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National Lumpy Skin Disease Action Plan Progress Report February 2023

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Introduction

The National Lumpy Skin Disease (LSD) Action Plan (the Action Plan) was released on 13 October 2022 and sets out national priorities for actions to strengthen Australia's preparedness for an incursion of LSD. It was developed in partnership with governments, industries and other stakeholders. It is envisaged that the Action Plan will be implemented over a period of at least three years.

Of the 27 activities in the Action Plan, 22 are underway and 5 are yet to commence. This report provides an overview of each activity's status, priority and next steps. A status key and prioritisation matrix are provided at the end of the report.

Table 1 Prioritisation matrix

Criteria	High priority (one or more of the following)	Medium priority (one or more of the following)	Low priority (all of the following)
Urgency	Activity is highly time critical.	Activity is less time critical.	Activity is not time critical.
Importance of project	Activity has a high impact on Australia's preparedness for LSD.	Activity has a moderate impact on Australia's preparedness for LSD.	Activity has a lower level of impact on Australia's preparedness for LSD.
Risks to program delivery if not achieved	If not achieved, activity would have a high impact on the success of the program of work or has a high level of dependencies with other activities.	If not achieved, activity would have a moderate impact on the success of the program of work or has some level of dependencies with other activities.	If not achieved, activity would have a low impact on the success of the program of work and has limited dependencies with other projects.

Note: Activities have been prioritised based on urgency and importance of the project and the risks to the success of the National LSD Action Plan program if the project is not delivered successfully.

Objective 1: International engagement

Table O1 Strengthen collaboration and engagement within the region to strategically address the risks of LSD

Activity	Lead and key collaborators	Description	Status	Priority progress update	Next steps
1.1. Support Indonesia's LSD response	<p>Lead Department of Agriculture, Fisheries and Forestry (DAFF), Department of Foreign Affairs and Trade (DFAT)</p> <p>Collaborators Meat & Livestock Australia (MLA), the Australian Centre for Disease Preparedness (ACDP), overseas partners</p>	This activity aims to ensure Indonesia receives ongoing financial and technical support for their LSD outbreak response to help control and contain the spread of the disease in alignment with the needs identified by the Indonesian Government.	On track	<p>High priority</p> <p>Support for distribution of vaccines and equipment</p> <ul style="list-style-type: none"> • DFAT has provided 435,000 LSD vaccines to the Indonesian government. • DAFF has provided a grant of \$1.226 million to fund an Australian Livestock Export Corporation Ltd (LiveCorp) project to partially reimburse the cost of foot-and-mouth disease (FMD) and LSD vaccination in buffer zones surrounding feedlots and facilities across Indonesia and supporting the welfare of smallholders within these communities. • DFAT is progressing the purchase of personal protective equipment and disinfectants. <p>Laboratory capacity</p> <ul style="list-style-type: none"> • DAFF has progressed a grant of \$1.048 million with the ACDP to deliver diagnostics and capacity building support to Indonesian government laboratories. The project has commenced with the establishment of a project team in February 2023. <p>Technical assistance</p> <ul style="list-style-type: none"> • DFAT has budgeted \$2.2 million to provide technical assistance for a range of support including disease surveillance and epidemiology, field services and biosecurity surveillance, emergency management and operations, support for national/sub national project teams and monitoring and evaluation. <p>Other technical and advisory support</p> <ul style="list-style-type: none"> • \$0.1 million in seed funding has been provided to support the investigation of a national livestock traceability system for Indonesia. • \$1.4 million has been allocated to support a collaborative project with the Food and Agriculture Organization of the United Nations (FAO) Indonesia office to deliver quarantine and 	<p>Support for distribution of vaccines and equipment</p> <ul style="list-style-type: none"> • The Australian Government (DAFF/DFAT) is working with Indonesian Ministry of Agriculture on further support as requested. This includes the provision of additional doses of vaccines and technical support through the Australia Indonesia Health Security Partnership. <p>Laboratory capacity</p> <ul style="list-style-type: none"> • A project inception workshop for the ACDP project is expected to occur in Indonesia in March 2023. <p>Technical assistance</p> <ul style="list-style-type: none"> • Support for epidemiological modelling is currently being progressed and development of surveillance approaches including through environmental monitoring. • Support for national/sub national project teams is being delivered on an as needs basis. <p>Other technical and advisory support</p> <ul style="list-style-type: none"> • Support for biosecurity communications is being progressed with the Indonesian Quarantine Agency. • DAFF is preparing to train Indonesian quarantine officers through the Biosecurity Training Centre (BTC) at Charles Sturt University (CSU). • Support is being progressed through the FAO Indonesia office through funding a technical support program that will also include the secondment of a DAFF officer. FAO will work closely with the Indonesian government to progress LSD and FMD control measures. DAFF is progressing arrangements with the FAO, and this is expected to be established in the first quarter of 2023.

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Activity	Lead and key collaborators	Description	Status	Priority progress update	Next steps
				emergency animal disease response and control efforts in Indonesia.	
1.2. Build LSD preparedness, technical and diagnostic capability and surveillance in near neighbouring countries	Lead DAFF Collaborators Overseas partners, DFAT, Agriculture Victoria	This activity seeks to build on existing relationships with Papua New Guinea (PNG)'s National Agriculture Quarantine and Inspection Authority (NAQIA) and Timor-Leste's Ministry of Agriculture and Fisheries (MAF) to improve their LSD preparedness, technical and diagnostic capability, and surveillance.	On track	High priority <ul style="list-style-type: none"> • DAFF has funded LSD testing capacity in Timor-Leste, with both Polymerase Chain Reaction (PCR) and Enzyme Linked Immunosorbent Assay (ELISA) test capability now established in country through ACDP. • DAFF is working with NAQIA in PNG to finalise a rapid risk assessment for LSD, to focus awareness and surveillance activities. NAQIA has developed an LSD and a foot-and-mouth disease (FMD) preparedness plan, and DAFF plans to support a number of activities including an advanced LSD/FMD field diagnostic and sampling skills workshop. • DAFF is funding a Quarantine Capacity Building Project with Timor-Leste, in collaboration with the BTC at CSU. This project will run from January-June 2023. A five day in country needs assessment was conducted from 16-21 January 2023 in Timor-Leste to quantify the scope of work to be undertaken. • DFAT has been working with Agriculture Victoria in Timor-Leste to improve laboratory capacity and disease surveillance efforts. An animal health surveillance system based on the EpiCollect platform has been deployed and is now in use which increases the diseases surveillance capacity for Timor-Leste. An animal disease testing laboratory was also installed in Dili in 2022 to increase the capacity to use modern molecular testing methodologies. 	<ul style="list-style-type: none"> • A DAFF-funded awareness campaign and surveillance activity for LSD and other diseases will begin in February 2023 in three border Municipalities of Timor-Leste. Awareness materials developed by Market Development Facility will be used as the focus of a series of village meetings, followed by active surveillance for these diseases. • A tailored training program is now being designed for the Quarantine Capacity Building Project. Ten quarantine officers from Timor-Leste will take part in a two week 'train the trainer' program at Charles Sturt University in April 2023, followed by a mentored training session for their colleagues in Timor-Leste in June 2023.

Activity	Lead and key collaborators	Description	Status	Priority progress update	Next steps
1.3. Strengthen relationships in South-East Asia	Lead DAFF, DFAT Collaborators Relevant state and territory governments, overseas partners	This activity includes establishing an OCVO presence in northern Australia, led by the Australian Deputy Chief Veterinary Officer (Deputy ACVO). The Deputy ACVO will seek to build relationships in South-East Asia and promote engagement around LSD and other important animal health issues.	On track	High priority <ul style="list-style-type: none"> In November 2022, DAFF engaged with an Indonesian government delegation in Canberra on a range of topics highlighting Australian and Indonesian biosecurity co-operation. The meeting included senior parliamentarians and decision-makers on agriculture policies and laws from Indonesia's Commission IV, as well as key Indonesian ministry stakeholders for DAFF, including the Director-General of Farming and Animal Health in the Indonesian Ministry of Agriculture. The Australian Government has a dedicated Biosecurity Counsellor situated at the Australian embassy in Indonesia. This veterinary position ensures engagement activities with the Indonesian Ministry of Agriculture are regular and ongoing. 	<ul style="list-style-type: none"> DAFF will continue to build relationships in South-East Asian countries.

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Activity	Lead and key collaborators	Description	Status	Priority progress update	Next steps
1.4. Engage in international and regional fora	Lead DAFF Collaborators Overseas partners	This activity involves Australia's ongoing engagement and contribution to international and regional fora on LSD.	On track	Medium priority <ul style="list-style-type: none"> • DAFF attended an international technical meeting on LSD in Dubai between 15-18 November 2022. This meeting was funded by the Bill and Melinda Gates Foundation and organised by Pirbright Institute and GALVmed. The meeting brought together researchers, industry representatives and policy makers to discuss best practice for the control and prevention of LSD and to disseminate and discuss information about the latest research on LSD. The meeting was also attended by representatives from ACDP, MLA and the NSW Government. • DAFF attended the 12th FAO/World Organisation for Animal Health (WOAH) Regional Steering Committee Meeting of the Global Framework for the progressive control of Transboundary Animal Diseases (GF-TADs) for Asia and the Pacific between 7 – 8 February 2023. Australia's contributions to the GF-TADs Regional Strategy advocated that it captures diseases of significant concern to Australia including LSD and FMD. DAFF also advocated that the strategy focuses on addressing transboundary animal diseases at their source and boosts prevention and preparedness capabilities in LSD- and FMD-free countries at significant risk of an incursion e.g. Timor-Leste and Papua New Guinea (PNG). 	<ul style="list-style-type: none"> • This is an ongoing activity with Australian representatives regularly attending meetings of intergovernmental organisations, focused on LSD control and elimination in the Asia Pacific region. • Australian representatives will continue to engage in international and regional fora relating to the management, control and prevention of LSD. This includes an upcoming FAO LSD Symposium on 14-16 March 2023.

Objective 2: Border biosecurity and trade

Table O2 Augment industry-government collaboration and communication on the border biosecurity risks of LSD to Australia and strategically address technical market access barriers

Activity	Lead and key collaborators	Description	Status	Priority progress update	Next steps
2.1. Review import policy and LSD risk pathways	<p>Lead DAFF</p> <p>Collaborators Peak industry organisations</p>	This activity will include undertaking robust science-based risk analyses for the import of products from LSD	On track	<p>High priority</p> <ul style="list-style-type: none"> In response to the spread of LSD in South-East Asia, DAFF has reviewed import permits for products from LSD affected countries and suspended those of concern. A draft review of Australia's import policy for dairy products for human consumption was released for stakeholder consultation on 31 January 2023. DAFF will maintain its country-free list for LSD, noting treatment options such as pasteurisation are now proposed for some dairy commodities for this disease. 	<ul style="list-style-type: none"> Reviewing import policy is an ongoing priority and DAFF maintains contemporary science and risk-based import policies. Stakeholder comments on the draft review of Australia's import policy for dairy products for human consumption close on 31 March 2023 and will be taken into consideration in finalising the review. DAFF is actively considering its import policy settings for other commodities having regard to the available science and nature of the biosecurity risks. A review of the risk of entry of LSD from non-regulated pathways has been undertaken (See Activity 5.1.a).
2.2. Develop a strategic approach to minimising export trade disruptions	<p>Lead DAFF</p> <p>Collaborators DFAT, the Australian Livestock Exporters' Council (ALEC), the Australian Livestock Export Corporation Ltd (LiveCorp), MLA, other industry groups, state and territory governments</p>	Affected countries to ensure the risk of LSD is managed and achieves Australia's appropriate level of protection.	On track	<p>High priority</p> <ul style="list-style-type: none"> In consultation with industry, and state and territory governments, DAFF finalised the LSD trade preparedness strategy. This strategy identifies priorities to mitigate trade losses that could result from an outbreak of LSD. DAFF has commenced implementing the LSD trade strategy, which included a comprehensive review of current export certification across multiple commodities to identify certificates that do not align with internationally recognised scientific standards. DAFF, in consultation with industry, has identified key priorities for engagement to pre-emptively mitigate these trade risks. 	<ul style="list-style-type: none"> DAFF continues to make positive progress in accordance with the identified priorities. This includes pre-emptively identifying certification where animal health statements could better align with science-based recommendations. In parallel, DAFF continues to actively align certification with global scientific standards for LSD. This is an ongoing, high priority activity with monthly consultation with key industry groups. DAFF is reviewing existing emergency animal disease materials to identify gaps for preparedness. This includes the preparation of communication 'toolkits' to ease burden if these diseases are detected in Australia.

Objective 3: Diagnostic capability and capacity

Table O3 Ensure that Australia's national diagnostic network provides reliable LSD testing capability and capacity

Activity	Lead and key collaborators	Description	Status	Priority progress update	Next steps
3.1. Improve national and regional LSD diagnostic capability and capacity	<p>Lead ACDP, Laboratories for Emergency Animal Disease Diagnosis and Response (LEADDR)</p> <p>Collaborators DAFF</p>	National testing capability for LSD will be transferred from ACDP to all state and territory government laboratories through the existing LEADDR network. Regional testing capacity is also being supported by ACDP (see Activity 1.2).	On track	<p>High priority</p> <ul style="list-style-type: none"> Permits have been obtained to import LSD virus and samples have arrived at ACDP. Quality control testing is under way for LSD assays. Network quality control material for PCR testing is being developed. 	<ul style="list-style-type: none"> In early March 2023, a report will be provided to DAFF which will include results of a stocktake of potential inactivated materials for the network quality control for PCR testing and a schedule for the roll-out of serological capabilities to LEADDR laboratories. A permit to transfer inactivated materials to LEADDR laboratories has been approved by DAFF.
3.2. Improve the diagnostic testing options at ACDP	<p>Lead ACDP</p> <p>Collaborators DAFF</p>	There are a range of diagnostic testing options available for LSD at ACDP. Despite this, the development of new and improved diagnostic tests is important for detecting and managing an LSD incursion in alternative ways and progressing research.	On track	<p>Medium priority</p> <ul style="list-style-type: none"> Negative samples to support development of serological (ELISA) tests in Australian animals have been collected through the Northern Australia Quarantine Strategy (NAQS). An Illumina enrichment genomic sequencing protocol for the detection of LSD virus has been developed which is in the final stages of testing following the arrival of live viral material at ACDP. Further improvements to high throughput sequencing methods are being developed, including standard workflows and computer algorithms. 	<ul style="list-style-type: none"> Further collection of negative samples through NAQS will occur to support development of the ELISA. Positive diagnostic samples will be obtained from Vietnam and possibly Indonesia. The final report of the project on LSD whole genome sequencing database and workflow development is due on 21 February 2023.

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Activity	Lead and key collaborators	Description	Status	Priority progress update	Next steps
3.3. Explore point-of-care LSD testing	<p>Lead ACDP, SCAHLS and AHC</p> <p>Collaborators DAFF and state and territory governments</p>	<p>This activity will explore the development and use of novel point-of-care (POC) tests to screen for potential LSD cases during an outbreak situation.</p>	<p>On track</p>	<p>Medium priority</p> <ul style="list-style-type: none"> • The Animal Health Committee (AHC) POC testing working group was established in 2021 to examine national policy issues related to POC testing for both notifiable and endemic diseases. • A consultant was engaged by DAFF to support the AHC working group in 2022. A broad range of stakeholder consultation was undertaken covering technical, operational and policy issues relating to the use of POC testing in Australia for all animal diseases. Their final report, including recommendations, was submitted to AHC for consideration in January 2023. • No specific research work is currently being undertaken to develop LSD POC diagnostic tests in Australia. However, Agriculture Victoria has the capability to use their existing loop-mediated isothermal amplification (LAMP) units to test for LSD if necessary. Publicly available primer sequences for this test mean the required test components can be rapidly developed in an existing Australian facility. 	<ul style="list-style-type: none"> • Agriculture Victoria will trial using loop-mediated isothermal amplification (LAMP) testing for LSD in Bhutan later in the year, which will provide further information about whether the performance of this test could be suitable for use in Australia. • The AHC POC testing working group will be reactivated under the Subcommittee on Emergency Animal Diseases (SCEAD) and finalise national POC testing policies.

Objective 4: Surveillance

Table O4 Optimise government and industry investment in LSD surveillance

Activity	Lead and key collaborators	Description	Status	Priority progress update	Next steps
4.1.a. Develop a national LSD surveillance strategy	<p>Lead AHC, Animal Health Australia (AHA)</p> <p>Collaborators DAFF, Commonwealth Scientific and Industrial Research Organisation (CSIRO)/ACDP, Australian Meat Industry Council (AMIC), peak industry organisations</p>	This activity aims to develop a national LSD surveillance strategy that will assist with detecting an LSD incursion as early as possible.	Yet to commence	<p>Medium priority</p> <ul style="list-style-type: none"> Work is yet to commence on this activity as efforts have been targeted at high priority activities at this stage. The AHC Epidemiology and Surveillance Advisory Group will be established shortly and will be composed of jurisdictional, DAFF and AHA members. 	<ul style="list-style-type: none"> The Epidemiology and Surveillance Advisory Group will investigate the adequacy of national LSD surveillance as a priority.
4.1.b. Develop a wild and free-roaming bovid surveillance strategy	<p>Lead State and territory governments</p> <p>Collaborators DAFF Northern Australian Quarantine Strategy (NAQS), Northern Territory Cattlemen's Association, other industry groups</p>	This activity aims to develop a surveillance strategy to identify the locations, numbers and population dynamics of wild and free roaming bovid populations.	Yet to commence	<p>Medium priority</p> <ul style="list-style-type: none"> Work is yet to commence on this activity as efforts have been targeted at high priority activities at this stage. Wild animal surveillance for a potential LSD incursion is already part of the NAQS program. Further surveillance is undertaken by state and territory governments, including through the National Significant Disease Investigation Program. NAQS targeted surveillance strategy includes routine LSD serology on feral bovids (cattle, buffalo, banteng). Since routine testing commenced March 2022, there have been 45 samples from 7 surveys. Exclusion testing also occurs on any bovid skin lesions. 	<ul style="list-style-type: none"> DAFF is discussing the possibility of Wildlife Health Australia leading a project to characterise Australia's wild bovid population structure. This activity is also dependant on Activity 4.1.a. Population estimates are also currently underway through NAQS, to underpin their own surveillance plan for northern Australia. Further activities will also likely be progressed through the Northern Australia Coordination Network, once this is fully established.

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Activity	Lead and key collaborators	Description	Status	Priority progress update	Next steps
4.1.c. Review arthropod vector monitoring programs	<p>Lead DAFF, state and territory governments</p> <p>Collaborators CSIRO, AHA</p>	<p>This activity will review Australia's current arthropod vector monitoring programs (including in near neighbouring countries) and investigate if there are opportunities or the need to adapt these programs to be relevant to LSDV surveillance.</p>	<p>On track</p>	<p>Medium priority</p> <ul style="list-style-type: none"> The capacity for midge species present in South East Asia to act as vectors for LSD is being investigated through DAFF-funded research in Thailand. 	<ul style="list-style-type: none"> The next milestone report on the project in Thailand is due 27 October 2023. A review of Australian vector monitoring programs has not commenced due to a lack of resources.

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Activity	Lead and key collaborators	Description	Status	Priority progress update	Next steps
4.2. Undertake training and awareness activities	Lead DAFF, state and territory governments	This activity seeks to develop training programs and raise awareness of the increased risk of LSD and other animal disease threats in the Australian livestock population.	On track	<p>Medium priority</p> <ul style="list-style-type: none"> The Northern Australia Coordination Network is being established with \$4.33 million in funding to bring together Northern Territory, Queensland and Western Australia governments in partnership with key industries and local communities to improve Australia’s surveillance and preparedness coordination in the north. DAFF is regularly engaging with their cohort of On-Plant Veterinarians and Food Safety Meat Inspectors about the FMD and LSD situation in Indonesia, Australia’s preparedness for these diseases, and our national emergency animal disease response arrangements. Workshops are being held to support their learning and development and increase awareness. NAQS Northern Australian Biosecurity Surveillance Network (NABSNet) training activities are occurring in northern Australia to raise awareness of the increased risk posed by LSD. The most recent NABSnet masterclass was held in November 2022 in Townsville and covered LSD and EAD reporting and a hands-on post-mortem techniques workshop. Regular presentations are given on NAQS surveillance, with a focus on current priority diseases. Audiences include producer groups, veterinarians, and state and territory government stakeholders. Fee-for-service community animal health reporting activities occur through Indigenous ranger groups. These include reporting to highlight unusual sickness in cattle or buffalo residing within indigenous controlled lands. Topwatch! Public awareness material is distributed at agricultural shows, schools, producer forums and to rangers, with personnel available for any questions. This material includes calendars, brochures and factsheets highlighting the risk posed by various diseases including LSD. Regular engagement and discussion with NABSnet vets to encourage LSD exclusions and reporting. The NABSnet website is also regularly updated with newsletters & relevant resources. 	<ul style="list-style-type: none"> The next NABSnet Masterclass will be held 27-28 March 2023 in Darwin. The program is still in development but will include updates on LSD & other relevant EADs. The Masterclass is adjacent to the Australian Cattle Vets’ conference, also in Darwin. NABSnet also provides ongoing support via regular newsletters, contact through the NABS Veterinary Adviser, and online resources and subsidies for significant disease investigations and EAD exclusions. Further training and awareness activities will be progressed through the Northern Australia Coordination Network, once this is fully established.

Objective 5: Preparedness and response

Table O5 Enhance the LSD preparedness and emergency response capacity and capability of industries and governments, and clearly define roles and responsibilities

Activity	Lead and key collaborators	Description	Status	Priority progress update	Next steps
5.1.a. Undertake risk mapping of the likelihood of entry, establishment and spread of LSD	Lead DAFF Collaborators State and territory governments, AHC, other partners	This activity aims to undertake risk mapping of geographical areas that may have a higher likelihood of entry, establishment and spread of LSD.	On track	High priority <ul style="list-style-type: none"> DAFF commissioned a risk assessment examining the potential for an incursion through non-regulated pathways (such as windborne spread) by external consultants. This work will guide future modelling and vector studies and aid in targeting future surveillance activities. The findings of this work were presented to AHC in February 2023. 	<ul style="list-style-type: none"> Talking points will be made available through the National Biosecurity Communication and Engagement Network before release of information about the risk assessment.
5.1.b. Develop epidemiological modelling systems for LSD	Lead DAFF Collaborators State and territory governments, AHC, other partners	This activity will focus on the development of systems for the epidemiological modelling of vector-transmitted disease outbreaks. The system will be used to integrate data from jurisdictional and national datasets.	On track	High priority <ul style="list-style-type: none"> A project adapting the Australian Animal Disease Spread (AADIS) model for LSD began on 12 September 2022. The model is being developed using Western Australia as a test case with a national model to follow later in the project. The national AADIS-LSD model will assess areas in Australia where LSD may spread and establish and compare different control strategies, including the use of vaccination and vector control. 	<ul style="list-style-type: none"> A prototype AADIS-LSD model is being developed for Western Australia. This is scheduled for completion in March 2023. The model will use Western Australian demographic and movement data for cattle, vector distribution maps, and control options based on the AUSVETPLAN Response Strategy for LSD to simulate the spread and control of LSD in Western Australia. Development of a national AADIS-LSD model has begun. This is due to be completed in December 2023. A literature review and analysis of LSD-competent vector species in Australia is underway, providing vector distribution maps for the model. Outputs may also assist other vector surveillance activities (see Activity 4.1.c.).

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Activity	Lead and key collaborators	Description	Status	Priority progress update	Next steps
5.2.a. Develop a national LSD vaccination strategy	Lead AHC, AHA Collaborators CSIRO, Cattle Australia, the AHC Vaccine Expert Advisory Group, other partners	This activity will establish a national LSD vaccine working group to develop a national LSD vaccination strategy, including options on how to best apply vaccination during a response and how to identify vaccinated animals.	Yet to commence	High priority • A national Vaccine Operational Policy Task Group is being established under SCEAD and will be responsible for developing national recommendations for the use of vaccination during an outbreak.	<ul style="list-style-type: none"> • SCEAD to confirm membership of the national Vaccine Operational Policy Task Group.
5.2.b. Access an LSD vaccine appropriate for use within Australia	Lead DAFF	Commercially available LSD vaccines will be evaluated to assess their suitability for emergency use in Australia.	On track	High priority <ul style="list-style-type: none"> • International suppliers of homologous LSD vaccines were contacted in 2022 to determine if they could produce a vaccine in compliance with quality standards that could be certified by a competent authority recognised by Australia. • A suitable manufacturer was identified through this process and engaged for further discussions. • The ACVO applied for an emergency use permit and import permit for a vaccine candidate in December 2022. 	<ul style="list-style-type: none"> • DAFF will continue to work with the APVMA and the vaccine manufacturer to progress the regulatory assessments.
5.2.c. Investigate options for the timely supply of LSD vaccines	Lead DAFF, AHA Collaborators State and territory governments, peak industry organisations	This activity aims to investigate options to secure access to LSD vaccines in the event of an outbreak, including the possibility of investment in an LSD vaccine bank modelled on the Australian FMD Vaccine Bank.	On track	High priority <ul style="list-style-type: none"> • In anticipation of receiving relevant regulatory approval (Activity 5.2.b.), DAFF is investigating options to supply LSD vaccines for use in Australia and in near neighbouring countries. 	<ul style="list-style-type: none"> • DAFF will engage with Animal Health Australia (AHA) and other stakeholders to investigate the possible establishment of a co-funded LSD vaccine bank for use in Australia in the event of an outbreak.

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Activity	Lead and key collaborators	Description	Status	Priority progress update	Next steps
5.3. Review the national LSD response strategy	<p>Lead AHA, AHC, DAFF, AUSVETPLAN Technical Review Group</p> <p>Collaborators Peak industry organisations</p>	This activity aims to ensure the national LSD response strategy is fit-for-purpose and well aligned with the national LSD vaccination strategy.	On track	<p>High priority</p> <ul style="list-style-type: none"> A joint government and industry exercise was developed by AHA to test components of the latest version of the AUSVETPLAN Response Strategy for LSD. The exercise concluded on 6 December 2022. The AUSVETPLAN Technical Review Group has reviewed and provided advice on some items detailed in the exercise report developed in late 2022. 	<ul style="list-style-type: none"> AHA is convening a writing group to revise the AUSVETPLAN Response Strategy for LSD considering the findings of the exercise on movement controls for live animals, vector management, vaccination and susceptible animal-free buffers.
5.4. Prepare to manage exported livestock in transit and in preparation for export during an incursion	<p>Lead DAFF</p> <p>Collaborators AHC, LiveCorp, MLA, live animal exporters</p>	This activity would involve the development of contingency plans (including preparedness, logistics, biosecurity and welfare) for Australian livestock consignments which are within the export process, including those that are loading or those that have departed but not yet arrived in their destination country.	On track	<p>Medium priority</p> <ul style="list-style-type: none"> DAFF commenced a review of broader export livestock incident management procedures. These incidents include the detection of a disease such as LSD in Australia. DAFF has identified stakeholders for an Export Livestock Incident Management Working Group to develop national operating principles for the return of vessels carrying livestock to Australia and other contingency arrangements. 	<ul style="list-style-type: none"> DAFF will consult with the Export Livestock Incident Management Working Group to identify next steps and update export livestock incident management procedures.
5.5. Investigate arthropod vector control options	<p>Lead DAFF</p> <p>Collaborators State and territory governments</p>	This activity will review Australia's current arthropod vector control options (including in near neighbouring countries) and investigate if there are opportunities to improve these or put in place plans to prevent the spread of disease.	Yet to commence	<p>Medium priority</p> <ul style="list-style-type: none"> Work is yet to commence on this activity as efforts have been targeted at high priority activities at this stage. 	n/a

Objective 6 Awareness and communications

Table O6 Facilitate stronger engagement between governments and industry through a comprehensive and adaptable communication strategy for LSD

Activity	Lead and key collaborators	Description	Status	Priority progress update	Next steps
6.1 Develop a comprehensive and sustained LSD communication plan to raise awareness and understanding of the disease, risk and preparedness activities	<p>Lead The National Biosecurity Committee Engagement Network (NBCEN), peak industry organisations</p> <p>Collaborators DAFF</p>	This activity will develop a comprehensive and sustained LSD communication plan to raise awareness and understanding of the disease, risk and preparedness activities.	On track	<p>High priority</p> <ul style="list-style-type: none"> Since the beginning of the LSD outbreak in Indonesia, DAFF has worked in partnership with NBCEN members to increase communication and awareness activities surrounding LSD in an effort to decrease the risk of an incursion and promote producer and community awareness. 	<ul style="list-style-type: none"> Ongoing biosecurity awareness activities include various social media and website updates, webinars, podcasts, education program content and border signage.
6.2. Develop a communication plan for use during an LSD emergency response	<p>Lead NBCEN</p>	This activity will develop a communication plan that could be used during an incursion of LSD.	On track	<p>Medium priority</p> <ul style="list-style-type: none"> DAFF, in partnership with National Biosecurity Communication and Engagement Network members, has been developing a detailed communication strategy for activation in the case of a significant Emergency Animal Disease (EAD) incursion. The communication strategy includes governance arrangements and a series of prepared messages across various mediums (website, media release, social media etc.), to be refined depending on the details of the incident, and that can be rapidly activated if needed. 	<ul style="list-style-type: none"> This work is nearing completion and an industry briefing is planned for March/April 2023.

Objective 7: Research and innovation

Table O7 Improve Australia's LSD preparedness and response through research priorities driven by industry and government needs, and ensure new knowledge is freely accessible

Activity	Lead and key collaborators	Description	Status	Priority progress update	Next steps
7.1. Set national priorities for LSD research, engagement and communication	Lead DAFF, AHA (e.g. through the National Animal Biosecurity Research, Development and Extension Strategy), AHC	This activity will seek to bring together industry, government and other stakeholders to identify, prioritise and undertake important LSD-related research and preparedness activities.	Yet to commence	Low Priority <ul style="list-style-type: none"> A symposium is being developed by DAFF to identify knowledge gaps and prioritise research and investment opportunities on Japanese encephalitis. If this symposium is successful, the same format could be used to identify and prioritise research on LSD. 	<ul style="list-style-type: none"> To be confirmed pending the outcomes of a recent Japanese encephalitis virus research symposium.
7.2. Investigate new technology LSD vaccines	Lead ACDP, EMAI Collaborators DAFF, state and territory governments, industry, MLA	This activity will seek research interest in developing alternative vaccine technologies that can be deployed both in Australia and internationally to control the further spread of LSD.	On track	Medium Priority <ul style="list-style-type: none"> DAFF conducted an open market discovery process, seeking responses from potential vaccine manufacturers about the possible development of novel LSD and other livestock vaccines and the potential for Australian-based vaccine production capability. In December 2022, DAFF reported to the National Biosecurity Committee that there is currently limited capacity for the market to fulfil the requirement for Australian-based vaccine production using technology that can be adapted to LSD and achieve rapid, large-scale vaccine production. NSW and QLD governments and the Commonwealth through MLA, are investing in a \$4.95 million project to support research into mRNA vaccines for livestock, including LSD. This project aims to deliver an mRNA LSD vaccine construct that has undergone in-vivo efficacy testing by 2024. 	<ul style="list-style-type: none"> DAFF will consider opportunities to support further research and development of new vaccine platforms. The mRNA project has resulted in the production of an LSD vaccine construct that will undergo in-vivo testing in the coming year. There is potential for MLA to embark on a larger project in partnership with NSW DPI to develop mRNA vaccines for other diseases in the future.

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Activity	Lead and key collaborators	Description	Status	Priority progress update	Next steps
7.3. Develop modelling tools to support LSD preparedness and response	<p>Lead DAFF, Centre of Excellence for Biosecurity Risk Analysis (CEBRA)</p> <p>Collaborators State and territory governments</p>	This activity will seek investment in other modelling tools to hone Australia’s LSD preparedness and response (in addition to epidemiological modelling tools developed under Activity 5.1.b.)	On track	<p>Medium Priority</p> <ul style="list-style-type: none"> Modelling tools can be used in various ways during emergency responses. While traditional tools like AADIS have been used successfully to plan for emergency responses, alternative tools are necessary to support tactical decision-making during emergency responses. To strengthen national real-time modelling capabilities during an outbreak response, a stakeholder workshop was held in August 2022 to identify gaps and priorities for real-time modelling activities during an outbreak response, using LSD as the test case. Outputs from the workshop will guide the development of modelling tools and workflows to support decision making during an emergency response. The project is expected to run until 30 June 2024. 	<ul style="list-style-type: none"> A review of real-time modelling tools for LSD and other diseases, and outcomes from the stakeholder workshop, will inform a workplan on modelling tools and workflows to develop. This is due in June 2023. A suite of modelling tools and workflows will be developed to assist decision making during an outbreak response on completion of the project in June 2024.

Objective 8: Recovery

Table O8 Mitigate the economic and social effects of an outbreak of LSD by developing options for a recovery strategy

Activity	Lead and key collaborators	Description	Status	Priority progress update	Next steps
8.1. Develop options for an LSD recovery strategy	<p>Lead DAFF, in consultation with other Australian Government agencies as appropriate</p>	<p>This activity will develop options for a LSD recovery strategy in consultation with other Australian Public Service agencies as appropriate, to assist in overall preparedness in the event of an LSD outbreak.</p>	On track	<p>High priority</p> <ul style="list-style-type: none"> DAFF has developed initial options for consideration by government regarding community recovery in an emergency animal disease incursion, such as LSD. This aligns with Recommendation 9 of the Exotic Animal Disease Preparedness Joint Interagency Taskforce. Whole-of-Government policy options were developed in consultation with an Interdepartmental Committee (IDC) co-chaired by DAFF and the Department of Prime Minister and Cabinet. Policy options were provided to the Australian Government for consideration. 	<ul style="list-style-type: none"> Work is continuing with jurisdictions on policy options to assist in response and recovery and ensure the Commonwealth and jurisdictions have a consistent and complementary policy approach.