

Submission to Senate Rural and Regional Affairs and
Transport References Committee

ATSE SUBMISSION ON THE ADEQUACY OF AUSTRALIA'S BIOSECURITY MEASURES

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The Australian Academy of Technological Sciences and Engineering (ATSE) is a Learned Academy of independent, non-political experts helping Australians understand and use technology to solve complex problems. Bringing together Australia's leading thinkers in applied science, technology and engineering, ATSE provides impartial, practical and evidence-based advice on how to achieve sustainable solutions and advance prosperity.

ATSE appreciates the opportunity to respond to the Senate's Rural and Regional Affairs and Transport References Committee's inquiry into the adequacy of Australia's biosecurity measures and response preparedness, particularly in the context of the international foot-and-mouth (FMD) disease and varroa mite outbreaks. ATSE has previously made a [submission to the consultation on the National Biosecurity Strategy](#) in March 2022. This submission proposes four key recommendations for responding to the FMD outbreak and improving Australia's preparedness for future agricultural disease outbreaks:

Recommendation 1: Apply a One Health approach to understanding and preventing FMD in Australia.

Recommendation 2: Focus on providing on-ground assistance to Indonesia to manage their FMD outbreak.

Recommendation 3: Invest in biosecurity and agricultural research funding to improve preparation for future outbreaks.

Recommendation 4: Undertake biosecurity workforce planning to improve capacity to respond to future outbreaks.

Responding to the international foot-and-mouth disease outbreak

ATSE welcomes the release of the [National Biosecurity Strategy](#) and considers this an important step in keeping FMD and other livestock diseases out of Australia. The inclusion of a One Health approach, as recommended by ATSE's submission, strengthens the National Biosecurity Strategy by considering the links between the health of humans, animals, plants, and the environment. A One Health approach is critical to understanding the FMD outbreak, the involvement of humans and the environment on transmission, and any environmental and human impacts of mitigation strategies.

Recommendation 1: Apply a One Health approach to understanding and preventing FMD in Australia.

FMD would be devastating to the livestock industry should there be an outbreak in Australia. It is imperative that the Australian Government takes all measures to prevent the entry of FMD into Australia following the Indonesian outbreak. At this stage, this necessitates providing resources and on-ground assistance to Indonesia to tackle their outbreak. The \$10 million recently committed by the Australian Government for biosecurity measures in Indonesia is a welcome development in the effort to keep FMD out of Australia.

Recommendation 2: Focus on providing on-ground assistance to Indonesia to manage their FMD outbreak.

Positioning Australia to respond to future animal disease outbreaks

Immediate response measures must be combined with long-term planning, in keeping with the National Biosecurity Strategy, to prevent and mitigate future disease incursions into Australia. ATSE recommends a focus on continuing research and development on livestock (including bee) diseases and on developing a skilled biosecurity workforce.

Australia is well-positioned to conduct and build upon research on prevention of livestock diseases due to our highly skilled workforce, access to scientific facilities, and large agricultural sector. For example, there is promising research on mRNA vaccines against livestock viruses such as lumpy skin disease and African Swine Fever. While mRNA vaccines have many advantages over traditional vaccines in safety, efficacy, and the amount of material required for production, challenges for livestock applications include instability (requiring cold chain storage of the vaccines) and at-scale methods to administer the vaccines. Continued research with the goal of advances in these areas is needed to bring down the costs associated with these limitations. Agricultural research funding should be considered within a broader research funding strategy covering the entire research pipeline, from curiosity-driven research to translation and commercialisation.

Recommendation 3: Invest in biosecurity and agricultural research funding to improve preparation for future outbreaks.

As advanced by the ATSE submission to the National Biosecurity Strategy, a highly trained and localised biosecurity workforce is requisite for the strategy implementation. Threats to biosecurity – including FMD and the varroa mite – develop rapidly. To ensure response measures are not delayed – with potentially detrimental consequences – there needs to be an appropriately skilled workforce already available. Long-term investment in engaging young people in STEM and supporting teaching capabilities in vocational and higher education are foundational to fostering a strong biosecurity workforce. There is an opportunity to plan for biosecurity skills development more specifically to ensure a readily available workforce to respond to threats.

Recommendation 4: Undertake biosecurity workforce planning to improve capacity to respond to future outbreaks.