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The Secretary
Joint Committee of Public Accounts and Audit
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CANBERRA ACT 2600

Review of Australia's Quarantine Function

Thank you for the opportunity to provide a submission to the above-mentioned review and comment on a range of quarantine issues which are important to CSIRO's ongoing research.

The attached submission is provided by CSIRO Livestock Industries on behalf of CSIRO as a whole

We would be pleased to respond to any queries or provide further information as required.

Yours faithfully

Shaun Coffey
Chief of Division

CSIRO submission to Review of Australia's Quarantine Function, May 2002

CSIRO is pleased to present the following submission to the Review and to comment on a range of critical quarantine issues raised. In the preparation of this submission, comment has been sought and incorporated from CSIRO Divisions – Entomology, Livestock Industries, Marine Research and Plant Industry.

Comment is arranged under the relevant term of reference.

1. Coordination of AQIS with other border control agencies:

CSIRO imports significant amounts of biological material (eg live insects, plant and animal disease agents, other material/s used in biological experiments) for the purposes of research under its charter.

The main border control agencies that are directly involved with goods imported by CSIRO for this purpose are:

- The Australian Customs Service (ACS),
- The Australian Quarantine and Inspection Service (AQIS), and
- Environment Australia (EA).

Lack of optimal coordination between these various services can significantly increase the costs associated with imported research products and places expensive and/or perishable biological materials at risk of deterioration due to unnecessary delays. These cost increases and delays appear to be a direct result of an inefficient import process which in its current form adds little value to Australia's overall customs/quarantine security.

Most research materials are naturally of interest to AQIS' operations; however, these problems occur because research materials in general need to be cleared by two agencies. The problem is best illustrated by an example citing common imported research materials cleared via an import agent such as Fedex or DHL.

> "The import of *Drosphila melanogaster* flies for CSIRO Entomology genetics research. In this instance there was a lack of co-ordination between AQIS and EA requirements. EA requires a permit for the import of *D. melanogaster*. AQIS also requires a separate permit to import. The EA permit is a single-issue permit while the AQIS permit is valid for two years. These permit systems are obviously not coordinated with one agency issuing a single consignment permit while the other agency issues a two year multiple entry permit."

2. Identification of potential risks to Australia and the application of resources to meet those risks:

Increasing business and leisure globalisation and expectations of free trade of goods across national borders have in recent years expanded the range and unpredictability of risks Australia may expect to face. In recent months, the threat of bioterrorism may be seen to add an added urgency to this challenge.

CSIRO considers that this is an appropriate time to introduction best practice hazard identification methodologies. Maintaining Australia's disease-free status will require application of world's best practice risk analysis methodologies, particularly in the area of hazard identification. While highly rigorous methodologies are in use in many other fields,

risk analyses have not been applied or adapted to the identification of potential quarantine risks to Australia, or indeed to any other country. Identification and ranking of risks is the necessary basis for resource allocation for barrier control activities, given that zero risk is not feasible and limited resources need to be well targeted. AQIS are developing a system of Quarantine Risk Indices to assist in allocating their resources between different entry paths. The examination of pathways, records, data required and some form of quantitative assessment should be encouraged. An effective means of comparison should involve appropriate advances in risk analysis, applied mathematics and economics.

3. Impact of international agreements on quarantine activities, including any proposed free trade negotiations:

Compatibility of CBD and SPS Agreement Requirements
The Cartagena Protocol, otherwise known as the Biosafety protocol of the Convention on Biodiversity, has been signed by over 60 countries, but not by Australia. Even though aimed at international trade in Genetically Modified Organisms, its statement of the precautionary principle, whereby "*lack of scientific certainty……regarding the extent of the adverse effects……shall not prevent that party (=country) from taking a decision ……in order to avoid or minimise such potential adverse effects*" is seen as directly at odds with the SPS Agreement under the WTO, to which Australia is a signatory, and which demands scientific justification for prohibiting imports. The precautionary principle is seen in some trading areas, notably Europe, as a means of opening up the WTO agreement and thus weakening the need for scientific justification for refusing imports ie a reversion to restricting imports on ill-defined grounds, potentially based on self interest. Australia's export economy probably has more to lose than many countries under such circumstances.

While Australia will resist any relaxation of the SPS Agreement at the Dohar talks, it is clearly in Australia's interest to ensure a high level of scientific certainty and where there is ambiguity between requirements, to develop the expertise in dealing with resulting scientific uncertainty. The approaches of the Cartagena Protocol and the SPS Agreement can be made more compatible through a thorough risk analysis approach. Australia therefore needs to maintain and enhance its leading position in developing this discipline and in encouraging its application to biosecurity internationally. While Biosecurity Australia is trying to develop this area, it is bound by resource and other constraints. The development of cross-organisational expertise in this area is seen as important to Australia's biosecurity and trading future.

4. Operations of AQIS that are beyond Australia's borders:

Enhancement of quarantine treatment methodologies by foreign agencies
Continuing enhancement of quarantine treatment methodologies has the potential to improving biosecurity levels and public confidence in efficacy. Clearly, as optimum results would be achieved if enhancements were to be simultaneously adopted by major trading partners, further efforts need to be put into the joint development of data sets and treatment protocols in conjunction with our major trading partners. Current developments in this regard between Australia, USA and China are to be encouraged. This will lead to minimal disputes between agencies and the use of compatible quarantine treatments based on an agreed set of scientific data.

By virtue of its leading international role and its capacity, Australia also has the opportunity to develop standardised treatment protocols for material traded between countries of the south-east Asian and Pacific regions. (see "*Quarantine capacity building in countries in the Asian and Pacific regions*" below).

Surveillance activities with near neighbours
We believe that one of the most effective initiatives to date has been the North Australia Quarantine Strategy (NAQS), in terms of success in assessing risk and providing valuable information regarding diseases of animals (eg Japanese encephalitis, surra) and insect and fungal pests of plants, through structured surveys and sentinel systems in Northern Australia and in our immediate northern neighbours, particularly Indonesia, Papua New Guinea and East Timor. Surveillance activities in these countries are conducted in partnership with local staff and have the added benefit of training and enhancing capacity to detect new pests, weeds and diseases, to heighten awareness and to materially assist in the early detection of new incursions. These activities are a very important part of Australia's quarantine function and should be strongly supported. Value could be further increased by engaging a wider range of experts from Australia to participate in targeted surveillance activities.

Quarantine capacity building in countries in the Asian and Pacific regions
In addition to specific NAQS training as mentioned above, there are huge benefits to be derived by broader training of quarantine and agricultural support staff in countries in the Asian and Pacific regions. AFFA in conjunction with AusAID and ACIAR are establishing a program of quarantine capacity building activities involving training in a wide range of quarantine related skills and practices. The concept of this program is strongly supported. Another proven method of building durable capacity in quarantine related science is through conducting collaborative research projects and tertiary training of students and staff at Australian universities. Adequate long-term resourcing of these strategies will be required. Development of supporting infrastructure within the region, with the support of DFAT, could also yield enhanced preparedness benefits for Australia.

5. AQIS border operations:

As mentioned in 1. above, better coordination and reduction in duplication of some border functions will work towards improved identification of risks. Reduction in duplication of roles and adoption of coordinated risk management approaches will allow a better application of limited resources to where they are needed most We can cite a number of instances where we see a low risk import item (eg synthetic DNA) taking as much time, cost and energy to clear the required processes as a high-risk item (eg live insects or plant disease).

Maximising skills
Border operations can be improved by a knowledgable and qualified workforce. A recent boost in the number of quarantine officers in Australia has been greeted with acclaim but as with any large recruitment drive, disbenefits can be seen. Many of the new recruits appear to have no formal qualifications in any field relating to AQIS functions eg agriculture, horticulture, forestry, biology, geology etc, and this lack of knowledge imposes a high level of operational risk and ineffectiveness. As an example from the import permits area, we have had to return a number of import permits on the basis of them containing incorrect import conditions. In our opinion this could have led to high-risk materials being imported without correct safeguards in place.

Quarantine treatment technologies
The need for the development of new quarantine treatments has become greater in recent years especially with the on-going phase-out of the principal quarantine fumigant, methyl bromide. Australia is a significant player in the development of methyl bromide replacements, with the CSIRO Entomology Stored Grain Research Laboratory (SGRL) being a world leader. We encourage AFFA to further support and collaborate with this group.

Rate of processing of requests for import permits for biological material
AQIS has set up a consultation process involving agricultural and environmental agencies to review applications to import in quarantine or to release biocontrol agents into the environment. For a variety of reasons, strict time frames must apply and a 40 working days' period from application to release is set. Problems experienced in recent years in getting timely feedbacks, in particular from AQIS, to our applications is most likely indicative of a lack of trained staff and/or resources. We recommend this process be reviewed for possible improvements.

Interaction with AQIS regarding containment facilities
CSIRO manages a number of facilities for the containment of exotic insects and plant and animal pathogens. Possibly due to the specialised nature of these facilities, we have had difficulties in recent times identifying appropriate section(s)/individual(s) within the AQIS structure with the responsibilities for oversighting issues such as design/upgrade of these facilities and auditing of Compliance Agreements. Frequent change in staffing has also led to loss of corporate knowledge, which has translated into inconsistent advice provided by AQIS from time to time.

6. Monitoring and surveillance within Australia for breaches of the quarantine barrier:

Need for targeted surveillance and use of general surveillance
We support initiatives to further develop and share pest and disease databases between agencies to maximise access to current information on the status of a given organism within Australia. To remain relevant, these databases will need to be funded and maintained long-term and information updated on a 'real-time' basis.

Supportive comment has been made of the work of the North Australia Quarantine Strategy in 4 above. While expansion of NAQ's activities is encouraged, it will also be important to ensure that core ongoing surveillance standards are maintained. For example, one aspect of the NAQS surveillance activities in northern Australia is the inspection of sentinel or commercial livestock to detect myiases caused by old world screw-worm fly (OWSWF) in conjunction with a trapping program where surveillance via myiasis detection is not possible. NAQS have not found one OWSWF in the period of trapping from 1991 to the present. In this instance trap operators become complacent/less vigilant. To guard against this outcome, it is recommended that staff be given opportunity to gain experience in regions where OWSWF is found to sharpen their skills. This is but one example of the need to test and maintain the effectiveness of surveillance operations where target organisms are not (currently) being detected.

There is a known high risk of marine pests and pathogens being imported through shipping movements, on hulls or in ballast water. AQIS introduced the Ballast Water Decision Support System (DSS) developed jointly by AQIS and CSIRO, in July 2001. This quantitative risk assessment of ballast water on ships planning to discharge in Australian waters provides the

first approach worldwide to assessing the risk of ballast water discharge in a rigorous manner, and AQIS is to be commended on its implementation. This provides the first step in using a sophisticated DSS, but ongoing improvements and enhancements will be required to maximise its value in the long-term. The DSS needs to be extended to include additional species that have been determined to threaten the marine environment. Quality monitoring, reliability assessment and updating should proceed for at least 10 years. The DSS may be expanded to include other vectors (apart from ballast water) and to incorporate high-risk domestic transfer factors as well as international factors. In order to achieve these requirements over time, AQIS will need to build and maintain strategic understanding and capability in development and support of modern modelling tools, or alternatively develop a strong long-term partnership with appropriately-skilled agencies to achieve this outcome.

Furthermore, AQIS should assist other appropriate state and federal agencies to formalize a procedure for identifying marine pests of quarantine concern in a fashion similar to that for notifiable terrestrial and aquatic pests and pathogens associated with imported commodities. It is well placed to influence the development of global and regional databases which will report notifiable marine pests in much the same fashion as terrestrial quarantine pests.

7. Development of import risk analyses:

Enhancement of methodology
The pressure placed on Biosecurity Australia to fulfil the requirements of scientifically defendable import risk analysis (IRAs) according to the Sanitary and Phytosanitary Agreement of the World Trade Organisation is immense. The IRA process has also placed a significant burden on all other parties involved, including CSIRO. The methodology adopted needs to be as efficient and effective as possible, reflecting best practice in risk analysis. Owing to limited resources and the need to process IRAs as rapidly as possible, Biosecurity Australia has not been able to invest significantly in research into scientific approaches and methodologies. Such research could be best achieved by collaborative partnerships between Biosecurity Australia and other research institutions with specific scientific skills required for this work.

A review of Australia's quarantine (Nairn *et al.* 1996) recommended the establishment of a key centre for quarantine risk analysis to enhance Australia as a world leader in this field. The Quarantine and Exports Advisory Council (QEAC) has consistently supported the need for more expertise in this area and recently agreed that a proposal for such a centre needed to be progressed. A recent Australian Academy of Technological Sciences and Engineering (AATSE) review of Australia's biosecurity recommended that a centre of excellence for biosecurity research be established as a CRC for strategic cohesion and credibility in international trade fora, while providing additional training funding to build capacity for the future. However a CRC proposal has proved difficult to pursue at this time and a central body for biosecurity risk analysis remains unfunded. We recommend that a Centre for Biosecurity Risk Analysis be funded and established as a matter of urgency.

Source of best professional skills and information resources – internal to AFFA vs external and best practice knowledge management by BA

Production of accurate IRAs requires access to experienced professionals and high quality information sources. Much, or in some cases all, the relevant expertise and data resides outside AFFA. Biosecurity Australia staff, as a result of economy, are having to undertake most of the collection and assessment of scientific data in-house. It is likely that they frequently lack the expertise required in many areas. While they have good access to on-line and computer based information sources, the same is not true of printed literature and of other sources of unpublished, 'grey' and informal data. To improve this situation a separation of the scientific data collection and IRA production functions should be encouraged. AFFA could contract out most of the scientific data collection to better equipped independent research providers such as State Departments of Agriculture, CSIRO and Universities. Biosecurity Australia staff could then concentrate on producing the IRA as a policy document.

The amount of information gathered for IRAs is considerable both in terms of treatment protocols and information on target pests and diseases. It is likely that much of this information can be re-used for subsequent related IRAs. AFFA needs to ensure that it installs best practice knowledge management practices so that it can reuse to maximum efficacy work previously done.