

A man in a light-colored checkered shirt is holding a white lamb. The background is a blurred green field under a blue sky. The image is overlaid with a teal and white graphic design.

FAWO

Federation of Australian Wool Organisations

THE AUSTRALIAN WOOL INDUSTRY
EMERGENCY ANIMAL DISEASE
PREPAREDNESS RD&E STRATEGY
2016/17 – 2018/19

**Minimising the
trade impacts
of emergency
animal diseases
on the Australian
Wool Industry**





CONTENTS

Executive summary	4
Abbreviations and acronyms	6
1. Purpose	7
2. Background	8
2.1 Australia's role in the global wool industry	8
2.2 Global arrangements for EAD response	8
2.3 Australia's EAD response system	9
2.4 The wool industry's exposure to EADs	10
3. Goal	11
4. Strategy development and context	12
5. Achievements under the previous Strategy	13
6. Gap analysis	14
7. Strategy	17
7.1 Overview	17
7.2 Program 1: Traceability	18
7.3 Program 2: Bale disinfection	18
7.4 Program 3: Wool disinfection	18
7.5 Program 4: Codification	19
7.6 Program 5: Capacity building	19
7.7 Program 6: Coordination and relationships	20
8. Budget	20
9. Roles and responsibilities	20
10. Monitoring and evaluation	22
11. Risk management	23
12. Supporting documents and references	24
Appendix 1: Scheduled AUSVETPLAN document revisions	25
Appendix 2: FAWO EAD Working Group terms of reference	26

EXECUTIVE SUMMARY

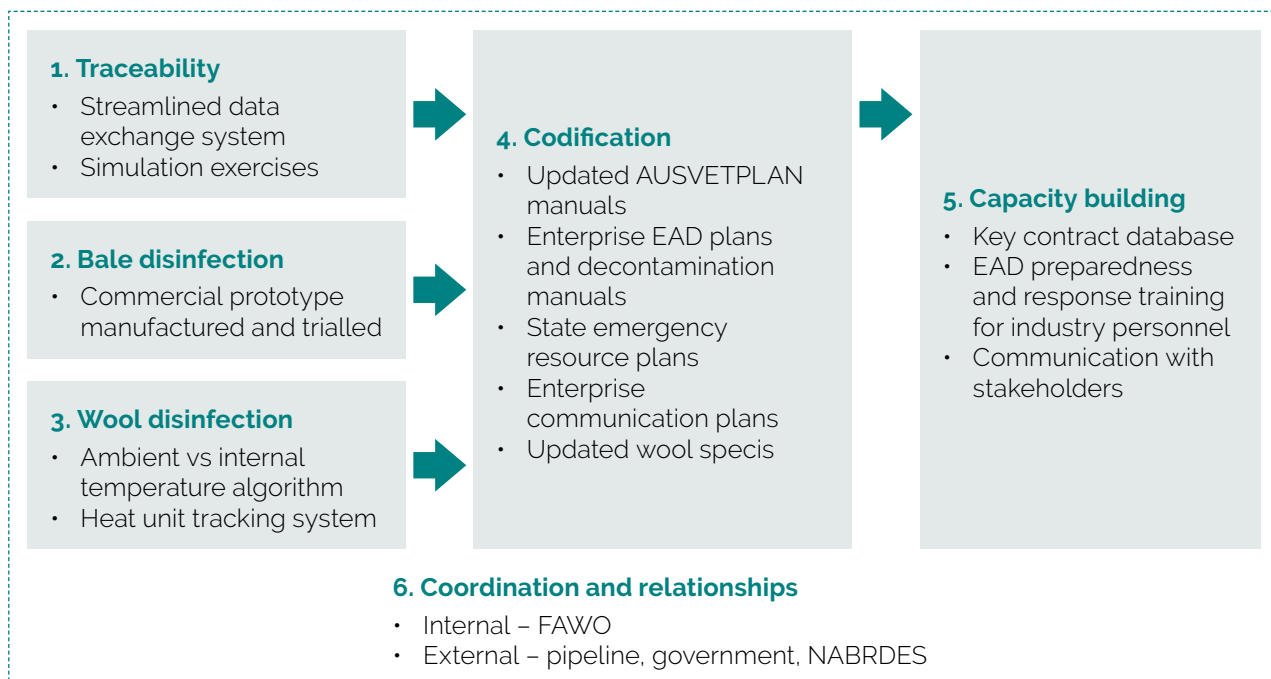
This document outlines a research, development and extension (RD&E) strategy to minimise the potential trade impacts on the Australian wool industry arising from emergency animal disease (EAD) outbreaks. The goal of the Australian Wool Industry Emergency Animal Disease Preparedness RD&E Strategy 2016/17-2018/19 is to develop and maintain a high level of preparedness in the Australian wool industry by:

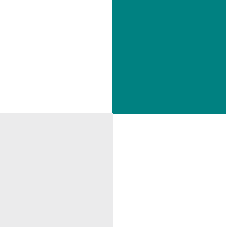
- Maximising time- and cost-effectiveness of the Government/industry response;
- Minimising reputational damage to the Australian industry;
- Minimising disruption to flows of Australian wool to the world's markets; and
- Achieving the most rapid possible return to normal business for wool growers and customers and others in the wool industry pipeline.

The Strategy builds upon the previous three-year strategy, which delivered:

- Advances in wool identification and traceability.
- The development of a prototype bale disinfection device, suitable for application in wool stores.
- Completion of the Wool Enterprise Manual, part of the AUSVETPLAN suite of EAD response documents.
- Confirmation through the World Organisation for Animal Health Ad Hoc Committee on Foot and Mouth Disease that a time/temperature relationship for deactivation of FMD virus based on a best-fit interpolation of three available data points would form an acceptable basis to managing time-based deactivation of virus in wool.
- Delivery of biosecurity awareness workshops to sheep producers.
- A range of communications and liaison activities with other wool producing countries and wool industry participants globally, as well as government.

Programs to be delivered under the Strategy are summarised as follows:





An indicative budget of \$250k is available from AWI for each of the three years of the Strategy. The budget will be allocated annually as the cost of specific projects becomes better defined. Leverage of AWI funds will be sought where possible.

Key risks to the plan and the steps taken to mitigate them are:

- Poor acceptance of or engagement with the Strategy by industry: scoping and design of activities undertaken in close consultation with industry, and extensive communication on the Strategy with all parts of the industry in Australia and overseas
- Lack of acceptance of outcomes by authorities responsible for EAD management: strong engagement with government agencies throughout the implementation of the Strategy through their participation in FAWO EAD Working Group meetings, and through AHA Members' Forums
- Duplication of RD&E: consultation with other woolgrowing countries (especially South Africa) and reviews of existing literature undertaken prior to initiating projects.

ABBREVIATIONS AND ACRONYMS

AAHL	Australian Animal Health Laboratory [of CSIRO]
ABARES	Australian Bureau of Agricultural and Resource Economics and Sciences
ACWEP	Australian Council of Wool Exporters & Processors
AHA	Animal Health Australia
AUSVETPLAN	Australian Veterinary Emergency Plan
AWI	Australian Wool Innovation
DAWR	Department of Agriculture and Water Resources (C'th)
EAD	Emergency animal disease
EADRA	Emergency Animal Disease Response Agreement
FAWO	Federation of Australian Wool Organisations
FMD(V)	Foot-and-mouth disease (virus)
NABRDES	National Animal Biosecurity Research, Development and Extension Strategy
NCWSBA	National Council of Wool Selling Brokers of Australia
IWTO	International Wool Textile Organisation
OIE	World Organisation for Animal Health
PISC	Primary Industries Standing Committee
PTWMA	Private Treaty Wool Merchants of Australia
RD&E	Research, development and extension
SCoPI	Standing Council on Primary Industries
SPS	Sanitary and phytosanitary
TMAG	Trade and Market Access Group
WPA	WoolProducers Australia
WTO	World Trade Organisation

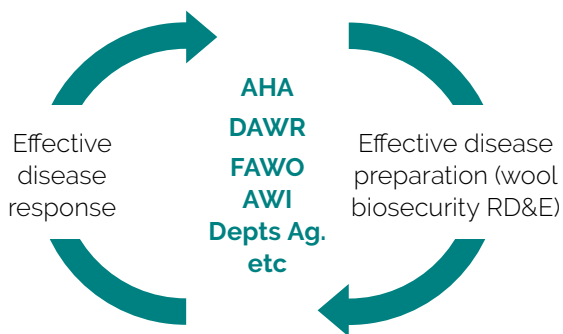
1. PURPOSE

This document outlines a research, development and extension (RD&E) strategy to minimise the potential trade impacts on the Australian wool industry arising from emergency animal disease (EAD) outbreaks.

This Australian Wool Industry Emergency Animal Disease Preparedness RD&E Strategy 2016/17-2018/19 is an update of the first such plan, which spanned the preceding three-year period. Changes in this revised strategy take account of progress made under the first plan and some minor developments in the EAD operating environment.

RD&E is critical to the continuous improvement of effective EAD responses (Figure 1).

Figure 1 The role of RD&E in effective EAD responses



The purpose of this Strategy is to:

- Identify RD&E priorities for EAD preparedness along the wool pipeline and, in doing so, move towards fulfilling the wool industry's obligations under the EAD Response Agreement (EADRA) and National Animal Biosecurity Research Development and Extension Strategy (NABRDES) (see below);
- Ensure the identified RD&E is carried out as effectively and efficiently as possible;
- Promote the industry's understanding of the importance of, and its collaboration towards achieving, a well-developed state of EAD preparedness; and
- Establish the mechanisms and culture needed to maintain the industry's EAD preparedness into the future.

This Strategy specifically addresses the shorn wool pipeline from farm to market; that is, it is concerned with the mitigation of supply chain and trade risks such as product traceability, rather than disease response risks such as diagnostic capability or vaccination. However, the Strategy will be delivered with close regard to disease response and preparedness RD&E carried out by AWI, Meat & Livestock Australia or other bodies.

This Strategy is not confined to foot-and-mouth disease (FMD), although FMD is the yardstick for devastating EADs – the Strategy embraces preparedness for any and all EADs.

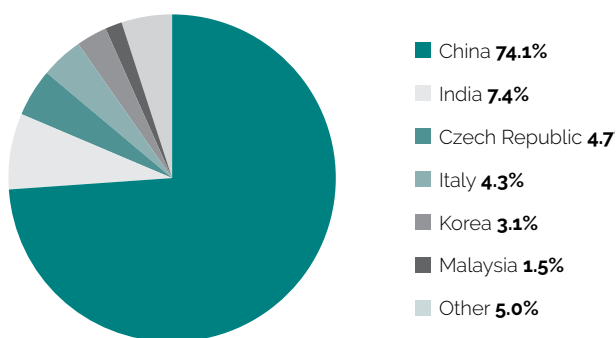
2. BACKGROUND

2.1 AUSTRALIA'S ROLE IN THE GLOBAL WOOL INDUSTRY

The Australian wool industry is heavily dependent on exports. In the year from June 2014 to June 2015, Australia exported 370 mkg of wool. Of this, 88% was exported in greasy form, the remainder as scoured wool, carbonised wool, carded wool or noils/waste.¹

The destinations for Australian wool exports for the year June 2015 to June 2016 are shown in Figure 2. China by far our dominant trading partner, taking 74.1% of Australis's wool exports.

Figure 2 Destination of Australian wool exports (greasy and processed)

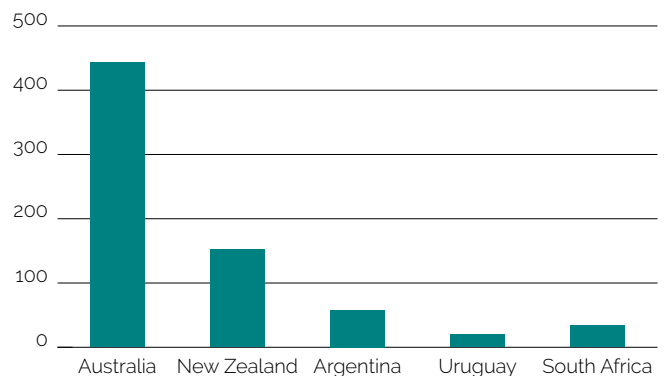


Source: Australian Wool Exchange 2016

The uninterrupted capacity to export is critical to the Australian wool industry. So too is the global wool trade highly dependent upon Australian exports. Australia dominates the world trade of wool (Figure 3). More significantly, Australia produces around 55% of world production of wool 24.5 microns and finer and 85% of superfine wools (18.5 microns and finer).²

Just under 50% of China's annual imports of raw and semi-processed wool are sourced from Australia.²

Figure 3 Volume of wool exports by main producing countries (raw, semiprocessed and wool on skins)



Source: ABARES 2015³

2.2 GLOBAL ARRANGEMENTS FOR EAD RESPONSE

There exists an international framework for the management of animal health and disease in respect to trade. This framework is overseen by the World Organisation for Animal Health (OIE), of which Australia and most other countries (including China) are members. The OIE publishes the 'Terrestrial Animal Health Code', whose aim is to 'assure the sanitary safety of international trade in terrestrial animals..and their products'.⁴ The Code underpins the Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement) among members of the World Trade Organisation (WTO).

The Code details, for each disease, standards for diagnostic testing, disinfection, establishing national or zonal freedom from the disease and so on. The Code also includes a range of general provisions covering animal disease, diagnosis, surveillance and notification; risk analysis; quality of veterinary services; disease prevention and control; trade measures, import/export procedures and veterinary certification; veterinary public health; and animal welfare.

Australia's EAD response system (Emergency Animal Disease Response Agreement (EADRA), Australian Veterinary Emergency Plan (AUSVETPLAN) and other components) is closely aligned with the provisions of the Terrestrial Code. For example, AUSVETPLAN requirements with respect to the time required for any possible foot-and-mouth disease (FMD) virus to be deactivated within a wool bale are identical to those of the Code. This alignment ensures that, as far as possible, the trade response to an EAD outbreak in Australia will be based upon the results of internationally-agreed scientific research.

1 Australian Wool Exports Snapshot, 4 August 2015 (using ABS data)
 2 Poimena Analysis, pers comm and IWTO Market Information 2015 report
 3 Australian Bureau of Agricultural Research, Economics and Statistics, Agricultural commodity statistics 2012
 4 OIE website, <http://www.oie.int/international-standard-setting/overview/>

2.3 AUSTRALIA'S EAD RESPONSE SYSTEM

Australia's EAD response system is coordinated by Animal Health Australia (AHA). AHA is a partnership between the Commonwealth and State/Territory governments, livestock industries and other stakeholders such as the Australian Veterinary Association. WoolProducers Australia is the wool industry member of AHA. WPA's contribution to AHA is funded from a portion of the livestock transaction levy paid when sheep are sold.

Australia's biosecurity framework is strong by international standards. Its elements include:

- The Emergency Animal Disease Response Agreement (EADRA), in which governments and industries have defined the manner in which Australia will prepare for and respond to EADs from governance, operational and financial perspectives. WoolProducers is the wool industry signatory to the EADRA and has prescribed rights and responsibilities under the agreement, (see section 9);
- The Australian Veterinary Emergency Plan (AUSVETPLAN), an extensive and detailed series of documents detailing the strategies, procedures and underpinning scientific justification for EAD responses;
- The National Animal Health Information System, a database used to collate, manage, analyse and report on data from a range of disease surveillance activities such as the National Significant Disease Investigation Program;
- The National Animal Health Laboratory Network;
- The National Livestock Identification System;
- Various training programs in emergency animal disease response and related areas; and
- The National Animal Biosecurity Research Development and Extension Strategy 2013-16 (NABRDES) (see below).

Notwithstanding the strengths of existing systems in Australia, there are gaps. The equine influenza outbreak of 2007/08 was considered to have exposed some of these gaps, particularly in quarantine, as identified in the subsequent 'Beale review'⁵. The 'Matthews review'⁶ of 2011 also highlighted a number of weaknesses in specific reference to Australia's foot-and-mouth disease preparedness.

Prompted by various FMD and bovine spongiform encephalopathy ('mad cow disease') outbreaks in other countries over the last two decades, Animal Health Australia (AHA) and its members, notably the Department of Agriculture and Water Resources (DAWR), have sought to strengthen Australia's biosecurity system. The Commonwealth Government report 'Reform of Australia's biosecurity system: An update since the publication of One Biosecurity: a working partnership' (2012),⁷ states:

The reforms being undertaken position the department to meet this increasing demand and to ensure the biosecurity system is effective and sustainable into the future. The reform program is consistent with the themes outlined in the Beale review, informed by previous reviews and stakeholder needs; and underpinned by five key principles:

- *Implementing a risk-based approach to biosecurity management*
- *Managing biosecurity risk across the continuum – offshore, at the border and onshore*
- *Strengthening partnerships with stakeholders*
- *Being intelligence-led and evidence-based*
- *Supported by modern legislation, technology, funding and business systems.*

⁵ Beale et al 2008, 'One biosecurity: A working partnership. The independent review of Australia's quarantine and biosecurity arrangements. Report to the Australian Government', September.

⁶ Matthews, 'A review of Australia's preparedness for the threat of foot-and-mouth disease', October 2011

⁷ Released by the Minister for Agriculture, Fisheries and Forestry, Senator the Hon. Joe Ludwig, 7 March 2012

2.4 THE WOOL INDUSTRY'S EXPOSURE TO EADS

An EAD outbreak would impose very substantial costs on the wool industry, depending on the specific disease involved. These costs would arise from two principal areas:

1. The cost of responding to the disease itself. The EADRA defines cost-sharing formulae for different diseases depending on the extent to which they impact on private versus public good and on the industries considered to be involved. FMD, for example, is a Category 2 disease. Eighty percent of the disease response would be paid for by Commonwealth and State/Territory Governments and 20% by industry, split between cattle, sheep/goats and pigs according to gross value of production.

Disease response costs include salaries and wages of those involved in the response, operating expenses, capital costs and compensation for affected producers. These costs can be huge. The Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES) estimated in 2013 that **just the control** of an FMD incursion could cost between \$60m (for a small outbreak) and \$373m (for a large multi-state outbreak).⁸

2. The cost of the trade impact. This cost is very difficult to judge, as it depends very much on the response of trading partners and many other factors. In the ABARES study, the present value of revenue loss across all industries, over ten years, was estimated at between \$5.6b and \$51.8b. The revenue loss to the wool industry was \$2.2b in all scenarios. This assumed exports of 44% of baseline in year 1, 96% in year 2 and 100% thereafter.⁹ The revenue losses were relatively low for wool compared with other commodities such as meat and dairy.

Wool has the advantage over other commodities of being non-perishable and therefore able to be stockpiled. Notwithstanding this advantage, the wool industry's strong export orientation places it at significant risk should Australia face an outbreak of an EAD that might be transmitted by wool. Trading partners would immediately place a ban on imports of Australian wool and this ban would remain in place until each country's authorities were satisfied that the wool posed no threat to national biosecurity. National judgements of biosecurity threats are not always entirely founded in science but, in any case, will err on the side of caution.

At the level of the global industry, the short-term depletion of the pipeline could be very damaging, particularly if some later-stage players for whom wool is optional move to other fibres.

Exporting scoured rather than greasy wool is one option to ensure wool poses no threat of disease transmission. However, there are currently only three wool scourers in Australia, after many moved offshore during the last ten years. Total Australian scouring capacity is now 15.5mkg. This capacity is nowhere near sufficient to process Australia's annual production of 240-245mkg greasy wool to meet demand in a timely way.

For the wool industry, the major EAD risks are considered to be foot-and-mouth disease (FMD), sheep and goat pox, bluetongue and screwworm fly, but there are many others beside these – including Rift Valley fever, which prevented greasy wool exports from South Africa to China for 12 months in 2010-11. New diseases also emerge regularly.¹⁰

It is clear that effective EAD prevention, speedy response to an outbreak should it occur, and well-planned trade continuity measures are critical for the Australian (and indeed the global) wool industry. Central to these measures is the concept of 'biosecurity'. The NABRDES defines biosecurity as 'the management of risks to the economy, animal and human health, the environment and the community, of pests and diseases entering or emerging, and establishing and spreading'. Biosecurity is thus a broad concept. It can be considered to include activities related to the resumption of trade in the event of an EAD because such activities rely upon, and must contribute to, high standards of biosecurity.

⁸ ABARES, 'Potential socio-economic impacts of an outbreak of foot-and-mouth disease in Australia', October 2013

⁹ By way of comparison, greasy wool from the UK was excluded from China for 18 months during and after the UK's 2001 FMD outbreak (John Lambert, personal communication)

¹⁰ SED Consulting, 'Exotic Animal Disease Preparedness in the Wool Industry', Final report for FAWO, May 2012

3. GOAL

The wool industry has strong incentives to participate actively in efforts to improve national EAD preparedness. Aside from the obvious economic self-interest of doing so, the industry has obligations under the EADRA and NABRDES. Any industry whose poor biosecurity practices contributed to the occurrence or extended presence of an EAD could be legally required to meet a relatively larger proportion of the cost of response than other parties.

This Strategy aims to ensure that the wool industry has in place all of the components of an effective EAD response as are reasonably possible. Just as importantly, it aims to establish in the industry the systems and culture that will ensure EAD preparedness is subject to an approach of continuous improvement.

The goal of this Strategy is to develop and maintain a high level of preparedness in the Australian wool industry by:

- Maximising time- and cost-effectiveness of the Government/industry response;
- Minimising reputational damage to the Australian industry;
- Minimising disruption to flows of Australian wool to the world's markets; and
- Achieving the most rapid possible return to normal business for wool growers and customers and others in the wool industry pipeline.



The Australian wool industry's emergency animal disease (EAD) preparedness research, development and extension strategy for 2016/17-2018/19 aims to minimise disruption to flows of Australian wool to the world's markets, should an EAD outbreak occur.

4. STRATEGY DEVELOPMENT AND CONTEXT

This Strategy has been developed by the Federation of Australian Wool Organisations (FAWO), specifically FAWO's Emergency Animal Disease Working Group (EAD WG), with the assistance of AWI.

This Strategy is an update of the 2013-16 Strategy, which in turn evolved from a concept paper developed with the guidance of the Working Group and with executive

and administrative support from AWI.

The three key 'parent' RD&E plans for this Strategy are summarised in Table 1. The Strategy also links to the Emergency Animal Disease Response Agreement (EADRA) and Australian Veterinary Emergency Plan (AUSVETPLAN) (further described in section 2.3).

Table 1. 'Parent' plans of this Strategy

PLAN	RELEVANT ELEMENT(S)
AWI Strategic Plan 2016/17-2018/19	Sheep Production Strategies: Healthy, Productive Sheep Investment focus: <i>Reduce risks to wool trade continuity from emergency animal diseases, through wool bale disinfection and traceability.</i> Targets: <i>Wool bale decontamination and disinfection procedures developed.</i>
Wool Industry National RD&E Strategy 2016-2020	Program 4: Manage Risks, Exploit Opportunities <i>Activities under this strategy seek to reduce the chance of occurrence, or mitigate any impacts that do eventuate, in relation to key industry risks. Priorities for industry-level risk management are in the areas of animal welfare, climate change and variability, and emergency and endemic animal disease.</i> KPIs: <i>By 2020... Investments in biosecurity research and diagnostic capacity are maintained at a level sufficient to allow industry to respond as required under the Emergency Animal Disease Response Plan.</i>
National Animal Biosecurity RD&E Strategy 2013-16 (NABRDES)	A cross-industry plan for biosecurity RD&E.

Note: The Wool Industry and Animal Biosecurity RD&E Strategies are part of the National Primary Industries RD&E Framework (NPIRDEF), an initiative of the Standing Council on Primary Industries (SCoPI) and supported by the Primary Industries Standing Committee (PISC). The aim of this framework is to 'facilitate greater coordination among the different Commonwealth, State governments, CSIRO, RDCs, industry and university sectors to better harmonise their roles in RD&E related to primary industries and assure that they work together effectively to maximise net benefits to Australia'.¹¹

¹¹ www.npirdef.org

5. ACHIEVEMENTS UNDER THE PREVIOUS STRATEGY

Significant progress has been made against priorities identified in the previous Strategy. Above all, the Strategy was characterised by a high level of coordination and collaboration between wool industry participants towards greater EAD preparedness. This was recognised when FAWO became the recipient of an Australian Biosecurity Award in 2014 'for its forward planning and leadership amongst industry partners to enhance emergency animal disease and Foot-and-Mouth Disease preparedness as a national priority, particularly throughout 2012–13'.

This is a proud achievement for the industry and one to be built upon over the coming triennium.

Other achievements under the previous Strategy were:

- Advances in wool identification and traceability. A study of the traceability of wool through the pipeline was completed, resulting in:
 - Detailed flow charts of the multiple paths of wool, including samples, from farm to market;
 - A stocktake and analysis of the various paper-based and electronic systems used to track wool through the pipeline and their interoperability;
 - Protocols and a spreadsheet tool for tracing wool forward from farm of origin to final destination; and
 - Identification of gaps in wool traceability based on 'real-life' simulations.

Progress has also been made in bale identification and tracking using radio frequency identification (RFID, by AWEX) and Bluetooth (AWI) technologies, with a pilot trial of the former to be carried out in 2017. Although the work with RFID and Bluetooth has been conducted with a focus on commercial efficiency rather than biosecurity, improved industry capacity to respond to an EAD outbreak will be an additional advantage.

- The development of a prototype bale disinfection device, suitable for application in wool stores, including:
 - Establishing the requirements for complete wetting of the bale;
 - Understanding the effects of the application of citric acid solution on quality parameters of baled wool;
 - Detailed engineers' drawings for commercial production of the device;
 - Market research to understand likely use patterns and optimal manufacture and deployment of the device, both in 'peacetime' and during an EAD outbreak; and
 - A plan to commission the manufacture of the first working device in 2016.
- Completion of the Wool Enterprise Manual, part of the AUSVETPLAN suite of EAD response documents. The availability of this manual ensures that, in the case of an EAD outbreak, the response activities implemented by wool-specific enterprises will be optimised to their specific circumstances.
- Confirmation through the World Organisation for Animal Health Ad Hoc Committee on Foot and Mouth Disease (FMD) that a time/temperature relationship for deactivation of FMD virus based on a best-fit interpolation of three available data points would form an acceptable basis to managing time-based deactivation of virus in wool.
- Delivery of biosecurity awareness workshops by AWI, DEDJTR and the Livestock Biosecurity Network (LBN) to 50 sheep producers in Victoria, increasing participants' understanding of the importance of farm-level biosecurity and industry-level RD&E to improve EAD preparedness.



(L-R) Dr Paul Swan Australian Wool Innovation, Bianca Heaney FAWO Secretary, Robert Ryan FAWO Chairman.
Photo courtesy Steve Keough photography.

6. GAP ANALYSIS

Additionally, a range of communications and liaison activities have been carried out, including:

- Interactions with other wool producing countries and wool industry participants globally through meetings of the International Wool Textile Organisation (IWTO), and especially the IWTO Biosecurity Working Group. This has led to mutual understanding of EAD preparedness activities in the industry globally and identification of opportunities to collaborate on these (notably with South Africa on disease agent deactivation in baled wool).
- Liaison with the Department of Agriculture and Water Resources (DAWR).
- Contribution to the OIE's Performance of Veterinary Services Evaluation Report of Australia.

However, several of the targets established in the previous strategy have not been met:

- Research to establish the relationship between ambient and internal wool bale temperatures. This is the most significant gap in the RDE to date and will be a focus of the current Strategy.
- Training in EAD preparedness and response for industry personnel.
- Development of a key contact database.

For the Vision to be achieved – that is, for the Australian wool trade to be resumed as rapidly as possible following the outbreak of an EAD – the following effective elements need to be in place:

1. Active disease **surveillance**, so that EADs are identified early;
2. An effective **governance framework** for responding to an EAD detection, well tested during 'peacetime';
3. An **operational disease response framework**, based upon sound scientific knowledge, validated and strongly linked to international (OIE) standards and also well tested;
4. **Structures and systems** to guide activities directed at restoring trade, including provisions for partitioning affected from unaffected areas (zoning) and certifying product safety;
5. The **technologies and materials** required to mount the response and recovery, including diagnostic tests, vaccines, disinfectants and so on;
6. **Financial and human capacity** to mount the activities required, including oversight, disease detection and response, trade negotiations; and
7. **Strong and well-coordinated communications** between industries, governments and trading partners.

The following is an analysis of strengths, weaknesses, opportunities and threats (SWOT), in respect to the elements described above, from a wool industry perspective:

STRENGTHS	WEAKNESSES
<ul style="list-style-type: none"> • Well-established and tested national EAD response plans and structures • Established, cooperative industry bodies • Strong relationships between the wool industry and AHA, DAWR and other key stakeholders • Strong relationships with overseas customers • Heavy reliance by China on wool from Australia – may encourage rapid resumption of trade • Some (limited) national experience within EADs (notably equine influenza) • New knowledge and tools arising from the previous Strategy (e.g. wool traceability, AUSVETPLAN manual, bale disinfection) 	<ul style="list-style-type: none"> • Declining State government resourcing of EAD preparedness • Infrequent, expensive national preparedness exercises • Gaps in EAD response plans with respect to wool, especially in respect to survival of disease agents in wool bales • Little if any EAD-related business continuity planning by wool industry enterprises • Some gaps in wool tracing systems • Heavy reliance on China as the major export market • Limited capacity to process wool on-shore • No demonstrated national experience of successfully mounting a 'zoned' response to a major grazing livestock EAD • Declining private veterinary sector in farm animals
OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> • DAWR interest in EAD preparedness, particularly FMD, and receptiveness to working with industry • Growing understanding among industry players of the importance and practice of good biosecurity • Work being undertaken in other wool producing countries (virus survival etc) – opportunity to leverage Australian efforts • National Animal Biosecurity R,D&E Strategy • Revision of EAD response plans with industry input to address gaps • Strengthening of EAD preparedness/communication structures involving industry, government and trading partners • Lessons learned from other wool-exporting countries 	<ul style="list-style-type: none"> • Biosecurity seen as a low risk and therefore not a high priority by industry players • Loss of corporate knowledge • Declining resources (levy and other) to address gaps in EAD preparedness • Occurrence of an EAD before critical gaps can be addressed • Lack of capability to address identified gaps

Key findings of the SWOT are as follows:

- Australia generally, and the wool industry specifically, are reasonably well placed to respond to an EAD outbreak but there are gaps in our preparedness. And whilst Australia has dealt with equine influenza and other outbreaks, neither the nation nor the wool industry has direct experience in dealing with a major EAD in the grazing livestock industries.
- The gaps in our preparedness require a range of responses from the conduct of R&D to the revision of

response plans, the establishment of cross-sectoral structures and the conduct of training and extension activities. 'Stress-testing' parts of the response system is also needed given our lack of 'combat experience'.

- Addressing the gaps identified will require the contribution and participation of numerous parties, including wool industry individuals, companies and organisations; government; overseas trading partners; and other bodies such as the OIE. AWI and FAWO will play a critical role in catalysing the activities undertaken as part of this Strategy.



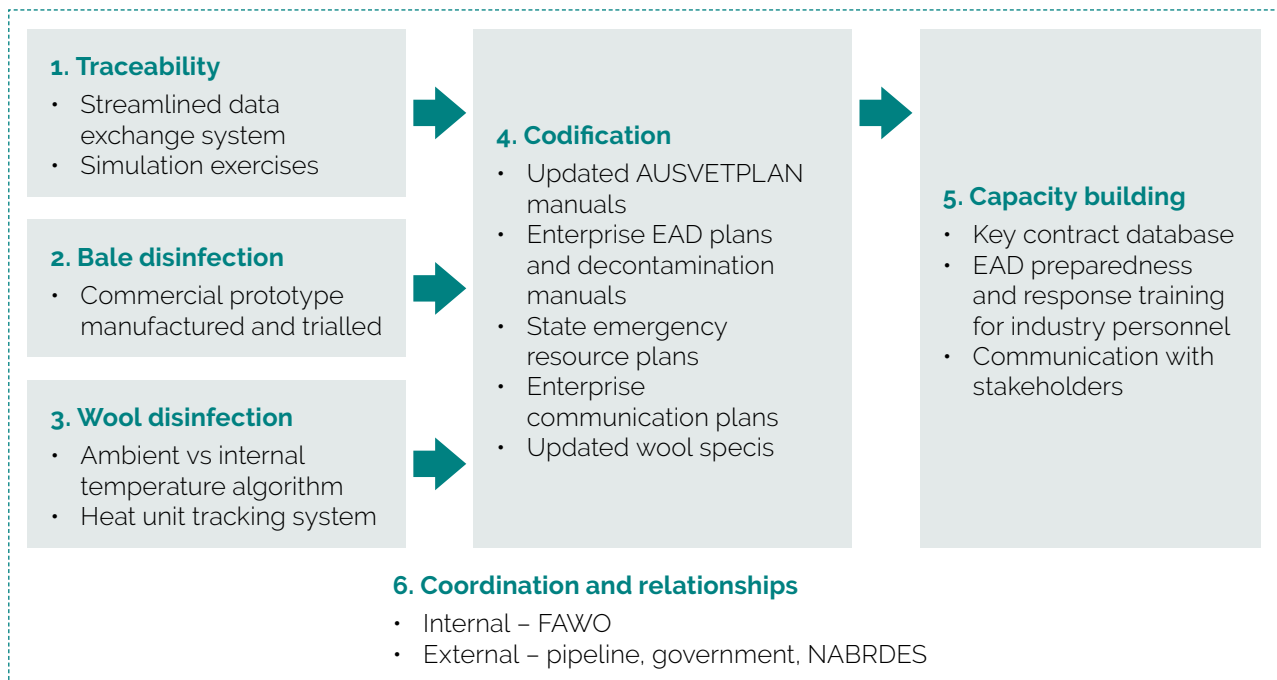
Image Credit: Baregamerino baregamerino.com.au

7. STRATEGY

7.1. OVERVIEW

The Australian Wool Industry Emergency Animal Disease Preparedness RD&E Strategy 2016/17-2018/19 is summarised in Figure 4 below.

Figure 4 Overview of Australian Wool Industry Emergency Animal Disease Preparedness RD&E Strategy 2016-19



Details of the individual programs are described below.

7.2 PROGRAM 1: TRACEABILITY

Rationale

A project completed under the previous Strategy demonstrated that wool can generally be traced forward from property of origin with a high degree of accuracy. Tracing protocols and a spreadsheet tool are now available to assist tracing and the process has been stress-tested to a minor degree.

However, tracing wool may be time-consuming and there are problems tracing certain wools, such as those that are bulk classed, passed through dealers, paid to shearers or in the form of mid-side or other samples.

Priorities

The final report from the project made a series of recommendations for future initiatives to enhance the traceability of wool. These recommendations were accepted by the FAWO EAD WG and include:

- Enhancements to existing software systems and possibly the development of a new, centralised database to enhance traceability.
- Development of a communication and training/awareness plan to inform wool brokers, exporters, private treaty merchants, other wool handlers about the steps that will be implemented in the event of an EAD outbreak (see Program 5).
- Regular conduct of simulation exercises to maintain traceability preparedness (see Program 5).
- Development of a decontamination protocol for wool handling facilities.
- Development of an industry human resource plan for EAD responses.
- Development of a FAWO-endorsed template EAD response plan for wool handling facilities.
- Modifications to the classers' specification to enhance traceability.
- Modifications to AUSVETPLAN to include proposed approaches to handling various types of wool in stores in the event of an EAD outbreak (see Program 4).

These recommendations will be implemented over the period of this Strategy.

7.3 PROGRAM 2: BALE DISINFECTION

Rationale

Under the previous Strategy, a prototype device to enable high-throughput disinfection of the outside of wool bales with a citric acid solution was developed by AWTA with AWI funding. Market research on how the device would be deployed in the case of an EAD outbreak was also undertaken. This research established that owners of wool stores would not purchase the device in 'peacetime' but would prefer to have devices made available as required.

The device has therefore been designed for containerisation to allow ready deployment. Detailed engineers' drawings of the device have been prepared.

Priorities

The priorities over the life of this Strategy will be to:

- Manufacture and evaluate, in one or more commercial environments, a fully-functioning device. The evaluation will consider transportability, ease of integration into existing facilities and the effectiveness, efficiency and safety of operation. It will also consider the effect of the disinfection process on the wool itself. This project will deliver a protocol or operational manual for the unit and a report recommending any design changes or other further work required.
- Undertake longer-term planning in respect to the number of units needed to be manufactured, storage location, maintenance, conduct of simulation exercises and other considerations.

7.4 PROGRAM 3: WOOL DISINFECTION

Rationale

The top priority for the wool industry during an EAD outbreak will be to convince trading partners that Australian wool poses them no biosecurity threat. This means demonstrating that any given lot of wool has an almost-zero risk of carrying the disease agent in question.

The interior of a wool bale offers a protective environment for disease agents that may be present. A major determinant of agent survival time in a wool bale will be temperature. The sensitivity of various viruses, especially FMD virus, to heat is generally well described although there is only a single study, with three data points, describing the relationship between

wool temperature, time and the survival of FMDV in that wool.¹² These three time/temperature combinations are specified by the OIE standards for FMDV deactivation in wool.

There is much less information available on the temperatures reached at various points inside wool bales stored under a range of conditions. This knowledge is needed to establish the relationship between bale storage conditions and deactivation of any FMDV that may be present.

Priorities

The priorities over the life of this Strategy will be to:

- Characterise temperature gradients within bales and their relationship to ambient temperatures.
- Develop a system for recording the accumulated heat*time units experienced by wool in storage or transfer sufficient to demonstrate deactivation of disease agents.
- Seek endorsement, from Australian and international authorities, for any recommendations or system arising.
- Modify AUSVETPLAN and other documents accordingly (see Program 4).

7.5 PROGRAM 4: CODIFICATION

Rationale

It is critical that any improvement in the wool industry's capacity to respond to an EAD outbreak is captured in documentation that can be readily accessed and applied when an outbreak occurs.

The Australian system for responding to emergency animal diseases is called AUSVETPLAN. AUSVETPLAN is 'a comprehensive series of manuals that sets out the various roles, responsibilities and policy guidelines for agencies and organisations involved in an EAD response'.¹³ These manuals are of various types: including 'disease strategies' (how specific diseases will be dealt with) and 'enterprise manuals' (how specific enterprises such as saleyards should deal with an EAD). AUSVETPLAN manuals are subject to a process of constant review and updating as new information comes to hand.

¹² McColl et al (1995), Australian Veterinary Journal, 72(8): 286-92

¹³ <http://www.animalhealthaustralia.com.au/programs/emergency-animal-disease-preparedness/ausvetplan/>

Program 4 will ensure that AUSVETPLAN manuals with relevance to the wool industry are kept updated with the best available information, including that arising from activities undertaken under this Strategy.

Priorities

The priorities over the life of this Strategy will be to:

- Provide wool industry input to relevant AUSVETPLAN documents as they are reviewed and updated (Appendix 1). WPA, as the wool industry member of AHA, will be the primary point of contact for these reviews and will seek FAWO EAD WG input as required.
- Seek specific changes to AVP documents as outcomes from this Strategy are generated, including:
 - Changing the provisions of the decontamination manual that presently require the destruction of wool from infected premises.
 - Incorporating into the appropriate manual the wool traceability protocols developed under the previous Strategy.
 - Developing and incorporating into the appropriate manual, wool-enterprise-specific decontamination protocols.

7.6 PROGRAM 5: CAPACITY BUILDING

Rationale

While Programs 1-4 ensures 'hard' systems are in place to guide the wool industry's response to an EAD outbreak, these systems will not be effective if the people involved in implementing them do not have the understanding, capacity or relationships to do so effectively. Program 5 will help to address these important aspects of EAD preparedness in the industry.

Priorities

The priorities over the life of this Strategy will be to:

- Develop a database of key positions and personnel throughout the pipeline, in Australia and overseas, particularly in key markets (China).
- Deliver training in EAD preparedness and response for industry personnel, building upon outcomes of the previous Strategy including the AUSVETPLAN Wool Industry Enterprise Manual, the bale disinfection device (to be commercially evaluated under this Strategy) and enhancements to wool traceability.

- Undertake 'stress-testing' of particular components of the EAD response with particular emphasis on the industry's restoration of trade.
- Develop industry response resources to complement and simplify the AUSVETPLAN documents for industry personnel, including electronic (e.g. web sites, videos) and hard-copy (e.g. posters) resources that could be mobilised in the event of an EAD outbreak throughout the industry. These resources might help individuals (e.g. brokers' staff) to understand, inter alia:
 - The likely course of the outbreak;
 - The ramifications for their workplace;
 - Their roles and responsibilities during the response;
 - Where to go for further information; and
 - How to manage customers and other stakeholders.
- Communicate with stakeholders about activities and progress under this Strategy.

7.7 PROGRAM 6: COORDINATION AND RELATIONSHIPS

Rationale

The activities of this Strategy will require coordination and management.

Priorities

The priorities over the life of this Strategy will be to:

- Effectively and efficiently implement projects to deliver on Programs 1-5.
- Facilitate the shepherding of new information and standards through the appropriate channels, e.g. OIE, IWTO.
- Maintain strong relationships between FAWO members, IWTO, AHA and other stakeholders in relation to wool industry EAD preparedness.

8. BUDGET

An indicative budget of \$250k is available from AWI for each of the three years of the Strategy. The budget will be allocated annually as the cost of specific projects becomes better defined.

Where possible, AWI will seek to leverage its RD&E funds with funding from other sources, including wool industry investment in AHA.

9. ROLES AND RESPONSIBILITIES

The implementation of this Strategy will be overseen by the FAWO EAD Working Group, their terms of reference for which is provided in Appendix 2. Progress will also be reported to the Steering Committee of the Wool Industry Strategy (see Section 3), especially where there are collaborative investments between agencies in projects under this Strategy.

Key organisations with a role to play in the delivery of this Strategy are as follows:

- **Australian Wool Innovation (AWI)** is the wool industry's R&D body. AWI will take primary responsibility for the development, oversight and funding of projects to address the priorities of this Strategy.
- **Wool Producers Australia (WPA)** is recognised as the woolgrower representative body in the Emergency Animal Disease Response Agreement (EADRA) between the Commonwealth Government, State and Territory Governments and livestock industries. As such, it has specific legal rights and responsibilities with respect to collective EAD preparedness and response including participation in the National Management Group, the highest level of governance in an EAD response. WPA is also the wool industry member of Animal Health Australia. In this role it holds levies on behalf of Australian wool growers for investment in health, welfare and biosecurity activities through AHA. WPA is a member of FAWO and a participant in the FAWO EAD WG. WPA will have responsibility to ensure that the activities of this Strategy are consistent with its other EAD preparedness plans and activities.

- Other **FAWO Full and Associate Members**, namely:

- Australian Council of Wool Exporters & Processors Inc;
- The National Council of Wool Selling Brokers of Australia Inc;
- Australian Wool Testing Authority Ltd;
- Australian Wool Exchange Ltd;
- Australian Wool Handlers; and
- Department of Economic Development, Jobs, Transport and Resources (Victoria) (Associate)

will have responsibility for ensuring that this Strategy addresses the main gaps in their EAD preparedness and to participate in or assist with projects as required. FAWO members will also ensure the engagement of the **International Wool Textile Organisation (IWTO)** and its member bodies. IWTO and OIE maintain a memorandum of understanding that includes a commitment by the parties to keep each other informed in matters of mutual interest including biosecurity.

- The Commonwealth **Department of Agriculture and Water Resources (DAWR)**, **State and Territory Departments of Agriculture and Animal Health Australia (AHA)** will all play an important role in advising on the acceptability and practicality of implementing Strategy outcomes in real-world EAD outbreak scenarios. This will take place through the FAWO EAD WG as well as other specific project-based interactions.

10. MONITORING AND EVALUATION

Deliverables from this Strategy and how their achievement will be monitored/evaluated are summarised in Table 2.

Table 2 Monitoring/evaluation of Strategy deliverables

PROGRAM	DELIVERABLES	HOW MEASURED
1. Traceability	Enhancements to software systems	Enhancements made
	Decontamination protocol for wool handling facilities	Protocol developed
	Industry human resource plan for EAD responses	Plan developed
	FAWO-endorsed template EAD response plan for wool handling facilities	Template developed
	Modifications to the classers' specification to enhance traceability	Modifications made
2. Bale disinfection	Fully-functioning bale disinfection unit manufactured	Unit manufactured
	Bale disinfection unit evaluated, with protocol/operational manual and report delivered	Manual and report delivered
	Longer-term unit manufacture and deployment plan	Plan approved by FAWO
3. Wool disinfection	System for recording the accumulated heat*time units experienced by wool in storage or transfer sufficient to demonstrate deactivation of disease agents	System developed and approved by animal health authorities
4. Codification	AUSVETPLAN documents modified to incorporate latest industry knowledge	Relevant modifications made to AVP documents
5. Capacity building	Database of key positions and personnel throughout the international pipeline	Database approved by FAWO Action plan for updating database developed
	Training in EAD preparedness and response for industry personnel	Training completed/ participant satisfaction surveyed
	'Stress-testing' of components of the EAD response	'Stress tests' completed
	Industry response resources to complement and simplify the AUSVETPLAN documents	Resources developed
	Communication with stakeholders	Activities undertaken/ target audience awareness surveyed
6. Coordination and relationships	Effective and efficient implementation of projects to deliver on Programs 1-5.	Achievement of deliverables

11. RISK MANAGEMENT

Table 3 shows the key risks to the success of this RD&E Strategy and the measures that will be taken to neutralise them as far as possible.

Table 3 Risks to the Strategy and steps taken to minimise these

CRITICAL SUCCESS FACTOR	RESPONSE
Strategy addresses the wrong issues	<ul style="list-style-type: none"> Approval for the Strategy sought from the FAWO EAD Working Group
Poor acceptance of or engagement with the Strategy by industry	<ul style="list-style-type: none"> Scoping and design of activities in close consultation with industry – to ensure outcomes are credible Extensive communication on the Strategy with all parts of the industry in Australia and overseas
Lack of acceptance of outcomes by authorities responsible for EAD management	<ul style="list-style-type: none"> Strong engagement with State and Commonwealth authorities throughout the implementation of the Strategy to ensure Strategy outcomes will be accepted and adopted in the case of an EAD outbreak. Means for achieving this engagement include the participation of government personnel in FAWO EAD Working Group meetings, and through AHA Members' Forums, with WPA as conduit.
Lack of willingness of the AWI Board to provide funding for the Strategy	<ul style="list-style-type: none"> Approval for the Strategy sought from AWI Board, and any concerns addressed Outcomes reported regularly to the Board
Duplication of RD&E	<ul style="list-style-type: none"> Consultation with other woolgrowing countries prior to initiating projects (especially South Africa) Reviews of existing literature and discussion with knowledgeable people where prior R&D may have been done

12. SUPPORTING DOCUMENTS AND REFERENCES

Australian Government 2012, 'Reform of Australia's Biosecurity System: An Update since the Publication of One Biosecurity: A Working Partnership', March, Commonwealth of Australia, Canberra.

Beale, R et al 2008, 'One Biosecurity: A Working Partnership. The Independent Review of Australia's Quarantine and Biosecurity Arrangements. Report to the Australian Government', September, Commonwealth of Australia, Canberra.

Matthews, K 2011, 'A Review of Australia's Preparedness for the Threat of Foot-and-Mouth Disease', October, Commonwealth of Australia, Canberra.

Primary Industries Standing Committee (PISC) 2013, 'National Animal Biosecurity Research, Development and Extension Strategy 2013 – 2016', Draft 6, 29 January, Canberra.

SED Consulting 2012, 'Exotic Animal Disease Preparedness in the Wool Industry', Final Report to FAWO and AWI, May, Australian Wool Innovation, Sydney.

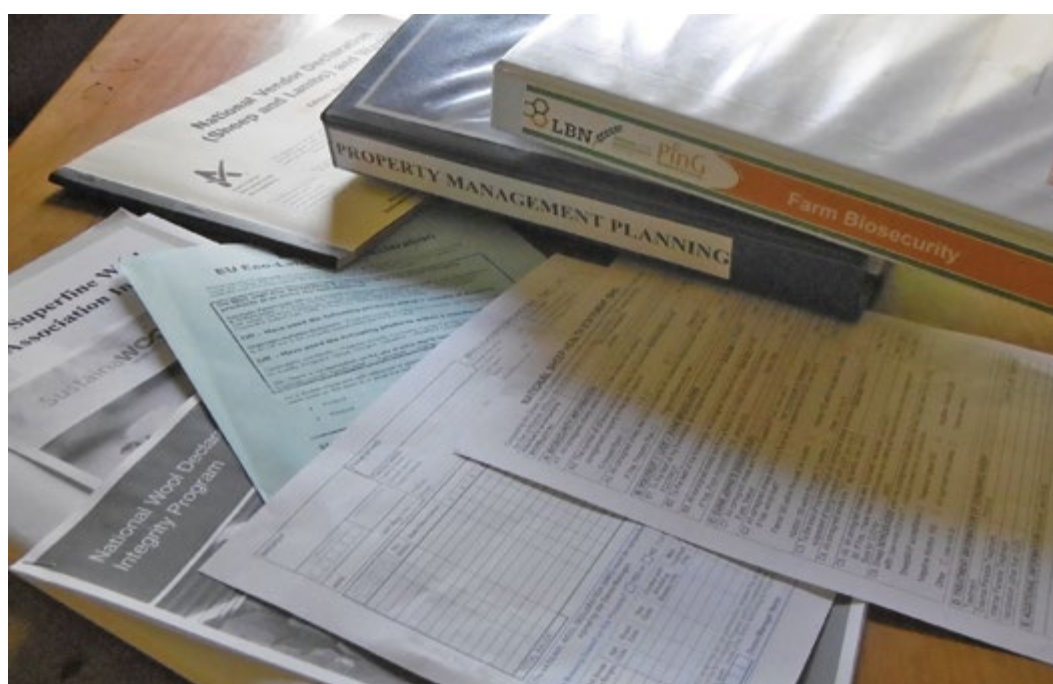


Image Credit: Baregamerino baregamerino.com.au

APPENDIX 1: SCHEDULED AUSVETPLAN DOCUMENT REVISIONS

The following table lists AUSVETPLAN manuals and other documents that will be subject to review over the life of this Strategy, and their status as at July 2016.

DOCUMENT	STATUS/SCHEDULED REVISIONS
Bluetongue disease strategy	Policy review underway, taking into consideration changes to the OIE Terrestrial Animal Health Code. In the early stages of discussion with the Technical Review Group (TRG).
Foot-and-mouth disease strategy	Approval of sections on management of milk and milk products, and on the movement of FMD-vaccinated animals, underway. Following approval of these sections, the disease strategy will transitioned into the Edition 4 format, and the approved sections incorporated.
Rabies disease strategy	Undergoing revision to consider outputs of an AHC working group; expected for consultation with TRG next, with industry consultation to follow.
Scrapie disease strategy	TRG comments on review being considered and addressed; industry consultation will follow. Updates expected to include changes in scientific and technical knowledge and the development of more detailed movement controls.
Screw worm fly disease strategy	Currently being reviewed by an expert writing group.
Surra disease strategy	Scheduled for review in 2017/18.
Vesicular stomatitis disease strategy	Recently underwent industry consultation; next steps would be presentation to the TRG and then AHC for endorsement.
Decontamination manual	Review pending update of scientific and technical information.
Livestock welfare and management manual	Currently being reviewed by an expert writing group (being reformed).
Valuation and compensation manual	AHA is working to address WPA concerns; next steps would be presentation of manual to Animal Health Committee for endorsement.
Artificial breeding centres manual	Currently being reviewed by an expert writing group (being reformed).
Enterprise manual for live export premises	Under consideration for development – initial scoping underway through the TRG.
Resource document on persistence of disease agents	Currently undergoing review and expansion (to include disinfectant susceptibility) – will update resource document and inform review of decontamination manual.

APPENDIX 2: FAWO EAD WORKING GROUP TERMS OF REFERENCE

TERMS OF REFERENCE

The FAWO Emergency Animal Disease Working Group is a forum for provision of expert advice and related services to FAWO members with the goal of maximising Australia's preparedness for EAD outbreaks. Specifically, the Working Group reviews and provides expert assessment of Australia's preparedness for an EAD outbreak, focussing on:

1. Assessment and analysis of potential disruptions to wool trade flows in the event of EAD emergencies, within a variety of potential outbreak scenarios, and producing quantitative estimates of potential disruptions to industry flows;
2. Considering and recommending specific actions for improving preparedness and minimising disruptions to flow of wool to trade customers, including identifying potential sources of funding support if required, and;
3. Monitoring of progress toward maximised industry preparedness.

COMPOSITION

The composition of the Working Group shall be determined by agreement of the FAWO Executive. Ordinarily, participants will be drawn from the broader membership of the FAWO Executive Committee, but may be supplemented by individuals external to this Committee, as required, by agreement of the FAWO Executive. Specifically, an Animal Health Australia Nominee is suggested as a Working Group member.

CONDUCT OF MEETINGS

Meetings will be chaired by the Chairman of the FAWO Executive Committee or nominee, and FAWO will provide secretarial support.

Minutes of the meetings will be kept, and Working Group decisions and action points disseminated to Group members, and provided to the FAWO Executive.

The FAWO Executive will be provided, on a 6-monthly basis, with a summary status report from the Chair of the Working Group, covering the general conduct of the Working Group and rating the state of industry EAD preparedness.

FREQUENCY OF MEETINGS

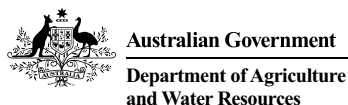
Meetings will be held on an as-needs basis, although expected to occur at least 6-monthly.

The calling of meetings will be through the Chair of the FAWO Executive Committee.

WORKING GROUP EXPENSES

Working Group members will cover their own expenses incurred in the conduct of meetings, and AWI will consider covering any expenses associated with provision of specific expert advice to the Group, upon written request.

The Australian Wool Industry Emergency Animal Disease Preparedness RD&E Strategy 2016/17-2018/19 was developed by the FAWO Emergency Animal Disease Working Group. FAWO acknowledges the financial and in-kind contribution provided by these organisations.



Australian Council
of Wool Exporters
& Processors



FAWO also gratefully acknowledges the contribution from Scott Williams (Scott Williams Consulting) in his role as the Wool EAD Preparedness Research & Development Co-ordinator.

FAWO

Federation of Australian Wool Organisations

Federation of Australian Wool Organisations Inc.

Unit 9 42-46 Vella Drive
SUNSHINE WEST VIC 3020 AUSTRALIA
Ph: +61 3 9311 0103