



Australian Government

Department of Agriculture,
Fisheries and Forestry

National Lumpy Skin Disease Action Plan Progress Report 2 February to April 2023

Biosecurity Animal Division



© Commonwealth of Australia 2023

Ownership of intellectual property rights

Unless otherwise noted, copyright (and any other intellectual property rights) in this publication is owned by the Commonwealth of Australia (referred to as the Commonwealth).

Creative Commons licence

All material in this publication is licensed under a [Creative Commons Attribution 4.0 International Licence](https://creativecommons.org/licenses/by/4.0/) except content supplied by third parties, logos and the Commonwealth Coat of Arms.



Cataloguing data

This publication (and any material sourced from it) should be attributed as: *National Lumpy Skin Disease Action Plan Progress Report*, Department of Agriculture, Fisheries and Forestry, Canberra, May 2023. CC BY 4.0.

This publication is available at agriculture.gov.au/biosecurity-trade/pests-diseases-weeds/animal/lumpy-skin-disease/national-action-plan.

Department of Agriculture, Fisheries and Forestry
GPO Box 858 Canberra ACT 2601
Telephone 1800 900 090
Web agriculture.gov.au

Disclaimer

The Australian Government acting through the Department of Agriculture, Fisheries and Forestry has exercised due care and skill in preparing and compiling the information and data in this publication. Notwithstanding, the Department of Agriculture, Fisheries and Forestry, its employees and advisers disclaim all liability, including liability for negligence and for any loss, damage, injury, expense or cost incurred by any person as a result of accessing, using or relying on any of the information or data in this publication to the maximum extent permitted by law.

Acknowledgements

The authors thank stakeholders for their input into this progress report.

Acknowledgement of Country

We acknowledge the Traditional Custodians of Australia and their continuing connection to land and sea, waters, environment and community. We pay our respects to the Traditional Custodians of the lands we live and work on, their culture, and their Elders past and present.

Contents

Introduction	1
Objective 1: International engagement	2
Objective 2: Border biosecurity and trade	7
Objective 3: Diagnostic capability and capacity	9
Objective 4: Surveillance	11
Objective 5: Preparedness and response	15
Objective 6 Awareness and communications	20
Objective 7: Research and innovation	22
Objective 8: Recovery	24

Tables

Table 1 Prioritisation matrix.....	1
Table O1 Strengthen collaboration and engagement within the region to strategically address the risks of LSD.....	2
Table O2 Augment industry-government collaboration and communication on the border biosecurity risks of LSD to Australia and strategically address technical market access barriers	7
Table O3 Ensure that Australia’s national diagnostic network provides reliable LSD testing capability and capacity	9
Table O4 Optimise government and industry investment in LSD surveillance.....	11
Table O5 Enhance the LSD preparedness and emergency response capacity and capability of industries and governments, and clearly define roles and responsibilities.....	15
Table O6 Facilitate stronger engagement between governments and industry through a comprehensive and adaptable communication strategy for LSD	20
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	222
Table O8 Mitigate the economic and social effects of an outbreak of LSD by developing options for a recovery strategy.....	244

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, 1 has been completed, 24 are underway and 2 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. In 2023 DAFF has committed to providing Indonesia with an additional 1 million doses of LSD vaccine. 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 has purchased personal protective equipment and disinfectants for the Indonesian response. <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. A project inception workshop occurred in Indonesia in March 2023 which included a range of stakeholders including Indonesian government officials. ACDP is in direct contact with Indonesian staff involved in the implementation and delivery of external quality assurance programs for LSD. <p>Technical assistance</p> <ul style="list-style-type: none"> DFAT has budgeted \$2.2 million in the 2022/23 financial year 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>	<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 (AIHSP). DAFF expects 500,000 doses of LSD vaccine to be delivered to Indonesia by June 2023 with a further 500,000 doses expected to be delivered before the end of the 2023 calendar year. <p>Laboratory capacity</p> <ul style="list-style-type: none"> The regional emerging disease surveillance program with ACDP is progressing with the purchase of equipment, reagents and delivery of training and mentoring of laboratory staff through Indonesia's government laboratory network. The project will be delivered over the 2023 calendar year. <p>Technical assistance</p> <ul style="list-style-type: none"> DFAT's AIHSP partners directly with Indonesia's Ministry of Agriculture (MoA) to strengthen health security systems and build One Health capabilities. This includes providing technical expertise, governance support and strategic planning to supporting Indonesia's disease control and surveillance efforts. In 2022, AIHSP worked very closely with MoA to respond swiftly to the LSD incursion through the provision of technical advice, vaccines, communication material and assisting in surveillance efforts. AIHSP works directly with MoA to provide technical advice and system strengthening, including embedding the

Activity	Lead and key collaborators	Description	Status	Priority progress update	Next steps
				<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 emergency animal disease (EAD) response and control efforts in Indonesia. 	<p>national animal health surveillance health system (iSIKHNAS) and conducting epidemiological modelling.</p> <ul style="list-style-type: none"> • AIHSP also works at a subnational level in Bali, East Nusa Tenggara, South Sulawesi, Central Java and Yogyakarta to strengthen provincial health security capabilities and capacities to prepare, prevent and control animal disease incursions. Like the support undertaken nationally with MoA, AIHSP provides technical expertise, governance support and strategic planning to strengthen subnational disease control and surveillance efforts. • Support for improved farm biosecurity and subnational delivery of activities is being secured through an agreement with a non-government organisation based in Indonesia. This is expected to extend the coverage and range of support delivered on the ground in Indonesia. <p>Other technical and advisory support</p> <ul style="list-style-type: none"> • DAFF is making final arrangements to train Indonesian quarantine officers through the Biosecurity Training Centre (BTC) at Charles Sturt University (CSU). Officials will be trained at the BTC in May/June 2023 with further support subsequently provided in Indonesia by CSU as officers disseminate this train the trainer program to quarantine officers in Indonesia. • An agreement has been established with the FAO Indonesia office to deliver a technical support program to the Indonesian MoA that will also include the secondment of a DAFF officer. FAO will work closely with the MoA to progress LSD and FMD control measures. The program will conclude on 31 March 2024 and a veterinary officer is expected to deploy to Indonesia in June 2023 to support delivery of the initiative.

Activity	Lead and key collaborators	Description	Status	Priority progress update	Next steps
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 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) nucleic acid testing and Enzyme Linked Immunosorbent Assay (ELISA) test capability now established in country through ACDP. • DAFF, Nossal Institute and NAQIA in PNG have finalised a rapid risk assessment for LSD, to focus awareness and surveillance activities. NAQIA has developed an LSD and a FMD preparedness work plan, and DAFF is supporting a number of activities including an advanced LSD/FMD field diagnostic testing, sampling skills and vaccination workshop. The development of vaccination plans for LSD and FMD for PNG is also being supported. • 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; a 10-day residential 'train the trainer' course was conducted for 10 quarantine officers from Timor-Leste at the BTC at CSU from 17-18 April; and a follow-up workshop in Timor-Leste in June is being planned. • 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 will be used as the focus of a series of village meetings, followed by active surveillance for these diseases. • 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 training workshop to deliver skills in LSD and FMD vaccination, diagnostic sampling and animal identification in PNG is planned for the week of 5 June 2023. • Veterinarians from the department and PNG's National Agriculture and Quarantine Inspection Authority will join a survey of PNG's southern border (Western Province) in June to assess risk pathways for LSD and other priority animal diseases.

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. DAFF is seconding an officer to the United Nations Food and Agriculture Organization (FAO) office in Indonesia in June 2023, to provide a ready conduit between Indonesian and Australian experts. The project represents a step up in integrating Indonesian, Australian and other international support efforts in what will be a long-term response. 	<ul style="list-style-type: none"> DAFF will continue to build relationships in South-East Asian countries.

National Lumpy Skin Disease Action Plan Progress Report May 2023

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 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. An Australian delegation led by the Australian Chief Veterinary Officer will be attending the 90th Annual General Session of the World Assembly of Delegates of the WOAH being held 21-25 May 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	Lead DAFF Collaborators Peak industry organisations	This activity will include undertaking robust science-based risk analyses for the import of products from LSD-affected countries to ensure the risk of LSD is managed and achieves Australia's appropriate level of protection.	On track	High priority <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. Stakeholder comments on a draft review of Australia's import policy for dairy products for human consumption closed on 14 April 2023 and will be taken into consideration in finalising the review. The review is expected to be complete by early 2024. A review of the risk of entry of LSD from non-regulated pathways has been undertaken (See Activity 5.1.a). 	<ul style="list-style-type: none"> Reviewing import policy is an ongoing priority and DAFF maintains contemporary science and risk-based import policies. DAFF is actively considering its import policy settings for a range of commodities having regard to the available science and nature of the biosecurity risks.
2.2. Develop a strategic approach to minimising export trade disruptions	Lead DAFF Collaborators DFAT, the Australian Livestock Exporters' Council (ALEC), the Australian Livestock Export Corporation Ltd	This activity will take a strategic approach to minimising disruptions to trade by analysing which export markets and products would be affected if there is an	On track	High priority <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, and has already progressed this work with several markets. 	<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 regular consultation with key industry groups. DAFF is reviewing existing EAD materials to identify gaps for preparedness. This includes the preparation of communication 'toolkits' to ease

National Lumpy Skin Disease Action Plan Progress Report May 2023

Activity	Lead and key collaborators	Description	Status	Priority progress update	Next steps
	(LiveCorp), MLA, other industry groups, state and territory governments	LSD incursion in Australia.		<ul style="list-style-type: none"> Whilst trading partner reactions cannot be anticipated in the event of an LSD incursion, to date approximately \$200 million worth of exports previously at risk could now continue without disruption. 	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"> In early March 2023, a report on potential materials for the network quality control for LSD testing (PCR) and a schedule for the roll-out of serological capabilities to LEADDR laboratories was supplied to DAFF. A permit to transfer inactivated proficiency testing materials to LEADDR laboratories has been approved by DAFF. This will allow proficiency testing to be undertaken for LEADDR laboratories. Under a whole of government EAD preparedness program, Victoria is strengthening its laboratory capacity for both rapid and sustained responses to disease outbreaks. 	<ul style="list-style-type: none"> Network quality control material for LSD testing (PCR) has been developed and will be transferred to LEADDR laboratories in late May 2023. LSD positive serum for the network quality controls for serological testing (ELISA) is currently being sourced.

Activity	Lead and key collaborators	Description	Status	Priority progress update	Next steps
3.2. Improve the diagnostic testing options at ACDP	Lead ACDP Collaborators DAFF	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	Medium priority <ul style="list-style-type: none"> Negative samples to support development of serological tests (ELISA) in Australian animals have been collected. A project at ACDP on LSD whole genome sequencing database and workflow development has been finalised. ACDP now has access to robust and repeatable whole genome sequencing procedures for timely LSD virus detection and characterisation. 	<ul style="list-style-type: none"> Further collection of negative samples through NAQS will occur to support development of the ELISA. Positive diagnostic samples may be obtained from Vietnam and Indonesia.
3.3. Explore point-of-care LSD testing	Lead ACDP, SCAHLS and AHC Collaborators DAFF and state and territory governments	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.	On track	Medium priority <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. DAFF engaged a consultant 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. NSW and Victoria are developing capacity to undertake POC testing for LSD virus in the event of an outbreak. 	<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 has been reactivated to harmonise national policy for POC testing.

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.	On track	<p>Medium priority</p> <ul style="list-style-type: none"> The AHC Epidemiology and Surveillance Advisory Group have finalised members from jurisdictional, DAFF and AHA members and a Terms of Reference will be confirmed shortly. The National LSD Surveillance Strategy will consider work already conducted in individual jurisdictions. 	<ul style="list-style-type: none"> The Epidemiology and Surveillance Advisory Group will evaluate current national LSD surveillance activities as a priority, which will support development of the National LSD Surveillance Strategy.

Activity	Lead and key collaborators	Description	Status	Priority progress update	Next steps
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.	On track	<p>Medium priority</p> <ul style="list-style-type: none"> A project proposal is under development to consider available data sources and other research on the population structure and dynamics of wild cattle and buffalo populations in northern Australia. 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 64 LSD samples from 8 surveys. Exclusion testing also occurs on any bovid skin lesions. 	<ul style="list-style-type: none"> The project proposal will be developed for funding in 2023-24.
4.1.c. Review arthropod vector monitoring programs	<p>Lead DAFF, state and territory governments</p> <p>Collaborators CSIRO, AHA</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 LSD virus surveillance.	On track	<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. It remains unclear what species of mosquitoes, flies, midges and ticks would be important in the transmission of LSD in Australia. Following results from the research project in Thailand, this activity will consider the scope and geographic coverage of existing vector surveillance programs implemented nationally, at seaports and airports, in jurisdictions for animal and human health and make recommendations for surveillance to better incorporate updated understanding of the geographic and seasonal distributions of vectors in Australia to inform risk assessments. Victoria is looking to collaborate with ACDP in a research project to evaluate vectors of importance for spread and maintenance of LSD within Victoria. This project will identify vector species of importance in Victoria, and experimentally evaluate their ability to competently carry LSD virus.

<p>4.2. Undertake training and awareness activities</p>	<p>Lead DAFF, state and territory governments</p>	<p>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.</p>	<p>On track</p>	<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. • 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. • A NABSnet masterclass was held 27-28 March 2023 in Darwin. The program involved updates on LSD & other relevant EADs as well as workshops on collecting appropriate samples for EADs and practising entry/exit procedures for suspected EAD incursions. The Masterclass was held adjacent to the Australian Cattle Vets conference, also in Darwin. • Following on from the Darwin NABSnet masterclass, a dry season Skin Survey has kicked off for NABSnet vets to complete increased numbers of skin sampling for LSD exclusions during the months of June/July. • 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. • NSW Department of Primary Industries (NSW DPI) has a number of veterinary and para-veterinary training initiatives underway including joint workshops with Local Land Services 	<ul style="list-style-type: none"> • NABSnet 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. • All jurisdictions will continue to deliver engagement and awareness activities, highlighting the risk of EAD’s like LSD. This ensures producers and other relevant stakeholders know who to contact when they encounter unusual signs of disease.
---	---	---	-----------------	---	--

Activity	Lead and key collaborators	Description	Status	Priority progress update	Next steps
				<p>in regional areas; supported training in emergency management and the distribution of EAD surveillance resources in high-risk environments.</p> <ul style="list-style-type: none"> • NSW DPI and Local Land Services (LLS) have been undertaking a targeted surveillance and engagement program in NSW saleyards since October 2022. This work focuses on examining cattle for signs consistent with LSD or FMD and undertaking confirmatory sampling. So far over 227 inspections have been performed across 29 saleyards. • Under its whole of government EAD preparedness program, Victoria has been undertaking extensive work to raise awareness with livestock keepers to ensure they are aware of biosecurity risks and best practices and have in place enduring measures and practices to effectively manage biosecurity risks. To date Agriculture Victoria has held 82 biosecurity planning workshops targeted at mixed farming businesses and remote areas to assist with the development of 436 farm biosecurity plans, has held 82 awareness events for 5,767 producers, and 123 events for 1,520 other stakeholders, and has had 1,865 enrolments in eLearning modules to support the sector's awareness of EAD events. • Queensland Biosecurity Officers and veterinarians are undertaking training to upskill in disease investigation procedures and techniques to increase capability and capacity for an EAD response. 	

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.	Completed	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 risk assessment and modelling has been released on DAFF's website. A summary of this risk assessment and modelling work was presented to industry representatives at a webinar on 4 May 2023. A recording of this presentation is available through the National Farmers Federation. 	nil
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 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.). Development of a national AADIS-LSD model has begun, with the completion of a revised synthetic cattle population and review of spread pathways underway. Testing of the model's spread pathways and review of control measures and the use of vaccination is planned shortly. A prototype AADIS-LSD model is being developed for Western Australia and uses Western Australian demographic and movement data for cattle to simulate the spread of LSD in Western Australia.

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.	On track	High priority <ul style="list-style-type: none"> • A national Vaccine Operational Policy Task Group has been established under SCEAD and will be responsible for developing national recommendations for the use of vaccination during an outbreak. • Membership of the national Vaccine Operational Policy Task Group consists of all jurisdictions, the Commonwealth and Animal Health Australia. • Jurisdictions have also been developing their own policies and vaccination plans for LSD vaccination. 	<ul style="list-style-type: none"> • The Vaccine Operational Policy Task Group will also be tasked with developing operational plans for using vaccination against other important livestock diseases.
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 is working with the APVMA and the vaccine manufacturer to progress the regulatory assessments.

Activity	Lead and key collaborators	Description	Status	Priority progress update	Next steps
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 in negotiations with a potential supplier of LSD vaccines for use in near neighbouring countries or Australia following an incursion. 	<ul style="list-style-type: none"> DAFF is in early discussions with Animal Health Australia (AHA) to investigate the possible establishment of a co-funded LSD vaccine bank for use in Australia in the event of an outbreak.
5.3. Review the national LSD response strategy	Lead AHA, AHC, DAFF, AUSVETPLAN Technical Review Group Collaborators Peak industry organisations	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	High priority <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. AHA has convened a writing group to revise the AUSVETPLAN Response Strategy for LSD considering the findings of the exercise. Refinements to the manual focus on movement controls for live animals, vector management, vaccination and the development of susceptible animal-free buffers. 	<ul style="list-style-type: none"> The AUSVETPLAN LSD writing group will continue to meet until the exercise findings are reviewed in full. Review of exercise findings for three of the four components are well progressed by the writing group, with the last component targeted for completion in May 2023.

Activity	Lead and key collaborators	Description	Status	Priority progress update	Next steps
5.4. Prepare to manage exported livestock in transit and in preparation for export during an incursion	Lead DAFF Collaborators AHC, LiveCorp, MLA, live animal exporters	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	Medium priority <ul style="list-style-type: none"> • DAFF is completing a review and continuing to develop a framework for broader export livestock incident management procedures. These incidents include the detection of a disease such as LSD and FMD in Australia as they relate to livestock exports. • DAFF is working with interested stakeholders to develop operating principles for managing livestock conveyances, including the return of vessels carrying livestock to Australia and other contingency arrangements. 	<ul style="list-style-type: none"> • DAFF will continue to engage with stakeholders to progress identified steps and update internal export livestock incident management procedures.

Activity	Lead and key collaborators	Description	Status	Priority progress update	Next steps
5.5. Investigate arthropod vector control options	Lead DAFF Collaborators State and territory governments	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	Medium priority <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	Lead The National Biosecurity Committee Engagement Network (NBCEN), peak industry organisations Collaborators DAFF	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	High priority <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. DAFF is finalising an LSD prevention and preparedness communication plan to support the next stage of LSD awareness raising communication and stakeholder engagement activities. This will be provided to NBCEN, AHC and NBC for endorsement.
6.2. Develop a communication plan for use during an LSD emergency response	Lead NBCEN	This activity will develop a communication plan that could be used during an incursion of LSD.	On track	Medium priority <ul style="list-style-type: none"> DAFF, in partnership with National Biosecurity Communication and Engagement Network members, has been developing a detailed communication response guide for activation in the case of a significant EAD incursion. The communication guide includes response triggers for communication activities, 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. Industry webinars on LSD and FMD were also held in March 2023 with members from across the animal industry. The webinars provided an overview and reassurance of communication activities DAFF would implement in the first 72 	<ul style="list-style-type: none"> DAFF is drafting an LSD specific national communication plan for implementation during an LSD emergency response. LSD specific national emergency response communication plan to be shared with NBCEN for endorsement. Once NBCEN endorsed, will progress to Animal Health Committee and National Biosecurity Committee for endorsement.

National Lumpy Skin Disease Action Plan Progress Report May 2023

Activity	Lead and key collaborators	Description	Status	Priority progress update	Next steps
				<p>hours of an EAD outbreak. DAFF is planning further webinars with plant and retail sectors in the coming months.</p>	

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.	On track	Low Priority <ul style="list-style-type: none"> A workshop is being planned by DAFF, with support from AHA, to identify knowledge gaps and prioritise research, development and engagement (RD&E) opportunities. 	<ul style="list-style-type: none"> The RD&E workshop is planned for the fourth quarter of 2023.

Activity	Lead and key collaborators	Description	Status	Priority progress update	Next steps
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. Proof of concept has been achieved with Border disease virus in sheep with progress on mRNA dose and formulation optimisation. NSW government is investing a further \$8.8M in this program and mRNA vaccine production capacity is being built into the NSW RNA pilot facility. 	<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. Testing the efficacy of the mRNA vaccine will initially be undertaken in sheep at a Canadian laboratory during the 2023 calendar year. Discussions are underway to conduct efficacy and serological studies using the mRNA vaccine in cattle at the ACDP.
7.3. Develop modelling tools to support LSD preparedness and response	Lead DAFF, Centre of Excellence for Biosecurity Risk Analysis (CEBRA) Collaborators State and territory governments	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	Medium Priority <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	Lead DAFF, in consultation with other Australian Government agencies as appropriate	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.	On track	High priority <ul style="list-style-type: none"> DAFF has developed initial options for consideration by government regarding community recovery in an EAD 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. Under Victoria's EAD preparedness program, consequence mapping of an incursion was undertaken and will be updated to consider the whole of government implications of an EAD event. This specifically relates to the potential for agriculture industry support and compensation, support of ancillary sectors that would be impacted by an emergency animal disease event, and support for the health and wellbeing of impacted communities. 	<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.