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Committee Secretary  
Senate Standing Committees on Rural and Regional Affairs and Transport  
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Dear Committee Secretary

**Adequacy of Australia's biosecurity measures and response preparedness, in particular with respect to foot-and-mouth disease**

**Summary**

This submission is made on behalf of several commercial livestock producers and experienced agriculturalists. It represents a snapshot into what we believe are the realities about the current *inadequacy* of Australia's biosecurity system for *both* the exclusion and mitigation of foot-and-mouth disease (FMD).

In short, this submission centres on our collective belief that relevant (Federal and State) government and industry bodies are fundamentally:

- (a) *Over-estimating* Australia's ability to efficiently and effectively confirm, contain, control and eradicate any incursion of FMD into Australia;
- (b) *Under-estimating* the time, expense and other resources required to prove FMD-freedom and re-establish entry to lucrative export markets for Australian livestock and livestock products; and, as such and most critically,
- (c) *Under-estimating* the absolute imperative to exclude FMD from Australia at any cost

**Context**

In its submission to the *Intergovernmental Agreement on Biosecurity (IGAB)* Animal Health Australia (AHA 2016) outlines the importance of biosecurity to Australian agriculture and Australia more broadly:

*"Biosecurity is integral to food security, agricultural competitiveness and market access. It goes to the heart of securing the future of our agricultural industries; their profitability, competitiveness and, in turn, the prosperity of rural and regional Australia and the nation itself."*

This statement implies that any sizable breach of biosecurity, especially by a disease with the morbidity, mortality, species susceptibility and export-market-closing-ability of FMD, would fundamentally decimate Australia's agricultural competitiveness, directly threaten the food and fibre security of our export customers, and undermine the existence of large swathes of rural and regional Australia.

The experiences of other countries like South Africa suggests FMD could cause permanent and irreversible consequences – both economic and socio-economic - in a country like Australia; well beyond the now widely-reported impact of \$80b over ten years. If ever there was a case for "prevention is better than cure" then FMD is that case.

**The biggest impediment to Australia's biosecurity system?**

"Follow the money"

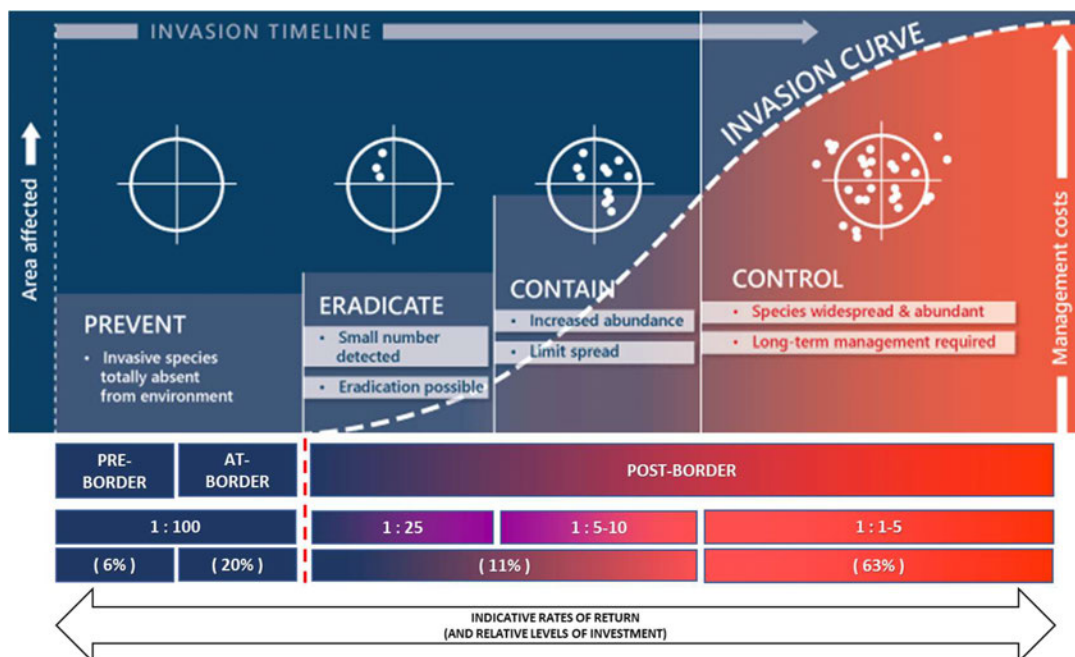
As identified in various reviews of Australia's biosecurity system over the past several decades, the major rate-limiting factor for biosecurity capability (people and systems) is a funding issue; specifically, the lack of a sustainable funding model linked to changes in trade and biosecurity risk levels. With pre-COVID forecasts indicating a >70% increase in passenger and bulk cargo arrivals by 2025, and ongoing resource demands to mitigate various newly-arrived exotic pest and disease incursions (white spot disease, varroa mite, fire ants, etc), the strain on already-limited funding is only increasing. Indeed, in the absence of fundamental improvements in funding for Australia's pre-border (preventative) biosecurity measures, modelling has indicated the potential increase in residual biosecurity risk may be as high as 75-200% (R Delane, pers comm).

**Figure 1** is an adaptation of material from 2015-16 *National Stocktake of Biosecurity Investment* (Craik et al. 2017) showing indicative rates of return (RoI) in the pre- and post-border space, as well as the relativity (%) of historical investment across the biosecurity continuum. Notwithstanding the obvious RoI benefits arising from preventative biosecurity investment, this graphic also highlights the considerable disparity in historical investment relative to likely return, including the high proportion of public and private monies now expended on controlling established pests and disease.

The latter has been compounded by the need to control a myriad of now-entrenched pest and disease agents, as well as a notable increase in Federal Government investment into post-border (domestic) containment and asset protection programs, most likely driven by their higher visibility to the voting public.

Clearly, in addition to urgent increases in biosecurity funding (especially for pre-border and at-border controls), we need better delineation and designation of funding responsibilities between Federal and State/Territory government - and industry - in future biosecurity investment and co-investment frameworks. In short, a significant boost in Government funding is required for the 'prevent' end of the invasion spectrum, with a concurrent increase in socialised industry and private landholder contributions towards the 'control' end of the spectrum.

**Figure 1.** The 'invasion spectrum' highlighting the relative benefits of preventative biosecurity investment



### ***The adequacy of Australia's post-border biosecurity systems to control an FMD incursion***

#### *"Expect the unexpected"*

Government and industry entities have been preparing for EAD incursions for many years. The various iterations of the EAD playbook – AUSVETPLAN – and the funding framework – EADRA – are testament to the commendable levels of preparation to-date.

However, as has been – and, to a degree, remains – the case with COVID-19 in Australia (a disease with half the morbidity rate, and a tenth the mortality rate, of FMD) even our best efforts around modelling and planning and associated responses have repeatedly fallen short of expectations. Likewise, reviews of the relatively recent experiences of FMD incursions into the UK (and, to some degree, South Africa) have highlighted a number of areas where, despite best intentions and endeavours in planning activities, the trajectory of FMD infection in these countries produced unanticipated issues and wholesale systems failures (Sumption et al, 2020). These include:

- An unanticipated entry pathway for the disease;
- Significant under-estimation of the initial outbreak size, arising from:
  - o The undetected presence of asymptomatic, infected animals (especially sheep)
  - o Delays in reporting and containing the initial infection
- Rapid overwhelming of veterinary sampling and tracing capabilities (and personnel);
- Demand for rapid-testing resources well-exceeded supply, leading to panic buying;
- Significant controversy around disease modelling, and subsequent culling activities;
- Challenges with 'managing' media, including premature reporting on peak-FMD caseload;
- Over-centralisation of decision-making, and a level of disregard for local knowledge;
- Under-estimation of the mass serological testing requirements (and, in South Africa's case, anti-FMDV treatments) necessary to support re-entry into export markets; and,
- Significant under-estimation of the mental health costs arising from FMD controls (including for years after FMD elimination) as well as the economic costs to - and compensation needs for - businesses linked to, but not directly involved in, livestock production.

The expansive nature of the above list clearly highlights the breadth and depth of the 'false sense of security' that can arise from well-intended planning, including in countries with far more experience with FMD than Australia. And while Australia is in the fortunate position of at least having the opportunity to learn the lessons arising from historical FMD outbreaks elsewhere, it is worth noting there are a range of factors that will limit our ability to respond to these lessons in the short- to medium-term. These factors, along with our firsthand experiences of COVID-19 management, raise concerns around our ability to quickly and effectively confirm, contain, control and eradicate any FMD outbreak. These concerns include:

- The sheer size and geographic spread of Australia's FMD-susceptible livestock (c. 110m) and wildlife (c. >30m) populations
  - o Australia is unlikely to have the number of experienced, professional resources (vets, EAD specialists, regional law enforcement, military personnel, etc) to adequately support anything other than a relatively localised outbreak of FMD
  - o Noting these resource constraints, as well as the difficulty associated with "ring-fencing" the relative confines of metropolitan cities during Australia's early COVID waves, it is implausible that any regional-Australia-wide lockdown (of livestock and people) could be effectively enforced, certainly for any length of time

- Australia has a markedly worse risk exposure if FMD gets a foothold in any one or more of the very large, geographically-spread populations of feral ungulate species (goats, pigs, deer, camels, buffalo)
  - o These populations exist across vast tracks of Australia, immediately adjacent to extensive and intensive livestock farming regions. It is feasible that an FMD / EAD infection may well have been circulating – unnoticed - in a feral animal population for a matter of weeks or more. This occurrence would render disease eradication efforts virtually impossible.
  - o These same feral animal populations are wreaking devastating impact on Australia's natural environment, including large tracks of sensitive wilderness in National Parks, Heritage areas and Traditional Lands.
  - o The time and cost to eliminate FMD from a feral animal population (let alone the resources needed prove FMD-freedom) could well be the basis of an entrenched FMD infection, and may result in the disease being established on an endemic basis
- Substantial gaps in the continuity of domestic livestock traceability systems, including:
  - o Non-compliance in property-to-property transfers through the supply chain
  - o Lack of individual animal traceability in sheep and goat populations
- Limited understanding and/or effective implementation of on-farm biosecurity practices
  - o ABARES data (2022) suggests there are approximately 58,000 broadacre livestock and dairy farms in Australia (EVAO > \$10k pa). These numbers do not capture livestock owners whose (lifestyle) enterprises fall below minimum value thresholds, nor animals being run in peri-urban backyards etc (all of whom present genuine risk pathways for an EAD incursion).
  - o Contrary to the 'front-end-of-the-bell-curve' views often portrayed in meeting rooms of industry representative groups, biosecurity awareness and compliance levels vary widely, even among commercial-scaled livestock producers.
  - o Culturally, many Australian farmers take pride in self-reliance and independence from third-party intervention, including auditing and other compliance activities
  - o These factors will materially impact the efficacy of on-farm biosecurity activities at a whole-of-industry level, and thus potentially impede post-border FMD protection and/or control efforts.
- Practical, on-the-ground understanding of roles and responsibilities in the event of a local FMD outbreak is extremely limited among producers.
  - o The recent flurry of industry webinars and local information workshops on FMD preparedness at farm level will aid greater general awareness around FMD.
  - o However, there remains a significant absence of any detail as to what – exactly – will transpire in the event of a possible or confirmed case of FMD at a local level. Specific questions include:
    - What do neighbouring property owners do in the event of suspected case of FMD?
    - Who is responsible for communicating any messages, alerts or obligations to proximate landholders?
    - What role could or should localised groups (RFS or equivalent, Landcare, farmer grower groups, etc) play in aiding any lockdown controls?
    - What is the chain of command and designation of authority among individuals, groups or agencies involved in any control response?

Despite the often-glowing (and often politically-motivated) endorsements of our emergency management systems and 'world class biosecurity' protocols, the reality is that Australia does not have

a good track record for delivering efficacy or efficiency in either area – the Black Summer Bushfires, eastern seaboard floods, varroa mite outbreaks and COVID-19 are but four recent examples. As sound as mock-up events and co-ordination strategies may be in theory, the reality is that the “perfect storm” created from a combination of an incursion of FMD, a partial or complete lockdown of regional Australia, the immediate cessation of export market access, and the logistics of large-scale disease control and eradication measures...will deliver anticipated and unanticipated consequences that simply exceed our response capability. This situation will most likely be exacerbated by the relative absence of adequately experienced and credentialled EAD leaders, and will be further confounded by the sheer numbers of resourced-constrained industry representative entities, many of whom are signatories to formal funding and co-ordination frameworks (EADRA, etc).

***It all starts and stops at (or before) the border***

*“Prevention is better than cure”*

An FMD incursion into Australia would cause catastrophic consequences, including but not limited to:

- Large-scale animal welfare issues for susceptible livestock and wildlife populations (100% morbidity; 10-30% mortality in affected flocks and herds);
- Immediate closure of Australia's \$22b worth of global beef, sheepmeat, goat-meat, wool, dairy and pork exports (with such closures to remain in-place until Australia can demonstrate FMD-freedom to OIE standards);
- A reduction of 70% (or more) in domestic livestock prices (in response to complete loss of export demand) and parallel reductions in levy income to livestock RDCs;
- Partial or complete lockdown of regional Australia in the short-term (and on-going disruptions to regional residential and tourist travel in the long-term);
- Significant unemployment arising from cashflow impositions for any business directly or indirectly involved in livestock production;
- Abandonment of livestock production in some areas, leading to broadacre land vacancies and subsequent landscape deterioration through unmitigated pest and weed populations;
- On-going mental health and PTSD-type conditions (including suicides) arising from loss of livestock, properties and/or livelihoods; and,
- Significant changes in population movements within regional Australia, including the potentially indefinite closure of some small towns.

It is critical to understand that there is no such thing as a ‘mild’ outbreak of FMD for a country with the size and geographic expanse of livestock and wildlife populations, and export market dependence, that Australia has. Whether the disease is confirmed in a wild buffalo population in the NT, in sheep flock in Victoria, or in a piggery south of Perth, the cascading effect of lockdown/s, wide-scale euthanasia of animals and market closures will have significant implications nationally.

Our pre- and at-border efforts to prevent an FMD incursion must therefore fully reflect the true economic and social devastation that would otherwise be incurred if the disease gets a foothold in Australia. To that end, several concerns remain regarding the adequacy of existing preventative biosecurity measures at Australia's 30+ international air and shipping ports.

These concerns include:

- A disproportionately high emphasis placed on *qualitative* assessments of incursion risk (and insufficient value placed on on-the-ground expertise from potential countries of FMD origin)
  - o 'Structured expert judgement' (SEJ) assessments conducted by the Centre of Excellence for Biosecurity Risk Analysis (CEBRA) in June of this year (prior to FMD being officially confirmed in Bali) indicate a theoretical incursion risk of 11.6% over the next five years. Chief Investigator of CEBRA, Aaron Dodd, has explained that "if the next five-year period was repeated 100 times, FMD would be detected, at least once, during 11.6 of those repeat periods" (Dodd, pers comm)
  - o Clearly this is not a concept easily or widely understood in the public domain, despite the "11.6%" incursion figure being repeatedly flagged as a 'low risk' in various forums and media. Such a figure is also at-odds (by orders of magnitude) to the 50% risk (of an FMD incursion, specifically from Indonesia) as quoted by respected Australian veterinarian, Ross Ainsworth (pers comm).
  - o As with any deployment of emergency or defensive resources, intelligence around risk / threats must have sufficient detail to provide practical decision-support. In the case of assessing the risk of an FMD incursion to Australia, the SEJ process must be re-run to better reflect both the epidemic levels of FMDV in Bali/eastern Indonesia, as well as the highest-risk period as identified by the CVO (i.e. the next 6-12 months).
  - o Notwithstanding the multitude of countries that present a potential FMD incursion risk to Australia, any additional transparency around - plus formal third-party auditing of - the SEJ process would underpin greater levels of stakeholder confidence, especially in those whose livelihoods depend on the accuracy of these assessments.
  
- Rigorous third-party auditing of the biosecurity measures currently in-place at Australia's airports (especially for, but not confined to, the processing of travellers returning from Bali).
  - o It is important to establish (and maintain) an *independent assessment process* for current biosecurity measures; this is the only effective mechanism that will identify gaps in existing biosecurity measures and quantify what additional resources may be needed.
  - o Conjecture surrounds the efficacy of citrate / citric acid in footbaths for FMDV, especially when exposure times are so limited in current usage. In an already-constrained biosecurity resourcing environment, using these mats to – in effect - 'create awareness' around FMD prevention is inadequate, if not unacceptable.
  - o Any reliance on artificial intelligence systems (which are, by definition, "artificial") at Customs entry to draft returning passengers according to theoretical biosecurity risk must be rigorously tested for real-world efficacy.
  - o Australia must fast-track technologies which ensure, without exception, that any and all passengers, luggage, mail and freight entering Australia from FMD / EAD hotspots are subject to assessment by a combination of sniffer dogs, 3D x-ray technology and manual inspection. Such technologies should logically be prioritised to entry pathways (country of origin, time period, etc) that present the greatest risk in the short-term.
  
- A long-term, strategic approach to mitigation and elimination of FMD on a global scale is warranted.

- By any measure, FMD is arguably the most significant disease affecting livestock production around the world. Indeed, Australia's ability to build and maintain lucrative export markets for livestock and livestock products is as much a function of good luck as it is one of good biosecurity management.
- But the odds of maintaining an FMD-free status are increasingly stacked against us, with record levels of passenger and freight movement rebuilding after COVID-19 disruptions, and a mix of endemic and epidemic FMDV levels encroaching from SE Asia in particular.
- It is therefore timely and wise that Australia considers what leadership role it could take in spearheading a more strategic approach to FMD management and elimination in the Asia Pacific. Such a strategy could leverage co-investment from the likes of ASEAN partnerships, with ag-export-dependent countries (Australia, New Zealand, others) providing a leadership function via 'FMD management hubs' specifically resourced and located in key geographical areas.
- Such a model could similarly be devised to address endemic (and pandemic) levels of FMD in the Middle East, Europe and Africa. As has been showcased with COVID-19 vaccine developments, global investment and research partnerships could make also significant in-roads in fast-tracking mRNA vaccines and anti-viral medications to bring FMD under global control.

### ***Concluding remarks***

- By any measure, and at any cost, the indefinite exclusion of FMD from Australia is foremost and critical. The viability of our agricultural sector, and regional Australia more broadly, is contingent upon this outcome.
- A bilateral political commitment to FMD prevention is essential – weaknesses in the Australian biosecurity system have arisen over multiple government terms, and will need to be strengthened for the long-term (including over multiple government terms).
- The Federal Government needs political and/or financial support from national industry entities to deploy resources pre-border and strengthen resourcing at-border. This may necessitate redeploying priorities away from post-border (domestic) biosecurity.
- DAFF Biosecurity must be properly and sustainably resourced, and not distracted from its core and critical pre-border and at-border role; post-border activities are best managed by better-resourced State/Territory governments, AHA and industry organisations.
- Industry and State and Territory agencies must materially increase their resource commitment to post-border biosecurity activities and preparedness by demonstrating genuine long-term resource commitments and capability, including:
  - A significant increase in incursion planning and 'practice runs'.
  - Formal (and audited) obligations on RDCs to demonstrate concerted and effective investment in biosecurity preparedness, including farmer capability with respect to implementation of biosecurity practices on-the-ground.
- Feral animal control (for FMD/EAD risk mitigation and a reduction in widespread ecological damage) is a very serious issue that must be addressed through dedicated, nationally-coordinated measures.

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