

Animalplan 2022 to 2027
Progress Report 2
February 2024

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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.

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Introduction

Animalplan 2022 to 2027 (Animalplan) is Australia's first national action plan to strengthen our production animal health system. It follows on from the success of [AQUAPLAN](#), the national plan for aquatic animal industries.

Animalplan will strengthen Australia's arrangements for managing animal health in agriculture by increasing productivity and reducing production losses incurred as a result of agricultural pests and diseases.

Many government and industry organisations have already developed animal health strategic plans for a single industry, region or jurisdiction. Similarly, national strategies and plans also exist or are under development covering a range of areas, including both the [Commonwealth Biosecurity 2030](#) roadmap and the [National Biosecurity Strategy](#), and issue-specific strategies for surveillance, diagnostics, and antimicrobial resistance. Animalplan does not duplicate or supersede these plans. Rather, it references and links these in a single strategic action plan for terrestrial agricultural animal health.

Implementation of Animalplan activities is a shared responsibility between government and non-government organisations. The Animalplan Steering Committee, with representation from government and industry, is overseeing the implementation of Animalplan activities.

In this report there is some project activity occurring that is not currently able to be reported on, as information becomes available it will be reported on in future reports.

This report provides an overview of the progress of each Animalplan objective and activity.

Objective 1: Improve Australia's preparedness and ability to respond to emergency animal diseases.

Table 1 Activities to improve Australia's preparedness and ability to respond to emergency animal diseases.

Activity	Lead and key collaborators	Desired outcome by 2027	Status	Progress update	Next steps
1.1. Continue to implement recommendations from emergency responses including EAD incursions, COVID-19, previous EAD simulation exercises and recent natural disasters	<p>Lead Animal Health Australia (AHA) (to facilitate engagement across governments and industries); government agencies and peak industry organisations (to lead implementation of recommendations)</p> <p>Collaborators None identified</p>	Recommendations from emergency responses are actioned to reduce emergency scenario risks to production animal industries	<p>Yet to commence (some)</p> <p>In progress (some)</p>	<ul style="list-style-type: none"> • Enhancing decision making on emergency animal disease (EAD) operations (project 26): The AHA Industry Forum EAD Working Group (IFEADWG) have developed a proposal that looks at building critical awareness around EAD issues, the impacts that could occur and developing resources and training to aid decision making and planning on a national cross-sectoral basis. • EAD Crisis Management planning (project 27): The proposal aims to conduct a stocktake of existing resources and to form a collaborative approach between government and industry (across a range of species) to develop new templates and resources that holistically address the actions and events that may take place in an EAD crisis. Resources developed will be made accessible to other industries. Some industries have since developed their own plans and are sharing them as part of the initial Crisis Management Plan (CMP) project stocktake. • AUSVETPLAN Response strategy: Lumpy skin disease (project 38): The AUSVETPLAN <i>Response strategy: Lumpy skin disease (LSD)</i> was published on the AHA website following incorporation of relevant comments from Exercise LSD2. Items identified by exercise participants considered out of scope of AUSVETPLAN have been referred to relevant stakeholders for further consideration and action. Further updates on progress against such actions will be provided in a later report. • Exercise Milky Way (project 39) (AHA): Exercise participants identified a need for further guidance on risk-based decision making. AHA has requested nominations from government and industry to assist with development of criteria/information for the risk assessment required as part of a milk movement control condition. Further updates on progress will be provided in a later report. 	<ul style="list-style-type: none"> • EAD Crisis Management planning (project 27): Resources developed will be made accessible to industry and government to provide ongoing training and exercise support. • Exercise Paratus (project 40): The lessons from the midpoint review will inform the next phase of the Exercise Paratus program, together with relevant recommendations of the taskforce report. It is intended the three remaining activities will escalate in scale and complexity and be delivered by mid-2024.

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Activity	Lead and key collaborators	Desired outcome by 2027	Status	Progress update	Next steps
				<ul style="list-style-type: none"> • Exercise Paratus (project 40): The Department of Agriculture, Fisheries and Forestry (DAFF) is delivering Exercise Paratus; a multi-year exercise program that aims to enhance Australia’s capability to respond to current and emerging biosecurity threats. The most recent exercise activity was delivered in June 2023, which used a foot-and-mouth disease (FMD) scenario to validate DAFF’s response protocols and the Crisis Communications Response Guide (‘playbook’) – which was developed as a recommendation of the Joint Interagency Taskforce: Exotic Animal Disease Preparedness. A midpoint review has been undertaken to assess outcomes of Exercise Paratus activities delivered to date to inform future elements of the program. It has identified a number of lessons across the five key areas, comprising: <ul style="list-style-type: none"> ○ policy, processes and capability needs ○ national coordination, leadership and decision-making ○ operating supports (systems/infrastructure) ○ communication and situational awareness ○ exercise administration and delivery. • South Australian pig biosecurity project (project 52) (NEW): The Pig Biosecurity Project is a joint initiative funded by Department of Primary Industries and Regions SA (PIRSA) and Pork SA via the SA Pig Industry Fund. The partnership is part of broader government-industry initiatives to enhance biosecurity preparedness for EADs across the pork supply chain to support market access and business continuity. A survey was undertaken to benchmark current biosecurity preparedness of the SA pig industry against the enhanced biosecurity requirements of an EAD outbreak. The survey identified biosecurity areas of high performance attributed to good health and husbandry practices. It also identified opportunities where targeted projects can improve industry preparedness, such as the information required when applying for a movement permit and providing clarity on the standard of enhanced biosecurity verification that underpins regulatory requirements in an EAD response. • Projects 21, 29 and 31 have not supplied public information to date but align with activity 1.1. 	
1.2. Continue to undertake simulation	Lead AHA	Simulation exercises are completed to	In progress	<ul style="list-style-type: none"> • Exercise Milky Way (project 39): AHA developed and led Exercise Milky Way, an industry and government exercise to test the raw milk movement controls from the updated AUSVETPLAN response 	

Activity	Lead and key collaborators	Desired outcome by 2027	Status	Progress update	Next steps
<p>exercises for a variety of EAD scenarios, including identifying and addressing trade ramifications</p>	<p>Collaborators Jurisdictions and peak industry organisations</p>	<p>reduce industry risks in a variety of emergency scenarios</p>		<p>strategy for FMD. Exercise participants confirmed that the raw milk movement controls in the FMD AUSVETPLAN response strategy are functional and fit-for-purpose, and several suggestions were made to improve the practicality of implementing the movement controls during an outbreak. AHA has advised government and industry representatives of the suggestions considered to fall within their respective areas of responsibility.</p> <ul style="list-style-type: none"> Project 14 has not supplied public information to date but aligns with activity 1.2. 	
<p>1.3. Operationalise AUSVETPLAN manuals and documents across industry supply chains and structures</p>	<p>Lead AHA Collaborators Jurisdictions and peak industry organisations</p>	<p>Agreed AUSVETPLAN manuals and documents are applied to reduce vulnerabilities in industry supply chains and structure</p>	<p>In progress</p>	<ul style="list-style-type: none"> Disposal priority project focusing on pyrolysis and composting as methods for large animal disposal (project 32): Composting provides an alternative to burning and deep burial that is a biosecure and environmentally sound method of disposal. Further evaluation of this method is required to ensure it is practical and operational in a large animal disease response. Construction of the bespoke mobile pyrolysis unit remains ongoing and planning for the testing phase of the pyrolysis unit is underway including suitable site location and logistics. Testing protocol and positioning of the emissions testing ports within the stack of the unit have been completed in conjunction with an emissions consultant. Two whole carcass composting treatments, the first using recommended carbon to nitrogen ratios, and the second using five turns to aerate the material, as well as a control treatment commenced in November 2023. A third treatment commenced in January 2024 and uses double carcass layer per windrow as opposed to single layers for the other treatments and the control. Samples for microbial analysis were collected from the control and the second treatment in January 2024. Temperature probes were inserted inside and adjacent to the carcasses to compare internal carcass temperatures with compost pile temperatures. All the treatments, except for the control, reached temperatures required for pasteurisation (>55oC) within 24 hours of setup. Enhancing decision making on EAD operations (project 26): IFEADWG – mentioned under 1.1 but also aligns with activity 1.3. EAD Crisis Management planning (project 27): IFEADWG – mentioned under 1.1 but also aligns with activity 1.3. Project 31 has been mentioned under activity 1.1 but also aligns with activity 1.3. 	<ul style="list-style-type: none"> Disposal priority project focusing on pyrolysis and composting as methods for large animal disposal (project 32): Pyrolysis testing is planned for April 2024 and future operational uses being explored for routine carcass disposal. The pig carcass composting trial commences in Feb 2024.

Activity	Lead and key collaborators	Desired outcome by 2027	Status	Progress update	Next steps
<p>1.4. Undertake projects, including commissioning and undertaking research, to further develop economic analyses and epidemiological modelling tools supporting rapid decision making in EAD responses for priority diseases</p>	<p>Lead DAFF, government agencies</p> <p>Collaborators None identified</p>	<p>Existing and/or new decision support tools provide timely and appropriate information to effectively support EAD responses.</p>	<p>In progress</p>	<p>In progress</p> <ul style="list-style-type: none"> • Carcass Disposal - Destroy and Let Lie (project 15): Biosecurity Queensland (QLD) - Stage 1 research has been completed. Stage 1 investigated if natural carcass decomposition processes (changes in tissue pH and temperature) could inactivate pathogens such as African swine fever virus (ASFV) in pigs, and FMD virus in cattle, pigs, sheep and goats under Australian conditions over the initial 48hrs post-death. An interpretive report has been prepared and a research manuscript is currently being prepared for publication in a scientific journal. Stage 2 research further investigating decomposition processes and potential ASFV inactivation in pigs over a longer time period has commenced. • Feral pig modelling (project 17): Biosecurity QLD’s feral pig spatial modelling has improved understanding of feral pig distributions and their ecology which will enable cost-effective strategies for feral pig management. To date, three scientific papers have been published, one each in the Australian Veterinary Journal (2022), Wildlife Research (2023) and Australian Mammalogy (2023). In addition to formal journal papers, the project has put together a comprehensive publicly available report on the effectiveness and efficiencies of feral pig control tools and an internal-only report on the capacity of QLD feral pig stakeholders to control feral pigs. <p>Completed</p> <ul style="list-style-type: none"> • Risk assessment for the introduction of Lumpy skin disease (LSD) into Australia through non-regulated pathways (project 22): has been completed and is outlined in the November 2023 progress report. 	<ul style="list-style-type: none"> • Carcass Disposal - Destroy and Let Lie (project 15): Stage 2 field research has commenced. The project is due for completion in June 2024. • Feral pig modelling (project 17): Two additional research papers are under preparation. <ul style="list-style-type: none"> Ongoing feral pig spatial modelling includes analysing: <ul style="list-style-type: none"> – movement data before, during and after aerial shooting activities to support refinement of control measure strategies. – habitat use data from additional sites to validate habitat suitability maps and previously generated habitat preference findings to validate model applicability. – Ongoing analysis of thermal imagery and camera trap data for comparison and interpretation to inform improved monitoring techniques. <p>The project is due for completion in June 2024.</p>

Activity	Lead and key collaborators	Desired outcome by 2027	Status	Progress update	Next steps
1.5. Implement innovative technologies and training to meet national EAD education and training needs	<p>Lead AHA</p> <p>Collaborators Jurisdictions, Australian Veterinary Association (AVA), CSIRO Australian Centre for Disease Preparedness (ACDP) and Veterinary Schools Australia and New Zealand (VSANZ)</p>	<p>Innovative technologies and training methods are adopted and implemented to improve EAD education and training needs for animal health professionals and supply chain participants</p>	<p>In progress</p>	<p>In progress</p> <ul style="list-style-type: none"> • A syndromic surveillance system to detect emerging animal biosecurity threats (project 28): NSW Department of Primary Industries (DPI) is collaborating with researchers from Charles Sturt university (CSU) to undertake a social research project to identify key drivers and barriers to participation in syndromic surveillance. The recommendations developed by this project will be used to inform development of a syndromic surveillance platform by NSW DPI with the aim of earlier detection of new and emergency diseases. • Projects 16, 29 and 35 have not supplied public information to date but align with activity 1.5. <p>Completed</p> <ul style="list-style-type: none"> • Virtual Reality to support FMD training (phase 2) (project 25), Independent expert review of the veterinary science education capability of Australia and New Zealand (project 33) and An augmented reality app to demonstrate the signs of four sheep EADs (project 41) have been completed and are outlined in the November 2023 progress report. 	
1.6. Investigate existing systems or trial new systems for national EAD data management in multi-jurisdictional responses	<p>Lead DAFF</p> <p>Collaborators None identified</p>	<p>EAD data, including surveillance and traceability data, is captured, analysed, managed and shared across jurisdictions and utilised for decision making purposes</p>	<p>In progress</p>	<ul style="list-style-type: none"> • Project 29 has been mentioned under activity 1.5 but also aligns with activity 1.6. 	
1.7. Implement activities identified in the National LSD Action Plan	<p>As identified in the National LSD Action Plan</p>	<p>Governments, industries and other relevant stakeholders undertake coordinated and effective actions to mitigate the risks of LSD</p>	<p>In progress</p>	<ul style="list-style-type: none"> • Quarterly updates on the National LSD Action Plan are provided on the DAFF website. 	<ul style="list-style-type: none"> • As indicated in the quarterly updates on the DAFF website.

Objective 2: Improve Australia’s surveillance and diagnostic capacity for animal pests and diseases.

Table 2 Activities to improve Australia’s surveillance and diagnostic capacity and capability for animal pests and diseases.

Activity	Lead and key collaborators	Desired outcome	Status	Progress update	Next steps
2.1. Implement actions under National Animal Health Surveillance Business Plan (NAHSBP) and National Animal Health Diagnostic Business Plan (NAHDBP)	As identified in the NAHSBP and NAHDBP	National surveillance and diagnostic capability and capacity for animal diseases adequately manage biosecurity risks and support early detection	In progress	<p>In progress</p> <ul style="list-style-type: none"> • Evaluation of antibody-detecting immunoassays for LSD in cattle and buffalo (project 2): This project continues to evaluate the suitability of 3 antibody detection enzyme linked immunosorbent assays (ELISA) for LSD testing in cattle and buffalo in Australia. Securing a licencing agreement with the commercial partner has enabled the project to progress further. The project is now expected to be completed in mid-2024. • Northern Australia biosecurity sequencing (NABSeq): High Throughput Sequencing (HTS) network and facility to enhance northern Australian biosecurity (project 6): This project continues to build the NABSeq network through a number of collaborative HTS projects relating to disease detection resources and surveillance in the region. Since the lead scientist commenced his work in February 2022, there has been good regional collaboration and project progress with the agreed deliverables. Significant progress and achievements for this period include finalising a business plan to guide further activities, solidifying regional research collaborations with Charles Darwin University and other HTS groups, securing additional funding support from ARC-linkage and generation of new data and findings through discovery HTS activities. • LSD testing capacity building in the LEADDR network (project 7): This project continues to progress the roll-out of molecular (qPCR) and serological (ELISA) capabilities to the LEADDR network as planned. Significant milestones achieved include: the importation of commercial ELISA kits y ACDP for transfer to the LEADDR laboratories; identification of serum samples suitable for ELISA quality assurance/proficiency testing program; and the completion of the first round of Capripox virus PCR proficiency testing program. • Development & evaluation of a Point of Care (POC) test network for EAD diagnosis (project 8): The project is currently expected to be completed in September 2024. While lab-based development work including assay performance assessment has been completed, field validation work, 	<ul style="list-style-type: none"> • Evaluation of antibody-detecting immunoassays for LSD in cattle and buffalo (project 2): This project has been extended to April 2024. The next Milestone Report is due in February 2024 to confirm receipt of samples from northern Australia/ collaborators in southeast Asia; and completion of comparative testing of sera and result analysis is due March 2024. • Northern Australia biosecurity sequencing (NABSeq): High Throughput Sequencing (HTS) network and facility to enhance northern Australian biosecurity (project 6): Milestone 6 Report is due Jan 2024. Plans to develop and formalize sustainability plans for the NABSeq project will be reported on. • LSD testing capacity building in the LEADDR network (project 7): The Milestone 6 Report is due April 2024. Further preparing and testing of samples for the ELISA Capripox panel. Conduct a

Activity	Lead and key collaborators	Desired outcome	Status	Progress update	Next steps
				<p>including user training activities, are yet to be undertaken, pending the availability of suitable field works. The preparation of a full validation dossier for Sub-committee on Animal Health Laboratory Standards (SCAHLs) to evaluate is also expected in due course.</p> <ul style="list-style-type: none"> • MicroRNA biomarkers for improved detection of animal diseases in a Johne’s disease model (project 9): The project has identified useful host response biomarkers for JD based on the initial trialling of bovine samples. Support from the national reference laboratory JD has been received in terms of suitable sample supply. Overseas collaboration for acquiring further suitable samples and trialling has also been initiated. • AUSVETPLAN Management manual: Laboratory preparedness (project 42): The AUSVETPLAN Management manual: Laboratory preparedness has been updated by the AUSVETPLAN technical writing group with support from LEADDR and SCAHLs. Some key elements of the draft revised manual were also tested through the Exercise Waterhole activities. It is currently being progressed for approval prior to publication. • Equine piroplasmosis diagnostic capability development (project 51) (NEW): The project aims to develop and implement serological capability for equine piroplasmosis at ACDP and commenced in June 2023. The initial milestone involving the procurement of essential kits and reagents has been completed. • Project 28 has been mentioned under activity 1.5 but also aligns with activity 2.1. <p>Completed</p> <ul style="list-style-type: none"> • Australian Biosecurity Genomic Database for notifiable terrestrial animal viruses (project 1): Phase 2 of this project was completed in August 2023. Access to the database can be found at the GitHub repository. The Database contains curated whole genome sequences of 88 viral sequences of notifiable disease pathogens including 56 sequences of nationally notifiable terrestrial and 32 sequences of nationally reportable aquatic animal diseases. The Database also includes listings by state notifiable disease. A manuscript describing the database titled “A genomic database for viruses on the Australian national notifiable disease list of terrestrial animals” nearing submission for publication to a journal such as Journal of Biological Databases and Curation. • Establishing networked serological testing capability for ASF (project 4): This project was completed in June 2023. The project helped ensure that state and territory, veterinary diagnostic laboratories are prepared for a African Swine Fever (ASF) outbreak. ASF serological testing capability, along with PCR, can be utilised for surveillance purposes and for disease 	<p>second Lumpy Skin Disease virus (LSDV) animal study with the aim of producing anti-serum to LSDV. Animal study has been tentatively rescheduled for February 2024. Obtain an import permit/transfer permit allowing us to import the IDvet capripox multi species ELISA kits into Australia and transfer to LEADDR laboratories.</p> <ul style="list-style-type: none"> • Development & evaluation of a Point of Care (POC) test network for EAD diagnosis (project 8): Milestone 5 is due in May 2024 when the contract variation process is completed. A report on training of field operators and a validation dossier for submission to the SCAHLs diagnostic test evaluation is to be prepared (subject to suitable assay performance). • MicroRNA biomarkers for improved detection of animal diseases in a Johne’s disease model (project 9): Milestone 5 Report is due in April 2024. Data from Johne’s disease positive property herds will be incorporated into the biomarker model. Commencement of a CSIRO-funded project (“Artificial Intelligence for Missions - AI4M”) to support software development for a microRNA-based diagnostic test and improvement/expansion of

Activity	Lead and key collaborators	Desired outcome	Status	Progress update	Next steps
				<p>exclusions, in the event Australia encounters this highly infectious pathogen.</p> <ul style="list-style-type: none"> Sample Tracking and Reporting System (STARS) enhancement (project 5): This project was completed in late November 2023. The Final Project Report outlined the successful deployment of the enhanced V2 STARS network, supporting improved national coordination of disease testing and surveillance to most of the animal health laboratories (integration to some labs remains ongoing). Many of the legacy STARS users have integrated with the new software ensuring their flow of information remains uninterrupted. Upgrades in technology and enhanced code performance ensures the system can support diverse datasets and can cope with large amount of data, expanding the capabilities of the system to ensure it will perform as expected in the event of an outbreak. The expanded capabilities of the new STARS system ensure easier and more efficient deployment pathways allowing existing and new users a streamlined path to integration. Developing immunohistochemistry test for LSD (project 10): This project was completed in June 2023. The project successfully characterised stored tissue material for use as positive LSD control material and identified that ACDP have suitable materials of LSDV-infected bovine tissue, and also tissue infected with sheep pox virus and goat pox virus. National laboratory simulation exercise (Exercise Waterhole) (project 36): The desktop and functional exercises were completed with great success in early November 2023. Activities 1 and 2 (September 2023) were conducted at AgriBio, Bundoora, Victoria. The focus of these 2 desktop activities were laboratory resources and logistics. Activity 3 (early October 2023) was conducted at the Tasmanian Animal Health Laboratory. The focus of this practical small lab exercise was to evaluate Tasmania’s animal health lab systems and prepare for Activity 4. Activity 4, a 3-day functional exercise held in early November 2023, was conducted across all Australian state/territory government animal health laboratory, including ACDP. The focus of this 3-day activity was to challenge each laboratory with a simulated dual disease outbreak. Developing lumpy skin disease and African horse sickness whole genome sequencing workflows (project 3) and National laboratory simulation exercise planning (project 18) have been completed and are outlined in the November 2023 progress report. 	<p>the biomarker discovery data analysis pipeline. Investigation of biomarker robustness in the overseas context - this will involve analysis of field samples in collaboration with international research institutes. Investigation of biomarker origin - this will be achieved through organoid infection experiments and analysis of organs collected at necropsy, in collaboration with international collaborators.</p> <ul style="list-style-type: none"> Equine piroplasmosis diagnostic capability development (project 51): Milestone 2 is due in April 2024. Expected to report on data accumulation and procedure generation of ELISAs and IFATs.

Activity	Lead and key collaborators	Desired outcome	Status	Progress update	Next steps
2.2. Develop and implement novel technologies, such as POC animal testing and genomics, to address gaps in diagnostic capacity	<p>Lead SCAHLs, Peak industry organisations, Rural Research and Development Corporations (RDCs)</p> <p>Collaborators None identified</p>	<p>A number of novel technologies are adopted and implemented that improve Australia’s surveillance and diagnostic capacity</p> <p>Australia has a well-developed policy and legislation on the use of POC diagnostic tests in notifiable diseases</p>	In progress	<p>In progress</p> <ul style="list-style-type: none"> • Evaluation of antibody-detecting immunoassays for LSD in cattle and buffalo (project 2): mentioned under 2.1. • Development & evaluation of a Point of Care (POC) test network for EAD diagnosis (project 8): mentioned under 2.1. • MicroRNA biomarkers for improved detection of animal diseases in a Johne’s disease model (project 9): mentioned under 2.1. • Equine piroplasmosis diagnostic capability development (project 51): mentioned under 2.1. <p>Completed</p> <ul style="list-style-type: none"> • Australian Biosecurity Genomic Database for notifiable terrestrial animal viruses (project 1): mentioned under 2.1. • Developing immunohistochemistry test for LSD (project 10): mentioned under 2.1. • Developing lumpy skin disease and African horse sickness whole genome sequencing workflows (project 3) and Consultancy for policies, strategies and operating guidelines for point of care (POC) testing for infectious disease (project 11) have been completed and are outlined in the November 2023 progress report. 	
2.3. Conduct an audit of current and future export and import market access requirements for animals and animal products to guide national surveillance planning	<p>Lead DAFF</p> <p>Collaborators None identified</p>	<p>Surveillance requirements are identified, understood, and implemented to improve market access and support Australia’s disease status claims</p>	Yet to commence		

Objective 3: Improve the adoption and implementation of biosecurity practices throughout the terrestrial animal industry supply chain.

Table 3 Activities to improve the adoption and implementation of biosecurity practices throughout the terrestrial animal industry supply chain.

Activity	Lead and key collaborators	Desired outcome	Status	Priority progress update	Next steps
3.1. Investigate the benefits and consider developing a national dashboard platform for government and industry biosecurity information systems, such as South Australia's One Biosecurity program	Lead Peak Industry Organisations Collaborators Jurisdictions, AHA	A national 'one-stop-shop' dashboard platform is investigated and scoped, which will collate biosecurity data across existing biosecurity information systems and help deliver targeted biosecurity interventions across producer supply chains	In progress	<ul style="list-style-type: none"> • Enhancement of One Biosecurity System (project 37): Work on the Enhancement of the SA One Biosecurity program to include a pig module initiated. • South Australian pig biosecurity project (project 52): mentioned under activity 1.1. 	<ul style="list-style-type: none"> • Enhancement of One Biosecurity System (project 37): Scoping and development of detailed specifications for a pig One Biosecurity module.
3.2. Share knowledge across animal industries and jurisdictions to strengthen quality assurance programs, on-farm biosecurity systems, biosecurity extension programs and regulatory activities	Lead AHA, Peak Industry Organisations Collaborators None identified	Strengths and weaknesses from existing systems across terrestrial animal industries are assessed and actioned, to improve validation of biosecurity, quality assurance and traceability processes, and support maintenance of market access through compartmentalisation and zoning	In progress	<ul style="list-style-type: none"> • Enhancement of One Biosecurity System (project 37): initial industry consultation on pig biosecurity assurance in SA undertaken. • South Australian pig biosecurity project (project 52): mentioned under activity 1.1. • Project 28 has been mentioned under activity 1.5 but also aligns with activity 3.2. 	<ul style="list-style-type: none"> • Enhancement of One Biosecurity System (project 37): Further consultation with the pig industry to review and develop tools for verification of on-farm biosecurity practices.

Activity	Lead and key collaborators	Desired outcome	Status	Priority progress update	Next steps
<p>3.3. Conduct more industry-government education and awareness communication activities to promote a biosecurity ‘culture’ and ‘community of practice’ across animal industries, including smallholders</p>	<p>Lead Peak Industry Organisations, AHA, DAFF Collaborators None identified</p>	<p>Producers and enterprises in the supply chain increase their understanding of the value of biosecurity, and increase adoption of farm and supply chain biosecurity practices</p>	<p>Completed</p>	<ul style="list-style-type: none"> • Smallholder risk and communication research (project 12): The pilot project in NSW tested an efficient, data-driven approach to locating smallholders (including pig owners) and determining their biosecurity risk level and engagement needs. • Building EAD preparedness in domestic abattoirs (project 20): This project produced a suite of EAD preparedness training materials specific to abattoir personnel, including sample standard operating procedures and an online e-Learning course. This training package is designed to help prepare staff to provide field support to jurisdictions during an EAD response. • South Australian pig biosecurity project (project 52): mentioned under activity 1.1. 	<ul style="list-style-type: none"> • Smallholder risk and communication research (project 12): The final report is being reviewed. • Building EAD preparedness in domestic abattoirs (project 20): ongoing promotion of the EAD preparedness training materials to encourage the development and implementation of EAD Response Plans in domestic abattoirs.
<p>3.4. Continue developing biosecurity guidelines for the supply chains of novel small-scale industries</p>	<p>Lead AHA Collaborators AgriFutures, novel industries</p>	<p>Biosecurity guidelines are updated or developed for novel small-scale production animal industries and communicated effectively</p>	<p>In progress</p>	<ul style="list-style-type: none"> • National Biosecurity Manual (project 43): AHA has developed the National Biosecurity Manual for the Ratite Industry, funded by AgriFutures and in collaboration with ratite industries. • South Australian pig biosecurity project (project 52): mentioned under 1.1. 	

Objective 4: Manage the risk of antimicrobial resistance.

Table 4 Activity to manage the risk of antimicrobial resistance.

Activity	Lead and key collaborators	Desired outcome	Status	Priority progress update	Next steps
4.1. Implement AMR activities as identified in the One Health AMR Master Action Plan and Australia's Animal Sector Antimicrobial Resistance Action Plan 2022 to 2027 (under development)	<p>Lead Governments, industries and other relevant stakeholders undertake coordinated and effective actions to mitigate the risks of AMR</p> <p>Collaborators None identified</p>	Governments, industries and other relevant stakeholders undertake coordinated and effective actions to mitigate the risks of antimicrobial resistance (AMR)	In progress	<ul style="list-style-type: none"> • Antimicrobial resistance survey in the pig industry (project 13): A repeat AMR survey in the Australian pig industry is commencing and will provide data to compare to previous surveys for monitoring and quality assurance purposes. The final draft report of the pig's AMR survey has been submitted to DAFF for approval. • Mitigating on-farm antimicrobial resistance risks for livestock industries (project 24): Coombe Consulting is aiming to improve the understanding in Australia of the transmission pathways and biosecurity priorities for mitigating AMR risks in livestock enterprises. This project will provide livestock producers with a framework to assess the risk of AMR transmission into, within or out of their enterprises. It will allow them to make informed changes to reduce the risk of spread of AMR and improve biosecurity. To date a background review has been undertaken to identify the currently level of research and/or activities in this area to leverage available knowledge. A framework by which an enterprise may identify potential transmission pathways has been developed, along with comprehensive instructions and workflow documents. Laboratories have been identified with the capacity to undertake both AMR and antimicrobial residue. The framework has been trailed on 4 of the 5 target industries to date with the final trial scheduled for completion in Q1 calendar year 2024. Preliminary results are under evaluation. • Australia's Animal Sector Antimicrobial Resistance Action Plan 2023 to 2028 (project 44): The Action Plan was published September 2023, launched via webinar in October and implementation has commenced. • Defining 'appropriateness of antimicrobial use' framework for the Australian animal sector (project 53) (NEW): Create an AMS assessment framework for use by companies to identify areas for improvement. Follows on from a previous CSIRO project "Quantifying AMU in Australian Production and Companion Animals" as it will define quantitative and/or qualitative indicators that can be used to provide context for AMU data, and highlight gaps in antimicrobial stewardship that impact all Australian-specific animal health contexts. 	<ul style="list-style-type: none"> • Mitigating on-farm antimicrobial resistance risks for livestock industries (project 24): Completion of final trial and detailed analysis of results. Final report due for publication in June 2024. • Defining 'appropriateness of antimicrobial use' framework for the Australian animal sector (project 53) (NEW): Additional funding required to create assessment frameworks for other sectors, wildlife and companion animals, and to draft information sharing agreements and draft industry standards.

Objective 5: Improve animal welfare outcomes relevant to emergency scenarios.

Table 6 Activity to improve animal welfare outcomes relevant to emergency scenarios.

Activity	Lead and key collaborators	Desired outcome	Status	Priority progress update	Next steps
5.1. Address terrestrial production animal welfare risks in emergency scenarios and incorporate findings in relevant policy and crisis response documents	<p>Lead AHA, in collaboration with jurisdictions and peak industry organisations</p> <p>Collaborators None identified</p>	Emergency response plans for terrestrial production animal supply chains manage animal welfare risks	Yet to commence		

Objective 6: Implement industry sustainability frameworks and plans.

Table 6 Activity to implement sustainability frameworks and plans.

Activity	Lead and key collaborators	Desired outcome	Status	Priority progress update	Next steps
6.1. Share knowledge (such as the development of benchmarks) between industries to implement industry sustainability frameworks and plans	Lead 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.	In progress	<ul style="list-style-type: none"> • Australian Agriculture Sustainability Framework (AASF) (project 23): The purpose of AASF is to communicate the sustainability status and goals of the Australian agricultural sector to markets and the community. It will provide the whole-of-Australian agriculture narrative about sustainability to assist in market access and it will provide a translation layer to assist supply chain companies, finance and investors to better understand and report on Australian agricultural sustainability. Implementation of Stage 2 of this project is progressing. 	

Objective 7: Improve the integrity of animal health systems.

Table 7 Activities to improve the integrity of animal health systems.

Activity	Lead and key collaborators	Desired outcome	Status	Priority progress update	Next steps
7.1. Develop cost-effective national traceability registers or systems for agreed animal industries that do not have one	<p>Lead Peak industry bodies, AHA, SAFEMEAT</p> <p>Collaborators None identified</p>	Cost-effective national traceability registers or systems are developed for agreed animal industries	In progress	<ul style="list-style-type: none"> Project 29 has been mentioned under activity 1.1 but also aligns with activity 7.1. Alpaca NLIS (project 45): Australian Alpaca Association, with assistance from AHA, has launched a voluntary National Livestock Identification System (NLIS) for alpacas. Deer Traceability (project 46): AgriFutures Australia funded a consultancy to investigate traceability options for the deer industry. This is currently under consideration by the industry. 	

Activity	Lead and key collaborators	Desired outcome	Status	Priority progress update	Next steps
<p>7.2. Implement mechanisms to streamline or automate animal and animal product traceability data across agreed industries and make this accessible to all supply chain participants</p>	<p>Lead Integrity Systems Company (ISC), in collaboration with peak industry organisations Collaborators DAFF</p>	<p>Existing or new mechanisms are implemented with high adoption rates from supply chain participants to improve collation of traceability data across information systems</p>	<p>In progress</p>	<ul style="list-style-type: none"> • Agricultural Traceability Enhancement: Australian Government contribution (project 34): Agricultural traceability is a shared responsibility between industry, governments and the broader agricultural supply-chain participants. The Australian Government has committed over \$100 million to enhancing agricultural traceability. Activities will support action to meet the objectives of the National Agricultural Traceability Strategy 2023-2033. • The National Agricultural Traceability Strategy 2023 to 2033 (project 47): The National Agricultural Traceability Strategy 2023 to 2033 (the strategy) was launched in July 2023 by Australian Agriculture Ministers to provide a nationally coordinated approach to enhancing traceability for biosecurity, trade, food safety and other outcomes. The strategy was co-designed by Australian government and industry stakeholders and will support modernising and further strengthening Australia’s tracking and tracing capabilities. • National mandatory individual electronic identification (eID) for sheep and goats (project 48): Government and industry are working together to implement national mandatory individual electronic identification (eID) for sheep and goats, working towards January 2025. This will improve the accuracy and efficiency of our already robust systems. The updated National Implementation Plan was released in September 2023. • NLIS Database Uplift project (project 49): Work is underway to uplift the National Livestock Identification System database and its supporting systems, which will help modernise Australia’s data capture, storage, and distribution system for tracking livestock and their movements. The project is being delivered by Integrity Systems Company (ISC) in consultation with Australian government and industry stakeholders. The first stage commenced in July 2023 with project establishment and scope definition. • Project 29 has been mentioned under activity 1.1 but also aligns with activity 7.2. 	<ul style="list-style-type: none"> • The National Agricultural Traceability Strategy 2023 to 2033 (project 47): The draft implementation plan is undergoing another round of public consultation, prior to being finalised by mid-2024.
<p>7.3. Use traceability systems to provide feedback to supply chain participants on animal health outcomes</p>	<p>Lead AHA, ISC Collaborators None identified</p>	<p>Existing or strengthened traceability systems provide improved feedback to supply chain participants on animal health outcomes occurring at relevant points of supply chains</p>	<p>In progress</p>	<ul style="list-style-type: none"> • Agricultural Traceability Enhancement: Australian Government contribution (project 34): mentioned under 7.2. • MyFeedback data (project 50): Integrity Systems Company (ISC) has recently launched ‘myFeedback’, which includes data from AHA’s National Sheep Health Monitoring Project and health data from five beef abattoirs. • Project 29 has been mentioned under activity 1.1 but also aligns with activity 7.3. 	

Project compendium.

Table 8.1 Active Projects referred to under objectives above.

Project number	Project name	Activity alignment	Contact
2	Evaluation of antibody-detecting immunoassays for LSD in cattle and buffalo	2.1, 2.2	animalhealthlaboratories@aff.gov.au
6	Northern Australia biosecurity sequencing (NABSeq): High Throughput Sequencing (HTS) network and facility to enhance northern Australian biosecurity	2.1	Mark.Sistrom@nt.gov.au
7	Lumpy skin disease testing capacity building in the LEADDR network	2.1	animalhealthlaboratories@aff.gov.au
8	Development & evaluation of a POC test network for emergency animal disease diagnosis	2.1, 2.2	Animalhealthlaboratories@aff.gov.au
9	MicroRNA biomarkers for improved detection of animal diseases in a Johne's disease model	2.1, 2.2	Cameron.Stewart@csiro.au
12	Smallholder risk and communication research	3.3	adpr@aff.gov.au
13	Antimicrobial resistance survey in the pig industry	4.1	raymond.chia@australianpork.com.au
14	*This project has not supplied public-facing information to date*	1.2	animalplan@aff.gov.au
15	Carcass Disposal - Destroy and Let Lie	1.4	Robyn.Grob@daf.qld.gov.au
16	*This project has not supplied public-facing information to date*	1.5	animalplan@aff.gov.au
17	Feral pig modelling	1.4	Robyn.Grob@daf.qld.gov.au
20	Building EAD preparedness in domestic abattoirs	3.3	adpr@aff.gov.au
21	*This project has not supplied public-facing information to date*	1.1	animalplan@aff.gov.au
23	Australian Agriculture Sustainability Framework (AASF)	6.1	NFF
24	Mitigating on-farm antimicrobial resistance risks for livestock industries	4.1	peter@coombeconsulting.com.au
26	IFEADWG: Enhancing decision making on EAD operations	1.1, 1.3	aha@animalhealthaustralia.com.au
27	IFEADWG: EAD Crisis Management Planning	1.1, 1.3	aha@animalhealthaustralia.com.au
28	A syndromic surveillance system to detect emerging animal biosecurity threats	1.5, 2.1, 3.2	animalplan@aff.gov.au
29	*This project has not supplied public-facing information to date*	1.1, 1.5, 1.6, 7.1, 7.2, 7.3	animalplan@aff.gov.au
31	*This project has not supplied public-facing information to date*	1.1, 1.3	animalplan@aff.gov.au
32	Disposal priority project focusing on pyrolysis and composting as methods for large animal disposal	1.3	Animal.biosecurity@dpi.nsw.gov.au

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Project number	Project name	Activity alignment	Contact
34	Agricultural Traceability Enhancement: Australian Government contribution	7.2, 7.3	nationaltraceabilitysummit@aff.gov.au
35	*This project has not supplied public-facing information to date*	1.5	animalplan@aff.gov.au
37	Enhancement of One Biosecurity System	3.1, 3.2	PIRSA
38	AUSVETPLAN Response strategy: Lumpy skin disease	1.1	aha@animalhealthaustralia.com.au
39	Exercise Milky Way	1.1, 1.2	aha@animalhealthaustralia.com.au
40	Exercise Paratus	1.1	DAFF
42	AUSVETPLAN Management manual: Laboratory preparedness	2.1	aha@animalhealthaustralia.com.au
43	National Biosecurity Manual	3.4	aha@animalhealthaustralia.com.au
44	Australia's Animal Sector Antimicrobial Resistance Action Plan 2022 to 2027	4.1	DAFF
45	Alpaca NLIS	7.1, 7.3	aha@animalhealthaustralia.com.au
46	Deer Traceability	7.1	Agrifutures Australia
47	The National Agricultural Traceability Strategy 2023 to 2033	7.2	DAFF
48	National mandatory individual electronic identification (eID) for sheep and goats	7.2	DAFF
49	NLIS Database Uplift project	7.2	DAFF
50	MyFeedback data	7.3	Integrity Systems Company
51	Equine piroplasmiasis diagnostic capability development (NEW)	2.1, 2.2	animalhealthlaboratories@aff.gov.au
52	South Australian pig biosecurity project (NEW)	1.1, 3.1, 3.2, 3.3, 3.4, 5.1	PIRSA
53	Defining 'appropriateness of antimicrobial use' framework for the Australian animal sector (NEW)	4.1	raymond.chia@australianpork.com.au

Table 8.2 Completed Projects referred to under objectives above.

Project number	Project name	Activity alignment	Contact
1	Australian Biosecurity Genomic Database for notifiable terrestrial animal viruses	2.1, 2.2	Peter.Mee@agriculture.vic.gov.au
3	Developing lumpy skin disease and African horse sickness whole genome sequencing workflows	2.1, 2.2	animalhealthlaboratories@aff.gov.au
4	Establishing networked serological testing capability for African Swine Fever	2.1	animalhealthlaboratories@aff.gov.au
5	Sample Tracking and Reporting System (STARS) enhancement	2.1	animalhealthlaboratories@aff.gov.au
10	Developing immunohistochemistry test for Lumpy Skin Disease	2.1, 2.2	animalhealthlaboratories@aff.gov.au
11	Consultancy for policies, strategies and operating guidelines for point of care (POC) testing for infectious disease	2.2	animalhealthlaboratories@aff.gov.au
18	National laboratory simulation exercise planning	2.1	animalhealthlaboratories@aff.gov.au
19	*This project has not supplied public-facing information to date*	2.1	animalplan@aff.gov.au
22	Risk assessment for the introduction of Lumpy skin disease (LSD) into Australia through non-regulated pathways	1.4	adpr@aff.gov.au
25	Virtual Reality to support FMD training (phase 2)	1.5	vrfmd@aff.gov.au
33	Independent expert review of the veterinary science education capability of Australia and New Zealand	1.5	VSANZ
36	National laboratory simulation exercise (Exercise Waterhole)	2.1	animalhealthlaboratories@aff.gov.au
41	An augmented reality app to demonstrate the signs of four sheep EADs	1.5	aha@animalhealthaustralia.com.au