity issues should be evaluated against the following set of parameters;

- DAFF and International standards
- Quality of the work (producing a final document before essential research is completed)
- Copyright clearances (Many researcher's don't have copyright permissions for material used in the research)
- Value for money including where it is spent (ie. 99% on the document and 1% research or buying data and then producing the document)
- Are all funded groups represented equally? (One working group had twenty-eight members, two each representing state groups, two representing coordinators and ONE representing all DAFF uses on behalf the money is spent. One vote each on spending proposals)
- Are any groups refused entry? DAFF are usually management and not the technical elements.
- Are some groups receiving better funding than others?
- Are the research groups funded on merit or just friends of the coordinators?
- Research may be reasonably well funded, but there is appears to be a big coordinated rush to spend in one year. This means copyright, DAFF standard, consultation and even scope are altered or watered down to meet the "must be spent in one year" view. Research is prioritised on what can be done in a year. Value and usefulness of the research is also compromised.
- The distribution of the research effort is not appropriate along the quarantine and biosecurity continuum because it leaves out surveillance. Much of the surveillance work is not coordinated and pieces that I work on just cover basics. To field test the traps developed in Canberra backyards, like mine, sample traps are sent to other volunteers around Australia and overseas. This works on trust only and feedback can be poor. How do you know a trapping system tested in my backyard works on *Lymantria dispar*? Yes it is field tested now over the north and eastern coasts of Australia entirely by volunteers.
- A lot of the volunteer program is driven by the need for field work to get specimens and data into research programs. The need to catch specimens in the best condition is driving trap development. The cost of doing this work through normal research programs is very high and usually too high to even contemplate. This volunteer program is a cheaper alternative but involves waiting as by its very nature, it can take years to complete. This has impact in the port surveillance and may be used as a cost-cutting exercise. If reasonably funded, the volunteer program could greatly increase efficiency amongst other programs like BOLD, *Lymantria* research, etc.
- When funding cuts are initiated, it is usually the smaller poorly funded research areas which receive the cuts. Managers cut these areas to keep up the funding to their priority areas. This is a reason volunteer programs take so long to produce results as it can take a long time to find the volunteers in the right areas to do the work when there are no incentives and cost recovery is partial.
- What methods could be used to set and review research priorities across the continuum is a hard question to answer.
 - Fix problems related to coordination.
 - Set priorities on a rational basis so that as conditions change, projects are reappraised

- Consult all interested parties
- Get ALL the relevant researchers together (including overseas experts).
- Find more appropriate ways to invest in volunteers
- Avoid separatism and duplication.
- Independent review.
- There should be a way to establish and review research priorities. However volunteer programs will tend to be sidelined by competition from employed professionals as many groups would want full funding to do this work.
- In the context of competing research priorities, DAFF has been giving priority to old and tried research. In fact, from the start of new technologies such as BOLD, DAFF management has had a concerted attack on this new technology for the last five years. Now it is starting to be considered main stream these same managers now want to run the program. It is still very poorly funded but it appears that management just want the junkets, trips, meetings and to be seen to be in the latest technology. A last gasp effort to control something that is over taking their beloved old system. There is no real attempt at co-ordination or re-allocated funding to this technology. BOLD is new and its real limits need to be looked at. Funds might be found for BOLD but the problems may not be even a consideration now. From a quarantine point of view it needs to be looked at NOW, to late afterwards. The use of BOLD is, and will be, driven by speed and low cost against the inefficiencies of traditional identification techniques.
- In using Risk Analysis the big problem is that it can take time. This is especially true with no supporting database like PDI and no one independently checking standards and accuracy. This has lead to major complaints about time and accuracy from overseas countries.
- When DAFF deletes a database how can sufficient emphasis be given to research on risk analysis methods. Refusing the release of staff that could find and obtain this information (convert Commercial-in-Confidence to public domain) should tell all you need to know. Parts of DAFF are scared and don't understand what it might or could tell researchers. They prefer to hide information.
- I do not know of any new information from research activity incorporated into Australia's risk management measures.
- There are critical information or knowledge gaps. Australia can't produce a full list of all endemic pest species. IMP was a start, building upon Nairn resources, to try and get an initial list. This list could then be agreed upon nationally. IMP was trying to track endemics in Australia. Much of this data was public domain or reduced to public domain for use by relevant researchers. Parts of this data are available in various degrees and it is from putting the various public domain sources, that I can quote numbers for this report. Can DAFF produce this information which I and other researchers use? AICN is built from a subset of IMP data and a volunteer is undertaking as update of it for a rebuild.
- It is probable that in the national interest, quarantine and biosecurity research will always have to be Commonwealth funded (with State co-operation).

C7. Review

91, 92, 93, 94, 95, 96, 97 The system has been reviewed to death and still it has major failures. I think we need consolidation. Failures need to be highlighted fast and fixed rather the culture of hiding and covering up.

There needs to be a system to highlight significant failure and investigate immediately with the aim of making good rather than excusing. A review of past significant failures of the system could allow potential failures to be picked up more quickly and prevented or fixed more efficiently. AQIS should not be allowed to influence the choices of which are reviewed as they can now. AQIS should not audit their own systems, even if it is by a different section. The same goes for PIAPH. DAFF needs to be seen as being independent but subject to scrutiny.

Table 3 Significant failures

Failure	Reason
RIFF	Quarantine failure, but what was important is why QLD DPI didn't respond after 2 years of public complaint?
Equine influenza	Reviewed
Bamboo mealy bug	Illegal imports reported by various agencies
Goodwood Island with crazy ant	Found and eradicated twice in 2004 and 2006. A small port with only a very limited ships coming from overseas. One of a number of east coast ports found with this pest. Is a coaster ship responsible for spreading this infestation
Crazy ants <ul style="list-style-type: none"> • properties in the Brisbane suburbs of Rocklea, Slacks Creek and Wacol • suburban Edmonton, Cairns and Townsville • Industrial estates at Caboolture and Hervey Bay. 	As at March 2008. Wide spread incursion along the Queensland coast With so many incursions at so many places make it suspicious.
Small Hive Beetle	Failure in sentinel systems

There are 9 places of Crazy Ant incursions on the East Coast of Australia from Goodwood Island in the South to Cairns in the North. Without any tracking function how do you know about these and why and what has caused them?

Answers

- Existing system monitoring and review mechanisms for quarantine and biosecurity policy and operations need to be independent. AQIS can and possibly does use its power to cover small failures and this leads eventually to large failure which can't be covered up.
- The group that does reviews must not be in AQIS, so as to give independence. It should cover all seeming significant failures.
- Is monitoring of the quarantine and biosecurity continuum targeted at the right areas (e.g. primarily at the border)? Is there any mechanism with predictive capabilities which can add to the armamentarium?