final report

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Visual Rural Services

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Review of ASEL

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Abstract

In completing this report, the authors have conducted a desktop review of the current ASEL, identifying areas of concern and also reviewing published reports of other previous reviews relating to the ASEL. This report has also presented initial findings from a systematic assessment of alternative regulatory frameworks that offer the potential to provide useful guidance for the export industry in developing a whole-of-chain QA system to document compliance with regulatory requirements and relevant standards and guidelines. The preliminary material presented in this report will be further expanded to produce summary information on issues, accompanied by more detailed discussion, to take to industry stakeholders for further consultation.

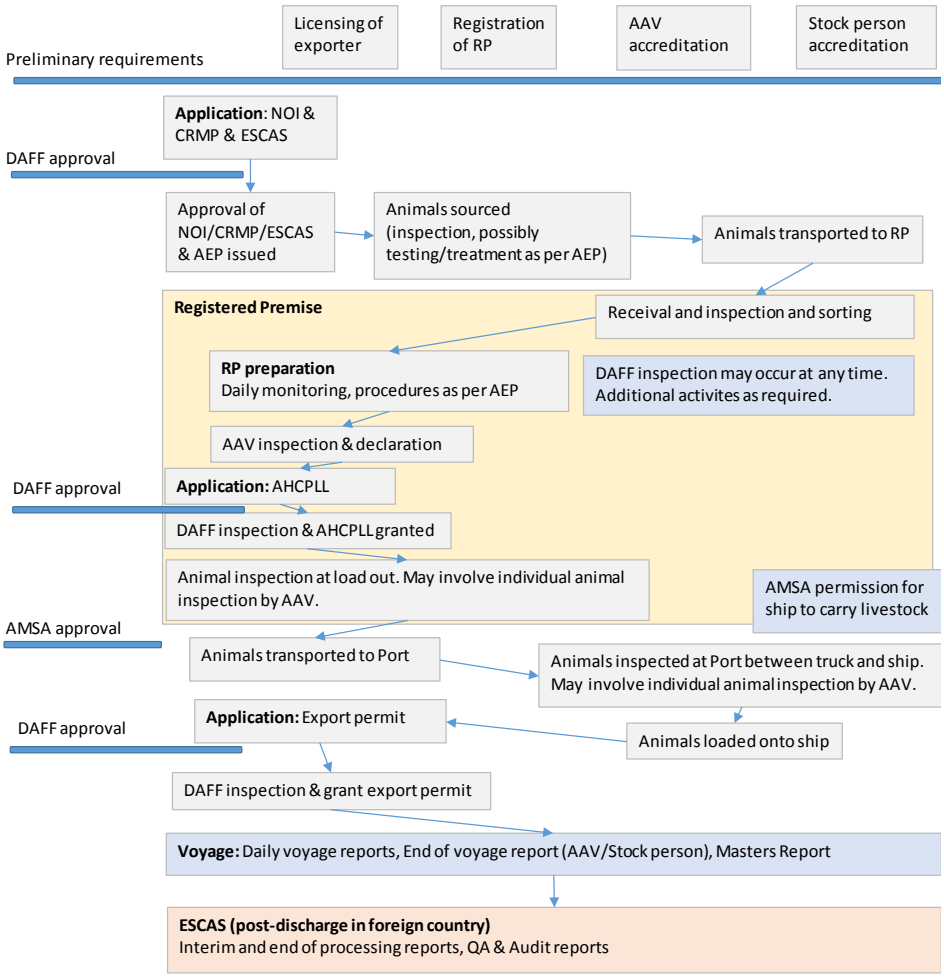
Executive summary

The purpose of this report is to provide a systematic review of the ASEL regulatory framework and to make recommendations for improvements as a contribution to support industry inputs in to the Australian Government review of ASEL.

The scope of this project was restricted to that part of the livestock export chain that is covered by the ASEL (property of origin in Australia to port of disembarkation in a foreign country). This report complements a related report on QA systems applicable to ESCAS where the scope runs from port of disembarkation to point of slaughter in a foreign country.

During the preparation of this report the project team completed a desktop review of the current ASEL regulatory framework, alternative regulatory frameworks and QA systems, and research outputs related to the current standards and assessment of export of sheep from southern ports in winter months.

The following illustrates the steps in the export chain subject to regulatory control, including critical points where DAFF or AMSA receive applications and grant approvals for a consignment or voyage.



The major findings of the report are summarized here.

The current regulatory framework is complex and includes requirements for compliance with state and territory legislation/regulations as well as Commonwealth requirements under both Australian and international standards.

The current regulatory framework is prescriptive and heavily reliant on government officers for compliance checking.

The ASEL has a number of problems associated with lack of clarity, inconsistency, redundancy and requirements that are not consistent with current science-based knowledge.

There are lessons and learnings from other regulatory frameworks that should be considered in any review and modification of the livestock export regulatory framework.

An effective, industry managed QA system will be an important and necessary component of a more efficient and effective regulatory framework for livestock export.

Three overarching drivers have been identified in the course of this review that have influenced our recommendations concerning the livestock export regulatory framework:

1. A long term viable and sustainable livestock export industry is in Australia's interests.
2. Ensuring protection of animal welfare outcomes for Australian livestock through to the point of slaughter in importing countries is necessary for a sustainable livestock export industry.
3. A co-regulatory framework that adheres to the principles and practices of good regulation is the most efficient and effective approach for sustainable regulation of the livestock export industry.

A brief explanation of the meaning of two terms is provided here.

> *Regulation* refers to the legislative instruments which impose mandatory requirements upon business, as well as government voluntary codes and advisory instruments for which there is a reasonable expectation of compliance (Commonwealth of Australia 2013).
>
> *Co-regulation* refers to the situation where industry develops and administers its own arrangements but government provides legislative backing to enable the arrangements to be enforced (Commonwealth of Australia 2013). Examples include situations where the government may legislate standards and industry then manage a QA program to demonstrate compliance. Legislation may provide for government imposed arrangements in the event that industry does not meet its own arrangements.

This report has six recommendations.

Recommendation 1: *A number of changes to ASEL are necessary to address inconsistencies and redundancy, to improve clarity, to address areas where evidence supports change, to move where possible to outcomes-based measures and to generally make the standards function more effectively and in accordance with the principles of good regulation.*

Recommendation 2: *There needs to be an effective process that allows regular review and timely modification of the standards in response to advances in research-based knowledge, stakeholder input, operational experience and technical advances.*

Recommendation 3: *A co-regulatory framework is recommended with an integrated whole-of-chain QA program.*

Recommendation 4: *An integrated, effective and efficient QA program should be developed that is capable of providing a high level of confidence in performance across the export chain that is compliant with standards and with early and effective corrective action where non-compliance is detected.*

Recommendation 5: *That an Industry Standards and Integrity Committee (ISIC) be appointed for the purpose of managing comprehensive consultation with stakeholders to achieve consensus on regulatory reform proposals including the development of a detailed implementation plan and budget for consideration by industry and government.*

Recommendation 6: *That consideration be given to tasking a joint industry-government working group to manage and provide advice on the development and implementation of the new regulatory arrangement including consideration of interim projects required to underpin the new systems.*

Abbreviations

Abbreviation	Explanation
AAO	Australian Government Authorised Officer
AAV	AQIS accredited veterinarian
AAWS	Australian Animal Welfare Strategy
ACCL	Australian Certificate for the Carriage of Livestock
ACO	Australian Certified Organic
ACT	Australian Capital Territory
ADF	Australian Dairy Farmers
AEMIS	Australian Export Meat Inspection System
AEP	Approved Export Plan
AFP	Australian Federal Police
AHA	Animal Health Australia
AHCPLL	Application for Health Certificate and Permission to Leave for Loading
ALEC	Australian Livestock Exporters' Council
ALES	Australian Livestock Export Standards
ALFA	Australian Lot Feeders' Association
ALMG	Australian Land Management Group
ALRTA	Australian Livestock and Rural Transporters' Association
AMLC	Australian Meat and Livestock Corporation
AMLI Act	Australian Meat and Livestock Industry Act
AMS	Audit Management System
AMSA	Australian Maritime Safety Authority
AO	Officer of the Order of Australia
APIQ	Australian Pork Industry Quality Assurance Program
APIQM	APIQ Management
APL	Australian Pork Limited
APS	Australian Position Statement (on the Export of Livestock)
AQF	Australian Quality Framework
AQIS	Australian Quarantine and Inspection Service
AS	Australian Standard
ASEL	Australian Standards for the Export of Livestock
AVA	Australian Veterinary Association
AWC	Animal Welfare Committee
BFA	Biological Farmers of Australia
CCA	Cattle Council of Australia
CCP	Critical Control Point
CLM	Certified Land Management
COAG	Council of Australian Governments
COP	Code of Practice
CRMP	Consignment Risk Management Plan
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DAFF	Department of Agriculture, Fisheries and Forestry
DAFWA	Department of Agriculture and Food Western Australia
DLG	Department of Local Government
DOR	Department of Resources
DPI	Department of Primary Industries
DPIPWE	Department of Primary Industries, Parks, Environment and Water

DTS	Deemed To Satisfy
EC Act	Export Control Act 1982
EC(MMP)O	Export Control (Meat and Meat Products) Order
ECRI	Export Certification Reform Implementation
EMS	Environmental Management System
ESCAS	Exporter Supply Chain Assurance System
EU	European Union
FLAC	Feed Lot Advisory Council
FLIAC	Feedlot Industry Accreditation Committee
FSMA	Food Safety Meat Assessor
GAP	Good Agricultural Practices
GHP	Good Hygiene Practice
GICA	Goat Industry Council of Australia
GLC	Global Livestock Certification
HACCP	Hazard Analysis and Critical Control Points
HSRA	Heat Stress Risk Assessment
ID	Identification
ILC	International Livestock Certification
IRG	Independent Reference Group
ISIC	Industry Standards and Integrity Committee
ISC	Integrity and Services Committee
ISO	International Organization for Standardization
ISP	Independent Service Provider
IATA	International Air Transport Association
IT	Information Technology
LCI	Livestock Certification International
LAR	Live Air Regulations
LCS	Livestock Certification Services
LEAP	Livestock Export Accreditation Program
LEP	Livestock Export Program
LERPIB	Livestock Export Reform Program Implementation Board
LESAC	Livestock Export Standards Advisory Committee
LESAG	Livestock Export Standards Advisory Group
LMA	Livestock Management Act (Victoria)
LPA	Livestock Production Assurance
LSCC	Livestock Supply Chain Certification
LTS	Land Transport Standards
MLA	Meat and Livestock Australia
MICOR	Manual of Importing Country Requirements
MSA	Meat Standards Australia
MTF	Ministerial Taskforce
NAWS&G	National Animal Welfare Standards and Guidelines
NCCAW	National Consultative Committee on Animal Welfare
NFAS	National Feedlot Accreditation Scheme
NLIS	National Livestock Identification System
NOI	Notice of Intention
NRM	Natural Resource Management
NSW	New South Wales
NT	Northern Territory

NVD	National Vendor Declaration
OAGM	Operations and Governance Manual for registered premises
O&G	Operations and Governance
OIE	World Organisation for Animal Health
OPV	On-Plant Veterinarian
PIC	Property Identification Code
PIMC	Primary Industries Ministerial Council
PIRSA	Department of Primary Industries and Resources of South Australia
PISC	Primary Industries Standing Committee
PLU	Portable Livestock Unit
POCTA	Prevention of Cruelty to Animals Act (Victoria)
QA	Quality Assurance
QLD	Queensland
QMDC	Queensland Murray-Darling Management Committee
R&D	Research and Development
RIS	Regulatory Impact Statement
RP	Registered Premise
RSPCA	Royal Society for the Prevention of Cruelty to Animals
SA	South Australia
SCA	Sheepmeat Council of Australia
SCoPI	Standing Council on Primary Industries
SE	South East
SOP	Standard Operating Procedure
SRG	Standards Reference Group
TAS	Tasmania
TRACE	Tracking Animal Certification for Export
VALE	Vets Against Live Export
VFC	Victorian Feedlot Committee
VICT	Victoria
WA	Western Australia

Contents

1 Background

The Australian Livestock Export Standards (ALES) were developed as a project initiated by the Australian Livestock Exporters Council (ALEC) in 1996/97 with funding support from the then DAFF Agribusiness Program. The aim of this project was to develop an industry quality assurance (QA) scheme, to be known as the Livestock Export Accreditation Program (LEAP), and the ALES provided the standard requirements on which the QA was based. The development of LEAP and ALES involved consultations with ALEC, exporters, AQIS, DAFF, the National Consultative Committee on Animal Welfare (NCCAW) and the Australian Meat and Livestock Corporation (AMLC), the predecessor to Meat and Livestock Australia (MLA).

LEAP and the ALES were implemented in 1998/99 by the Australian Livestock Export Corporation (LiveCorp). The LEAP scheme aimed to provide independently verified assurance (audited by AUS-MEAT) that exporters complied with ALES in addition to relevant legislative requirements for export, other animal welfare legislation and codes of practice. AQIS recognised LEAP accreditation as evidence of exporter competence, a requirement of the exporter licensing process under the Australian Meat and Livestock Industries Act 1997. This co-regulation was covered by formal agreement between AQIS and LiveCorp.

In 1999 and 2002, there were reviews of the livestock export trade by an Independent Reference Group (IRG) convened by the Federal Minister for Agriculture, Fisheries and Forestry. Both reviews were convened in response to concerns over incidents relating to live exports and whether there were appropriate controls in place to prevent such incidents in the future.

In 2003, the Keniry Livestock Export Review (Keniry 2003) was initiated in response to welfare concerns arising from issues associated with the MV *Cormo Express*, an export vessel carrying sheep to Saudi Arabia that spent 80 days on the vessel following rejection of the consignment by Saudi authorities.

Significant reforms were made to industry regulation following the Keniry Livestock Export Review, which led to government taking on full responsibility for managing the regulation of the livestock export process. This included the development of the Australian Standards for the Export of Livestock (ASEL), which initially came into effect in July 2005 and since then there have been several revisions. The current version 2.3 of ASEL was endorsed in April 2011.

In May 2011, the Four Corners television program aired evidence of animal welfare mistreatment of cattle in Indonesian facilities. In early June 2011 the Federal Government prohibited Australian cattle exports to Indonesia until further notice. The Government commissioned an independent review into Australia's livestock export trade (Farmer 2011) also in June 2011. This review was tasked with delivering an interim report by 29 July 2011 and a final report on 31 August 2011. Two industry-government working groups were established in June 2011 (one for live sheep and goat exports and one for live cattle), these reported in August 2011.

In July 2011, the Government announced that cattle exports to Indonesia could be resumed provided that exporters met new conditions concerning animal welfare requirements. The first ship carrying Australian cattle to Indonesia under these new closed supply chain arrangements arrived in Indonesia in mid-August 2011[1].

In October 2011, the Government outlined the future of regulation in Australia's live export industry, which incorporated the Government's response to the recommendations of the *Farmer*

[1] http://www.abc.net.au/pm/content/2011/s3294864.htm

Review as well as separate responses to the findings of the two industry-government Working Groups[2].

Information about the detail of the new regulatory frameworks is outlined through the DAFF web pages on the Exporter Supply Chain Assurance System (ESCAS)[3]. The new supply chain assurance framework was required to be in place for all markets that take Australian slaughter and feeder livestock by early 2013.

The Farmer Report made the following specific recommendation that relate to the conduct of this project:

The Review recommends that a comprehensive review of ASEL be undertaken.

- *The review should inter alia examine the policy on export of sheep from southern ports to the Middle East in winter months, with a view to:*
  - *mitigate feedlot and shipboard losses in adverse weather conditions*
  - *mitigate losses from heat stress and inanition during the voyage.*
- *The review should also consider additional specific criteria, identified in recent industry-funded research, for selection of suitable livestock for export.* (Farmer 2011, p50)

There are a range of additional activities flowing from the government's commitment to the recommendations from the *Farmer Review*. A comprehensive government review of the Australian Standards for the Export of Livestock (ASEL)[4], was initiated. DAFF established a Livestock Export Reform Program Implementation Board (LERPIB) to oversee the implementation of reforms. A steering committee was set up to overview the development of the review report and its presentation to the LERPIB. A DAFF secretariat was responsible for undertaking broad consultations and preparation of reports.

As a separate but related process, industry initiated this project as a longer term response to future industry needs and regulation, to examine the scope and delivery of the ASEL and ESCAS within the industry regulatory framework. In this examination, industry also sought to respond to the Farmer Report recommendation:

> *The Review recommends that in line with ASEL, industry develop and implement a through-chain QA system to complement government regulatory compliance programs.* (Farmer 2011, p 39))

2 Project Objectives

In July 2012, the Australian Government announced the commencement of its comprehensive review of ASEL. This project was initially intended to provide detail to support industry's input to this review, whilst also guiding the industry's long term reform agenda and strategy for ASEL. Discussions during the conduct of the project resulted in a stronger emphasis being applied to the medium to longer term needs of industry in terms of meeting and demonstrating compliance to risk focused regulatory standards.

The objectives of the project are set out below.

1. Through consultation with Exporters, Producers, Australian Government, State Government and other stakeholders the researchers should:

[2] http://www.daff.gov.au/ludwig/media_office/media_releases/media_releases/2011/october/gillard-government-reforms-live-export-trade

[3] http://www.daff.gov.au/aqis/export/live-animals/livestock/escas

[4] http://www.daff.gov.au/animal-plant-health/terms_of_reference_for_a_review_of_the_australian_standards_for_the_export_of_livestock_and_the_livestock_export_standards_advisory_group

a. Undertake a scoping study of the current ASEL livestock export regulatory framework that will identify the current regulatory framework strengths and weaknesses. The review should consider factors such as duplication of standards across ASEL, duplication with existing state or federal legislation, reporting and inspection requirements (both exporter and AAV) and the regulatory costs of compliance.
b. Compare and contrast ASEL with alternative regulatory approaches to identify opportunities for improvement. These should include but not be limited to the Australian land transport standards, National Feedlot Accreditation Scheme, Australian Animal Welfare Standards for processing of livestock, Cattle Care and Livestock Production Assurance scheme. The review should detail the merits of all alternative regulatory approaches, such as the format or methods used to communicate the regulatory obligations to those responsible.
c. Any development of alternative regulatory approaches should consider whole of supply chain quality assurance systems or required materials to enhance industry's ability to demonstrate compliance to regulations.
d. Provide recommendations and prototype examples of alternative regulatory models and analyses and document the strengths and weaknesses of the various approaches.
e. Provide recommendations on a comprehensive consultation process with live export industry stakeholders and representatives to determine the preferred industry supported regulatory framework based on the above outputs.

2. The review should examine the export of sheep from southern ports to the Middle East in winter months including:
    a. Adequacy of the current standards
    b. Changes in preparation practices for various classes of sheep
    c. Conduct a review of DAFF investigations to identify gaps in the current standards and improved control measures to monitor welfare outcomes.

3 Methodology

The objectives for this project provided a scope defined by the phrase ***current ASEL livestock export regulatory framework***. Our interpretation of this scoping phrase was that it included all aspects of a regulatory framework (legislation and associated subordinate regulations, standards and other guidelines or codes of practice that may be considered to be relevant to livestock export operations), and that the coverage extended over that part of the export chain that was covered by the current ASEL.

The current ASEL extends from property of origin to port of disembarkation at the end of the export voyage. It does not include ESCAS which covers additional parts of the chain that start at the point of disembarkation and continues to the point of slaughter for those animals exported for feeder or slaughter purposes.

There are parts of this report that touch on aspects of ESCAS but this is usually done where material is directly relevant to the scope of this report and we have not undertaken a detailed review of ESCAS processes. There are separate projects that are involved specifically with ESCAS regulatory systems.

The project brief provided the following guidelines on the methodology to be adopted:

1. Scoping Study Report
    a. Initial desktop study of the current ASEL which includes:
        i. Identifying specific issues, including strengths and weaknesses, in the current ASEL.

ii. Preparation of a consultation plan and reporting framework – draft matrix of responsibilities, identification of duplication, strengths and weaknesses.
iii. Preparation of an interim report detailing the findings of the desktop study.

b. Identification of other regulatory approaches (codes of practice, standards, regulatory frameworks) that may be relevant to the objectives.

c. The project team will develop an initial set of criteria to allow comparable assessment to be made of documents drawn from quite different situations based on general criteria relevant to the export situation. Examples of criteria include clarity of purpose, ease of implementation and process, and effectiveness (delivery of outcomes capable of meeting disparate stakeholder needs (business operation vs public interest and regulatory requirements)), lines of communication and responsibilities, verification of compliance and enforcement methods. It is expected that this will involve a wide scope including documents and guidelines produced for other livestock production activities (poultry, pigs, aquaculture, feedlots, land transport) both in Australia and internationally.

d. Complete a process of consultation (phone, email, face-to-face) with relevant stakeholders (Exporters, DAFF/AQIS, ALEC, CCA, SCA, State/Territory jurisdictions, RSPCA) to seek input on the issues identified in the objectives and any other issues raised by stakeholders that relate to the objectives. Priority issues are likely to include:
   i. compliance costs and general feedback on content of the current ASEL;
   ii. identification of strengths and weaknesses of the current frameworks;
   iii. areas where changes may be considered to the current frameworks with a focus on maintaining the highest standards of QA, while facilitating implementation and compliance;
   iv. identification of areas where specific additional tools or functionality may be beneficial as part of a process of ongoing improvement of systems and frameworks. Examples might include hardware and software platforms to facilitate automated and semi-automated collection of data and information, analysis and reporting.

e. Develop a draft report with recommendations, including:
   i. findings of the above review process;
   ii. changes that may be considered beneficial, along with consideration of justification for all changes;
   iii. recommendations and prototype examples of alternative regulatory models, including documentation of the strengths and weaknesses of the various approaches.
   iv. options for conduct of comprehensive consultation with all stakeholders to progress to a consensus industry position on a preferred regulatory framework.
   v. circulate draft report to stakeholders

f. Convene a workshop for discussion of the draft report, involving invited representatives of stakeholder groups that have been consulted during the project.

g. Submit final report

2. Literature review
   a. A desktop review of technical and scientific literature related to export standards and the regulatory environment, contributing generally to all sections of the final report.

3. Export process – sheep exported to the Middle East from southern ports

a. Review of current standards that are relevant to export of sheep from southern ports, including consideration of winter vs summer months.

b. Description of preparation practices for various classes of sheep being prepared in southern ports for export to the Middle East and other destinations, in winter and summer.

c. Review of DAFF investigations relating to export of sheep from southern ports. The review will summarise issues identified in the reports and recommendations for any changes to procedures arising from the investigations. The review will identify areas where standards and/or monitoring and reporting may be changed to improve animal welfare outcomes.

4. Reports.
    a. A number of reports will be submitted as milestones. These will include:
        i. An interim report on the scoping study's desktop review identifying the strengths and weaknesses in the current ASEL;
        ii. A report on the review of the export process for sheep from southern ports to the Middle East in winter months;
        iii. A report on the whole scoping study, including assessment of and recommendations for alternative regulatory approaches;
        iv. A final report that brings all of the above research together.

It was evident as the research progressed, that drawing all of the above components into one final report would result in a lengthy document with a lot of valuable information, but not necessarily presented in a readily digestible format. For this reason the following component reports now exist as stand-alone reports:

1) Report on Export of Southern Sheep to the Middle East in Winter
2) Final Report

4 Current regulatory framework

The live export industry is regulated by the Commonwealth government through DAFF Biosecurity (formerly AQIS).

The regulatory framework comprises a complex mix of Commonwealth legislation and regulations, the Australian Standards for the Export of Livestock (ASEL), other relevant standards and guidelines and various State and Territory legislation and related regulations.

4.1 Renaming of AQIS and DAFF

AQIS

In 2011 the Department of Agriculture, Fisheries and Forestry (DAFF) announced that the Australian
Quarantine Inspection Service (AQIS) name and brand was to be replaced by the name DAFF Biosecurity.

An attempt has been made to use the term DAFF Biosecurity or DAFF to refer to tasks and associated reports that may have previously been referred to as AQIS responsibilities. It is understood that the renaming process is a phased one and there are still documents and other material that refer to AQIS.

In some cases where there is still apparent reference to AQIS on current material, the term AQIS has been retained in this report. An example is for AQIS Accredited Veterinarians or AAVs.

In addition, where the term AQIS has been presented in previously published material that is being referred to in this report, we have chosen to continue to refer to AQIS.

DAFF

In 2013, the incoming Federal Government changed the name of DAFF to the Department of Agriculture. As much of the analysis in this report relates to the period prior to this change the term DAFF has been used throughout the report.

4.2 Commonwealth legislation and regulations

The key pieces of Commonwealth legislation and regulations include the following.

- *Australian Meat and Livestock Industry Act 1997* (AMLI Act)
    - *Australian Meat and Live-stock Industry (Export Licensing) Regulations 1998* (AMLI Regulations)
    - *Australian Meat and Live-stock Industry (Standards) Order 2005*
    - *Australian Meat and Live-stock Industry (Conditions on Live-stock Export Licences) Order 2012*
- *Export Control Act 1982* (EC Act)
    - *Export Control (Animals) Order 2004*
    - *Export Control (Prescribed Goods — General) Order 2005*
    - *Export Control (Animals) Amendment Order 2012 (No.1)*
- *Navigation Act 2012*
    - *Marine Orders - Part 43: Cargo and Cargo Handling - Livestock*

The AMLI Act and the EC Act are administered by DAFF and the Navigation Act 2012 (replaced the Navigation Act 1912 as of 1 July 2013) is administered by the Department of Infrastructure and Transport through the Australian Maritime Safety Authority.

The AMLI Act provides the legislative regime for licensing of exporters and provides the Secretary of DAFF with the power to make orders that impose conditions on export licences (see Section 17 of the AMLI Act). Section 17 of the AMLI Regulations requires that an applicant for an export licence must submit an Operations and Governance Manual for approval in conjunction with the licence application.

The *Australian Meat and Live-stock Industry (Standards) Order 2005* stipulates that the holder of an export licence must operate in accordance with the Australian Standards for the Export of Livestock (Version 2.3) 2011.

The *Australian Meat and Live-stock Industry (Conditions on Live-stock Export Licences) Order 2012* was implemented to make compliance with the *Export Control (Animals) Order 2004* a condition of a livestock export licence.

The EC Act and the associated Orders provide the detailed regulatory framework that governs the export of each consignment of animals.

Under the *Export Control (Animals) Order 2004* an exporter must first be licensed under the AMLI Act and then must comply with the various conditions of the Order.

Part 2 of the *Export Control (Animals) Order 2004* relates to export of livestock by sea and there are specific divisions of the *Export Control (Animals) Order 2004* that deal with topics of direct relevance to this review:

- Division 2.2 outlines the requirements for registration of premises for holding and assembling livestock for export.

- Division 2.4 outlines the Notice of Intent (NOI) to export and related matters including the CRMP and ESCAS requirements.
- Division 2.5 relates to inspection of livestock before export and grant of export permit. A Health Certificate is issued by an authorising officer, providing:
    - The live-stock meet the requirements of a specified importing country relating to the health of the live-stock
    - An inspection of the live-stock is conducted before they leave the registered premises at which they are held and assembled for export
- Section 2.54 outlines requirements for granting of permission to leave for loading. Amongst other things it requires an authorising officer to be satisfied that each of the livestock is fit to undertake the proposed export voyage without any significant impairment of its health. To make this assessment the authorising officer must have regard to the following matters:
    - The animals' general condition.
    - The risk of them being injured by the enclosures or ramps used for loading them onto the ship, aircraft, train or other vehicle on which they are to be carried to the place of export.
    - The nature of the accommodation for them on the ship on which they are to be transported overseas.
    - The numbers, species, health and general condition of any other animal to be carried on the same ship.
    - The conditions that the animals are likely to encounter during the export voyage.
    - An authorising officer may be satisfied live-stock are fit to undertake a proposed export voyage without needing to be assured of the fitness of every individual animal in the consignment.
- Part 4A of the Animal Orders relate to accreditation of veterinarians for live-stock export and Part 5 to auditing processes.

A veterinarian who undertakes pre-export preparation and/or shipboard services for livestock under an Approved Export Program must be accredited by DAFF Biosecurity as an AQIS Accredited Veterinarian (AAV) as defined in Part 4A of the *Export Control (Animals) Order 2004.* In order to apply for accreditation as an AQIS Accredited Veterinarian (Livestock), a veterinarian must:

- be an Australian citizen;
- be registered by a state/territory veterinary surgeon's board;
- have completed Animal Health Australia's Accreditation Program for Australian Veterinarians (APAV)[5]; and
- have successfully completed the AAV online course[6];
- Submit an application to DAFF

Responsibilities of AAVs are outlined in the *Export Control (Animals) Order 2004* and in sections of the ASEL.

The *Export Control (Animals) Amendment Order 2012 (No.1)* amends the Animals Order to introduce the ESCAS framework with a phased implementation such that all livestock exports would be covered by the new regulatory arrangement by 1 January 2013. The amendment details the changes and conditions implemented under the ESCAS arrangement.

[5] http://www.animalhealthaustralia.com.au/training-centre/accreditation-program-for-australian-veterinarians-apav/

[6] http://aqis.animalhealthaustralia.com.au/aqis/index.asp

The *Navigation Act 2012* and subordinate regulations the *Marine Orders Part 43* relate to aspects of ship safety. These instruments detail the design features and management of ships carrying livestock including details of the design of pens and passageways for different livestock, requirements for carriage of fodder and water. All ships used for livestock export must have a current Australian Certificate for the Carriage of Livestock, issued by AMSA under the Marine Orders Part 43.

There are additional Commonwealth regulations relating to the requirement for supply chain assurance within specific markets for Egypt and Indonesia, implemented in response to evidence of mistreatment of animals in these jurisdictions. These include the *Australian Meat and Live-stock Industry (Export of Live-stock to Egypt) Order 2008*, and the *Australian Meat and Live-stock Industry (Export of Live-stock to the Republic of Indonesia) Order 2011*.

The export regulatory framework was modified in 2011-2012 with the development of the ESCAS requirements for all exports. The changes were in response to strong community interest in animal welfare and opinions that previous systems were not providing assurance that animal welfare outcomes were being managed effectively, particularly for Australian animals being managed in other countries.

The Australian government reforms of the regulatory framework in 2011-2012 were based on continued support for a sustainable livestock export industry by regulation of livestock exporters in order to achieve appropriate animal welfare outcomes for Australian livestock through to the point of slaughter in importing countries. The requirements are outlined in the ESCAS framework[7] and include a requirement to:

- provide evidence of compliance with internationally agreed welfare standards;
- demonstrate control through the supply chain;
- demonstrate traceability through the supply chain;
- meet reporting and accountability requirements;
- include independent auditing.

The new regulatory requirements were applied to Australian exporters through amendments to the existing regulations mainly because exporters are subject to Australian legislation while entities based in importing countries are not.

4.3 Australian Standards for the Export of Livestock (ASEL)

The ASEL--“the Standards”--provide defined welfare outcomes that must be achieved at critical steps along the export chain. The current ASEL (Version 2.3) came into effect in April 2011. The ASEL will be considered in more detail later in this report.

The Standards represent the basic animal health and welfare requirements for the conduct of the livestock export industry, which the Australian Government expects the industry to meet.

4.4 Australian Position Statement on the Export of Livestock

The Australian Position Statement on the Export of Livestock (APS) is a separate document at the front of the ASEL. The APS has been endorsed by the Primary Industries Ministerial Council (PIMC) but is not enforceable by law. The APS is important in providing guiding principles and context to the ASEL.

[7] http://www.daff.gov.au/biosecurity/export/live-animals/livestock/escas

The APS also provides a brief overview of the export chain and the various roles and responsibilities. The APS reflects the broad objectives and expectations of involved stakeholders for the operation of the ASEL.

4.5 Australian Animal Welfare Strategy (AAWS)

The AAWS was initiated by the Primary Industries Ministerial Council in October 2005 to guide the development of new, nationally consistent policies and enhance existing animal welfare arrangements in all Australian states and territories.

Under the Australian constitution, State and Territory jurisdictions have responsibility for the regulation of animal welfare and to take action in response to animal cruelty. This responsibility is detailed in various state and territory legislation.

The AAWS scope is broad and covers the humane treatment of all animals in Australia including:

- livestock/production animals;
- animals used for work, sport, recreation or display;
- companion animals;
- animals in the wild;
- aquatic animals; and,
- animals used in research and for teaching purposes.

The Strategy is intended to:

- Provide direction for the development of future animal welfare policies, based on a national consultative approach and a commitment to high standards of animal welfare.
- Facilitate the establishment of priorities that are consistent with agreed strategic goals and the revision of, and agreement on, acceptable standards.
- Clarify the roles and responsibilities of key community, industry and government organisations.

4.6 National Animal Welfare Standards and Guidelines

Until recently each state and territory has based the administration of animal welfare regulation on National Animal Welfare Model Codes of Practice, although there have been some variations in approach between jurisdictions. The AAWS initiated the development of National Animal Welfare Standards and Guidelines (NAWS&G) through a consultative approach managed by Animal Health Australia (AHA). It is intended that the NAWS&G, as they are progressively developed, replace the Model Codes of Practice.

This process has involved the convening of a small Writing Group, with consideration of draft proposals at Standards Reference Group meetings, comprising representatives of governments, industry and animal welfare representatives. The outcomes from this process include:

- Specific Standards are to be the basis of regulation within jurisdictions – these are the outcomes that “must” be achieved.
- Guidelines that provide guidance on achieving the Standard and best practice, but are not part of the regulation and are not mandatory.

The first area to be addressed in implementing this revised approach was the Land Transport of Livestock (LTS), covering a number of livestock species and existing Codes of Practice. The LTS involved the following industries – cattle, sheep, pigs, poultry, goats, alpacas, buffalo, camels, deer, emus and ostriches and horses. General Standards and Guidelines that apply to all livestock species are presented first in the document followed by species specific requirements.

The development process for the LTS was commenced in 2006, with PIMC endorsement occurring in May 2009. Implementation has been slow and is yet to be finalised in all jurisdictions. Standards and Guidelines have also been drafted for the cattle and sheep industries. A Regulatory Impact Statement was prepared in consultation with the Office of Best Practice Review (OBPR) and these documents were released for public consultation until 5 August 2013. Feedback from public consultation has been considered by the Reference Groups, and the outcomes are being discussed with the OBPR. The government endorsement process from here on is uncertain due to changes announced by the Federal Government in the administration of animal welfare and the Standing Committee on Primary Industries (SCoPI).

4.7 State and Territory Legislation and Requirements

The following table outlines details of state and territory regulation of animal welfare and prevention of cruelty.

Table 4.1: Summary of relevant State and Territory Legislation/Regulation

	Department	**Legislation/Regulation**
Victoria	Department of Primary Industry Victoria	Livestock Management Act (LMA) Standards & guidelines document have been referenced in the LMA. Animal cruelty is regulated separately under the Prevention of Cruelty to Animals Act (POCTA) 1986
South Australia	Department of Environment and Natural Resources – Lead agency Department of Primary Industries and Resources South Australia (PIRSA)	Animal Welfare Act 1985 All standards are made into regulations Livestock Act - Policy, education and awareness Animal Health officers are appointed under the Livestock Act. Primary roles are animal health, ID disease surveillance
Tasmania	Department of Primary Industries, Parks, Environment and Water (DPIPWE)	Animal Welfare Act - Standards – have been adopted as Regulations under the Animal Welfare Act
New South Wales	Department of Primary Industries (DPI)	Prevention of Cruelty to Animal Act 1979 (POCTA) Standards are developed as regulations and are referred to as an Animal Trade COP - this is a category under the Act to make them mandatory
Western Australia	Department of Agriculture and Food WA (DAFWA)	Animal Welfare Act 2002 Standards - how they are implemented will depend on how they are worded. If appropriate they will be stripped out and placed directly in regulation. There may be the need for refinements to enable enforcement
Northern Territory	Department of Housing Local Government and Regional Services. Department of Resources (DOR) – Primary Industry	Separate legislation and responsibilities: • Animal Welfare Act – Department of Local Government • Livestock Act – DOR Standards – There is officer agreement that the DLG will focus on animal cruelty and the DOR on livestock production standards. The Livestock Act will adopt the animal welfare standards
Queensland	Department of Agriculture Fisheries and Forestry (DAFF)	Animal Care and Protection Act 2001 • Standards are called up under a provision that refers to mandatory COP's. (At some stage they will amend COP to Standards)

Officers from the relevant state and territory departments have responsibility for ensuring compliance with state legislation or codes concerning animal welfare, identification, traceability and transport of livestock within each state.

State inspectors may then be assessing animal welfare under a combination of current state legislation, regulations and codes of practice as well as referencing the national ASEL.

There is generally a common requirement for all livestock movements to be registered on the NLIS movements' database.

4.8 International standards and requirements

Livestock sourced for export from Australia to other countries must comply with importing country requirements.

In addition the ESCAS requirements are based in part on international standards for animal welfare coordinated through the OIE[8]. These include standards that cover transport of animals by land, sea and air, slaughter of animals for human consumption and the killing of animals for disease control purposes.

5 The Export Process

5.1 Licensing

Only licensed exporters are allowed to export livestock from Australia. Information on the application and assessment process and requirements is set out on the DAFF website. In brief this process includes:

- Preparation of an operations and governance manual.
  The manual sets out how the business will operate and be governed including information about:
  - how the business will comply with the ASEL;
  - risk management;
  - compliance strategy.
- An assessment of the financial viability of the business.
- An AFP criminal history check.
- Payment of a licence fee.
- Completion of an application.
- An AQIS audit. The purpose of this audit is to determine whether the licensed exporter has prepared livestock for export in accordance with the following:
  - The Australian Meat and Live-stock Industry Act 1997 and subordinate legislation and Export Control Act 1982 and subordinate legislation.
  - ASEL
    (a) The exporter's operations and governance manual.
    (b) Any licence conditions.
    (c) The exporter's Notice of Intention and Consignment Risk Management Plans (NOI/CRMP).

5.2 Preparing to Export

The following outlines the export process from a regulatory perspective.

[8] http://www.oie.int/animal-welfare/animal-welfare-key-themes/

The exporter must be approved by DAFF and hold a current licence.

The licensed exporter submits a Notice of Intention to Export (NOI), a Consignment Risk Management Plan (CRMP), as stipulated in the *EC (Animals) Order 2004*, and if relevant an Exporter Supply Chain Assurance System (ESCAS).

These documents describe the proposed export plan including details of exporter, importer(s), details of livestock (species, class, breed, age, quantity) proposed for each pre-export registered premise and port of loading. The NOI also provides details of the ship, relevant dates for the voyage, destination ports, and names of the AQIS Accredited Veterinarian (AAV) and LiveCorp accredited stock person.

AAVs were originally referred to as third party veterinarians and this term still appears occasionally in documentation. They are not government employees but they do have to complete an accreditation process and meet various requirements in order to be accredited by AQIS. AAVs may be involved in pre-export preparation, or may travel on a ship to provide shipboard services under an Approved Export Program.

The CRMP component of the application describes the importing country requirements, how the exporter plans to meet relevant standards described in the ASEL and any other relevant risk management considered necessary for the export. This information includes a description of how any importing country requirements (pre-export quarantine, isolation, health certification or testing etc) will be met. The ESCAS component (if relevant) requires the exporter to describe how they will ensure control of the supply chain in accordance with ESCAS requirements.

Approval of the NOI & CRMP & ESCAS (if appropriate) by DAFF is required before the exporter can begin to prepare the specified livestock for export. All subsequent activities in relation to livestock preparation must be in accordance with the NOI & CRMP.

DAFF Biosecurity will also provide one or more Approved Export Plans (AEP) when an NOI is approved. The AEP defines any tasks to be undertaken by the AAV as part of the pre-export preparation of livestock (quarantine, treatments, testing and health certification).

5.3 Sourcing and Preparation

All livestock raised in Australia are expected to be handled in compliance with state and territory animal welfare regulatory frameworks and with other requirements relating to food safety.

The exporter issues instructions for the sourcing of livestock and proceeds through any treatment, testing and certification requirements as stipulated in the NOI, CRMP and AEP, or as specified by the importer.

ASEL has a number of specific requirements specified in Standard 1 that must be met before livestock can be considered as suitable for export including:

- relevant animal health requirements (S1.1);
- importing country requirements (S1.2);
- animals must be identified to property of source or individually (S1.3);
- compliance with Australian food safety requirements if being intended for human consumption; and,
- meeting a range of specific requirements based on rejection criteria or eligibility for export (age, weight, pregnancy status, body weight, wool length, horned status and others).

On-farm procedures may or may not be included in the AEP. Examples of on-farm procedures that may be performed as part of preparation or selection of animals for export include administration of selected vaccines to animals or testing of animals for specified diseases or pregnancy status.

5.4 Transport

Livestock that meet the relevant criteria as suitable for export are transported by road to the pre-export registered premises.

All livestock transported anywhere in Australia must comply with state and territory regulatory requirements relating to animal welfare and particularly to the Land Transport Standards. In addition movement of livestock in Australia must be conducted in accordance with state and territory requirements relating to animal identification (under the National Livestock Identification System) and related requirements for documenting animal movements including recording movements on the NLIS database and ensuring that moving animals are accompanied by appropriate documentation (required travel documents vary between states and may include travel permit, NVD, waybill, or transported stock statement).

Standard 2 of the ASEL also stipulates specific requirements for the road transport of livestock destined for export. In some cases these requirements appear to be unnecessary replication of requirements under the state/territory regulatory framework as outlined in the Land Transport Standards. Other conditions appear to be different or additional and may therefore be viewed as specific to the transport of livestock intended for export as opposed to the transport of livestock for purposes other than export.

Specific requirements outlined in Standard 2 of the ASEL include:

- Only livestock fit to travel are presented for loading (Division 1, 2.2 (1)).
- A travel plan must be completed before loading (S2.3 and S2.12).
- Livestock must be inspected prior to loading and any animal showing signs consistent with rejection criteria outlined in the ASEL or any other condition that could cause the animal's health or welfare to decline during transport or export preparation, must not be transported (S2.11).
- Inspection of the loading facilities and vehicle must be undertaken before loading at the property.

Livestock that meet all the relevant requirements for sourcing and transport for export are then transported to a registered premise for preparation in accordance with requirements that may be defined in ASEL, NOI, AEP or importer/importing country specifications.

5.5 Pre-export – Registered Premises

All livestock intended for export from Australia by sea must be assembled at a DAFF registered premise for pre-export quarantine and preparation. A registered premise (RP) is a premise that is registered under Division 2.2 of the *EC (Animals) Order 2004*.

Registration of these premises must be renewed annually and requires preparation of a detailed operations manual documenting how the premise will operate and in particular meeting requirements in relevant legislation and the ASEL.

Standard 3 of the ASEL relates to management of livestock within the RP. Specific requirements outlined in Standard 3 include:

- Only fit livestock accompanied by appropriate documentation can be accepted into the RP (Division 1, 3.4 (1)).
- Operator must obtain a copy of the vendor declarations regarding the property of source and health and welfare status of the livestock before accepting the livestock (S3.12).
- Livestock must be individually inspected at unloading to determine whether they are suitable for preparation for export (S3.13 (b)).
- All livestock must be inspected daily by a competent stock person (S3.16(a)).

- All sick or injured livestock must be given immediate treatment and veterinary advice must be sought if the cause of sickness or injury is not obvious or if action taken to prevent or treat the problem is ineffective (S3.16(b)).
- Investigation by a registered veterinarian must be conducted if mortalities in any one paddock or shed exceed specified thresholds on any one day (S3.16(c)).
- Any livestock identified at unloading as distressed, injured or otherwise unsuitable for export must be marked by a permanent method and isolated (S3.17).
- Only livestock fit for travel, which meet importing country requirements, can be loaded for transport to the port of embarkation (Division 1, 3.4 (2)).
- Only fit animals that comply with these Standards and importing country requirements can be transported to the port of loading for export (S4, Division 1, 4.4 (1)).

There are additional inspection and recording/reporting/application procedures that are defined in the *EC (Animals) Order 2004*:

- Daily reconciliation of animals and animal movements on the RP and daily monitoring and reporting of animal health and mortality, and making and storing of records of action taken in compliance with the manual are defined as part of the operations manuals (Section 2.05).
- An AEP may include requirements about pre-export quarantine, treatments and testing of livestock based on importing country requirements and ASEL and may also impose obligations on an AAV to report on the AEP and keep relevant records and make relevant declarations in relation to compliance with the AEP (Section 2.47).
- The AEP issued under S2.47 will require that livestock be examined by an AAV at the registered premise to confirm that they are identified to property of origin, that animals are free of symptoms listed in the appropriate rejection criteria in ASEL and that any activities stipulated in the AEP have been completed. This process is notified by a declaration by the AAV that accompanies the Application for Health Certificate and Permission to Leave for Loading (AHCPLL).
    - These procedures involve mob or yard-based inspections of animals as a minimum and individual animal inspections or additional procedures may be undertaken if there are concerns over animal health or welfare.
- The completed AHCPLL with appropriate declarations by the exporter and the AAV, and accompanied by a travel and loading plan that covers travel from the RP to the port, loading onto the vessel and the voyage, is submitted to DAFF Biosecurity for approval (Section 2.52).
- A DAFF authorised officer inspects animals at the RP (generally a mob or yard/paddock based inspection though individual animal inspections may be undertaken if there are concerns over animal health or welfare) after the exporter has submitted the AHCPLL and granting of permission to leave for loading (Section 2.43 and 2.54).
- The AEP may also require the AAV to directly supervise individual animal inspections (typically for sheep and possibly goats) on the day of export. A team of inspectors may then undertake these inspections either at the RP prior to load-out or at the port between unloading from trucks and loading onto the ship.

Granting of permission to leave for loading authorises the exporter to transport the animals from the RP to the port and load them onto the ship.

A DAFF Biosecurity officer may impose conditions on a permission to leave for loading including requesting that specified animals be removed from the export process if they have any concerns about their suitability for export, or may refuse to grant permission to leave for loading (Section 2.54).

There is usually some form of inspection as animals are moved to loading ramps to be loaded onto trucks at the RP. In some cases this is a detailed individual animal inspection performed under the supervision of an AAV and in compliance with the AEP. In other cases it may be

inspections performed by stock inspectors as animals are moved towards the loading ramp such that any animals that are not fit to load or that show signs of ASEL rejection criteria can be identified and removed prior to loading.

5.6 Vessel Preparation and Loading

Livestock cannot be loaded on a ship until the ship has been inspected and approved through a process managed by AMSA to ensure that the ship is certified for carriage of livestock in accordance with Section 7 of the *Marine Orders Part 43*. It is understood that this process occurs after the approval of an NOI and issuing by DAFF of an AEP and before animals are prepared for transport from the RP to the port.

Livestock are transported to the wharf by road and unloaded in preparation for loading onto the export vessel. Requirements of the ASEL and relevant state and territory regulations and standards concerning land transport and general provisions for animal welfare apply to the transport, preparation and loading of the vessel.

Standard 4 of the ASEL relates to vessel preparation and loading. Specific requirements outlined in Standard 4 include:

- Only livestock that are fit and healthy can be loaded (S4.8 (b)).
- Livestock must be inspected for health and welfare and fitness to travel, immediately before they are loaded onto the vessel (S4.8 (a)).

As outlined in the previous section an AEP may require that animals be inspected under the direct supervision of the AAV on the day of loading. This requirement is in line with ASEL S4.8.

If this individual animal inspection occurs at the RP immediately prior to loading onto trucks then at the port animals are usually subjected to a mob-level inspection (termed a welfare inspection) to detect and remove any animals that are unfit to load based on welfare criteria resulting from injuries or conditions that have become apparent during the journey from the RP to the port.

If the individual animal inspection does not occur at the RP then it will occur at the port.

ASEL Standard 4 also requires that stocking densities be in accordance with tables provided in ASEL and with the findings of an agreed heat stress assessment. A Heat Stress Risk Assessment (HRSA) is conducted through a custom developed software program called *HotStuff* (Version 4). HotStuff models heat stress risk estimates given input assumptions about each specific export vessel, proposed voyage (dates and destinations), and livestock characteristics. Mitigation strategies can then be used to reduce the risk of heat stress through managing air flow and altering stocking densities. The aim of use of the model is to ensure that there is a less than 2% chance of a 5% mortality event arising from heat stress.

An accredited stock person employed by the exporter must accompany each consignment of livestock and if required under the AEP, an AAV must be appointed (ASEL S4.5). Stock person accreditation requires completion to a satisfactory standard of training arranged periodically by LiveCorp and delivered by trainers with appropriate qualifications.

At the completion of loading animals onto the ship at the port, the exporter then completes an Application for Live-stock Export Permits form with appropriate accompanying documentation as defined in Section 2.58 of the *EC (Animals) Order 2004* and submits that directly to a DAFF officer at the wharf. The DAFF officer will review relevant information and grant the export permit. This allows the ship to sail.

5.7 Voyage

At the time the AEP is issued (on approval of the NOI, CRMP and ESCAS documentation), the Secretary of DAFF may require that an AAV must accompany the voyage. During each voyage either an AAV or an accredited stockperson (if there is no AAV on the voyage) must provide reports on health and welfare of livestock.

The ASEL has specific definitions of two important terms from the perspective of animal welfare during a voyage (Standard 5, Division 1). The first is ***notifiable incident*** and the second is ***reportable level of mortality***.

A notifiable incident is defined as an incident that has the potential to cause serious harm to the health and welfare of animals and includes elevated (reportable) mortality rates in animals as well as other problems including vessel breakdowns, piracy, or rejection of livestock at an overseas port.

Reportable mortality rates are defined for each species of livestock and may differ by voyage length.

There are regulatory requirements during the voyage relating to management of animals and reporting of performance:

- If a notifiable incident occurs DAFF must be notified as soon as possible and within 12 hours and a report provided (ASEL S5.11).
- If a notifiable incident occurs (as defined by the ASEL), the master of a ship must send a copy of the notifiable incident report to the Manager, Ship Inspections, AMSA (Marine Orders Part 43, S37).
- Livestock and livestock services must be regularly inspected (day and night) to ensure that the health and welfare of the livestock are maintained (ASEL S5.6 and subsequent components).
- Section 4A.15 of the *EC (Animals) Order 2004* specifies that AAVs when accompanying a voyage must make a written report to the Secretary of DAFF each day during the voyage (daily report) and within 5 days of the end of the voyage (end of voyage report). The section also states that the AAV must provide the reports in the form approved by the Secretary for that purpose and provides a list of matters about which information may be required.
- ASEL S5.12 states that for journeys greater than or equal to 10 days, the AAV (or accredited stock person if an AAV is not accompanying a voyage) must provide daily reports and further stipulates that the reports must provide information as defined in Appendix 5.1 of the ASEL.
- ASEL S5.13 states that regardless of the journey duration within 5 days of completion of discharge at the final port of discharge the AAV or accredited stock person (if an AAV does not accompany the voyage) must provide an end of voyage report and the report must include information outlined in Appendix 5.2 of the ASEL.
- The DAFF website provides two template forms for download[9], titled *Daily Voyage Report* and *End of Voyage Report (Sea Transport)*. These templates provide similar but not identical lists of required information to those stipulated in the ASEL and in the *EC (Animals) Order 2004.*
- The master of a ship is required to make a report in writing (Master's Report) after completion of a voyage (other than a voyage that is less than 24 hours in duration) in accordance with the template provided in the Marine Orders Part 43. The Master's Report is sent to the DAFF and to the Manager, Ship Inspections, AMSA (Marine Orders Part 43, S19).

[9] http://www.daff.gov.au/biosecurity/export/live-animals/livestock/forms

- Twice annually, the Secretary of DAFF is required to table a report to Parliament on performance of livestock export voyages over the preceding 6-month period[10] (AMLI Act, Division 5, S57AA).

Any voyage with a reportable mortality event that is identified in reports to DAFF, is then subjected to an investigation by DAFF officers using additional information about the voyage and animals prepared for export on that voyage that may be sourced from regional DAFF offices, DAFF Canberra, AAVs, exporters and the master of the ship. Summary reports from investigations of reportable mortality events are then made available on the DAFF website[11].

The voyage part of the live export process ends when animals are unloaded at an overseas port.

There appears to be some variation in how reportable mortality rates are defined and reported in the existing framework and how they appear to be used in practice.

Section 5.5 of ASEL Standard 5, states that a reportable mortality rate is estimated for each species of animal that is on a ship and provides the following definition:

> ***Shipboard mortality rate*** *refers to any species, and means the percentage determined by dividing the number of deaths of that species occurring while on the vessel (including during loading and unloading) by the total number of that species loaded, and multiplying the resulting figure by 100.*

Marine Orders Part 43 (Section 37) states that:

> ***mortality*** *means, in respect of any species, the percentage determined by dividing the number of deaths of that species occurring while on the ship (including during loading and unloading) by the total number of that species loaded and multiplying the resulting figure by 100.*

Marine Orders Part 43 also states that the term ***reportable level*** has the same meaning as in Standard 5 of the ASEL.

Form 5, Appendix 1 of the *Marine Orders Part 43* provides a template of the reporting form which is to be sent to the Secretary of DAFF in compliance with the requirement for reporting to Parliament as required in Section 57AA of the *AMLI Act*.

Form 5 asks for identification of all exporters, voyage details (voyage number, duration and dates of loading and unloading), and the total number of animals loaded by species and port of loading. A separate section of the form then asks for the total number discharged by species and port, with a column for mortality number by species and port. It is assumed that the discharge details are also to be presented by port of loading (as opposed to port of discharge) but this is not clarified. There are opportunities for confusion in interpreting this form, particularly for voyages that load and unload animals at multiple ports given that animals loaded at different ports may possibly be mixed during the voyage and it may not be possible to accurately determine the port of loading for all animals unloaded at any one destination port.

Section 57AA of the *AMLI Act 1997* states that the Secretary of DAFF must provide a 6-monthly report to Parliament that is based on reporting by the master of the ship under the Marine Orders and is defined as including the following:

(a) the name of the exporter;
(b) the month and year in which the completion of the loading of the livestock occurred;
(c) the port or ports at which loading took place;

[10] http://www.daff.gov.au/animal-plant-health/welfare/export-trade/mortalities

[11] http://www.daff.gov.au/biosecurity/export/live-animals/livestock/aqis-mortality-investigations

(d) the port or ports at which the live-stock were discharged;
(e) the month and year in which the completion of the discharge of the live-stock occurred at each port;
(f) duration of the voyage;
(g) the type or types of live-stock;
(h) the number of each type of live-stock loaded;
(i) the total mortality for each type of live-stock;
(j) the percentage mortality for each type of live-stock;
(k) any action taken by the Secretary in relation to the exporter as a result of the reporting by the master of the ship.

It is not clear in this information what is meant by ***type*** of livestock. It appears to be referring to species of livestock (cattle, sheep, goats, camels), but the word type is often used to refer to categories of livestock within a species that may be based on sex (cow, steer, bull) or some other categorisation based on a combination of factors such as weight, age and sex (lamb, young wether, mature wether, ram, ewe).

There is then variation between the different sources with respect to the definition of information to be included in the daily voyage reports and the end of voyage report. The most detail appears to be in the templates available on the DAFF web site but the legislative requirement may be interpreted as being defined in the ASEL and the *EC (Animals) Order 2004*.

The DAFF templates ask for mortality rates by species and class of livestock and ask for a separate and overall estimate of mortality for each deck of the vessel.

Reading DAFF mortality investigation reports available for download from the DAFF website suggests that mortality investigations are conducted at the level of a consignment[12]. There are occasions where the mortality rate by species was below the reportable mortality threshold and where the mortality rate for one or more consignments on the ship was above the threshold and a mortality investigation was implemented. There does not appear to be a uniform and standard definition of a consignment[12]. Some mortality reports comment on the mortality rate by property of origin for cattle mortalities. This is achievable for cattle given the unique individual animal ID systems employed as part of the NLIS for cattle but requires recording and reporting of individual animal identification data for all mortalities as well as the capability of tracing those records to lists of animals arranged by property of origin. Sheep mortality reports do occasionally note mortality descriptions by property of origin, based on mob level identification systems used for sheep.

There is no mention in any regulatory source from the current ASEL regulatory framework of any requirement to record or report livestock mortalities by property of origin, consignment or port of loading and yet all of this information is apparently accessed and assessed by DAFF as part of a mortality investigation.

There is a need to define terms and to clearly define requirements for recording and reporting using standardised data and information. It is understood that there may be separate levels of reporting for Parliamentary reports as opposed to daily reports and end of voyage reports and it is suggested that mortality investigations be based on more detailed data requirements as defined for daily or end of voyage reports.

[12] Consignment is generally interpreted as all animals loaded at one port and under the control of one exporter. A single voyage may contain multiple consignments loaded at multiple ports, and there may be more than one consignment loaded at a single port.

5.8 ESCAS

The Exporter Supply Chain Assurance System (ESCAS) extends the regulatory framework for livestock being exported for feeder and slaughter purposes from the point of disembarkation to the point of slaughter in an overseas country.

The legislative authority underpinning ESCAS is contained in the *EC (Animals) Order 2004* and details on required processes are provided on the DAFF website[13].

An ESCAS plan is required for all consignments of slaughter and feeder animals, and is submitted by the exporter in conjunction with the NOI and CRMP.

The ESCAS has to:

- Provide evidence of compliance with internationally agreed welfare standards, principally through OIE Standards.
- Demonstrate control through the supply chain, expected to be achieved either through a vertically integrated supply chain or through formal commercial arrangements between the exporter and other supply chain participants.
- Demonstrate traceability through the supply chain, incorporating animal identification and reconciliation of animals at each point along the chain with provision of interim reports and a final report that account for all exported animals. The requirements vary for cattle/buffalo and sheep/goats because of the differences in animal identification methods commonly used for these animals (individual animal ID for cattle/buffalo vs mob ID for sheep and goats).
- Meet reporting and accountability requirements.
- Include independent verification and auditing.

This review has not included a detailed assessment of the ESCAS regulatory framework and has not made specific recommendations in relation to development of modifications to the ESCAS regulatory framework or the development of QA processes for this part of the chain. This is mainly because a separate MLA project (W.LIV.3014) has recently been completed that has addressed the development of a risk management and quality assurance program for ESCAS.

There are some important issues in relation to the ESCAS framework that are relevant to this report.

The first is that ESCAS covers a part of the export chain (in foreign countries) and the scope of this report covers part of the chain (property within Australia to foreign discharge port). Any whole-of-chain regulatory framework and associated QA program needs to be developed in an integrated and harmonised manner.

Issues relating to compliance with international welfare standards and the need to demonstrate control of the supply chain have particular relevance to overseas components of the chain and are less relevant to the matters being considered in this report.

Approaches to animal traceability and reporting for ESCAS are likely to be based on the extension of existing approaches for traceability and reporting for parts of the chain that occur within Australia or on the voyage.

The ESCAS framework has been developed as a co-regulatory framework with responsibilities for demonstrating compliance with standards being placed on the exporters and with clear requirements for the need to develop industry QA programs that incorporate involvement of

[13] http://www.daff.gov.au/biosecurity/export/live-animals/livestock/escas

accredited, independent audit providers. This process is directly relevant to development of a co-regulatory framework for the first part of the chain.

Industry-Government Working Groups for cattle and sheep & goats were formed to provide advice on the issues relating to the ESCAS and the development of the regulatory framework and a range of documents and reports are available on the DAFF website including checklists for development of assurance and audit activities and lists of performance targets and measurements that are to be used to assess compliance against international animal welfare standards. These process documents are considered to be helpful as a source of information in developing QA programs for earlier parts of the chain.

The W.LIV.3014 report has provided detailed information about QA program options for ESCAS and much of this information also has relevance in the development of QA programs for earlier parts of the chain.

5.9 Air Freight

The export process for livestock transported by air (or by any means other than by sea) has some similarities to the general process outlined above for animals exported by sea with key differences associated with additional regulatory requirements that are specific to air transport.

Specific regulatory requirements for export by air are outlined in Section 3 of the *EC (Animals) Order 2004* and Standard 6 of the ASEL.

There are also specific additional Commonwealth regulatory requirements relating to air transport of animals, administered by the Department of Infrastructure and Transport and including:

- *Commonwealth Air Navigation Act 1920; and,*
- *Air Navigation Regulations 1947* and other subordinate orders or regulations.

The International Air Transport Association (IATA) is responsible for the production and maintenance of the *IATA Live Animals Regulations (LAR)*[14] which acts as a global Standard for transporting animals by air. The OIE has also produced an international Standard for the transport of animals by air[15].

This review has not incorporated detailed review of specific regulatory requirements for transport by air. The principles and approaches developed in this report for the regulatory framework surrounding export of animals by sea are assumed to apply in a general sense to air transport.

5.10 Managing non-compliance

Under the existing regulatory framework, DAFF may receive information about possible non-compliance from a variety of sources. This section uses information from the Biosecurity Guideline for management of non-compliance as part of ESCAS for information[16].

It is expected that DAFF will respond to each notification on a case-by-case basis and subject to investigation, instances may be classified into several categories (Table 5.1).

Table 5.1: Classification of non-compliance

[14] http://www.iata.org/publications/Pages/live-animals.aspx

[15] http://www.oie.int/index.php?id=169&L=0&htmfile=chapitre_1.7.4.htm

[16] http://www.daff.gov.au/biosecurity/export/live-animals/livestock/regulatory-framework/compliance-investigations/non-compliance

Category	Definition of Finding
No confirmed non–compliance	No substantiated information confirming failure to comply with the approved exporter supply chain assurance system or failure to meet the control, traceability or animal welfare outcomes.
Minor	A failure to comply with the approved exporter supply chain assurance system which is not likely to result in systemic failure or reduced ability to meet the control, traceability or animal welfare outcomes.
	Potential to affect control, traceability or animal welfare outcomes.
Major	A failure to comply with the approved exporter supply chain assurance system which is likely to result in systemic failure or materially reduced ability to meet the control, traceability or animal welfare outcomes.
	A number of minor non–compliances which are likely to result in systemic failure can be considered to be major non-compliance.
	Likely to affect control, traceability or animal welfare outcomes.
Critical	A failure to comply with the approved exporter supply chain assurance system which has led to the control, traceability or animal welfare outcomes not being met.
	Certain to affect control, traceability or animal welfare outcomes.

The Biosecurity Guideline then outlines the process by which DAFF will investigate compliance issues and determine the response (compliance measures) that may be applied to the exporter(s). Compliance measures may be applied until sufficient information is provided with confirmation by an independent auditor to demonstrate that the non-compliance has been rectified and that the required outcomes can be achieved. The power to apply such actions is contained within relevant legislation and associated regulations.

In general actions may be at one or more several levels that escalate in severity depending on the validity and severity of non-compliance:

- Seek additional information about activities and compliance with standards;
- Refuse to approve a NOI, CRMP or ESCAS;
- Apply conditions on the approval of a NOI, CRMP or ESCAS;
- Cancel or revoke a NOI, CRMP or ESCAS;
- Refuse to grant, suspend or cancel a permission to leave for loading;
- Refuse to issue or revoke an export permit;
- Criminal sanctions.

5.11 Summary of reporting and compliance checks

The existing regulatory framework for live export by sea imposes requirements at each step mainly on the exporter and also on the operator of an RP.

Accredited stock persons and AAVs must complete accreditation (evidence of competencies).

There are licensing and registration requirements including auditing that apply to exporters and RP operators.

There are detailed requirements in the form of reports, declarations and other documents that are associated with each step along the chain and that serve as both evidence of compliance

with standards and also as part of the requirements for approval (certification or issuing of permits) at each stage to allow export to continue.

There are several steps where DAFF reviews specific applications and associated material (declarations, test results or other material) and provides approval for the exporter to proceed.

At all steps the exporter is required to be compliant with the various regulatory Standards. There is generally a requirement for records to be kept of performance but information may only be provided to the regulator at each of the critical approval steps and at other times the exporter and other agents with regulated responsibilities (AAV, RP operator and transport operator) are required to keep relevant records and provide these if required.

The current regulatory approach for those steps ending at disembarkation (primary focus of this report), involves almost exclusively direct control by DAFF of all compliance checking. The exceptions are accreditation of AAVs and stock persons that involve training managed by either industry or a third party, and the involvement of AAVs in performing procedures as outlined in the AEP and also accompanying voyages. AAVs are operating under direct regulatory control.

Section 5 and Figure 5.1 below identify a comprehensive sequence of regulatory requirements along the livestock export supply chain. ESCAS adds further specific requirements in the country of destination, the detail of which is not covered in this report. Compliance with these regulatory requirements creates a significant cost on both industry and government.

In conducting this study, detailed in-house cost estimates from industry operators were not collected; however the various requirements for each component of the supply-chain have been identified throughout this section. The regulatory cost of doing business impacts similarly on all industry operators and individual company management and reporting responses vary and are an important component of the commercial advantage that some operators are able to create. This information is commercially sensitive. Likewise the cost to government for administering the regulatory requirements are significant, and will be reflected in cost-recovery charges imposed on operators.

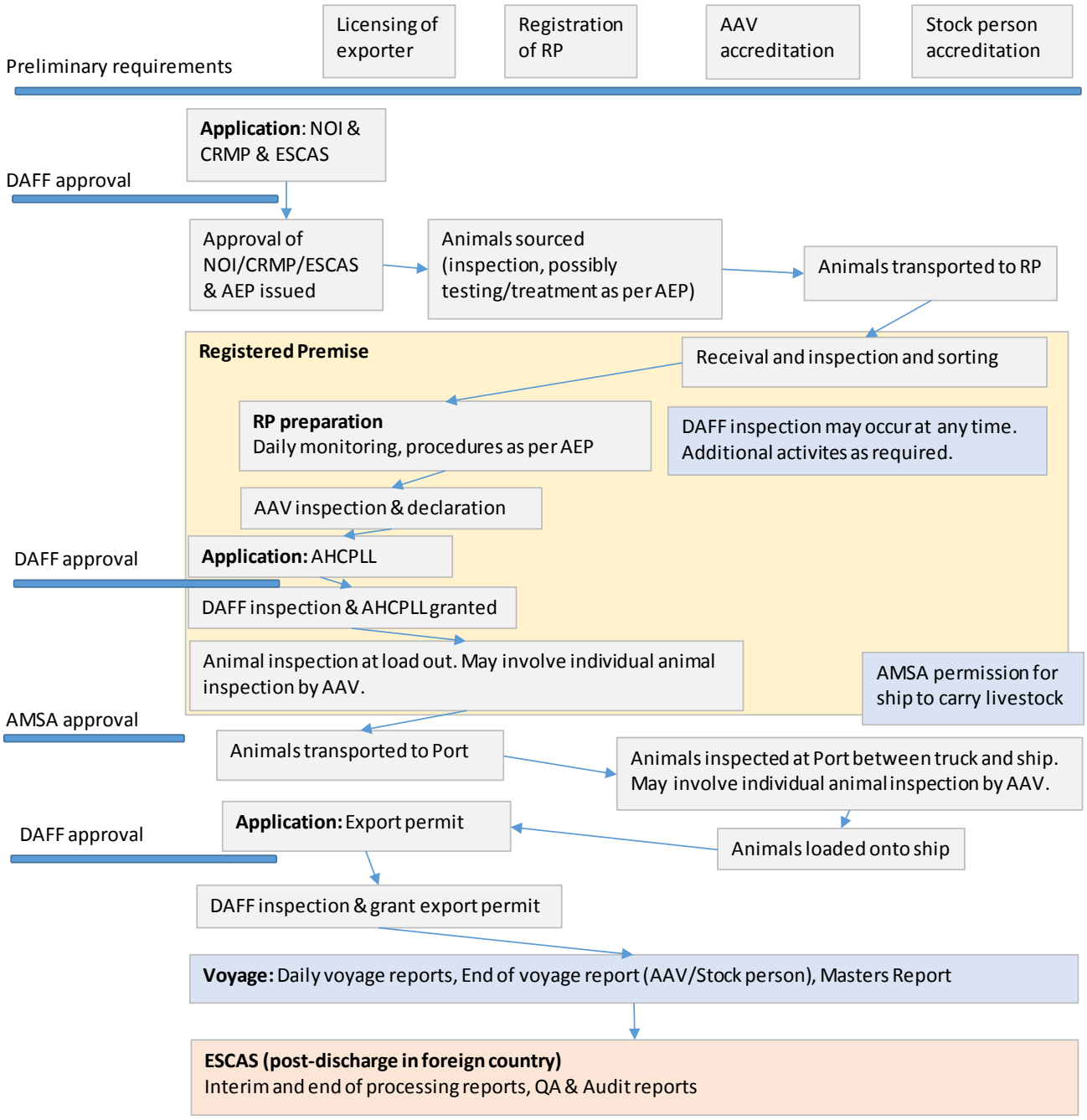


Figure 5.1: Diagrammatic flow of steps in the export chain associated with some form of regulatory control, including critical points where DAFF or AMSA receive applications and grant approvals specific to that consignment or voyage.

6 ASEL scoping study

6.1 Management of the Standards

The ASEL and the APS were developed as part of the Australian Government's response to the Keniry report. The Livestock Export Standards Advisory Committee (LESAC) was established at that time to provide advice to DAFF on the wording and adequacy of the Standards. The LESAC considered and endorsed both the original APS and ASEL documents.

The Livestock Export Standards Advisory Group (LESAG) was established in 2009 to further the work of the LESAC. LESAG's function is to provide advice to the Minister for Agriculture, Fisheries and Forestry through DAFF on the revision, further development and implementation of Australian Standards for the Export of Livestock (ASEL).

Membership of LESAG includes representatives from DAFF (Chair), ALEC, CCA, SCA, LiveCorp, Australian Maritime Safety Authority (AMSA), Centre for Animal Welfare and Ethics (University of Queensland) and RSPCA. Members have been selected on the basis of their particular personal expertise and experience and to give as wide a spread of knowledge in relation to the livestock export industry as possible.

The Farmer Review identified concerns about the operation of LESAG including:

- Amendment to the standards is too slow, which may have animal welfare implications.
- Exporter concern at RSPCA involvement as they are philosophically opposed to the trade.
- RSPCA frustration at delays.
- Failure to incorporate research results into ASEL.
- Meets too infrequently.

The Farmer Review concluded that:

> *LESAG is an advisory group and in the opinion of the Review its functioning should not unnecessarily delay the decision-making process within government. To that end, the role, function and effectiveness of LESAG should be reviewed, with a view to achieving more timely and better outcomes in the continuous improvement process.*

The role of LESAG as an advisory body to the Minister creates confusion of responsibilities as DAFF has the operational responsibility for the regulation of the livestock export trade. LESAG reporting to the Minister introduces a political element into the process of determining standards that

> *need to be clear, essential (causally related with mortality or otherwise scientifically based), consistent and verifiable (Farmer 2011 page 46).*

A number of submissions to the 2012 Government review of ASEL and LESAG identified the importance of a co-regulatory framework and within that a broad stakeholder representation on a representative group that has responsibility for providing advice on the standards.

Some submissions felt that LESAG could be replaced with a structure composed of two groups: a smaller technical advisory group that may include key industry and government representatives and technically skilled appointees; and a second reference group that represents all the major stakeholder groups.

Submissions agreed that the group(s) should meet regularly and that it/they should have clear Terms of Reference and an orderly and effective pathway for introducing and implementing change to ASEL or to related documents (best practice guidelines or approved arrangement documents).

Meeting twice a year has been suggested as an appropriate frequency.

The group could then consider material relevant to Standards (complaints, scientific advances, community expectations, performance reports, and other submissions).

The project team considered an alternative approach to managing standards as is currently being applied through the AAWS.

Under the AAWS NAWS&G development approach (Section 4.5), a Business Plan was developed by the project manager - Animal Health Australia (AHA) and agreed by all parties to guide the process[17].

Whilst the AAWS process outlined in Section 4.6, was developed for a full reformatting of the previous National Model Codes of Practice into Standards and Guidelines, it provides a framework that has potential relevance for livestock export standards.

However, the NAWS&G development and implementation process is very slow and would not be appropriate for livestock exports where there may be the need to make changes to the ASEL to respond to identified weaknesses or necessary changes. The Livestock Transport Standards process commenced in 2006, they were endorsed by PIMC in 2009, and as yet implementation is not complete in all jurisdictions.

Given the composition of the NAWS&G Standards Reference Group, it is not uncommon for there to be dissenting views on some aspects of the Standards and Guidelines, and full consensus may not always be possible. If this is seen as a significant issue, dissenting views are likely to be taken up through the government and ministerial approval processes.

Key steps in the AAWS approach that are considered to have relevance to the ASEL review process include:

- Utilisation of a small Writing Group that could involve appropriate expertise depending on the issue being addressed.
- Ensuring relevant technical input – this may be accommodated through the Writing Group, through existing or commissioned R&D, or specialist advice.
- Endorsement by a larger representative group – to ensure all consequences are identified.
- Communication strategy – for stakeholders.

The Regulatory Impact Statement (RIS) is an extremely costly and time consuming process, yet does introduce a safeguard to avoid excessive and costly regulation. The preparation of a RIS is part of the Council of Australian Governments (COAG) Regulation Reform agenda, yet does not appear to have been applied previously to all livestock export regulatory changes.

6.2 Australian Position Statement on the Export of Livestock

The Position Statement provides a framework for the development of the ASEL including guiding principles and defined outcomes for the livestock export industry, as agreed through LESAG. See section 4.4.

[17] http://www.animalwelfarestandards.net.au/

6.3 Farmer review

The following extracts from the Farmer review (extracts presented as quotes shown in italics, Farmer 2011) highlight a number of the findings and recommendations relating to both the ASEL and the broader regulatory process. Some key words have been highlighted in this report to present a snapshot of identified issues.

6.3.1 Section 3 - Current Regulatory Arrangements

*There is a lack of clear, or **clearly appreciated, roles and responsibilities** under the regulatory framework, and in particular the welfare of livestock destined for, or in, the export supply chain. (Farmer 2011, p27).*

***Responsibility for compliance** with specific aspects of ASEL shifts at each stage of the supply chain. For example, the primary producer/vendor is responsible for selecting only fit stock for sale; the transporter is responsible for loading only fit stock; the registered premises operator is responsible for receiving only fit stock. (Farmer 2011, p29).*

*A number of concerns persist, including the **lack of nationally consistent and enforceable standards for animal welfare** and, at an operational level, some failure to comply with ASEL requirements. (Farmer 2011, p30).*

***Greater clarity about, and shared understandings on, responsibilities and regulatory powers in the respective jurisdictions** would assist the Australian Government and the states and territories to identify and address gaps and areas of discontinuity. This is necessary to ensure more effective government dealings with animal welfare matters throughout the livestock export supply chain. (Farmer 2011, p30).*

Farmer Recommendation
The Review recommends that the Australian Government urge the states and territories to develop and implement, as a priority, enforceable standards of welfare to replace Codes of Practice, incorporate the standards into legislation and prepare and implement compliance programs to monitor and enforce the regulations in the domestic phase of the livestock export trade. (Farmer 2011, p30).

Cattle, sheep and goat welfare standards should be produced as a priority for incorporation into state and territory legislation.
(Farmer 2011, p30)

*A number of respondents including the Australian Livestock Exporters' Council (ALEC), WA Beef Council, Australian Livestock and Rural Transporters Association, state governments and individual exporters, proposed and/or supported the concept of an independently audited, **through-chain quality system incorporating formal contracts involving exporters, producers, agents, registered premises operators and transporters (including shipping companies where relevant)**. The exporters would assume responsibility, with contract specifications including livestock type and quality specifications as well as compliance with enterprise-level QA programs and welfare standards at each stage in the export chain.* (Farmer 2011, p31)

Such a system, it was proposed, would:

- *establish clear lines of accountability and benchmarks in the domestic part of the chain*
- *establish a feedback mechanism in the domestic chain to support improvements and performance*
- *specify what should/must be recorded, to whom it should be reported and what must be done with the reports*

- *enable demonstration of compliance with animal welfare standards at all stages and enable audit of outcomes, not inputs or paperwork only.* (Farmer 2011, p31)

After a successful establishment period such a quality system could, in the view of a number of submissions, largely replace the current prescriptive regimen. AQIS would then be responsible to audit the quality system itself – that is, AQIS would retain an 'audit the auditor' function. (Farmer 2011, p31)

While the Review sees potential in development of through-chain QA, it does not consider the time is right to reduce government regulation. If industry were to introduce such a system and demonstrable animal welfare assurance improvements resulted, there might be scope in the future to examine options for reducing government regulation. (Farmer 2011, p31)

Recommendation
The Review recommends that in line with ASEL, industry develop and implement a through-chain QA system to complement government regulatory compliance programs*.* (Farmer 2011, p31)

6.3.2 Section 4: Australian Standards for the Export of Livestock

It is clear, for reasons outlined below, that a full review of ASEL remains a priority. ***Standards need to be clear, essential (causally related with mortality or otherwise scientifically based), consistent and verifiable****. Ongoing* ***feedback and review processes need to be clarified and strengthened and roles and responsibilities of bodies engaged in monitoring and enforcement of ASEL and related welfare standards need to be clarified and formalised.*** *In addition, accountability for shipboard welfare needs to be better defined.* (Farmer 2011, p46)

There were comments on page 47 that ASEL could have a **stronger focus on outcomes rather than inputs, potential roles of audits and key performance indicators** and that in some sections of ASEL the wording is unclear and may lead to inconsistent advice or difficulty in enforcing standards.

On page 48, Farmer (2011) noted some comments suggesting that ASEL was thought too prescriptive, not allowing enough flexibility to assess situations and make decisions based on animal welfare.

Flexibility of both Standards and associated Work Instructions is a key issue for regional AQIS veterinarians and a full review of ASEL should include consideration of issues of discretion and delegation.
(Farmer 2011, p48)

There is no statement in ASEL about the consequences of breaching the standards*. Leaving aside the penalties for conviction under state or territory welfare legislation (a rare and unlikely event in these circumstances), the penalties able to be applied by AQIS for breaches of ASEL are imposition of changes in conditions for future consignments or, in serious cases of non-conformance, suspension or cancellation of an export licence.* (Farmer 2011, p49

There has been evolution of practices in recent years in relation to investigation of mortalities and other welfare issues, as well as in the publishing of mortality investigation reports. The Review has seen evidence ***of some untidiness in procedures*** *during this evolutionary process. As noted in Section 3.4.9 above, the Review sees merit* ***in issues relating to reporting and sanctions*** *being examined as part of the DAFF/AQIS review of service delivery issues recommended by the Review.*
(Farmer 2011, p49)

Findings

- *Since the introduction of ASEL, there have been improvements in many domestic elements of the supply chain.*
- *ASEL need to continue to evolve, in relation both to persistent issues like mortality in sheep exported from southern ports in winter months and to the results of scientific research.*
- ***There needs to be closer examination of a range of issues relating to ASEL, including issues of scope, clarity and accountability, flexibility, sanctions and review procedures**. (Farmer 2011, p50)*

Recommendation

The Review recommends that a comprehensive review of ASEL be undertaken.

- *The review should inter alia examine the policy on export of sheep from southern ports to the Middle East in winter months, with a view to:*
  - *mitigate feedlot and shipboard losses in adverse weather conditions*
  - *mitigate losses from heat stress and inanition during the voyage.*
- *The review should also consider additional specific criteria, identified in recent industry-funded research, for selection of suitable livestock for export.*

(Farmer 2011, p50)

Recommendation

The review recommends that the role and function of the Livestock Export Standards Advisory Group should be reviewed. (Farmer 2011, p50)

6.3.3 Section 5: Suitability of livestock for export

Recommendation

*The Review recommends that the ASEL review should examine the **policy on export of sheep from southern ports to the Middle East in winter months, with a view to:***

- ***mitigate feedlot and shipboard losses in adverse weather conditions***
- ***mitigate losses from heat stress and inanition during the voyage.***

(Farmer Review 2011, p59)

Recommendation

*The Review recommends that the proposed review of **ASEL should also consider additional specific criteria, identified in recent industry-funded research, for selection of suitable livestock for export.***

(Farmer Review 2011, p61)

6.4 Review of ASEL and LESAG

In response to the Farmer Review the government committed to undertake a comprehensive review of the ASEL to determine improvements that can be made to the standards, taking into account information and findings of the Farmer Review and recent research of relevance[18]. The review process commenced in May 2012 and has been completed, although the report has not been released. The Minister is yet to announce the outcome from the review, however DAFF have indicated that a RIS process is likely.

[18] http://www.daff.gov.au/animal-plant-health/welfare/terms-of-reference-for-a-review-of-the-australian-standards

A number of submissions to the review were accessed on the DAFF website[19] and these have been reviewed in the preparation of this report. It is noted that at the time of completion of this report, it was no longer possible to download copies of the submissions from the DAFF website.

6.4.1 LEP submission

The Livestock Export Program (LEP) partnership between MLA and LiveCorp presented a submission to the government review of the ASEL in September 2012 (Livecorp 2012). Preparation of this submission involved consultation with a number of industry stakeholders including the Australian Livestock Exporters Council (ALEC), ALEC State Chapters, Cattle Council of Australia, Sheepmeat Council of Australia, Goat Industry Council of Australia, LiveShip, LiveAir and exporters. This submission identified:

The complexity of regulatory arrangements has led to duplication and confusion in their application, increasing the enforcement and compliance costs for industry and government. The complexity of the arrangements was noted by Farmer

Conversely, there are several areas within ASEL which duplicate other regulation. The three key components that the LEP has identified are:

1) *The provisions under the Export Control (Animals) Order 2004 for the establishment, siting and operation of a registered premise and Standard 3 of ASEL;*
2) *The requirements of the Australian Animal Welfare Standards for the Land Transport of Livestock (the Land Transport Standards) and Standard 2 in ASEL; and*
3) *Some of the provisions of Marine Order 43 and Standard 4 and 5 of ASEL.*

In this vein, it is also important to note that there is no justification for extending ASEL to cover ESCAS. To do so would duplicate existing regulation, raise questions about jurisdiction, confuse ASEL's purpose and commit ESCAS to the regulatory restrictions incumbent in ASEL

The current structure of ASEL is not in line with best practice regulation. The use of mandatory and prescriptive standards to ensure operational elements are met has several shortcomings.

These include a focus on operations rather than outcomes; higher enforcement costs; restrictions on innovation; a lack of flexibility in enforcement/compliance; increased risks of perverse outcomes (eg. the pregnancy example highlighted by Farmer on page 48); difficulty in keeping standards current; and inconsistent or differing interpretations of ambiguities.

For these reasons, governments have been increasingly shifting away from prescriptive regulation and towards outcomes or performance based regulatory structures.

The concerns with ASEL's structure were identified prior to the Farmer Review by the Livestock Export Standards Advisory Group (LESAG). LESAG was developing a proposal to restructure ASEL consistent with the Australia Animal Welfare Strategy principles (Objectives, Standards and Guidelines).

The adoption of an outcomes or performance based regulatory structure for ASEL would provide greater support for the development and adoption of a quality assurance model for the domestic supply chain elements.

[19] http://www.daff.gov.au/animal-plant-health/welfare/export-trade/submissions-export-livestock

The LEP has a project due for completion in early 2013 developing an industry preferred regulatory model for ASEL and another project due for completion in late 2012 which will develop recommendations for potential quality assurance models for ESCAS. The outcomes of these projects could provide a strong basis upon which to pursue a full review of the structure and format of ASEL in mid-2013.

The LEP believes that the current ASEL review should reconsider current restrictions and avoid putting in place additional restrictions that attempt to isolate a class or group of sheep on the basis of addressing a single risk factor. In its view, there is insufficient evidence in the RD&E undertaken to date to support such an approach.

The LEP notes that better risk management of consignment preparation along the pathway to export is likely to be more effective than adopting restrictions on classes or groups of sheep.

6.4.1.1 LEP recommendations for the refinement of the existing ASEL

The LEP submission supported the review process as an opportunity to refine ASEL to address issues of duplication, inconsistency and ambiguity and to ensure that all standards are essential, verifiable, clear and underpinned by science (LiveCorp 2012).

The LEP submission provided a detailed table of proposed changes to the ASEL and areas of concern that required more discussion to agree on appropriate wording of changes. These recommendations have been reviewed as part of the activities undertaken for this review and where appropriate incorporated into a table of proposed changes that is presented in Appendix A of this report.

The LEP submission also identified a number of broader issues for consideration and these are summarised here:

- The ASEL requirements for minimum restraint and veterinary equipment (the vet kit) – The LEP submission flagged further work to be completed on reviewing the vet kits for export voyages. The LEP indicated that it would submit the findings from this additional review once completed and that this should then lead to the Steering Committee considering updates to the vet kit to ensure that it reflects current practice. The Steering Committee should also consider whether it is appropriate for a component as constantly changing (as treatments develop) and as integral to welfare outcomes as the vet kit, to be enshrined in ASEL where it is difficult to update.
- Standard 2 of ASEL relating to the land transport component of the export process must be heavily amended or removed in light of the recent incorporation of the Land Transport Standards (LTS) into state and territory legislation.
    - The LTS is the first nationally consistent and enforceable set of legislated animal welfare standards and has the support of the Australian, state and territory governments and industry. There are problems in having requirements in ASEL that relate to land transport where those requirements appear to differ from the LTS. It seems most appropriate for transport of livestock to be conducted in compliance with the LTS and the most efficient way of achieving this would be for ASEL to refer to the LTS as the appropriate source of standards that must be complied with by transporters.
    - If the Steering Committee chooses to retain transport related standards within ASEL it must ensure that they are essential and verifiable, with clear responsibility for regulatory oversight identified.
- Portable Livestock Units (PLUs) – The current standards are too prohibitive to allow the development of these units despite indications from overseas that higher quality PLUs

may be able to deliver improved welfare outcomes. The LEP has suggested providing DAFF Biosecurity with the discretion to make decisions to allow the use of PLUs beyond the current arrangements, specifically where it can be demonstrated that they can deliver animal welfare outcomes equivalent to an ACCL approved vessel. The Steering Committee will need to ensure that in considering changes in this area it liaises with Australian Maritime Safety Authority so that its recommendations are incorporated and considered during the review of Marine Order 43.

- Stocking densities – The LEP has engaged consultants from the CSIRO to review the stocking densities for live animal exports with a view of refining the current levels.

6.4.2 RSPCA Australia submission

The RSPCA submission to the ASEL review drew in part on a 2008 report by RSPCA titled *Australian Livestock Export Standards - A flawed process* (RSPCA 2008). The 2012 submission by RSPCA Australia focused on the following areas:

- Roles and responsibilities for regulating the live export supply chain with a need to clarify and define the regulatory responsibilities for animal welfare within state and territory regulatory frameworks as distinct from responsibilities managed by the Commonwealth.
- Legal status of ASEL and sanctions for non-compliance. The submission notes that non-compliance with standards tends to be noted without sanction or to result in conditions imposed on exporters only for a limited period of time and that these approaches may not provide sufficient incentive to ensure long term changes in practices that improve welfare outcomes.
- Information that should inform the review. The submission noted that ASEL should develop over time in response to emerging scientific knowledge as well as community expectations.
- Issues specific to the standards

The submission outlined a number of issues, including:

- Many standards require things that are not measurable or amenable to regulation
- Exemptions from standards are permitted with no requirement for justification
- There remains an overall lack of transparency, reporting and feedback in the export process
- The standards contain no process for public feedback of information on animal welfare performance. Furthermore, inadequate reporting requirements mean that little useful data are collected, and these have not been available to those tasked with reviewing the standards
- The heat stress model must be referenced in the standards and subject to independent and ongoing assessment. The heat stress model is an industry-developed model that has not been independently validated, is not publicly available for scrutiny, has not been published in a peer-reviewed scientific publication and is therefore of unknown quality
- Comprehensive standards must be included for all species. There are still some sections of the ASEL that are marked as ‘under development’. All sections must contain standards and these must be comprehensive for all species.

The document also details specific concerns associated with each section of the standard. These are summarized as follows:

Standard 1 - Sourcing and on-farm preparation

- Rejection criteria are inconsistent across standards.
- Rejection criteria are not being consistently and reliably applied.
- Strategies to reduce sheep mortality due are not being implemented, eg. tracking of sheep performance.
- Special requirements are needed for the export of entire males.
- Require industry QA as the minimum standard.

Standard 2 - Land transport of livestock

- Inconsistencies between LTS and ASEL.
- ASEL needs to take into account additional needs of animals being exported in terms of the overall impact of the journey and the particular requirements for sourcing of animals for export.
- Require industry QA to remove inconsistencies between operators.
- Insufficient reference to the standard of loading facilities.

Standard 4 - Vessel preparation and loading

- Stocking densities for onboard loading should be reviewed.
- Standards should require cross-checks between transport loading records from the registered premises and the loading records onboard the vessel.

Standard 5 - On-board management of livestock

- A standard should be developed requiring the regular monitoring of ammonia and requirement for corrective action at 25ppm.

Standard 6 - Air transport of livestock

- Stocking densities for on-board loading should be reviewed .
- Rejection criteria for air transport must be presented in a consistent way to those for sea transport. .

6.4.3 Australian Livestock and Rural Transporters Association submission

The Australian Livestock and Rural Transporters Association (ALRTA) submission supports the development of effective whole-of-chain QA with a focus on improving accountability, management and outcomes – not on generating paperwork. The submission focuses on transport related issues but many of the principles outlined in the submission relate to management of effective QA to maintain confidence in systems that meet required standards.

A number of examples are provided where existing standards relating to aspects of livestock transport could be used to develop measurable outcomes that in turn can then contribute to the development of performance indicators in a QA program.

The ALRTA submissions identifies two existing QA programs (*LPA* and *truckCare*) and suggests that such QA programs be incorporated into a future export chain QA system as a 'deemed to comply' solution to relevant standards.

6.4.4 State government departments

Submissions were provided from the NT, NSW and QLD departments with responsibilities for animal health and welfare.

Issues raised in these submissions related to the importance of removing conflicts between the ASEL and relevant standards that are legislated at the state level, with a particular focus on standards relating to animal welfare and land transport. Suggestions include removing requirements in ASEL that relate to domestic animal health and welfare and instead referring these requirements to relevant state regulatory frameworks that already exist and that are enforceable by state authorities. Sections of the ASEL that relate to land transport may be referred to the LTS which are directly enforceable under existing state regulatory frameworks.
The NSW submissions identified value in additional research to investigate farm-level factors that may contribute to mortality risk and in the value from on-going analysis of data that may be available through routine export operations given the likely routine collection of relatively large amounts of data through QA procedures.

The DAFF QLD submission raised the importance of clarifying the roles and responsibilities for regulatory management of animal health and welfare between state and Commonwealth. Examples raised included situations occurring at the port of loading, on the loading ramp and on the vessel immediately after loading. These issues raise important practical points about the value of having systems that are clear and understandable and where responsibilities for regulatory management and enforcement are equally clear.

6.4.5 Vets Against Live Export submission

The Vets Against Live Export (VALE) submission was focused on a review of inspection regimes prior to export of livestock from Fremantle port and concentrated mainly on the role of AAVs in inspection processes. The submission recommended that AAVs be contracted and accountable to DAFF (AQIS) as a measure of ensuring independence from potential conflicts of interest through being employed by exporters.

The submission also suggested that AAVs be involved in additional inspection processes including at the time of receival of animals into the registered premise (RP), daily visits during the period at the RP to review animal health and welfare, inspection at the RP before load-out to travel to the port for loading, at the time of loading and at the port while loading occurs.

6.4.6 Other submissions

A number of other submissions available on the DAFF website have been reviewed and matters raised in these submissions have been covered elsewhere in this report. Many of these submissions present views that support the importance of QA across the chain, often with a clear message to extend the QA application to parts of the chain that are located within Australia (property of origin through land transport to assembly depot and then to port of loading). Submissions also stress the importance of stakeholder engagement in development and management of the regulatory framework.

A submission from the Nationals for Regional Western Australia raised the point that calls to increase the responsibilities for veterinarians in inspection processes may not necessarily be efficient or effective. Animal inspections prior to export (at the RP or the port of loading) should be done by people with appropriate skills (Accredited Stock Inspectors) and not necessarily by veterinarians. This should not be viewed as a suggestion that veterinarians not be involved. There is justification for having a veterinarian present where expertise in veterinary science is required to make decisions about animals such as diagnosis and treatment of veterinary conditions and euthanasia of severely compromised animals. It is noted that many current inspection processes involve experienced non-veterinary stock inspectors with a veterinarian present to provide veterinary expertise on selected matters.

6.5 Additional investigations undertaken by the project team

6.5.1 Mortality Investigations

There are two separate sources of information and data available from the DAFF website that relate to mortalities in livestock occurring during live export from Australia. The first is in files that are associated with 6-monthly reports on livestock mortalities tabled in each House of Parliament[20]. These files are made up of a mixture of spreadsheet and document file reports that provide one row of data for each voyage departing from Australia and containing details by species of port of loading, date of loading, duration of voyage, total animals loaded and numbers

[20] http://www.daff.gov.au/animal-plant-health/welfare/export-trade/mortalities#reports

of deaths. The second is a series of reports summarising findings of DAFF investigations into each reported mortality event[21]. Both sources provide files starting in 2006.

A review of sheep mortalities during live export was conducted in mid-2012 as part of an earlier report and covered the period from 2006 to 2011 (Shiell et al 2012). The sheep review was restricted to those voyages leaving southern ports in Australia (Portland, Adelaide and Fremantle), that were carrying larger numbers of sheep, and that were travelling to Middle East destination ports.

A similar review of cattle mortalities was conducted as part of the preparation for this report and covered the period from 2006 to 2012. The cattle review considered all voyages that contained cattle.

This section provides a brief summary of the findings from analyses of livestock mortality data. A detailed description of the findings from the review of sheep mortalities can be found in the earlier W.LIV.0284 report (Shiell et al 2012), and a detailed description of the findings from the review of cattle mortalities is presented in Appendix B of this report.

6.5.1.1 Findings from review of sheep mortality data

A Government investigation is conducted whenever there is a consignment with a reportable mortality event (>2% mortality for sheep voyages). Reports from mortality investigations conducted since 2006 were downloaded from the DAFF website. The material summarised here was drawn from those mortality investigation reports that dealt with reportable death events in sheep. There were 13 investigation reports involving deaths in sheep exported by sea from southern ports between 2006 and 2011, with consignment-level mortality percentages ranging from 2.04 to 4.19%. The major causes of deaths in all 13 voyages that had reportable levels of sheep mortality were heat stress and enteritis. In most cases where enteritis occurred it was often associated with deaths that were attributed to enteritis alone, enteritis in combination with inanition and inanition alone.

There were two general patterns for mortalities over time in relation to enteritis deaths. In some cases mortalities occurred as soon as the voyage started and peaked within the first few days followed by a gradual decline as surviving animals recovered. In other cases daily mortality counts were low for several days before climbing to a peak and then falling. These patterns were likely to reflect exposure periods.

The earlier onset pattern is likely to reflect increased exposure of animals to *Salmonella* organisms in the registered premise such that animals were already heavily exposed at the time that they were loaded onto the ship. The more delayed onset of mortalities (second pattern) is very strongly suggestive of heavy exposure of sheep to enteritis causing organisms (*Salmonella*) on board the ship.

Both occurrences are entirely consistent with our understanding of the epidemiology of enteritis in sheep. Healthy sheep may carry the causative organisms and under conditions that favour proliferation of the organisms (such as stress, adverse climatic conditions, concurrent disease, inappetence), animals may succumb to clinical disease, shed high levels of infectious organisms and create high exposure risk for other cohort animals. Conditions favouring high shedding and exposure may occur in the RP or on board. Exposed animals may become sick and there may be a number of deaths and then surviving animals recover and the condition tends to resolve. For those voyages with reportable mortality events associated with enteritis, there was little evidence of elevated mortality rates during the time sheep were in the RP. However, it is acknowledged that the RP is likely to be serving as a focus of exposure risk and the

[21] http://www.daff.gov.au/aqis/export/live-animals/livestock/aqis-mortality-investigations

management practices of handling large numbers of sheep through the same yards on receival and load out, as well as successive preparations of large numbers of sheep in the same facilities and paddocks for voyage after voyage, provides opportunities for increased environmental contamination with infectious organisms over time and increased risk of heavy exposure of some mobs.

Deaths due to heat stress appeared to follow cumulative exposure over time to very hot conditions (often several days in a row), around the period when vessels are in the Gulf region and in some cases associated with unloading.

Data from 6-monthly parliamentary reports did not allow clear differentiation between sheep loaded in each specific port and a number of voyages contain sheep that were loaded at two or three of the main southern ports (ships may load first at Portland then call in to Adelaide or Fremantle to load additional sheep before leaving for the Middle East).

There was within year and between year variations in voyage mortality rates for sheep. There was a progressive decline in mortality rates from 2009 to 2011. The within year variation was consistent with an elevated mortality risk in the Australian winter (mortality rates tended to be low from December to April before rising to a peak in August and then declining again to December).

There was also an effect of port of loading with voyages containing sheep loaded at Portland experiencing a higher rise in mortality rate in the Australian winter compared to voyages that loaded sheep at Adelaide and/or Fremantle but not Portland. There was less evidence to support differences in mortality rate for voyages containing sheep loaded at Adelaide when compared to Fremantle.

A summary of recommendations from the earlier W.LIV.0284 report arising from review of export of southern sheep in winter is presented in Section 6.5.3.

6.5.1.2 Findings from review of cattle mortality data

This section provides a summary of findings from an analysis of cattle mortality data derived from government mortality reports and 6-monthly reports to parliament on export voyages. Detailed findings are provided in Appendix B.

A notifiable incident is defined in the ASEL as having occurred when the reportable level of mortality defined for a species and voyage type is exceeded. For cattle export voyages the reportable mortality levels are 0.5% for voyages less than 10 days in duration and 1% for voyages greater than or equal to 10 days in duration.

A reportable mortality must be reported to DAFF and as notifiable incidents these events are then identified in 6-monthly reports on livestock export mortalities that are tabled in each House of Parliament every six months, and they are the subject of subsequent investigation by DAFF.

Of the 20 voyages that had a reportable mortality event involving cattle, the major cause(s) as identified in the relevant DAFF reports were:

- Pneumonia or other respiratory disease in 6/20 (30%).
- Injuries and downer animals perhaps exacerbated by rough weather and in some cases slippery flooring, was either the major cause or an identified cause in 6/20 (30%).
- Three reports noted heat stress as the major cause or a cause of mortality (two long haul voyages and one short haul voyage).
- At least two reports noted problems with bulls being exported to the Middle East and raised concerns about whether there might be specific risks associated with bulls due to their weight and possibly behavioural traits.
- At least two reports noted problems with cows and raised concerns about whether there might be specific risks associated with cows.

Of the 20 voyages, 10 (50%) involved trips to Indonesia and 10 (50%) involved voyages less than 10 days in duration.

The major findings from statistical analyses of summary data from export voyages between 2006-2012 included:

- There was relatively little evidence for a seasonal pattern in mortality rates in voyages to the Middle East whereas there was some evidence for a seasonal pattern in mortalities for voyages travelling to SE Asia.
- There was little difference in mortality rate between voyages to SE Asia and voyages to the Middle East when expressed as deaths per 1000 cattle-days (adjusted for length of voyage).
- Cattle from southern ports in Australia had a higher mortality rate than cattle loaded from northern ports.
- The lowest mortality rates were seen on ships carrying mid-level numbers of cattle (1 to 5,000 cattle) and the highest mortality rates were in ships with either the smallest (<1000 cattle) or the largest (5000+ cattle) categories of cattle shipments. In the middle two categories of cattle shipment size, those ships that carried mixed species had higher mortality rates than those ships that carried cattle only.
- Screening (unadjusted) analyses indicated that voyages loading cattle from southern ports had a higher likelihood of experiencing a reportable mortality event compared to voyages loading cattle from northern ports.
    - More detailed modelling indicated that this was really only the case for voyages travelling to SE Asia. Voyages loading cattle from southern ports and travelling to SE Asia had a higher likelihood of experiencing a mortality event compared to voyages loading cattle from the north and travelling to SE Asia.

A summary follows of issues identified in the review of cattle mortality data and DAFF investigation reports that are considered relevant to the ASEL review focus of the current report.

A number of recommendations from DAFF mortality reports were related to understanding causal factors for respiratory disease and improving prevention (vaccination and animal selection) and treatment (antibiotic and other treatments) as well as provision of better care on-board (by having a veterinarian accompany more shipments) and collection of better records of morbidity and mortality rates (see later section). These issues were all considered useful and are likely to be further informed by findings from the current W.LIV.0252 project which was scheduled for completion in 2013.

A number of reports also recommend that cattle spend at least 3 clear days in the registered premise while preparing for export. No scientific evidence was presented to support these recommendations

Injuries and problems associated with recumbent animals were also a common cause of mortality in the reports. Slippery flooring appears to have been identified in a number of reports as a contributory factor. A review of the *Marine Orders (Part 43)* and ASEL has not identified specific mention of the importance of non-slip flooring or any specific requirements for non-slip flooring. Specific provision for non-slip flooring for export livestock may be beneficial.

Reports also mentioned consideration of avoiding export of animals greater than specified weight limits, exclusion of bulls that displayed abnormal or aggressive behaviour and review of whether cows in general or some types of cows (older or heavier or pregnant) may have higher risk of some conditions such as injury and therefore require additional scrutiny or different management.

There were several reports that recommended that an AAV accompany one or more subsequent voyages. It is presumed that this recommendation may be based in part on the fact that there had not been an AAV on the voyage where the reportable mortality event occurred initially. The

requirement for an AAV to accompany a voyage is made by the Secretary of the Department under the *Export Control (Animals) Order 2004*. In general it is expected that an AAV would accompany all long haul voyages but not necessarily all short haul voyages. Given that of the 20 reportable mortality events, half involved short haul voyages, there appears to be scope for consideration of extending the involvement of on-board veterinarians to more voyages and in particular to short haul voyages as well as long haul voyages.

There was no evidence presented to document specific benefit in terms of animal welfare or morbidity/mortality rates that may be directly attributed to the presence of an AAV when compared to voyages where there was no AAV.

An alternative to simply requiring that more or indeed all voyages should be accompanied by an AAV may be to consider the underlying reasons for recommending that AAVs accompany more voyages and then to look for options for addressing those issues. The major benefits of an on-board veterinarian are presumably associated with specific veterinary skills i.e. diagnosis and appropriate treatment of conditions occurring during the voyage, and implementation of preventive strategies during the voyage to minimise risks of the same conditions occurring in other animals on the same ship. While there may be genuine advantages associated with having a registered veterinarian on board, there may be similar advantages from appropriately trained and experienced stock persons performing some of these roles on voyages where veterinarians are not present,, assuming such activities would be conducted under an appropriate framework providing stakeholders with confidence in performance and outcomes.

There are perceived to be real benefits from provision of training and resource material describing common conditions occurring in export livestock, managing livestock during export and in procedures such as performing post mortems to determine cause of death and where appropriate collection of standardised samples for return to Australia where specialist pathologists may confirm the cause of death. There are existing requirements for stockpersons and AAVs to complete training and accreditation before they can work on export vessels and there are a variety of additional training materials and resources that have been developed (W.LIV.0161, W.LIV.0278). The Independent Review of Australia's Livestock Export Trade (*Farmer Review)* also made recommendations about improving the positive welfare and health impacts of AAV involvement.

The authors support consideration of further review of the role of AAVs and stockpersons and further development of training and resource material.

A number of mortality reports recommended initiatives that appear to be similar to those being implemented through a current project (W.LIV.0252, Identifying causes of cattle mortality to the Middle East) or in related projects. These activities include the development of standardised systems for improving the role of AAVs in diagnosing and managing conditions on export voyages, and of training materials and other resources to support these systems. The approach applied in W.LIV.0252 incorporates completion of post mortems of mortalities while on-board to determine cause of death and collection of samples (if deemed appropriate) for importation back into Australia and examination by specialist pathologists to check causes of death. The project has attempted to develop standardised systems for improved routine collection of data and information on animal health and welfare outcomes to allow better analyses to understand causes of mortality events and act to prevent them in the future. This project is approaching completion and it is expected that the final report will provide additional recommendations on how the role of AAVs and stockpersons can be improved to further optimise animal health and welfare during livestock exports.

A number of mortality investigation reports also included recommendations about better recording of treatments given to animals and a later report provided simple draft templates for

recording of treatments and deaths (including post mortem findings) along with recording of individual animal identity using NLIS or visual tag systems.

The authors strongly support the benefits of better routine data collection and analysis. Key characteristics are that data requirements should be standardised where possible, kept as simple as possible to ease the burden of collection and compliance, and used routinely to assist industry in documenting good performance against standards, identifying problems early to allow better and earlier interventions, and contributing to strategic decision making and research as part of integrated efforts to continue to monitor and improve industry performance.

6.5.2 Issues arising from published material

The project team completed a review of scientific literature of relevance to the ASEL and associated regulatory framework as part of the background preparation for this report. The purpose of this review was to identify issues of relevance to the objectives of the current report. The findings are presented in a concise summary in an attempt to reduce length of this section in the report.

Effective animal welfare standards should be designed to clearly spell out the minimum acceptable standards for managing animals, in a manner that accommodates new knowledge, advances in scientific understanding and new technologies. The structure of ASEL was developed on a whole–of-chain 'risk-based framework' (*Australian Position Statement on the Export of Livestock*) to include 5 standards for separate stages of live export by sea, and a separate standard for air freight (Standard 6). It is important that any review of ASEL reflects current thinking towards animal welfare and incorporates relevant information from research, industry performance and practice, and technological advances.

The literature review process supports findings discussed earlier in this report of requirements in the ASEL that are unclear or not necessarily consistent with findings from relevant scientific research. There are examples of redundancy, inconsistency and lack of clarity in the text. It appears to be difficult to make changes to the ASEL even where the changes may be justified on the basis of scientific research.

This section identifies a number of areas where changes to the ASEL are considered likely to result in improved clarity and effectiveness of the ASEL. Changes are necessary to address inconsistencies and redundancy, to improve clarity, to address areas where evidence supports change, to move where possible to outcomes-based measures and to generally make the standards function more effectively and in accordance with the principles of good regulation.

A number of specific changes are listed in Appendix A that incorporates suggested changes made by the LEP in a submission to the ASEL review in 2012 and additional changes identified through this review.

A list of broader issues and associated changes are summarised below:

- There is scope for improvement in the pathways and processes that allow relevant R&D outputs to contribute effectively into regular review of existing standards and to allow modification of standards where appropriate. This recommendation has two components:
    - An effective process for review and where appropriate modification of standards.
    - A process that facilitates contribution of R&D output into the standards review process, that may include specific activities aimed at assessing regulatory impacts of R&D output and presentation of R&D output in a way that facilitates contribution to policy and regulatory review. These issues have been discussed in a recently released handbook describing movement of knowledge from science to policy (Rajic and Young, 2013).

- Mapping of the ASEL against the Australian animal welfare standards and guidelines during the review process is recommended
- Definitions used throughout ASEL should be consistent with regulation and the Animal Welfare Standards and Guidelines. For example, definitions required for; older, dissimilar size, class, younger etc.
- The review of ASEL should reconsider revising the restrictions placed on classes or groups of livestock on the basis of addressing a single risk factor. There is insufficient evidence in the R&D to date to support this approach.
- The land transport components of the Standards could be simplified by referring to the National Land Transport Standards without additional criteria that must be met or checked. This change is likely to simplify issues relating to responsibilities and compliance and means that everyone has to refer to a single set of Land Transport Standards
- Industry should consider developing and implementing an integrated monitoring and surveillance capacity that can underpin QA systems and provide important benefits to the industry in terms of documenting good performance, early identification of problems and underpin and inform industry R&D.
- The roles, responsibilities and accountability of all parties who interact with the animals throughout the live export chain (including the legislative requirements) should be clearly identified and defined within ASEL.
- Existing standards should be revised to ensure they are clear, essential, consistent, verifiable, risk-based and underpinned by sound science. They should be outcomes-focussed where possible and less process-focussed.
- Credible performance indicators (to support the requirement for a measurable outcome) should be developed for the critical 'core' standards, using R&D output and input from stakeholders
- Prescriptive standards that are not supported by R&D outcomes should be removed from ASEL. This statement applies to the situation where there is clear scientific evidence to support a position counter to that described in a prescriptive standard. Where there is no scientific evidence or findings are equivocal, the use of the precautionary principle[22] is appropriate to make the best recommendation possible given available knowledge about an issue.
- The APS should be revised, such that it provides context to ASEL and duplication is removed. The APS is a statement of intent which is not sufficiently supported by the existing standards.
- Revision of ASEL should recognise state regulation, adoption of AAWS standards and guidelines and other regulation (for example Export Control Order, Marine Order 43). Standard 2 is covered by the Land transport Standards and Guidelines, which represents an unnecessary degree of repetition. Standards 1 and 2 currently contain lengthy statements of normative requirements, with few performance measures.
- In their current format the ASEL do not facilitate whole-of-supply-chain coordination and cooperation, including an obvious lack of processes to manage the flow of data, particularly in the following areas:
    - Stock preparation, fit to load criteria and reject management
    - Time off feed/water and transport times
    - Veterinary treatment
- The AAWS standards and guidelines development process is relatively slow and resource intensive and would not be appropriate for livestock export.
- ASEL should follow a 'standards and guideline' format, clearly defining mandatory standards and optional guidelines

[22] a principle of science that prescribes conservative action in the face of scientific uncertainty to manage risk of harmful effects to wellbeing of humans, animals or the environment pending further scientific investigation.

- Components of the current ASEL which are prone to frequent change (for example, livestock treatments, veterinary kit) should not be enshrined within the standard but should be covered by complementary guidelines
- The role of LESAG in the R&D review/ASEL standard revision process should be reviewed
- Practices which conflict with public opinion should be reviewed, even if the practice in question is scientifically defensible
- Relevant technical input should be available during ASEL standard revision. The utilisation of a small writing group for the revision of standards, based on R&D output, would allow technical changes to be made in a timely manner.

6.5.3 Review of ASEL in relation to export of southern sheep in winter

A separate report was completed as part of this project and titled ***Review of ASEL Scoping Study: Export of sheet from southern ports to the Middle East in winter months*** (Shiell et al 2013). This section draws on the executive summary of that report. Readers are directed to the full report for more detail.

The report provided a review of the current ASEL and regulatory framework with a particular focus on preparation of sheep for export from southern ports in the Australian winter months. It also incorporated an assessment of government reports from investigations of reportable mortality events since 2006 and identified areas in the current ASEL that may benefit from review.

There have been 13 reportable mortality investigations involving sheep voyages since 2006. These reports involved voyages that included sheep loaded from all three major ports (Fremantle, Portland and Adelaide) and there were two major drivers of mortality identified in the investigations: enteritis or more broadly salmonella-inanition, and heat stress.

There has been a decline in voyage and annual mortality rates over the years since the period from 2000-2002 and this is attributed in part to the decline in total numbers of sheep being prepared for export as well as to the implementation of the current ASEL and associated improvements in standards of preparation of sheep for export and management of the export supply chain.

In the period since 2004 when the initial Standards were implemented there have been no major changes in the way sheep are prepared for export and little evidence of continued decline in annual mortality rates for export sheep.

Many of the issues identified in the report may require targeted research projects to deliver results that can then contribute to improvements in the regulatory framework.

Caution is urged to avoid making additional prescriptive changes to the ASEL and also to avoid making changes unless there is unequivocal evidence to support a view that the changes are both warranted and likely to result in measurable benefit. As can be seen in some of the discussion in the full report, there are existing requirements in the ASEL that may not be warranted when assessed for science-based justification and that may not necessarily be having measurable beneficial impacts on welfare outcomes, but are nonetheless difficult to change, largely because they are already incorporated into the Standards.

One option may be to consider some changes as interim changes until such time as further research is conducted or evidence accumulated to warrant implementing change into the standards. An example may be implementing measures as export advisory notices with a defined timeline in conjunction with further research.

Options for consideration include:

1. That a framework be developed that will allow appropriately justified research findings to inform modifications to Standards over time. There is a sense of frustration within the industry that it is difficult to modify sections of the Standards once they are written even when there is a body of accumulating evidence to justify change.
2. That consideration be given to removing the term *pastoral and station sheep* from the Standards and replacing it with a clear definition of any restrictions that may be placed on sheep sourced for export during winter months. It is suggested that the definition be linked to the geographic locations of the origins of sheep that have been shown to be at elevated risk of mortality during winter months.
3. That the land transport components of the Standards be simplified by referring to the National Land Transport Standards without additional criteria that must be met or checked. This change is likely to simplify issues relating to responsibilities and compliance and means that everyone has to refer to a single set of Land Transport Standards.
4. That consideration be given to implementing research to test whether there is a benefit in allowing a shorter minimum time on feed for sheep being prepared in registered premises. There have been a number of occasions where reviews have suggested that shortened feedlot time may be beneficial in terms of reducing exposure risk to *Salmonella* organisms in the registered premise.
5. That further research be conducted to assess options for risk mitigation against Salmonellosis including in particular oral vaccination and management of sheep in registered premises during winter months. There are ongoing questions about the benefit of sheds vs paddocks (in both the west and the east) as well as how best to manage sheep in paddocks to minimise exposure risk and also whether it may be possible to monitor environmental loads and mob level shedding.
6. That appropriate research be conducted or expert opinion sought on the benefits of shearing sheep in the days before loading onto ships as a preventive measure against possible heat stress. It is understood to be a common practice in sheep prepared in sheds in Western Australia but the benefits do not appear to be documented.
7. It was not possible to identify definite suggestions concerning options to mitigate risk of heat stress in sheep prepared in southern ports during winter months. There has been a new version of HotStuff implemented recently and there is also ongoing work validating the application of HotStuff in managing heat stress risk.
    a. It is suggested that the findings of ongoing work aimed at validating HotStuff and HSRA models be considered in developing further recommendations for refining and improving HSRA.
    b. It is suggested that industry consider reviewing the strategic objective for HotStuff (lower than 2% probability of a 5% mortality event) during this process.
8. That industry consider developing and implementing an integrated monitoring and surveillance capacity that can underpin QA systems and provide important benefits to the industry in terms of documenting good performance, early identification of problems and underpin and inform industry R&D.

6.5.4 Review of standards relating to pre-embarkation inspection of sheep

The Independent Review of Australia's Livestock Export Trade (Farmer 2011), incorporated a visit by Mr Bill Farmer AO to Fremantle to view the inspection process at Fremantle wharf and the registered premises. Mr Farmer raised concerns about inspection procedures at the Fremantle Port and subsequently DAFF initiated a review of the inspection procedures at Fremantle Port, undertaken by a steering committee appointed by DAFF.

The export industry commissioned an independent review of sheep pre-embarkation procedures as part of a separate MLA-funded project (Perkins and Madin 2012). The report from this project was provided to DAFF as part of industry submissions into the DAFF review of the inspection regime prior to export of livestock from Fremantle Port. The DAFF review process was completed

in late 2012 and a final report from the DAFF review was made available on the DAFF website (DAFF 2012c).

This section provides brief summary information from the two reports described above. Readers are directed to the two reports for more detailed information.

The independent review described in W.LIV.0171 (Perkins and Madin 2012) involved collection of information by direct observation, literature review and industry consultation about processes at registered premises and ports in Victoria, South Australia and Western Australia.

The W.LIV.0171 report conclusions and recommendations included the following:

- The current systems reviewed at South Australia, Victoria and Western Australia were all considered compliant with conditions stipulated in the ASEL and the *Export Control (Animals) Order 2004.*
- The individual animal inspection system as viewed in Fremantle was considered to provide a better opportunity to apply a consistently high level of inspection rigour to every animal and more likely to detect and reject animals that meet rejection criteria than the individual animal inspection processes in South Australia or Victoria. The individual animal inspection processes described in this report for South Australia and Victoria do not deliver a consistently rigorous inspection opportunity to every sheep and consequently are considered to have a higher likelihood of missing some animals that actually meet ASEL rejection criteria.
- The raised platform structure used at Fremantle was considered to be an effective method for moving animals in a secure and safe manner from truck to ship. All rejects at the Fremantle port are held in secure holding pens out of view of the general loading activities and under shade. They receive appropriate veterinary care and are transported back to the registered premise at intervals through the day. The Fremantle inspection system is therefore considered to have better potential to ensure optimal animal welfare outcomes both for sheep that are loaded onto the ship (those that pass the inspection) and for sheep that are rejected at the port, than the method viewed at the Adelaide port (individual animal inspection at the RP followed by welfare inspection in a single holding pen at the port).
- W.LIV.0171 concluded that there was insufficient benefit to warrant having two individual animal inspection procedures very close together in time (one at the RP and one at the port). The most logical place to have the final individual animal inspection process was at the port, immediately before sheep are loaded onto the ship. This was felt to provide the best assurance that all animals that are loaded onto the ship are compliant with all ASEL requirements.
- There was considered to be scope for improvement to other existing inspection and rejection processes currently being applied at the RP.
- It was suggested that consideration be given to trialling the Fremantle system in other states.

The final report from the DAFF (DAFF 2012c) appointed Steering Committee did not agree with the conclusions and recommendations presented in the W.LIV.0171 report. The recommendations in the DAFF report are summarised here.

1. Recommendation 1 (to the ASEL Steering Committee)
   Identify the roles and responsibilities of all parties who interact with the animals throughout the live export chain including the legislative requirements.

2. Recommendation 2 (to the ASEL Steering Committee)
   - Identify in ASEL the competencies and training required for all people who interact with the animals throughout the live export chain from sourcing to loading.

- Ensure that individuals placed in such roles have an understanding of their responsibilities and are competent to perform their duties.

3. Recommendation 3 (to the ASEL Steering Committee)
   Outline in the ASEL what record keeping must be done throughout the different stages of the inspection process starting from receipt of the animals at the registered premises, how often, who keeps the information and who it must be made available to when required.
   In particular:
   - DAFF to develop templates to support the record keeping requirements for AAVs as stated in *Export Control (Animal) Orders 2004* (part 4A 14)
   - The requirement for record keeping of rejection at unloading set out in S3.17 to be expanded to cover animals rejected at all stages of the assembly process
   - A consignment report summarising animal health issues, reasons for rejections, adverse events and treatments should be provided to DAFF and the onboard AAV prior to issuing the export permit.

4. Recommendation 4 (to State and Territory Governments)
   Animal welfare inspectors who are responsible for the welfare of livestock should have free access throughout the live animal export chain up to and including the point of loading, to ensure compliance with state and territory Animal Welfare Acts.

5. Recommendation 5
   The primary point for individual inspection should be at the registered premises and the facilities and inspection process must be designed to reliably assess each animal for fitness to travel and against all of the ASEL rejection criteria.

6. Recommendation 6 (to the ASEL Steering Committee)
   The Approved Export Program should document where and how the individual inspection of livestock will be conducted at both the registered premises and the wharf including the procedures when dealing with rejects.

7. Recommendation 7 (to the ASEL Steering Committee)
   That at each point in the supply chain, inspection procedures and facilities are in place to allow the identification and removal of unfit animals in a timely manner to ensure that animals unfit for transport or export are not transported to the next stage.

8. Recommendation 3 of the Farmer Review
   The committee reaffirms Recommendation 3 of Farmer Review, acknowledges that industry has commenced this work and believes that this should be given priority.

   Farmer Recommendation 3 recommends that in line with ASEL, that industry develop and implement a through-chain QA system to complement government regulatory compliance programs.

The recommendations made in the DAFF report link to the Australian Standards for the Export of Livestock (ASEL) Version 2.3. These standards are being revised and relevant recommendations from this report will be provided to the steering committee reviewing ASEL for their consideration.

7 Alternative regulatory approaches

7.1 Introduction to good regulation

Regulation refers to the broad range of legally enforceable instruments which impose mandatory requirements upon business and the community, as well as those government voluntary codes and advisory instruments for which there is a reasonable expectation of widespread compliance (Commonwealth of Australia 2013).

Best practice principles for regulation have been designed to improve the transparency, accountability, proportionality, consistency and targeting of regulatory measures (COAG 2007), and include:

1. establishing a case for action before addressing a problem;
2. a range of feasible policy options must be considered, including self-regulatory, co-regulatory and non-regulatory approaches, and their benefits and costs assessed;
3. adopting the option that generates the greatest net benefit for the community;
4. in accordance with the Competition Principles Agreement, legislation should not restrict competition unless it can be demonstrated that:-
    a. the benefits of the restrictions to the community as a whole outweigh the costs, and
    b. the objectives of the regulation can only be achieved by restricting competition;
5. providing effective guidance to relevant regulators and regulated parties in order to ensure that the policy intent and expected compliance requirements of the regulation are clear;
6. ensuring that regulation remains relevant and effective over time;
7. consulting effectively with affected key stakeholders at all stages of the regulatory cycle; and
8. government action should be effective and proportional to the issue being addressed.

In addition, the Productivity Commission has identified a number of characteristics of good regulation (Productivity Commission 2012):

- targeted towards specific policy goals and objectives;
- smallest possible impacts on business compliance costs, competition and capacity for innovation;
- be non-discriminatory, consultative and transparent;
- written in plain English to make it easy to understand;
- subjected to periodic review;
- be risk-based;
- be more outcomes focused than process or systems focused;
- based on voluntary compliance where possible; and,
- associated with risk-based enforcement measures.

The Best Practice Regulation Handbook (Commonwealth of Australia 2013) identifies a number of alternative regulatory forms including:

- ***Self-regulation***:
    - Rules and codes of conduct formulated and enforced by industry.
    - More appropriate in situations where there is no strong public interest concern and the areas being regulated are consider low-risk and low impact.
    - Unlikely to be appropriate if the industry may have an incentive not to comply.
- ***Quasi-regulation***:
    - Where governments may influence businesses to comply with where there is no explicit government regulation.
    - Examples include industry codes of practice developed with government involvement, industry-government agreements and accreditation schemes.

- ***Co-regulation:***
    - Industry develops and administers its own arrangements but government provides legislative backing to enable the arrangements to be enforced. This may be referred to as the underpinning of codes and standards.
    - Government may legislate standards and industry then manage a QA program to demonstrate compliance.
    - Legislation may provide for government imposed arrangements in the event that industry does not meet its own arrangements.
- ***Explicit government regulation***
    - Comprises primary and subordinate legislation and is a commonly used form of regulation.
    - Has been applied to situations where the issue being regulated is viewed as high-risk, high-impact, where the community requires the certainty provided by legal sanctions, and where there is a history of systematic compliance issues.

There are important governance issues related to effective regulation (Australian National Audit Office 2007) and these may be summarised under four topic areas:

1. Risk:
    a. Using structured risk management methods to identify risks and develop regulatory approaches to mitigate these risks. Risks may be at the level of an event that interferes with the regulated entity's ability to comply with regulations, and with the ability of the regulator to effectively administer regulation.
    b. A matrix approach to risk assessment may be useful, that combines the probability of an event occurring with its impact to provide an overall assessment of risk.
2. Accountability:
    a. Regulatory practices must be transparent, well defined and involve application of quality assurance processes.
3. Managing performance:
    a. The regulatory framework must operate with a clear performance plan, procedures and protocols and performance must be assessed against protocols and against defined performance measures in a structured quality assurance framework.
4. Managing probity:
    a. Credibility and good governance practice are vital to ensure stakeholder confidence in the effective actions of the regulator

There has been a progressive move in Australia (and elsewhere) over time from prescriptive regulatory frameworks towards performance-based and process-based regulation (Carroll et al 2008).

Prescriptive regulation is described as being based on defining how activities are to be undertaken (what techniques and materials to use, what must be done, precisely how it is to be done, and where it must be done). Prescriptive regulation generally emphasises a known degree of risk mitigation over innovation or cost management and is often described as being inputs focussed rather than outputs focussed. Much of the current livestock export regulatory framework is prescriptive.

Under a prescriptive regulatory framework, the regulated entity is only required to carry out the mandated actions to discharge legal responsibilities. If adverse events still occur then the fault may be viewed as lying with the regulations and the regulator, even though the intent and lawful responsibility may actually lie with the regulated entity. Accountability under these sorts of situations may be misplaced and on occasion may have little to do with performance measures. Prescriptive regulations tend to be particularly poor in industries where innovation plays an important role in business activities and if outdated or poorly designed may actually prevent businesses from adopting current best practices.

Performance based regulation is based on specifying required outputs or performance measures that must be achieved (output focussed rather than inputs). Performance based regulation provides a degree of flexibility to industry to determine how they will achieve compliance and is viewed as being more supportive of innovation.

Carroll et al (2008) describe process-based regulation as a third category while noting that this term does not appear to be referenced in Australian government documents about regulatory practices. Process based regulation may also be described as risk-based regulation where practices are based on risk identification, assessment and that can define control practices that must be developed, implemented and audited.

It is common to see regulatory frameworks with characteristics of all types of regulation and indeed it may for many situations be necessary to combine multiple types of regulation to ensure achievement overall of efficient and effective risk management. Under food safety regulations there are some clearly prescriptive measures (pasteurisation of milk) as well as some outcomes-based measures (maximum allowable bacterial counts) that may be combined in one set of standards (Carroll et al 2008).

The trend in Australia is to encourage moves towards performance-based regulatory requirements except where prescriptive requirements are unavoidable to ensure public safety in high risk situations (Carroll et al 2008).

Process-based measures are identified as being particularly appropriate when the range of risks that need to be controlled is numerous, when some of these risks and appropriate control measures may be relatively poorly or little understood, and when a range of possible control measures or approaches may exist. Where risks are relatively well defined, control measures well understood and where innovation may not be a feature of the industry, prescriptive measures may remain the most effective regulatory regime (Carroll et al 2008).

Performance-based measures add to this the requirement that relevant outcomes must be able to be clearly defined and measured, and performance-based measures are likely to be most relevant for industries where innovation is a major attribute. Where performance measures may be poorly defined or hard to measure, these systems may not deliver adequate regulatory control of outcomes.

Documentation of performance is described as requiring two levels of evidence (Penny et al 2001):

- Direct evidence based on measurements collected directly on the outcome of interest; and,
- Backing evidence which is defined as evidence that the direct evidence is credible and valid.

These two dimensions may be considered to form the driving influences behind the design of QA programs.

Carroll et al (2008) also note that in some cases a move from prescriptive to performance based measures has seen the proliferation of industry standards and guidelines being developed and referred to in the regulation as conferring ***Deemed to Satisfy*** (DTS) status with regulatory standards. In some cases the overall effect has been to increase the general regulatory burden and complexity rather than to simplify it and make it more efficient.

There are recognised problems in reconciling the flexibility of performance-based regulation with the need for accountability by the regulated entities in developing strategies to achieve

performance, documenting performance and in addressing deviations or non-compliance. Increasing flexibility generally seems likely to make accountability more problematic.

It is acknowledged that good regulatory practice must reach a balance between imposing sufficient regulation to ensure achievement of agreed economic, social and environmental goals while also explicitly minimising and simplifying the regulatory burden on businesses. Australian governments appear to support the principles of reducing regulatory burdens where possible provided that performance measures remain compliant with agreed goals, moving away from prescriptive regulations and towards performance-based regulations (based on measurable performance against stated outcomes). Outcomes-based regulation focuses on the key outcomes and not the means by which these are achieved, allowing better flexibility for industry to explore adoption of new/alternative techniques or technology to improve performance.

A number of government publications provide useful information on development, implementation and administration of better policy and regulation including the following:

- Australian National Audit Office (2006). Implementation of Programme and Policy Initiatives: Making Implementation Matter. Canberra, ACT.
- Australian National Audit Office (2007). Administering Regulation: Better Practice Guide. Canberra, ACT.
- Victorian Competition and Efficiency Commission, Office of Regulation Reform, State Government of Victoria. Principles of Good Regulation – Regulation Reform.
- NSW Government Better Regulation Office (2009). Guide to Better Regulation.

The *Administering Regulation: Better Practice Guide* (Australian National Audit Office 2007) provides excellent advice and information on developing and implementing regulatory programs under a range of relevant headings.

The *Administering Regulation: Better Practice Guide* also acknowledges that resources are likely to be limiting and that risk assessment should guide activities to ensure optimal risk mitigation for least cost. Types of activities and the frequency of different activities may be based on risk assessments and then monitored and revised depending on performance.

The Guide describes graduated approaches to non-compliance that may range from encouragement to provision of direction and elevating to restriction, suspension, cancellation and the possibility of civil or criminal actions. Where remedial actions are appropriate to address non-compliance, these should be accompanied by a clear plan with a timetable for implementing each action and an accompanying plan for monitoring and reporting on progress.
Finally the Guide describes the importance of adverse event preparedness and planning which should ensure that events are managed effectively when and if they do occur.

A recent review article was commissioned by DAFF as part of the Australian Animal Welfare Strategy and provides a number of comments relevant to this section (Bloom 2008).

Tick-the-box methods that check processes may form a relatively efficient way of assessing and regulating business activities but are also subject to criticism because they tend to be rigid and inflexible, may not necessarily produce the desired outcome(s) or may be sufficiently inflexible to not permit operators to adjust or adapt to systems that may improve outcomes (Bloom 2008).

There are particular problems for regulation of livestock export that result from the complexities of multiple jurisdictions (State/Territory/Commonwealth) and the need for revision to achieve national consistency and clarity of responsibilities (Bloom 2008).

Regulatory approaches may include compliance and enforcement measures that range from legal to more socially inclusive (Bloom 2008). Legal processes operate through command and control where breach of regulated standards results in punishment. Social/administrative

processes refer to more cooperative partnership approaches with remedial action to remedy breaches. The combination of these two approaches provide options for managing standards with a pyramid of responses ranging from notification to more onerous responses associated with license revocation or criminal penalty.

Regulatory processes that involve more severe legal (civil or criminal) action against entities for breaches of regulatory compliance, may be less effective than those that involve less punitive measures that allow entities to apply remedial action in response to events and breaches (Bloom 2008). A detailed discussion on this issue and the advantages and disadvantages of the legal vs socially inclusive approaches is provided in Bloom (2008). There is recognition of the importance of punitive measures including civil and/or criminal actions as a final measure in a pyramid of sanctions that would both act as a motivator for compliance and as a punishment in the case of severe violations or violations that are not responded to in an adequate manner. However, a system that immediately escalates any breach to the level of a criminal prosecution does not provide an environment that encourages open reporting of performance against standards. In contrast it has the effect of encouraging under reporting of problems, may result in setting of standards at a level lower than might reasonably be achieved (to minimise the risk of criminal proceedings) and generally does not facilitate industry commitment to a co-regulatory model.

The social process model is described by Bloom (2008) as fostering a more cooperative government-regulated industry approach based on recognition and rapid reaction to detected breaches or threats. This approach is based more on a cooperative approach to setting outcomes-based standards and to a recognition that effective monitoring should allow early detection of problems or possible/real breaches and a rapid response. These measures are important evidence that a monitoring or QA program is working and should be encouraged and facilitated. This is the context where Bloom (2008) describes the more positive environment of social process. In a biological system, problems will occur from time to time. Every attempt should be made to implement measures to minimise the risk of problems. If and when problems occur, early detection and rapid reaction to minimise adverse effects and put in place measures to address the issue and prevent its reoccurrence should be recognised as good performance and not subjected to the threat of criminal action. This sort of approach is identified by Bloom (2008) as being likely to result in higher achieved standards of welfare outcomes than an approach that is based on punitive regulation.

It is important to note that this discussion is based on a graduated scale of responses for non-compliance that initially requires reporting and corrective action and then elevates through increasingly punitive actions such as restriction, suspension or cancellation of licence, more onerous corrective actions and ultimately the possibility of civil or criminal actions.

The co-regulatory framework operating for the AQIS Export Meat Program is identified in both Bloom (2008) and the *Administering Regulation: Better Practice Guide* (Australian National Audit Office 2007) as an example where the co-regulatory model has reduced unnecessary structural requirements for compliance and allowed the development of cost-effective QA measures involving industry initiatives. A regulatory framework completely managed by government is considered likely to be relatively rigid, more likely to be process driven, difficult to adapt to changing business environments and relatively expensive (increasingly so as the environment moves towards full cost recovery for government services). In recent years there has been a move towards more co-regulation in a number of sectors. Benefits include the possibility for industry to take more ownership of their own regulatory environment and to have outcomes-focused regulatory standards with less prescription on how operators might meet the standards. This allows industry to be innovative and efficient in developing procedures for documenting compliance and this approach ensures cost-efficiency. These measures are described in more detail under the following section on review of existing industry regulatory frameworks.

A number of issues relating to regulatory practices have been raised in Red Meat Industry submissions to the Productivity Commission first (MLA 2007) and second (AMIC 2008) reviews of regulatory burdens on business. Many of the points raised in these submissions relate to practices and principles of good regulation as outlined above, and the value of having a single set of national regulations rather than regulations that may vary between jurisdictions within Australia.

A number of specific issues were identified in the 2007 submission that related to livestock exports including:

- Rising regulatory costs.
- Little evidence of improvement in outcomes resulting from changed regulations.
- Lack of impact assessment for regulatory changes.
- Some regulatory measures may be contrary to best practice principles for regulation.

In recent years the concept of social licence to operate has become a topical issue amongst agricultural industries in general and for the livestock export industry in particular. A social licence to operate refers to community approval for the activity and is based in turn on the beliefs, perceptions and opinions held by stakeholders in a particular activity (Arnot 2011). Arnot (2011) defines social licence as the *privilege of operating with minimal formalised restrictions (legislation, regulation, or market requirements) based on maintaining public trust by doing what's right*. Arnot (2011) also defines public trust as the *belief that activities are consistent with social expectations and the values of the community and other stakeholders.*

If social licence is lost through events that erode or eliminate public trust, there is a risk of having it be replaced with social control, represented by regulation, legislation, litigation and increasing public activism opposing operation of the industry (Arnot 2009). This process may be viewed as a tipping point with a lower cost, trust-based tacit approval of industry operations (social licence) being replaced with often a higher cost, more rigid, regulatory framework that attempts to enforce compliance in order to maintain some level of public confidence. Arnot (2009) argues that industry investment in building and maintaining social licence is not just the right thing to do, it is good business.

In considering the livestock export context, it is apparent that there is an erosion of social licence for livestock export and this is leading to a combination of mounting scrutiny of industry, increasing public pressure for more regulatory controls to be imposed on industry activities and calls for the export of livestock to be abolished based on animal welfare grounds.

When there is effective social licence to operate, Arnot (2009) indicates that it is possible for operators to move away from a more restrictive, regulatory environment towards a more relaxed operating framework with less regulation.

In summary, the following conclusions may be made about the context of the livestock export regulatory framework and appropriate guiding principles for reform:

- The existing livestock export regulatory framework is predominantly prescriptive and there is scope to move towards more process and performance based regulation.
- Principles and characteristics of good regulation should guide any regulatory review.
- Effective regulation is likely to require components of the framework that may be prescriptive, process or performance-based. Choices between these approaches should be based on the characteristics of the part of the chain that is being considered and there may be situations where prescriptive measures are the most efficient and effective approach to regulation.
- Care should be applied to ensure that regulatory requirements are based on effective measures / processes that are clear, consistent and related to welfare outcomes.
- Performance measures should be based on outcomes that are able to be measured in an efficient manner.

- Changes to the regulatory framework should be based on improvements in efficiency and flexibility while ensuring there is accountability and that effectiveness (performance against standards) is maintained.
- Building and maintaining social licence to operate is both ethically right and sound business, is dependent in turn on industry behaviours and performance, and will contribute to an improved regulatory framework.

7.2 Review of existing livestock regulatory frameworks

There are a range of accreditation, legislative and regulatory schemes relating to livestock and in particular animal welfare in use throughout Australia. These schemes have been developed by government, industry bodies, private companies and service organisations.

A number of schemes have been reviewed as part of this report including:
- Australian Export Meat Inspection Systems (AEMIS)
- Australian Land Transport Standards
- Livestock Management Act (2010) from Victoria
- truckCare
- National Feedlot Accreditation Scheme (NFAS)
- Australian Pork Industry Quality Assurance Program (APIQ)
- Livestock Production Assurance
- Australian Land Management Group – Certified Land Management
- RSPCA Approved Farming Scheme

A standardised set of criteria has been developed by the authors and applied in a consistent manner to each of these alternative frameworks to allow comparative assessment of the frameworks. The findings from these assessments are presented in a summary matrix form in Table 2 (for the major alternatives), followed by a more detailed discussion of each alternative framework.

Table 7.1: Summary matrix presenting findings from assessment of major alternative regulatory frameworks

CRITERIA	REGULATORY APPROACH								
	AEMIS	**Australian Land Transport Standards**	**Livestock Management Act (2010)**	**National Feedlot Accreditation Scheme**	**Truck Care**	**Australian Pork Industry Quality Assurance Programme**	**LPA Quality Assurance (tier 2)**	**ALMG Certified Land Management**	**RSPCA Approved farming**
Origin of scheme	Legislative + Gov't-industry co-regulation	Legislative	Vict gov't legislation + industry co-regulation	Industry	Industry	Industry	Industry	Private	Private
Scope	Meat products for export	Commercial transportation of livestock	All regulated livestock activities	All feedlot activities	All transport from loading to delivery	On farm activities	On farm activities	On farm activities	Intensively raised livestock
Purpose	Compliance with regulation and with importing country requirements	Defined Standards for monitoring and compliance	Framework for implementing welfare standards and demonstrating compliance	Marketing, industry self-regulation, image management	To facilitate the meeting of industry and regulatory requirements	Provide leadership on issues of compliance, regulation & consumer concern.	Marketing, industry self-regulation, improved welfare outcomes, food safety	Environmental & animal welfare outcomes management	Demand for higher welfare products
Voluntary/non voluntary	Non-voluntary	Non-voluntary	Non-voluntary	Voluntary	Voluntary	Voluntary	Voluntary	Voluntary	Voluntary
Clarity of Purpose	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Good	Excellent	Excellent
Ease of implementation	Complex, co-operation required from industry, gov't & other countries.	Nationally consistent Standards. Requires separate implementation in every state/territory.	Flexible, has to integrate with multiple different QA programs for compliance monitoring	Straight forward	Straight forward	Straight forward	Successful implementation but poor uptake (tier 2)	Workshop & mentored development of custom CLM Management Plan.	Supported by RSPCA personnel, some cost to producer
Effectiveness of external communication	Excellent	Varies from state to state	Excellent	Provides verifiable data	Good	Excellent	Poor	Good	Good

CRITERIA		REGULATORY APPROACH							
	AEMIS	**Australian Land Transport Standards**	**Livestock Management Act (2010)**	**National Feedlot Accreditation Scheme**	**Truck Care**	**Australian Pork Industry Quality Assurance Programme**	**LPA Quality Assurance (tier 2)**	**ALMG Certified Land Management**	**RSPCA Approved farming**
Responsibilities for record keeping	Abattoir operators and meat exporters	Responsibility of the operator for each part of the chain.	Livestock operator	Feedlot operator	Transport operator	Landholder/ member	Producer	Producer	Producer with RSPCA support
Reporting responsibility	External auditor or DAFF auditor	Minimal reporting. Victoria has audit reporting through QA	Livestock operator or government officer	External auditor	External auditor	External auditor	External Auditor	Review workshops	RSPCA Assessor
Verification of compliance	Regular compliance checking and audit reports	Mainly enforced through breaches. May change to compliance reporting.	Industry QA programs or government audit & enforcement	Managed by industry	Managed by industry committee	Managed by industry committee	Managed by the LPA Advisory Committee	ALMG accredited auditor	RSPCA assessors reporting to RSPCA panel
Enforcement	Imposed conditions, withdrawal of licence to export	Infringement notices, fines, court appearances	Infringement notices, fines, court appearances	Suspension or withdrawal of accreditation, referral to regulator	Suspension or withdrawal of accreditation	Suspension or withdrawal of accreditation	Suspension or withdrawal of accreditation	Suspension or withdrawal of accreditation	Suspension or withdrawal of scheme approval
Benefits to participant	Compliance necessary for export approval	Freedom from prosecution	Compliance with standards.	Ability to export product with a “Grain fed” label. Image management	Compliance with legislative and industry requirements	Ability to export product. Image management	Absence of obvious benefits resulted in diminishing uptake	Personal benefit and limited market benefit	Market premium and targeted support

CRITERIA		REGULATORY APPROACH							
	AEMIS	**Australian Land Transport Standards**	**Livestock Management Act (2010)**	**National Feedlot Accreditation Scheme**	**Truck Care**	**Australian Pork Industry Quality Assurance Programme**	**LPA Quality Assurance (tier 2)**	**ALMG Certified Land Management**	**RSPCA Approved farming**
Compliance costs	High	Low (may change)	Medium	Medium	Medium	Medium	Medium	Variable depending on plan	High
Advantages	Outcome focused	Comprehensive and clear	Flexible, co-regulatory framework, efficient and effective	Industry controlled and managed, communication and market focused	Industry developed, funded and managed	Industry developed, funded and managed	Comprehensive standards, simple implementation	Peer driven process linked to personal goals	Supported by promotional campaign, excellent communication, premium
Disadvantages	High compliance costs	Prescriptive, range of implementation between states, no system of reporting	Compliance burden	Low uptake, implementation costs	Low uptake	Compliance burden	Poor external communication, lack of incentive for producers, costs	Low uptake and limited market benefits	Narrow supporter and producer base

7.2.1 Australian Export Meat Inspection System (AEMIS)

Background to AEMIS

The Australian Export Meat Inspection System (AEMIS) was implemented in late 2011 following joint government-industry reviews of export regulatory systems. The process was motivated in part by a move to full cost recovery systems for export certification functions (recommended in the Beale Review of quarantine and biosecurity arrangements) and by a reform agenda aiming to move away from item-by-item inspection of processes by a government officer and towards a model with greater emphasis on company quality management systems. There were also perceived opportunities for improvement through more objective performance measures, increased use of electronic processing and simplified or streamlined inspection procedures.

The reform process was managed with government funding through the *Export Certification Reform Implementation (ECRI)*[23] that created a joint industry-AQIS Export Meat Ministerial Taskforce (Meat MTF)[24]. The driving principles for reform were to make export certification more effective and efficient. The resulting system was intended to ensure compliance with relevant legislation and standards while also allowing business greater flexibility in how they manage their day-to-day operations. This was achieved with a co-regulatory model.

The time period from formation of the Meat MTF to implementation of the AEMIS system was about 2.5 years, reflecting the number and complexity of issues that had to be resolved in order to implement the new system.

The reform agenda specified a number of items that had to be successfully addressed including:

- implementation of more efficient on-plant and off-plant meat inspection functions and staffing arrangements;
- implementation of more effective/efficient verification, security and certification activities;
- effective transition to an improved export inspection and certification system;
- developing strategies to ensure that reforms were accepted by importing countries and to manage possible responses by Australia's trading partners to any changes in the export inspection and certification system;
- identifying improvements required between AQIS and industry with the development/ enhancement of electronic systems that would create significant efficiencies for meat inspection and certification;
- identifying the most appropriate cost recovery model in the delivery of meat inspection and export certification;
- re-drafting legislation, where necessary, to align with the reforms to meat export inspection and certification services.

The Meat MTF implemented a series of projects to address specific challenges in moving to the new system and contributing to the development of systems and processes (including increased use of electronic systems), reporting (including development of IT systems), cost recovery, auditing, and agreement of international trading partners.

The *Regulation Impact Statement (RIS)* for the Export Certification Reform Package contains information that is directly relevant to the livestock export situation and also

[23] http://www.daff.gov.au/ecri

[24] http://www.daff.gov.au/__data/assets/pdf_file/0006/2189679/meat.pdf

specifically references issues that relate to the export of meat and meat products from Australia as well as the export of livestock (Australian Government 2011). The following points are drawn from the RIS and relate mainly to export of meat and meat products:

- Export of meat and livestock from Australia is heavily regulated and export of meat and meat products has extensive regulatory requirements.
- Prior to the reform the RIS identified constraints including the lack of flexibility for business in arranging procedures to comply with certification requirements, and the inability for business to negotiate salaries for inspection services or to assign inspection staff to other activities when they are not required for inspection duties.
- The RIS discusses options for regulatory reform and identifies revision of export certification service delivery arrangements as a preferred option. This involved a devolving of auditing and inspection functions away from DAFF (AQIS) staff to company employed personnel and independent audit providers. This approach required a combination of strategies including requiring appropriate training for staff to ensure competency. For some positions that were being moved from AQIS responsibility to company staff, the staff would be required to enter into deeds of agreement with AQIS, even though they were being employed by a non-government entity. This ensured that company engaged auditors and inspectors would meet requirements of overseas countries that all carcasses or products for example be inspected by a government officer.

AEMIS review

AEMIS is a co-regulatory, service delivery model.

AEMIS operates in processing plants that are exporting meat and meat products to other countries.

There is a great deal of the structure and functionality of the AEMIS model that has relevance to the livestock export situation.

Meat export is controlled by the Commonwealth with underpinning legislation and Australian standards. Processing plants have to work within state/territory legislative jurisdictions as well. There are importing country protocols and requirements and there are requirements for inspection of some or all products by a Commonwealth officer.

Under AEMIS, the legislation and standards remain under government responsibility and DAFF retains responsibility for setting the key performance indicators and the controls. These are based on the relevant legislation and standards and are outlined in a DAFF controlled document called the Approved Arrangement Guideline (Meat). This is described in more detail later in this section.

AEMIS then allows businesses increased flexibility under the co-regulatory environment to manage their processes while ensuring compliance with the Approved Arrangement Guideline (Meat) and as a result with relevant standards and legislation.

Monitoring of compliance and reporting is achieved through a QA program that is risk-based and that involves a combination of company staff performing inspection activities (internal inspection and verification), independent auditors performing official audits and DAFF officers performing additional verification and audit activities as well as retaining certification and approval responsibility.

Some of the inspection duties that were formerly only done by DAFF Officers are now performed by inspectors who are employed by the companies, providing increased business

flexibility and the potential for companies to assign these individuals to other tasks provided their inspection duties are performed.

Audits are a key part of the system but the system allows companies to employ independent auditors provided they meet appropriate certification standards and are approved by the Commonwealth.

There is a universal catch-all option where companies may choose to operate under a system more similar to the old-style Commonwealth regulated model with DAFF providing all inspectors and doing all the auditing. This regime is more rigid and likely to be more expensive. It is retained to allow small operators for example the option of not having to develop their own QA systems but to continue to rely on full government regulatory services on a cost recovery basis.

The arrangements are relatively complex but the end result appears to be a system that does allow for commercial efficiency and flexibility while operating in compliance in what is generally considered to be a heavily regulated environment.

In the transition to the AEMIS system there was some Commonwealth funding support to offset costs but the system is now operating as a full-cost recovery system so all costs are being borne by industry.

AEMIS implementation has been associated with a number of advances in information technology systems including the Audit Management System (AMS), Tracking Animal Certification for Export (TRACE) and the online Manual of Importing Country Requirements (MICOR). These IT systems are already being applied to livestock exports as well as to export of meat and meat products.

An important component of the AEMIS system is the Approved Arrangement Guideline (Meat).

7.2.1.1 Approved Arrangement Guideline (Meat)

DAFF retains responsibility for specifying the controls that businesses must meet under AEMIS. For export of meat and meat products these controls are specified in the Approved Arrangement Guideline (Meat)[25].

The *Approved Arrangement Guideline (Meat)* provides a clear framework that meets all requirements of the *Australian Standard for the Hygienic Production and Transportation of Meat and Meat Products for Human Consumption* (Australian Meat Standard AS4696), and the Export Control (Meat and Meat Product) Orders, abbreviated as EC(MMP)O.

Any meat processing plant that wishes to export meat or meat products must have an Approved Arrangement. The Approved Arrangement describes how occupiers will meet legislative requirements, including assuring compliance with:

- good hygienic practices (GHP) to ensure that food is wholesome;
- the application of HACCP for food safety;
- product integrity through the application of product identification, segregation, and traceability practices ensuring that product is accurately described and maintains relevant importing country identification ;
- importing country requirements;
- animal welfare requirements; and,

[25] http://www.daff.gov.au/biosecurity/export/meat/elmer-3

- systematic whole of chain approach.

The basis of all Approved Arrangements is a QA system based on HACCP and that meets all requirements of the relevant Australian Standard.

The Approved Arrangement system is designed to:

- be outcome based;
- address the relevant requirements of legislation and the Australian Meat Standard;
- address any necessary importing country requirements;
- use a risk-based approach (HACCP);
- be auditable against, and is capable of being related back to, the requirements of the Australian Standard;
- be capable of being understood by the users of the system; and,
- be subject to formal internal review to maintain currency.

The Approved Arrangement Guideline (Meat) covers a range of topics under three broad areas:

- Systems Support
  - Overarching objectives, organisational structure, auditing, training, document control, corrective action procedures.
- Process Control
  - Good hygienic practices including sanitation, hygiene, pest control, waste management, water control, control of hazardous substances, animal welfare, temperature control, various animal and carcass handling procedures and others.
  - Critical points identified under a HACCP process.
- Product Integrity and Certification
  - Traceability and recall procedures, certification and security, importing country requirements, export documentation etc.

The Approved Arrangement Guideline (Meat) document follows a standardised layout and each of the three broad areas identified above is divided into a number of sections. Each section has the same headings:

- Outcome: defines the outcome to be achieved
- Performance indicators: Describe the actions that need to be undertaken to demonstrate compliance and are expected to be used to inform the development of relevant operating procedures and work instructions.
- Performance checklist: Provide a detailed, step-by-step checklist of procedures that underpin the performance indicators. These are expected to be used in the development of procedures/work instructions and also to inform the audit procedures for each section.
- Targets for each procedure: Targets provide clear measurable thresholds for each procedure and each target is referenced to the relevant section of legislation or to good management practice documents. Targets are presented in two levels:
  - Mandatory targets (identified with an “M”) that are referenced to relevant sections of the Export Control Act (1982) and subordinate legislation. These targets must be met in the Approved Arrangements, and
  - Non-mandatory targets that reflect good management practice.

The expectation is that processors will develop their own detailed set of procedures and work instructions based on templates provided in the Approved Arrangement Guideline (Meat) and addressing each of the sections outlined in the Approved Arrangement Guideline (Meat).

DAFF then registers the plan and reviews and approves the arrangement (the detailed procedural documents developed by the processor).

7.2.1.2 Sanctions for non-compliance

The Approved Arrangement includes an outline of sanctions policy that details how non-compliance will be managed under the co-regulatory environment.

Under AEMIS it is the meat exporter's responsibility to provide compliance with relevant legislation and standards. Regulatory actions and sanctions are imposed when non-compliance and/or breach of the legislation is detected, in line with the relevant Australian legislation.

During inspection, verification and auditing activities, authorised officers (third party or government officers) may issue direction to an exporter to address non-compliance. These situations may include immediate action to ensure that non-compliant product is not produced or exported (on the spot response to a breach or non-compliance at a point in time).

Non-compliance may also be followed by regulatory action by the Secretary (or delegate) against the exporter that may include one or more of the following:

- completion of an audit report with recommendations for corrective action to address non-compliance;
- notice to vary the approved arrangement to bring it into compliance;
- notice to change the frequency or audit;
- show cause notice asking the exporter to show why the approved arrangement or registration of the exporter should not be suspended or revoked;
- written notification of immediate suspension of an approved arrangement or registration;
- conducting an unannounced audit;
- revocation of export permits and government certificates;
- prosecution.

The documentation of sanctions also explicitly recognises that government officers may have both audit and regulatory roles in the industry. When a government officer is conducting an audit it is defined as a fact finding activity to be facilitated by the establishment/operator. If a departmental officer detects a non-compliance during the audit process, then the audit is immediately suspended and the officer assumes a purely regulatory role to investigate the non-compliance and take action as required under the regulatory framework. If an audit is being conducted by a non-government authorised officer (third party auditor) and non-compliance is detected, then that officer will notify the Secretary (or delegate) immediately and the same process is then followed (suspension of audit and imposition of a regulatory process of information gathering and management of the non-compliance).

Some specific markets have additional response activities for non-compliance that may be agreed on as part of market access arrangements and that then form part of the approved arrangement for those plants providing product into these markets. An example of one such arrangement is the initiation of a rapid-response unit of DAFF officers who would complete an audit of a plant following non-compliance.

Co-regulatory Quality Assurance in action

There are multiple levels of performance monitoring that occur under the new AEMIS.

Processors are responsible for the hygienic operations of their facilities in compliance with standards. Processors have company-managed QA systems for monitoring performance.

A formal HACCP review is used to identify Critical Control Points (CCPs) which are points where identified hazards can be controlled (reduced to an acceptable level or eliminated), and implement control measures and monitoring procedures. Monitoring is aimed at detecting deviations from normal limits and allow corrective action before the critical limit for a process may be exceeded. Response points and corrective actions are all defined. There are also verification procedures which involve some form of monitoring to ensure the HACCP system is functioning effectively on an ongoing basis. Company staff must be adequately trained for the monitoring and verification procedures they are involved in.

A number of performance measures have been identified for use in continual monitoring as part of a Product Hygiene Index (PHI). PHI measures are objective, relate to food safety and are capable of discriminating between different performance levels or processing plants. Data on PHIs are collected each day and reported through a national database.

Where company staff perform checking and monitoring and verification of performance against standards, there are built-in checks that involve DAFF officers checking the performance of company staff. For example DAFF inspectors are expected to check each CCP each day to provide a level of checking that monitoring is being undertaken and that performance is in compliance with standards ie that targets are being met or corrective action applied if deviations occur.

In some cases performance against standards require that samples be collected on a regular basis such as swabs of specific sites on a defined number of carcasses to check for bacterial growth. In some cases there are parallel sampling regimes with the main performance checking involving sampling under a company QA system and a separate verification process with a smaller number of samples being taken by DAFF inspectors. The results are then compared to look for inconsistencies or unusual patterns that may be indicative of compliance failure or process issues.

There are requirements for some inspection procedures to be undertaken by government inspectors and these requirements are often mandated by importing country protocols. Inspection procedures under the new AEMIS system may be undertaken by DAFF officials called Food Safety Meat Assessors (FSMAs) or by Australian Government Authorised Officers (AAOs).

AAOs are employed under a hybrid arrangement with the following characteristics:

- AAOs are employed by the company which means that there is flexibility for negotiated employment conditions and they may have additional tasks required under the terms and conditions provided that their inspection activities are completed.
- AAOs agree to abide by a DAFF code of conduct and are legally obliged to perform inspections in accordance with a detailed set of DAFF controlled instructions. These conditions mean that AAOs are accepted as meeting the requirement for government inspections for meat products destined for export.
- The combination of characteristics provides flexibility to companies for work arrangements while retaining the DAFF inspection standards and work conduct.
- An additional incentive for companies to hire AAOs is that they may then be able to reduce the number of DAFF employed inspectors in the processing plant.

Export meat processing plants all employ a mixture of company QA staff and have DAFF officers also present (FSMA and On-Plant Veterinarian) and there are mandatory weekly

meetings between DAFF officers and company staff (QA staff and management) to review performance against standards and discuss any issues.

Independent third party audit providers (AUS-MEAT) are involved in a number of aspects of the export meat QA program. All export abattoirs and export boning rooms must hold AUS-MEAT accreditation in relation to the Australian Meat Industry Classification System and formal involvement in the AUS-MEAT Approved Quality System forms a required part of a registered establishment's Approved Arrangement with DAFF. The AUS-MEAT Approved Quality System incorporates training in procedures under the Australian Quality Training Framework (AQF) as well as accreditation and regular audits for ensuring ongoing compliance with standards.

Finally, there periodic formal audits conducted of processing plants that are conducted by DAFF and also by auditors engaged on behalf of importing countries. DAFF audits had been conducted every month and are in the process of being moved to every 2 months and possibly to every 6 months. As the interval between audits is extended, the audits generally become more detailed and a periodic detailed audit may require two audit staff inspecting all aspects of plant performance over a period of 2-3 days. Audits conducted at the request of importing countries may be undertaken by overseas auditors or by third party providers such as AUS-MEAT acting under approval to conduct audits on their behalf.

There are a number of characteristics of the AEMIS framework that have potential application to the livestock export chain.

It is based on a combination of legislation and standards with DAFF retaining responsibility for setting the control measures (Approved Arrangements) and for approving and registering (licensing) establishments.

There is a co-regulatory framework to ensure compliance with standards and legislation and that non-compliance is detected early and corrected.

The co-regulatory framework incorporates extensive QA components that are risk-based and involve elements managed internally by operators, externally by third party accreditation and audit providers, as well as oversight by DAFF officers.

The QA framework provides a high level of monitoring and has DAFF or independent verification and audit procedures built in to provide a level of *check-the-checkers* that provides continual performance monitoring and verification.

There are also cases where government involvement in monitoring and inspection procedures has been reduced and where company inspection officers are able to be used for these purposes. This provides an opportunity for increased flexibility and for reduced compliance costs.

The processes provide a constant level of QA and reassurance that performance at all times should meet standards and that non-compliance at any time will be detected and corrected.

Differences between meat processors and livestock export

While the AEMIS is considered to offer a lot of attributes and functionality that are directly applicable to the livestock export industry, there are a number of important differences between the two industries.

Export processing plants involve repetitive tasks performed on a chain that is in operation for many hours each day. Each plant is required to have a DAFF On-Plant Veterinarian (OPV)

present at the plant (larger plants may have more than one) and either one or more AAOs and one or more DAFF FSMAs. There are requirements to inspect every carcass at points along the chain. This means that every plant still has DAFF officers present to perform certification tasks as well as verification and QA type tasks.

The meat processing industry is therefore better placed (than the live export industry) to have a multi-layered QA system with industry QA officers performing QA as well as DAFF officers performing independent QA tasks and check-the-checker tasks (activities designed to monitor the performance of industry QA staff).

Both industries operate across a physical system that spans from provider (producer or saleyard) to aggregation point (lairage at a processing plant or RP). However, the processing plant then has almost all their activities at a single location (processing plant) though there may be multiple steps (live animals in lairage, processing chain, boning room, chiller, packing room, shipment, etc). In contrast the exporter has to operate across a very different set of physical locations extending from RP to port of loading, voyage, port of discharge and post-discharge transport and varying destinations in a foreign country.

The livestock export chain has important differences in structure, location and function.

The export industry does not have repetitive short-time tasks that occur in a single extended chain, largely at one location. The export industry tends to operate at a voyage level with component activities that are done for one voyage and then not done until the same step occurs for the next voyage.

Receival at the RP tends to occur within a short time frame (48 hours) but livestock may arrive at an RP outside this time. The specified receival period allows exporters to arrange for extra staff including stock inspectors and drafters to be present at receival to handle, inspect, classify and sort livestock in compliance with standards and with market requirements.

While DAFF and state/territory officers may arrive at the RP at any time (with appropriate notice) to perform official functions, there are relatively few defined visits or inspections involving DAFF or state/territory staff during routine preparation of livestock for export.

A private veterinarian may be called to the RP at any time to attend to any animal that is sick or injured. An AAV and a DAFF veterinary officer perform animal inspections as required by export regulations. There are generally inspection processes that occur at the RP prior to load-out and at the port of loading before animals are loaded onto the export vessel.

The point of this description is that under routine operations within the existing regulatory framework there are relatively few occasions where either a DAFF veterinary officer or other DAFF or state/territory officer or an AAV undertake inspection activities of livestock. During the time when animals are in the RP and right up to loading on to the vessel, they are under the care of industry personnel (RP staff, exporter or staff acting on behalf of the exporter, transporter).

7.2.2 Australian Land Transport Standards

Background

The Australian Animal Welfare Strategy (AAWS) has been working towards developing a series of national Standards relating to various aspects of animal welfare. The intention being to move away from variability and uncertainty associated with the many Model Codes

of Practice for the Welfare of Animals that have existed for many years. National Standards offer a single set of consistent standards that can include mandatory and voluntary (best practice) components and these can then be implemented under state and territory regulations to provide a clearer foundation for animal welfare standards that has a stronger basis for enforcement.

The first Australian national animal welfare standards and guidelines developed under the AAWS were applied to livestock being transported by land. The Land Transport Standards were endorsed by the Primary Industry Ministerial Council in May 2009 and the states and territories then became responsible for implementation of the national standards and guidelines within each jurisdiction. Most jurisdictions have implemented the standards, with arrangements still to be finalised in WA.

These completed standards present an example for the subsequent development of a range of other national welfare standards and guidelines aimed at replacing various model codes of practice with nationally consistent and enforceable welfare standards (Australian Government 2012).

Standards review

The Land Transport Standards cover the process of land transport of livestock by road, rail and vehicle. From an animal welfare perspective, this process commences at the time that animals are first deprived of feed and water prior to loading to the time that livestock have access to water (with the exception of day old chicks and poultry sent for processing) at the completion of the journey (destination). There is a chain of responsibility for the welfare of livestock that begins with the owner or their agent and extends to the final receiver of the livestock.

Responsibilities along the chain are clearly outlined and include:

- mustering and assembly;
- handling and waiting periods prior to loading;
- loading, journey duration, travel conditions, spelling periods; and,
- unloading and holding time.

The Land Transport Standards apply to all people responsible for the care and management of livestock that are transported throughout the entire process including agents, transport operators and people on farms, at depots, sale yards, feedlots and processing plants. The standards apply to the major commercial livestock species.
The Land Transport Standards is made up of two parts – the first dealing with general standards and guidelines (for all livestock species) and the second dealing with species specific standards and guidelines. The content within both parts is divided into various topics and under each topic material is presented under the same headings:

- Objectives – these are the intended outcome(s) for each section of the standards
- Standards – these are the minimum requirements that must be met under animal welfare law
- Guidelines – these are the recommended practices to achieve desirable animal welfare outcomes; they are used for guidance and describe higher animal welfare outcomes compared to the minimum requirements of the Standards.

Standards are then implemented within the legislative frameworks of each state and territory, generally by proclaiming them in regulations under state/territory animal welfare legislation.

For most states and territories the standards seem likely to be managed in a similar way to previous welfare legislation, meaning that there is no auditing or documentation of

compliance and penalties only occur when there is a breach of the standards that is supported through a legal prosecution. There are a range of other QA programs (some of which are described elsewhere in this section) that do include attention to compliance with welfare standards.

Victoria has developed a new legislative framework under the Livestock Management Act (2010) that provides a framework for integrating all the proposed national welfare standards into the state regulatory framework and additionally providing a system under which these standards can be demonstrated to have been met. The Livestock Management Act (LMA) has characteristics that may be useful in the context of this report and further details are provided in a separate section.

7.2.3 Livestock Management Act 2010 (Vic)[26]

Background

The Livestock Management Act (LMA) was enacted in Victoria in April 2010. The LMA was intended to provide a legislative framework to allow implementation of the expected series of national welfare standards (of which the Land Transport Standards were the first) in Victoria and to also provide a framework under which compliance could be managed.

The LMA was purposefully developed to also respond to various national regulatory reviews and guidelines to ensure that the Victorian regulatory framework was contemporary, reflected market, customer and community expectations, applied nationally consistent standards, harmonized delivery and enforcement, minimized regulatory burdens on industry and recognised QA programs as mechanisms for demonstrating that standards are met. These principles are directly applicable to the current issues being considered in this report for the livestock export industry.

LMA review

The LMA is an example of a co-regulatory framework.

Under the LMA a livestock operator must comply with the adopted Standard when engaging in a livestock activity, and must also carry out a systematic risk assessment within six months of introduction of any regulated Standard. The systematic risk assessment follows a defined process where a livestock operator will have read the relevant standard, considered their application to his/her business and put in place the required control measures to meet the standard.

The LMA has two compliance regime options.

The first compliance regime applies to those operators who are not already operating under an approved QA program. These operators will be subject to higher levels of inspection for compliance with the relevant standards.

The second compliance regime is via a co-regulatory arrangement where monitoring and reporting activities are established through an approved QA or other compliance arrangement.

A major advantage of operating under an approved QA or compliance arrangement is that

[26] http://www.dpi.vic.gov.au/agriculture/about-agriculture/legislation-regulation/all-acts/livestock-management-act

no additional audit procedures will be required over and above those being completed as per the approved arrangement. In addition, operators under an approved compliance arrangement will not have to complete the systematic risk assessment, and finally those operators are not liable to be prosecuted for an offence against the regulations unless they have been deemed as *suspended* from the approved arrangement for prior non-compliance with a standard.

Existing QA programs likely to attain Victorian DPI approval as approved compliance arrangements include truckCare and the Australian Pork Industry Quality Program (APIQ). Approval requires assessment by the DPI.

The approach adopted in the LMA is to utilise where possible the procedures developed and adopted in existing QA programs, avoiding the need to develop and manage additional QA procedures for purposes that may directly overlap. It allows state resources to then be focused on monitoring and compliance for those operators who are not involved in approved compliance arrangements and it is expected to greatly encourage operators to join existing arrangements.

The LMA does involve mandatory compliance by all livestock operators and costs are expected to be borne by the operators through involvement in QA programs or through cost-recovery if state department officers conduct audits. There are associated compliance and reporting burdens and in some cases these may represent a requirement where previously there had not been any reporting requirement. The LMA is expected to drive increase uptake of QA programs.

There are a number of important incentives built into the LMA for livestock operators. First, those operators who are operating under an approved QA arrangement (such as truckCare) are exempted from performing a systematic risk assessment for those activities covered by the approved QA arrangement and will not be subjected to further inspection or audit by state department officers (other than procedures required for compliance with the approved QA arrangement). In addition, livestock operators involved in an approved QA arrangement will not be liable for prosecution for an offence against the regulations unless they have been deemed as suspended from the approved arrangement for prior non-compliance with a standard. This element is an important acknowledgement of the function of QA arrangements which are to apply continual monitoring and where non-compliance is detected to then apply corrective action(s) to ensure that compliance is achieved and the risk of the same breach is reduced or eliminated.

7.2.4 truckCare[27]

Background

truckCare is a quality accreditation program designed by the Australian Livestock and Rural Transporters' Association (the ALRTA) in consultation with animal welfare authorities and livestock transport operators.

truckCare review

truckCare is administered by the ALRTA through a truckCare committee and is audited by independent auditors. The program is built around the quality assurance principles contained in international standards. It uses hazard analysis of critical control points to manage risks

[27] www.alrta.org.au/truckcare/

and is designed to integrate with other quality programs across the Australian meat and livestock sector.

truckCare procedures are designed for livestock transporters to be able to demonstrate meeting industry and legislative requirements for food safety, biosecurity, management, traceability and animal welfare. This is achieved through delivery records, and investigation of poor loading facilities and complaints either from a customer or other person involved in the livestock transport task. truckCare has been reviewed and modified to ensure that compliance with truckCare will mean that operators are meeting all the enforceable requirements of the Land Transport Standards and other welfare standards as applicable.

When accredited by the ALRTA, a livestock operator is deemed to have policies, procedures and records in place, certified by an approved quality auditor, to prove the quality of the transport operation in its delivery strategies with specific regard to animal welfare. Accredited transport providers are allowed to badge their trucks with the truckCare logo. An audit is required every two years to maintain accreditation and non-compliance is addressed through the issue of corrective action requests or withdrawal or suspension of accreditation.

The main components of the program require procedures for defined activities including:

- traceability for every load;
- training for all personnel involved in the handling of livestock;
- identification of poor loading facilities;
- suitability of livestock crates to ensure no damage is caused to livestock;
- identification of poorly spelled livestock;
- identification of stock unfit for travel;
- procedures to be followed for downer animals;
- procedures for dealing with complaints from customers;
- procedures for dealing with loading problems; and,
- procedures on the recommended method of loading for the various types of livestock.

The truckCare program is a voluntary industry initiative and is managed and funded by industry. It is not clear what proportion of all transport operators across the country may be accredited under truckCare but many of the larger operators are understood to be already accredited meaning that a relatively high proportion of all livestock being transported within Australia are likely to be carried by truckCare accredited transport operators.

7.2.5 National Feedlot Accreditation Scheme[28]

NFAS background

The National Feedlot Accreditation Scheme (NFAS) is an industry quality assurance scheme that was initiated by the Australian Lot Feeders Association (ALFA). The NFAS is an example of self-regulation. The NFAS was the first agriculturally based quality assurance scheme implemented in Australia and was proactively developed to ensure that every accredited feedlot met legislative requirements and exceeded community expectations. The scheme has been operating since 1994.

While it is a voluntary QA program, export beef can only be identified as *grain-fed* or *lot-fed* if cattle were sourced from an NFAS Accredited Feedlot. In addition, some domestic markets may either require that cattle be sourced from NFAS Accredited Feedlots or may pay a premium for such cattle. Accreditation therefore has the potential to impact market access.

[28] www.ausmeat.com.au/auditing-accreditation/feedlot.aspx

Review

The NFAS is managed by AUS-MEAT, an independent organisation (at arms' length from the feedlot industry). Under the scheme, feedlots are independently audited each year to ensure compliance with animal welfare, environment, food safety and product integrity legislation. The scheme is industry funded and third-party auditing is conducted by AUS-MEAT auditors. Auditing costs are covered by audit fees. NFAS requirements are continually updated as developments in legislation, codes of practice, guidelines, technology, best management practice and science occur.

The objective of the NFAS is to develop a quality system for beef feedlots that meets or exceeds legislative requirements, standards and community expectations, and that impacts positively on product quality and acceptability.

In order to be accredited a feedlot operator must:

- have documented procedures in place, specifically for the feedlot which meet the requirements of relevant industry standards and codes of practice;
- maintain records that these procedures have been adhered to for all cattle prepared at the feedlot; and,
- undergo a third party audit of these procedures, records and facilities at the feedlot.

NFAS is owned by the Australian Lot Feeding Industry through AUS-MEAT Limited. AUS-MEAT administers the scheme through the Feedlot Industry Accreditation Committee (FLIAC). FLIAC is made up of representatives of major industry peak bodies and has the following responsibilities:

- manage the NFAS;
- ensure the effective operation of the NFAS by recommending changes to it;
- assesses recommendations from AUS-MEAT on the accreditation status of individual feedlots;
- make recommendations to the AUS-MEAT Committee on the outcomes of appeals from Feedlots relevant to their Accreditation status; and,
- report to the wider community on the status of the Australian feedlot industry based on objective information generated from monitoring of the scheme.

Audit costs are borne by the feedlot operator and maintenance of the program is funded by industry. At present around 450 feedlots are represented in the NFAS Australia wide. Numbers have declined over the last few years as terms of trade for feedlots have deteriorated. All the major feedlots are accredited and all product exported under a grain fed label must be accredited with the NFAS. Accreditation with NFAS brings other benefits to feedlot operators, for example reduced insurance premiums, discounted license fees and market access in some cases.

7.2.6 The Australian Pork Industry Quality Program (APIQ)[29]

Background

APIQ is the pork industry's on-farm quality assurance program and covers product integrity, i.e. food safety, biosecurity and animal welfare. APIQ was developed to provide industry leadership on issues of compliance, regulation and consumer concern.

APIQ provides a national QA framework developed and owned by Australian Pork Limited (APL) to provide a national QA framework that pig producers can apply in order to

[29] www.apiq.com.au

demonstrate compliance with production standards that may be deemed as important or required by customers, consumers and regulators.

APIQ is a voluntary program but is intended to meet market access and regulator requirements, for example access to an export market and many domestic markets may mean that pig producers must have an approved on-farm QA program in place.

Review

The program is owned and managed by Australian Pork Limited (APL), the national representative body of pork producers. The management body is a division of APL and is called APIQ Management (APIQM).

APIQ is described as an on-farm quality assurance system. It is based on managing farm risks by following Good Agricultural Practices (GAP), using the principles of Hazard Analysis and managing Critical Control Points (HACCP).

APIQ Standards cover five key areas:

- management;
- food safety;
- animal welfare;
- biosecurity; and,
- traceability.

The standards reflect producer compliance to the Model Code of Practice for the Welfare of Animals - Pigs (3rd Edition, 2007) (Model Code) and the APL National Environmental Guidelines for Piggeries (2nd Edition, 2010).

APIQ certification requires an internal audit and an external audit annually. External auditing is performed by independent auditors who are registered with APIQM. Auditors deal with non-compliance by issuing corrective action demands or by referring to APIQM. APIQM reviews all auditor reports and performance then influences whether or not a producer remains certified under the program.

Some of the administration costs of APIQ are borne by APL and audit costs are borne by producers.

Around 87% of the national sow herd is currently APIQ accredited and this includes all major pork producers. All export processors and a number of domestic processors require certification. Certification enables producers to sell product with the APL logo.

Benefits to producers include:

- Independent certification that production meets required standards.
- Ability to sell to all export and domestic processors.
- Provision of a system that enables producers to meet all requirements of codes and to maintain appropriate records.

7.2.7 Livestock Production Assurance(LPA)[30]

Background

The Livestock Production Assurance (LPA) Program is an on-farm food safety certification

[30] www.ausmeat.com.au/

program. The LPA food safety standards are associated with basic on-farm food safety guidelines, which underpin food safety declarations in the suite of LPA National Vendor Declarations (NVDs).

Review

LPA is owned by the red meat industry through AUS-MEAT Limited. LPA accreditation is linked to Property Identification Codes (PICs). LPA accreditation is a voluntary program but without accreditation producers cannot get livestock processed through an abattoir and therefore market pressures are effectively ensuring that almost all producers are accredited.

To maintain LPA accreditation, livestock producers must comply with each of five defined performance elements: property risk assessment, safe and responsible animal treatment, stock feed/fodder/grain management, preparation for dispatch of livestock, and livestock transactions and movements. Accredited producers are required to participate in audits, to verify the effectiveness of the systems implemented on farm to ensure the LPA Standards are met. Audit costs are subsidised.

There is a second tier of LPA, called the Livestock Production Assurance On-Farm Quality Assurance (LPA QA) which incorporates CattleCare and FlockCare. LPA QA was intended for those producers who were already participating in the LPA food safety program and aimed to broaden the program to general on-farm QA with additional modules on systems management, livestock management and additional optional modules.

CattleCare and FlockCare received considerable support initially but are no longer functioning because of producer concerns over compliance costs and lack of any perception of market premium as an incentive for participation. Information on the Meat and Livestock Australia web site indicates that a new overarching QA framework may be under development called AgriSure. At the time this report was prepared, development of AgriSure appears to have stalled due to difficulties in identifying commercial incentives for producer involvement in the program (problems which may have also impeded uptake of CattleCare and FlockCare).

Cattle Council (with support from MLA) have recently developed another voluntary QA program called the Pasturefed Cattle Assurance System (PCAS)[31] which is intended to provide certification for claims about pasture-fed or grass-fed production systems, including modules to document freedom from antibiotics and hormone growth promotants. PCAS requires independent audit for certification and annual administration fees and audit costs are payable by producers wishing to join the scheme.

7.2.8 ALMG – Certified Land Management[32]

Background

Certified Land Management (CLM) is an independent environmental and animal welfare management system, developed in the late 2000's. It is an integrated set of planning processes and on-ground activities based on an environmental management system (EMS). CLM has been developed and is managed through the Australian Land Management Group (ALMG) and is used by organisations or individuals to improve environmental and animal welfare management. The aim is to help land managers, industry organisations and natural

[31] www.certifiedpasturefed.com.au

[32] www.almg.org.au/

resource management agencies improve environmental and animal welfare management while providing an independent verification of performance.

Review

CLM integrates environmental and animal welfare with broader productivity and risk management considerations. The system is self-directed and externally audited and complies with ISO 14001, an internationally recognized management standard. CLM members use a systematic risk assessment approach to identify management activities which will positively impact on environmental or animal welfare outcomes. The management plans are monitored and audited by external auditors.

CLM standards are a mixture of processes and outcomes and are based on the ISO14001 management process with outcomes demonstrating continuous improvement and support for biodiversity and good animal welfare practices. Animal welfare standards are based on the Codes of Practice and as standards are developed they will be incorporated into the CLM process. Land and livestock managers use CLM to develop their own plan for improving natural resource management, animal welfare, productivity and risk management and can use CLM accreditation to verify their environmental and animal welfare credentials. At this point there are market benefits for some users of the system and a range of community and other benefits associated with verification and communication of the environmental and animal welfare credentials.

Currently the system is used by about 150 landholders in Queensland, New South Wales, Victoria and South Australia and enterprises involved include sheep and wool, beef cattle, dairy, grain and viticulture. It is a self-funded system with landholders paying audit and training costs. ALMG does have a number of corporate and government sponsors and supporters including Elders, The Queensland Murray-Darling Management Committee (QMDC) and a number of Natural Resource Management bodies. The RSPCA supports CLM.

7.2.9 RSPCA – Approved Farming Scheme[33]

Background

The RSPCA is involved in providing information to consumers about where their food comes from and increasing consumer demand for higher welfare products. It is doing this through a number of humane food programs including the RSPCA approved farming scheme.

Review

The RSPCA Approved Farming Scheme has developed standards for the care of layer hens, pigs, meat chickens and turkeys. The RSPCA Approved Farming standards are developed by RSPCA scientists with industry consultation and are reviewed every two years.

Egg producers, pig, meat chicken and turkey farmers must meet the RSPCA's standards in order to join the RSPCA Approved Farming Scheme. Once the farm has been approved, eggs, pork, chicken and turkey products from these farms are stamped and sold with the RSPCA Approved Farming logo (Paw of Approval). Companies marketing eggs, pork, chicken or turkey products supplied by approved producers participate in the scheme as licensees.

[33] www.rspca.org.au/PawOfApproval

Participating farms are audited or assessed at least twice each year with the frequency of assessments varying with species and production systems. Assessors are trained RSPCA employees and an RSPCA assessment panel is responsible for assessment of farm reports and approval of accreditation.

Farmers do not bear the cost of assessment or involvement in the scheme. RSPCA receive a royalty from products sold and these funds support the scheme. The scheme aims to improve farm animal welfare, and deliver benefits to farmers participating in the scheme by aiming to access a growing premium market. Benefits to the farmer include access to support from RSPCA experts, involvement with a widely recognized animal welfare organization and in most cases a premium for product sold under the scheme. With 95% brand awareness, the RSPCA is recognised by consumers as the foremost authority on animal welfare. The farmer benefits are based on leveraging the credibility of the RSPCA brand and ensuring market access by meeting consumer concerns over animal welfare issues. Uptake of the scheme by farmers Australia wide varies with approximately 7% of the pig herd involved, 2% of laying hens and 1 to 2% of meat chickens.

7.3 Live Animal Ministerial Taskforce

The same *Export Certification Reform Implementation (ECRI)*[34] process described in the section above on AEMIS, also created a *Live Animal Ministerial Taskforce*[35] in April 2009, tasked with reform within the livestock export regulatory framework.

Some of the IT activities identified in the Live Animal MTF priority list were identical to items outlined in the Meat MTF, namely the Audit Management System (AMS), Manual of Importing Country Requirements (MICOR) and Tracking Animal Certification for Exports (TRACE).

The Live Animal MTF also included project milestones under the following headings:

- regulatory reform;
- performance based regulation;
- animal welfare;
- emergency preparation, response and contingencies;
- communications and engagement; and.
- market access.

The activities and project milestones identified in the Live Animal MTF documents have been overtaken by subsequent events in the livestock export industry including the development of ESCAS and the current review of the ASEL and related activities including the current project.

7.4 Livestock Export Accreditation Program (LEAP)

The Livestock Export Accreditation Program (LEAP) was implemented in 1997 and functioned until the changes to the regulatory framework in 2004 that followed the Keniry Review. A brief overview of LEAP is useful in the context of the regulatory framework.

[34] http://www.daff.gov.au/ecri

[35] http://www.daff.gov.au/biosecurity/export/ecri/live-animal-mtf

LEAP was implemented in 1999 as part of an industry Quality Assurance scheme managed by the newly formed LiveCorp with AUS-MEAT appointed as an independent body contracted to provide accreditation, certification and compliance services. LEAP was considered at the time to be an example of a co-regulatory framework, as it operated under a deed of agreement with AQIS and included AQIS audit and reporting requirements. It was however described in the Keniry Review as a self-regulated QA scheme.

Government licensing of livestock exporters at the time required an assessment by the licensing authority that the exporter is competent. AQIS recognised the LEAP program as an approved QA scheme under a deed of agreement between LiveCorp and AQIS to allow certification of exporters to be managed through LEAP and to have LEAP assessing exporter compliance with the then Australian Livestock Export Standards (ALES).

The scheme operated through until 2004/2005, when following the Keniry Review, the government assumed full responsibility for regulation of the trade, including all aspects of the licensing process and ensuring compliance with relevant standards. Reasons provided in the Keniry Review for moving away from the LEAP included difficulties identified by AUS-MEAT in conducting audits and imposing sanctions for non-compliance, inadequacies in the current standards and conflicts of interest in a QA program under the control of LiveCorp where LiveCorp itself was dependent on voluntary levies for its operation.

7.5 Summary in relation to the livestock export situation

There are a number of issues identified from the regulatory systems reviewed for this report that have direct relevance to the livestock export regulatory framework.

The background, justification and approach described for the development of the AEMIS is considered to be directly relevant to the livestock export situation and provides a suitable model for reform of the livestock export regulatory framework. The Live Animal MTF already exists and could be revisited to direct towards management of regulatory reform for the livestock export industry.

The issues identified in the review of other regulatory systems that are most applicable to livestock export regulatory reform are identified below.

- Preference for a co-regulatory model that retains DAFF responsibility for setting or approving standards and control measures while allowing industry increased flexibility for demonstrating compliance.
- Where possible have a focus on outcomes rather than process.
- Incorporate a risk based approach that has increased emphasis on points associated with high risk and that rewards companies that build a track record of compliance over time with fewer regulatory audits. Conversely non-compliant businesses should be more heavily regulated to encourage improvement and to protect the integrity of Australia's market access and performance against standards.
- Review and strengthen control measures where required in an approved arrangement type process (as applies in AEMIS) to make sure procedures are in place to meet or exceed standards. Companies may then develop their own procedures and work instructions following standardised templates to ensure control measures are implemented and standards are met.
- DAFF to retain direct responsibility for approvals with specific responsibilities delegated to industry or third parties following appropriate assessment/accreditation/certification.
- Use of existing QA programs and standards where appropriate provides a flexible and cost-effective approach to documenting performance to standards.
    - Examples include the use of the National Land Transport Standards and QA programs such as truckCare for land transport of livestock at any point between

property of origin and port of loading. This principle may be extended to a requirement for livestock vendors to participate in relevant QA programs covering aspects of animal production and welfare.

- Review of the role of AQIS Accredited Veterinarians in line with the way AQIS Authorised Officers are managed within the AEMIS. There may be benefits in requiring specified personnel to abide by DAFF issued work instructions and codes of practice while also allowing flexibility for companies to negotiate employment conditions and define work tasks other than inspection processes.
- Incorporating improvements to recording and reporting systems to gain efficiencies through better use of electronic systems. An important part of this will be the development of standardised terminology and templates.
- Explicit recognition of the high level of public scrutiny of livestock export and the need to build co-regulatory systems that restore and maintain public confidence. This will require particular attention to governance, transparency, and mechanisms for managing non-compliance. It may also mean that procedures that are implemented for monitoring and reporting performance may be more detailed or involve higher compliance costs than in an industry with a lower level of public interest. Examples include increased in-person inspection, use of independent, accredited auditors and increased roles for positions such as the AAV. These steps are seen as a necessary cost for a sustainable industry.
- Integrating whole-of-chain QA from producer/supplier to point of slaughter in a foreign country into the co-regulatory framework.
    - There are particular challenges in setting and managing standards for the international aspects of the framework as required under ESCAS. The approach outlined in the ESCAS documentation is to use international (OIE) standards in this situation which avoids criticisms that might otherwise be directed at Australia for attempting to mandate its own standards in other countries. It should be noted that there are likely to be efficiency benefits from having an integrated QA system that manages performance across the chain (including stages within Australia and stages outside Australia).
- There are benefits in allowing an option where exporters may choose to use DAFF service delivery for some of the inspection and certification steps, as is described in the AEMIS. This provides an avenue for some activities to occur that may not otherwise have been able to take place.

8 Current MLA LiveCorp projects

There are a number of current projects that have been implemented through the combined MLA/ LiveCorp R&D Program that have direct relevance to the current report.

The projects listed here are directly relevant to the development of a co-regulatory framework incorporating whole-of-chain QA systems. These projects indicate ongoing commitment by industry to the development of procedures intended to ensure compliance with standards.

1. W.LIV.3014 Exporter Supply Chain Assurance System – Development of a risk management and quality assurance program (Schuster 2013).

The authors have read a draft report from W.LIV.3014 in the preparation of this report. W.LIV.3014 considers the feasibility and requirements of a risk management and quality assurance program to complement ESCAS, provides an extensive review of QA programs and characteristics and makes recommendations about development and implementation of

a risk-based QA program to support the live export industry in aspiring to best practice and achieving ESCAS compliance.

2. W.LIV.0388 Standard Operating Procedures (SOPs) for cattle

Generic SOPs developed in English and Bahasa to align with DAFF checklists and ensure compliance with OIE guidelines and DAFF requirements. The final report for this project was not available at the time this report was prepared.

3. W.LIV.0399 Standard Operating Procedures for Sheep and Goats

As above for sheep and goats. The final report for this project was not available at the time this report was prepared.

4. W.LIV.3001 Development of Supply Chain Procedures Checklist

Intended to assist exporters as well as importers, transport operators, lot feeders and processors of these animals to record, report and ensure supply chain compliance by demonstrating compliance with each of the ESCAS components. The checklist covers common stages in the process for feeder and slaughter animals from disembarkation in a foreign country to processing. The final report for this project was not available at the time this report was prepared.

5. W.LIV.3003 Development of Work Instructions for Cattle

Effective and efficient adoption of SOPs meant that elements of the written procedures be supported by effective and practical work instructions and guidance documents to ensure that personnel are provided with the information needed to perform an individual task correctly and consistently while maintaining the required animal welfare outcome. They also provide a mechanism for practical training in the work environment and a tool for assessment of competency and for audits of performance. The final report for this project was not available at the time this report was prepared.

9 Quality assurance systems

9.1 Introduction

Considerable comment has been made on the need for the development and utilisation of through-chain Quality Assurance (QA) arrangements to assist in managing compliance to standards in the livestock export industry.

The Farmer review responded to this with the following recommendation:

> ***that in line with ASEL, industry develop and implement a through-chain QA system to complement government regulatory compliance programs***

Farmer also commented:

> *While the Review sees potential in development of through-chain QA, it does not consider the time is right to reduce government regulation. If industry were to introduce such a system and demonstrable animal welfare assurance improvements resulted, there might be scope in the future to examine options for reducing government regulation*

The livestock export supply chain extends from on-farm in Australia through to the slaughter of animals in overseas markets.

A separate MLA/LiveCorp project (W.LIV.3014) examined options for introducing QA to the ESCAS part of the export chain to provide an additional or alternative underpinning of offshore supply chain assurance arrangements for ESCAS. The ESCAS scope runs from port of discharge in a foreign country to point of slaughter in a foreign country.

This report has a scope that complements W.LIV.3014 in that our scope runs from property of origin to destination port in a foreign country.

While the two projects cover different parts of the chain, the concept of whole-of-chain QA encompasses the entire export chain and the proposed approach detailed in the ESCAS QA project has been examined as part of this review to identify potential implications for a through-chain QA objective, as well as to avoid overlap and duplication of project activity.

9.2 What does quality assurance mean?

Quality Assurance (QA) in its simplest sense means any action taken to prevent quality problems from occurring.

When an organisation develops and implements some form of QA system, it will generally require development and documentation of the system (policies and procedures) and then implementation including provision of resources, training and adequate support to ensure it works.

Historically many organisations developed their own internal QA systems, and there were problems with variability in how these systems were developed and applied. The International Organisation for Standards (ISO) have developed the ISO 9000 family of standards for Quality Management Systems and these have become the primary source of international standards for QA systems[36]. These include *AS/NZS ISO 9000:2000, Quality Management Systems – Fundamentals and Vocabulary; AS/NZS ISO 9001:2008, Quality Management Systems – Requirements; AS/NZS ISO 9004:2000, Quality Management Systems – Guidelines for Performance Improvements*.

The effect of having international standards is that most companies now develop procedures in line with these standards and this in turn has meant that independent audit bodies can now provide auditing of performance against the standards, providing efficient assurance for organisations operating within a supply chain as well as for consumers.

The QA systems approach required for compliance with the ISO 9000 standards includes the following steps:

a) Determining the needs and expectations of customers and other interested parties.
b) Establishing the quality policy and quality objectives of the organisation.
c) Determining the processes and responsibilities necessary to attain the quality objectives.
d) Determining and providing the resources necessary to attain the quality objectives.
e) Establishing methods to measure the effectiveness and efficiency of each process.
f) Applying these measures to determine the effectiveness and efficiency of each process.
g) Determining means of preventing nonconformities and eliminating their causes.

[36] http://infostore.saiglobal.com/store/

h) Establishing and applying a process for continual improvement of the quality management system.

The QA systems approach involves development and application of a systematic approach to assess all the processes and activities involved in delivering a service or product and defining quality objectives that are measurable and consistent with the quality policy. Procedures then need to be developed for checking performance against quality measures, identifying and fixing problems and improving the processes and activities. The system incorporates detailed documentation, development of a document control system and a requirement for regular verification and auditing.

The ISO 9000 standards are generic meaning that they do not contain highly detailed specific standards that detail exactly how things must be done within any one specific organisation or industry. Instead they define QA processes that must be implemented and there is then a requirement for organisations to develop their own detailed procedures as part of their QA system documentation, while abiding by the generic process requirements of the standards.

9.3 Risk management within QA systems

The ISO 9000 standards explicitly require that QA systems include methods for identifying and managing risks where risks may include events with the potential to adversely affect quality measures.

General guidance for establishing and implementing risk management processes may be found in international standards such as *AS/NZS 4360:2004, Risk Management*.

The *Approved Arrangement Guideline (Meat)* used within the Australian export meat industry incorporates a HACCP approach to applying risk assessment and identification of critical control points. While HACCP was developed primarily for food safety applications there are examples of application of the process to other purposes including management of risks for farms raising livestock (Noordhuizen and Frankena 1999) and across the food supply chain including those parts of the chain starting at farm of origin (Manning et al 2006).

Application of a structured and systematic risk assessment methodology is well suited to the QA framework as a way of identifying points in the supply chain where QA monitoring and measuring might be implemented.

9.4 Animal supply chain challenges

Current QA systems tend to focus more on extrinsic quality attributes such as production system characteristics, animal welfare standards, personnel health and safety, and environmental standards.

Intrinsic quality attributes are related to the product (such as Meat Standards Australia for meat eating quality). QA systems that incorporate intrinsic quality attributes are likely to provide stronger business incentives for driving improvements to supply chain efficiency and quality, particularly where those product quality attributes may also influence market access and demand.

The major outcomes of interest for monitoring performance in the livestock export chain are those that are associated with animal welfare. While there is a general trend in regulatory reform towards outcomes-based performance measures, there may be difficulties in defining outcomes that are able to be measured and that have direct association with animal welfare.

Benchmarking protocols have been used for some time in livestock production systems and provide examples of methodology that may be used for development of performance indicators that might in turn be used in a QA system.

9.5 Attributes of risk-based QA for livestock export

W.LIV.3014 (Schuster 2013, Chapter 5) provides a detailed outline of QA and risk management programs and much of this information is directly relevant to this report. We have chosen not to repeat the same information in this report and readers are referred to W.LIV.3014 for additional information about general attributes of QA systems. There are some important distinctions between the approach outlined by Schuster (2013) and elements of the approach being described in this report.

Schuster (2013) describes a QA program for the ESCAS part of the supply chain whereas this report is focused on the ASEL part of the chain. More importantly Schuster (2013) describes a QA program that is separate to Government and that involves industry reporting to the QA Program rather than to Government.

Schuster (2013) identifies a benefit of the closed Program in that it would foster confidence by exporters in reporting to the Program because reporting is to the Program and not to the Government. While this is accepted, it is our view that the reporting to Government is a necessary part of transparency and critical to the strengthening of social licence to export, which in turn is necessary for a co-regulatory model to function effectively and particularly to work towards a reduced regulatory compliance burden based on good performance (Section 7.1).

This report has described attributes of a co-regulatory model that retains Government involvement in oversight of standards, licencing and approvals and in aspects of inspection, verification and auditing. Reporting on performance compliance is expected to be to Government agencies. Over time, depending on demonstration of performance to standards and demonstration of performance of the QA program, this report outlines a transition process towards reduced government applied regulatory burdens and more responsibility being delegated to an industry QA program.

The following sections do not constitute a comprehensive review of QA systems structure and function. The international standards and other documents provide examples of requirements of QA systems and these have been briefly summarised in the previous section. The following sections provide material of relevance to this report.

9.5.1 Scope of QA

This project is focused on that part of the export supply chain as is reflected in the ASEL; from selection on property within Australia to the management of livestock aboard the export vessel.

The W.LIV.3014 report (Schuster 2013) is focused on application of QA for the ESCAS part of the export chain.

It will be necessary to provide an overarching framework that allows linkage between these two components while allowing differentiation of ESCAS from ASEL to allow clear and separate messages to be developed for Australian standards and legislation/regulations (ASEL) as opposed to international standards that are being applied to animals in other

jurisdictions. This ensures a clear message to foreign countries that Australia is not imposing Australian standards and legislation on other sovereign nations.

9.5.2 Integration with other QA systems

There are existing QA systems that cover parts of the live export chain and that may be able to be integrated in to a live export QA system.

The most relevant example is *truckCare* which provides an existing QA system that has been modified to ensure livestock transport within Australia is conducted in compliance with National Land Transport standards.

Where such systems already exist and where they provide appropriate QA against standards or guidelines that are directly relevant to the export chain, there are important efficiency benefits from incorporating these into a live export QA system or framework under a Deemed To Satisfy (DTS) approach.

It will be necessary to develop a process that allows assessment of candidate existing QA systems to determine whether they are appropriate in terms of scope and level of QA to meet performance standards for the export chain QA system. If existing *truckCare* systems can be deemed to satisfy this requirement then they may be incorporated within the export chain QA system.

If a non-*truckCare* transporter is used, it would be necessary for the operator to demonstrate compliance to the LTS, within their own QA arrangements.

Other existing QA systems may offer QA coverage on-farm and during the period in the RP (*National Feedlot Accreditation Scheme - NFAS*).

In some cases it may be necessary to consider modification to an existing QA system to ensure that the system covers standards that may be appropriate to specific requirements for export if these are different to existing requirements for animals being managed for purposes other than live export. Care needs to be applied to ensure that this approach does not inadvertently make regulatory compliance more complicated and resource intensive.

9.5.3 Relationship to regulation

The current regulatory framework is heavily dependent on Commonwealth control of compliance with standards.

It is assumed that the underlying legislative arrangements controlling livestock export will continue (accepting that there may be minor change in some of the details) with a combination of state and territory legislative requirements that mainly relate to livestock management and transport (welfare outcomes) and Commonwealth legislation relating to export.

These legislative instruments will include associated regulations for additional detail and also detailed standards (ASEL, ESCAS and national animal welfare standards) that provide targets and outcomes to be achieved. There may be additional guidelines or best practice documents. These parts of the regulatory framework will provide the performance targets, systems processes and other control measures that must be achieved by operators.

The QA system is expected to be an industry managed process that provides evidence of performance against the regulatory requirements.

This report supports a move to a co-regulatory framework with the same underpinning legislation as exists currently and with government retaining responsibility for the appropriate standards. Under the co-regulatory framework there is opportunity for industry to develop a QA system to provide evidence of performance in compliance with standards and to have government regulatory requirements for compliance eased provided that performance is satisfactory.

As Farmer indicated it may be appropriate to have a QA system running in parallel to a full government regulatory scheme to ensure satisfactory performance before considering any move to reduce government regulation and rely more heavily on industry led QA systems.

Any reduction in government regulatory activities is seen as being secondary to the ability of a QA system to provide sufficient assurance to all stakeholders that performance is meeting the required standards.

An effective QA system is identified as a means of providing stakeholders (importing countries, Australian regulators, export industry operators and the public), with evidence of performance against standards and other regulatory requirements, while allowing industry the flexibility of managing aspects of the scheme and reducing government regulatory burdens for industry.

9.5.4 System for review of relevant standards

The QA system will need to incorporate processes to allow regular review and modification of the standards in response to advances in research-based knowledge, stakeholder input and operational experience and technical advances. The standards should reflect current levels of scientific knowledge about risks and risk management as well as community expectation.

There is a Standards Review function performed currently by the Livestock Export Standards Advisory Group (LESAG). There are industry concerns over the effectiveness of the current review processes and a government review of ASEL including LESAG has recently been completed by DAFF and recommendations are currently with the Minister.

It is suggested that standards review is best delivered by a joint body (like LESAG) that includes representation from government, industry and key stakeholder groups but this body should meet regularly and have well defined pathways to allow changes to the standards to be considered and implemented where appropriate in a timely manner.

9.5.5 Risk Management

Risk management principles have direct application to an effective QA system for the livestock export chain. Risk management approaches are well described in international standards, and the existing AEMIS system provides an example of the application of HACCP approaches within a QA framework.

Livestock management is an example of a biological system with inherent variability and risks of adverse events even under good management. A risk-based management approach will be expected to incorporate preventive measures based on a risk assessment that are intended to reduce risk of adverse outcomes occurring (e.g. vaccination of healthy animals based on risk of preventable diseases) as well as preparedness and response measures capable of detecting problems early and implementing effective responses that minimise adverse outcomes when events do occur.

Unforseen and undesirable events that arise and are identified and responded to within a biological system by the established mechanisms in place are a reflection that risk

management systems are working, rather than a system failure. Such built in systems are part of a continuous improvement process and are an important component of QA.

9.5.6 Management of non-compliance

There is an existing framework for classifying and managing non-compliance with standards through the export chain with sanctions ranging from provision of additional information to answer queries or clarify performance through to revoking or cancelling permissions to progress animals through the chain and ultimately to criminal prosecution. This framework is expected to remain in place.

A QA program would be designed around performance measures that can be used to document compliance with relevant standards as outlined in ASEL and ESCAS. Schuster (2013) has provided an outline of how an ESCAS QA program may manage non-compliance including consideration of sanctions and reporting. These appear to be based on the classifications and range of sanctions already being used in the export industry (Section 5.10).

When non-compliance or breach is detected through any of inspection, verification or audit activities, it should initiate a more detailed audit response to investigate the non-compliance and develop a corrective action plan. Non-compliance may trigger a more formal government regulatory response using options that are already outlined in existing guidelines (see Section 5.10).

Depending on the scale and severity of non-compliance there may be additional sanctions imposed through a future co-regulatory framework related to ongoing QA activities such as the frequency of audits and whether audits may involve government officers vs third party auditors.

9.5.7 Ownership of the QA system

There are a range of options for ownership of an industry QA system, including LiveCorp, MLA or a combination of these and/or other representative or independent interests.

Whatever structure is adopted it will be important to have appropriate governance and procedures to ensure probity with particular attention to conflict of interest and ensuring that accreditation and system operational arrangements are fully independent, impartial and free from industry interference.

There will also need to be a very strong industry level commitment to the scheme, and a focus on ensuring it delivers real value to the industry. Drivers for industry uptake of the QA arrangement are vital, and if the scheme is seen as just another level of additional regulation it will not be successful. Scheme ownership with an important industry connection, yet with independent delivery and credibility is seen as important.

The two main options considered in this report for the ownership and structure of a QA system were as identified in Section 6 of the W.LIV.3014 report i.e., creation of a new, wholly owned company and through appending the new program within an existing industry organisation.

This report supports the finding as recommended in W.LIV.3014 of the creation of a new, wholly owned company that retains ownership of the program standards, rules and logos/marks. This would ensure a clear separation and autonomy of the entity from industry, with independent governance responsibilities. W.LIV.3014 recommended that the board of this company should represent the key industry stakeholders and may include:

- Australian Livestock Exporters Council;
- Cattle Council of Australia;
- Goat Industry Council of Australia;
- LiveCorp;
- Meat & Livestock Australia; and,
- Sheepmeat Council of Australia.

Additional independence and integrity may be achieved by a modification to this approach, with LiveCorp and MLA creating a separate joint venture company (limited by guarantee), with a skills-based board, covering the following areas of expertise:

- livestock exports;
- livestock production andwelfare
- quality systems.

9.5.8 Corporate and program name

The name chosen for the QA scheme and its owner are important, particularly if the scope of the program covers the whole supply chain. An important consideration in overseas markets is the need for the scheme to be seen as international, independent of government and able to be embraced by supply-chain participants within various jurisdictions.

The name of the scheme should ideally reflect an international or global emphasis rather than being an Australian driven requirement. Some participants are also less likely to consider themselves as necessarily part of an export process and may identify external benefits from certification.

Possible options include:

- International Livestock Certification (ILC);
- Global Livestock Certification (GLC);
- Universal Livestock Certification (ULC);
- Livestock Supply Chain Certification (LSCC);
- Livestock Certification International (LCI or LiveCert); or,
- Livestock Certification Services (LCS).

9.5.9 QA methodology and terminology

International standards require that QA systems have specific procedures for measuring quality.

Auditing is the process used to verify that an activity or output conforms to the standards and QA protocols. The ISO 9000 family of standards describes three levels of audits:

- First-party: conducted by the organisation that is providing the goods or services (in this case the exporter).
- Second-party: conducted by the customer on the supplier or by other persons on behalf of the customer.
- Third-party: conducted by an organisation independent of both the supplier and the customer. Third party audits are often conducted by independent bodies that are accredited to perform audit functions.

In order for an individual/organisation to perform audit functions, they will need to be able to demonstrate specific competencies and to be accredited as an auditor. This in turn requires investment in training, assessment and accreditation and in on-going evidence of competency.

There may also be a role in an organisation for personnel who have QA functions (QA officer or verification officer) and where those functions require competencies and training at a standard that is below the level of an auditor.

The terms accreditation and certification also require definition.

Accreditation refers to the process where an authorised body gives formal recognition that a person or body is competent to carry out specific tasks.

Certification refers to the process where an authorised body provides written certification (signed certificate) that a product, process or service conforms to specified requirements.

With respect to the livestock export chain, it is expected that independent accredited bodies with recognised competencies in audit and certification procedures would be involved in provision of these services through the export industry QA system (as is defined for the ESCAS system). An accredited body may be tasked with accrediting individuals, organisations and facilities or vessels as being approved or licensed for export operations. They may also certify that operators or units within the export supply chain (exporters, assembly depots etc) operate in compliance with the QA system rules and standards. There may be more than one body that provides these services on a fee for service basis to ensure competition from providers.

Responsibilities of accredited bodies are likely to include:

- reporting to the industry QA scheme manager;
- implementing auditing competence and approval requirements;
- administering the provision of audit services that are a separate function to the certification function; and,
- providing certification of operators or units.

Auditing services may also be provided by other accredited bodies (bodies other than the certifying body) including for example desk-top and on-site audits.

9.5.10 Funding needs and implementation responsibility

A QA system will require one-off costs for development and implementation and then annual operating costs.

While a QA system may be expected to be self-funding in the longer term it may require additional funding support initially.

It will be important for the new board to take full responsibility for their role as soon as practical; however they will need access to funds and administrative support to assist in the selection of a QA Scheme Administrator and in developing and implementing systems and processes.

The time-frames and options for implementation responsibility and funding are identified below:

<u>Prior to the QA Board becoming operational</u>

Options for management of the implementation process:

- LiveCorp;
- MLA;
- LEP (LiveCorp/MLA); or,
- Contractor,

Options for funding – possible sources

- LiveCorp;
- MLA;
- LEP (LiveCorp/MLA);
- Government part-funding under MTF; or,
- Other government contributions.

Following appointment of the QA Scheme administrator

Options for management of the implementation process:

- QA Scheme Board – governance responsibility;
- QA Scheme Administrator;
- Support and assistance from - LEP (LiveCorp/MLA); or
- Contractor.

Options for funding – appropriate agreements will need to be established between the QA Company and the funding provider. Possible sources:

- LiveCorp;
- MLA;
- LEP (LiveCorp/MLA);
- Government part-funding under MTF; or
- Other government contributions.

It is assumed that certification bodies and auditors will operate on a fee-for-service basis using a schedule of fees approved by the Board.

Estimated Funding Needs

It will not be possible to prepare a budget for implementation and operation of a Live Export QA arrangement until detail of the approach is agreed. A preliminary "ball-park" assessment has however been prepared by the project team, as this was identified as an important consideration for industry, and some broad estimate would assist in industry consultations. The project team is aware that there are many assumptions, decisions and possible variations that will impact on the final cost, and urges caution in placing too much emphasis on the amounts associated with costing this exercise. The estimate is intended as a general guide only. This estimate is set out in more detail in Appendix C.

Costing estimates do not include any estimation of costs to industry operators in implementing the QA arrangements within their company. The total set up and year 1 cost is estimated to be $521,000. The estimated annual operating cost is $345,000.

It is also anticipated that a Regulatory Impact Statement (RIS) will be required to identify the cost impacts of changes that impact on regulatory requirements. Varying approaches have been adopted to the conduct and funding for a RIS for past regulatory changes affecting the livestock export trade, and no cost estimate has been included in this estimate.

9.5.11 Transition to co-regulation

This section provides a summary of an approach intended to allow staged transition to the co-regulatory model. Additional details are provided in Appendix D.

The major challenges in successfully introducing QA to the livestock export sector as a co-regulatory arrangement are:

- Ensuring there are drivers in place that encourage operators to become certified under a through-chain QA arrangement.
- Ensuring government and other stakeholders including the public, have sufficient confidence in the QA scheme to provide an assurance that the export industry is meeting the required performance standards.
- Recognition by stakeholders that the most effective and efficient co-regulatory model will be one that allows phased reduction in regulatory compliance burdens for industry that are in turn conditional upon an effective QA system.

Management of QA implementation and the granting of regulatory concessions by government will require strong government support and industry commitment to an agreed transition timetable and strategy.

The following options for broad principles are suggested as a basis for this commitment:

1) Industry and government agreement to industry QA being adopted as a mechanism to assist in verifying livestock export industry regulatory compliance.
2) A framework for transition to a co-regulatory arrangement be agreed.
3) The transition to:
    - have as a starting point existing arrangements and documentation; and,
    - enable proof of capability to be demonstrated to ensure delivery of equivalent outcomes or better.
4) Potential medium-term cost savings for industry and government to be identified.
5) Mechanisms to reward consistently good performance and encourage continuous improvement.

Mandatory or Voluntary

Whether QA certification is embraced as a mandatory requirement for supply-chain operators or is just one option for verification of compliance will need to be considered. Under a voluntary arrangement, some operators may choose not to participate in the transition to QA Certification, and remain within the existing regulatory framework. A further option exists to introduce it as a voluntary arrangement and to defer any decision on whether to make certification a mandatory requirement, until proof of capability is apparent.

The AEMIS system (Section 7.2.1) has an approach that makes an *Approved Arrangement* mandatory while providing processors with two options for an approved arrangement. The first allows an individual operator to function under a system where all compliance checking and certification is done by government officers on a cost recovery basis. The second allows an operator to develop a QA plan that is reviewed and approved by the regulator and that involves a combination of industry led QA and a reduced regulatory compliance burden. One of the benefits of this approach is that it does allow smaller operators to choose to continue to operate under a government controlled regulatory framework.

It is suggested that the AEMIS style approach be used for the livestock export industry.

Tiered transition and operation

A tiered approach is suggested both as a phased implementation of the new regulatory arrangement and for ongoing operation.

During implementation the principle of the tiered arrangement is that the current government controlled, prescriptive regulatory framework be run in parallel with a newer co-regulatory system with industry QA until the new framework can be deemed to be operating effectively and that performance is satisfactory. Then the new framework would move to a tiered

operational arrangement that enables operators with a proven QA system and performance to earn concessions from some existing regulatory requirements.

The following is provided as an example based on three tiers, with operators able to progressively embrace QA if they wish, leading to regulatory compliance concessions. The tiers involve:

> **Tier 1 - Base level** –- Existing regulatory arrangements with government managing regulatory compliance under a cost recovery system.
>
> **Tier 2 Certification - interim** - operators within a supply-chain achieve certification for an industry managed co-regulatory model with an embedded QA system. Government regulatory compliance continues in parallel to provide additional confidence that QA systems are functioning.
>
> **Tier 3 Certification – full implementation** - The operator's QA system is embedded and demonstrating effectiveness at verifying required outcomes, and government regulatory compliance burdens are eased, conditional upon satisfactory performance with resumption of regulatory burdens possible if performance standards are not achieved.

More detail on the tiered transition is provided in the Appendix D.

9.5.12 System requirements for managing data and information

This section provides information on system requirements for three different components of a QA program from the perspective of an exporter and from the perspective of a QA Program entity (the Program).

1. Program documentation (Schuster 2013)
    a. Statement of the QA Program vision, purpose and objectives
    b. Manual including detailed information on the QA program
    c. Instructions on how to develop operating procedures and work instructions for entities (exporters) to apply within their own operations and that may be classified into sub-components:
        i. System support within an entity including management commitment and review, internal audit, corrective action, training and document control.
        ii. Process and outcomes control including demonstration of supply chain control and livestock traceability.
    d. Guidelines on the role of third party certifying and audit and verification functions that may be incorporated into the QA Program.
2. Management of accreditation and certification bodies including for example lists of accredited individuals and organisations that may provide services to the export industry and individual entities, both in Australia and internationally.
3. Management of QA records (objective evidence of activities performed or results achieved) resulting from certification, inspection, verification or audit activities (or other activities). This component may include information on breaches or non-compliance and associated corrective action plans or sanctions.

Components 1 and 2 are most logically maintained in a centralised management system that would be best maintained under the supervision / control of the QA Program and that had a web interface to allow industry operators to seek and obtain information and specific and current resource documents (templates, SOPs, manuals etc) for their own purposes. These

two components include only information on the program and detailed instruction or guidelines on how operators might implement the program. Schuster (2013) has recommended the development of a centralised management system for handling information and documents relating to components 1 and 2 as defined above. This appears likely to be supported by all stakeholders in the event that a QA program is developed.

The third component includes detailed data and information on individual exporter performance at the animal or consignment level. This component is considered to be commercially sensitive and there are varying views on how records relating to component 3 might best be managed.

There is little support for a centralised, industry system to collect data on animal performance through the export chain (Perkins and Madin 2013). This was largely because such data are viewed as commercially sensitive and many exporters were concerned about data being stored in any system that was not under the direct and exclusive control of the individual operator. There were secondary considerations based on the fact exporters are currently using a wide variety of ad hoc and internally developed systems for managing these data, that these systems are embedded within broader, confidential business management systems and that it would be very difficult to develop a one-size-fits-all system to suit all operators even if the commercial sensitivities could be overcome.

In a contrasting argument, there are potentially important benefits across the industry in the development of a centralised system that could collect records on animal performance for measures directly related to the standards (or whatever specific performance targets are defined for livestock export).

Development of a centralised, industry system that allows each exporter to manage their own records through a secure part of the centralised system has the potential to provide useful risk mitigation benefits at the industry level as part of a QA Program.

In part this is justified due to a counter-factual argument. In the absence of a centralised QA program, individual operators are expected to develop their own programs under a common framework. If any individual operator does not do this effectively and a critical non-compliance event occurs there is a risk that the entire industry will bear the consequences – the most extreme of which may be a threat of industry closure. Development of an industry program is one way to mitigate this risk – by providing a uniform high standard framework under which all exporters can immediately operate to the same standard (for QA purposes).

A centralised system also has the potential to contribute to a co-regulatory framework where effective QA and performance that meets or exceeds required standards may be rewarded with a reduction in regulatory compliance burdens for exporters.

One approach to balancing the concerns over commercial sensitivity and industry benefit is to consider a centralised system that is limited to those specific records that are required for QA purposes (to document compliance with regulatory standards).

The most effective solution for managing animal traceability across a supply chain starting in Australia and ending in a foreign country, is an internet-based solution that is built around web-enabled database technology.

The report by Perkins and Madin (2013) provides a detailed description of the functionality of a system and options for development of a system. Animal traceability is identified as a base functionality requirement and other functions can relatively easily be added to a system once a QA Program is outlined and specific performance standards described.

As outlined in Perkins and Madin (2013), it is possible to have a real-time system that can be securely updated and queried by internet or SMS (mobile phone texting), meaning that a verification officer in an isolated location (foreign country) can upload a status report at any time and this could be viewed and mapped or processed (analysed and reported) immediately by an authorised user at another location. The use of SMS capability means that it is still possible to update (or query) the system in areas where there is no internet coverage, provided that there is mobile phone coverage. Such a system can be extended to include certification and inspection/verification/auditing activities and any other functions that may be required.

10 Stakeholder consultation

An important requirement for any industry driven reform is that key exporter and supply-chain stakeholders (including government) support the proposed reforms. To ensure that this support exists, a comprehensive series of consultations is proposed, so that any issues or concerns can be identified and where possible addressed, prior to a final decision being taken to proceed.

Consultations will need to focus on the two major themes arising from this assessment:

- Recommended reforms to existing ASEL
- Recommended reforms to regulation and compliance verification.

10.1 Who drives and co-ordinates the consultation process?

The consultations are best conducted by a group that carries the authority of the project initiating organisations and ALEC, and that is accepted by industry operators as “in-touch” with the practical realities of the industry, including the regulatory framework.

It is proposed that an Industry Standards and Integrity Committee (ISIC) be appointed for this purpose comprising:

- LERDAC representative (Chair);
- ALEC nominee;
- MLA nominee; and,
- LiveCorp nominee.

Support – MLA or LiveCorp staff person, or nominee.

10.2 Preparation of a consultation document

The finalised version of this report provides a reasonably lengthy document that in turn refers to other reports that have been recently completed including W.LIV.3014 and milestone reports completed as part of this project.

It is suggested that a concise document be prepared for circulation as part of the consultation process. Sections of this report (summary, recommendations and executive summary) may serve as the foundation for the consultation document depending on industry support for the findings outlined in this report.

The consultation document can refer to this report or other sources for more detailed information on changes to ASEL and to the regulatory framework.

10.3 Consultations proposed

The principle focus in consultations is expected to be on those who are directly affected, those who are paying for proposed reforms, and government agencies.

The following is a suggested sequence for consultations including the principle issues to be addressed during the consultations.

10.3.1 Exporters and owners/operators of registered premises

Consultation is suggested through a workshop consultation session organised through ALEC and possibly arranged in conjunction with ALEC meetings. These sessions should include members of the project team and it may be useful to involve a facilitator to ensure effective and useful discussion. Topics to include:

- Outline of the study and recommendations.
- Discussion on proposed ASEL changes including:
    - detailed discussion on recommended changes, implications and practical issues; and,
    - additional gaps or issues that need to be addressed through R&D.
- Discussion on proposed regulatory reforms and verification measures proposed including through-chain QA including:
    - outline of the proposed approach;
    - discussion on principles, the tiered concept, ownership and management; and,
    - budget and who pays.
- Industry measures that would assist with implementation of the proposal.
- Summary and actions.
    - Feedback from the consultation will be incorporated into the consultation discussion document either through changes to the main points or through addition of a section on discussion points.
- The role of the project team (authors of the current report) in additional consultations would need to be discussed and agreed upon at this meeting as well. Further consultation may be best managed by ISIC members.

10.3.2 Livestock producers

Scheduled discussions with major peak bodies (CCA, SCA, ADF and GICA) are likely to be best conducted through face-to-face workshops that follow the same broad approach as outlined above for the exporters. However, this may be dependent on feasibility of arranging a meeting and if it is not possible to arrange a meeting, alternative options include dissemination of a revised consultation document to key office bearers for feedback and members of the ISIC travelling to one or more meetings involving office bearers of the peak bodies.

10.3.3 DAFF

Consultation with relevant DAFF personnel will need to be arranged.

Likely topics for discussions will include the same agenda as for other consultations and additional specific topics that are related to the regulatory environment including:

- Discussion on points where government and industry may differ on reform options and identification of common ground for each of these issues.
- Key political and industry obstacles to agreement and implementation and options for addressing these.
- Factors that may act as incentives or disincentives for adoption.
- Avenues for funding assistance for development and implementation.

10.3.4 Political consultation

Regulatory reform will require political support through relevant Minister(s) and opposition counterpart(s).

The consultation document and proposed changes to the regulatory framework may alter through the course of consultation with industry stakeholders and if so there will need to be revision to any consultation document and proposed changes to the regulatory framework before discussion with the Minister.

Discussion points other than those identified above in earlier consultation activities that are likely to be particularly relevant in consultation with the Minister include:

- Best Practice regulation and the role of industry.
- Industry preparedness to take greater responsibility for operational standards and verification through chain to ease the costs and pressures on government.
- Importance of an agreed transition framework including ongoing regulatory oversight, binding deeds and oversight mechanisms. The need for a driver, or incentive for industry to progress through the tiers and be rewarded with some regulatory concessions.

10.3.5 Other supply-chain operators

10.3.5.1 Livestock selling agents

The major livestock selling agent companies, are either licensed exporters in their own right, or act as contracted suppliers of livestock to exporters. Consultations with exporters should ensure any operational issues for agents are identified.

10.3.5.2 AAV's, accredited stockmen and other contracted service providers

In the initial stages, it is not proposed to alter the role and responsibilities of these operators within the supply chain. In time it may be considered appropriate that stockman certification

becomes a responsibility of the QA scheme, however no separate direct consultations are suggested in this development phase for any of these groups.

10.3.5.3 Other QA service providers

It would be valuable for consultations to occur with *truckCare*, LPA and AUS-MEAT to assist in ensuring an understanding of the proposal under discussion and to identify compliance and operational issues with verifying that the QA standards are being met.

10.4 Outcomes from consultation

The consultation process is aimed at gaining support from stakeholders for regulatory reform and finalising the details of the proposed reforms.

At the end of the consultation process, a regulatory reform proposal is expected to be developed for implementation, along with a timeline, task list and budget.

The content of this report is presented as a suggested starting position for that reform. This is expected to change through the consultation process.

11 Summary

11.1 Introduction

In completing this report the authors have conducted a desktop review of the current ASEL and associated regulatory framework as well as alternative regulatory frameworks and associated QA systems.

This chapter is intended to provide a concise summary of the issues identified throughout this report. Readers are referred to relevant chapters earlier in this report for more detail on each of the issues.

The livestock export industry has a very wide stakeholder community[37] and provides important contributions to the Australian economy[38].

The Australian Position Statement on the Export of Livestock provides a succinct description of the export process as well as roles and responsibilities and the guiding principles are supported as the basis for a sustainable livestock export industry.

Three overarching drivers have been identified in the course of this review that guide development of recommendations concerning the live export regulatory framework:

1. A long term viable and sustainable livestock export industry is in Australia's interests.

2. Ensuring protection of animal welfare outcomes for Australian livestock through to the point of slaughter in importing countries is necessary for a sustainable livestock export industry.

[37] http://ris.finance.gov.au/2011/10/21/livestock-exports-regulatory-framework-for-animal-welfare-assurance-%E2%80%93-regulation-impact-statement-and-post-implementation-review-%E2%80%93-department-of-agriculture-fisheries-and-forestry/

[38] http://www.livecorp.com.au/industry-statistics

3. A co-regulatory framework that adheres to the principles and practices of good regulation is the most efficient and effective approach for sustainable regulation of the livestock export industry.

These principles were major drivers behind the development of the ESCAS requirements[37] and the same principles are considered by the authors to be applicable across the export chain and have therefore influenced the findings and recommendations of this report.

11.2 Suggested changes to ASEL

Section 6 of this report provides a detailed review of the current ASEL including summaries of prior reviews undertaken independently of this project and completed prior to this project, and various activities undertaken during work completed for this project.

In addition, Appendix A provides a table of detailed changes suggested as ways of improving ASEL. Much of the material in Appendix A was first proposed in a submission by the LEP to the government review of ASEL in September 2012. In the course of preparing this report, the authors have added to the original LEP table so it now represents the views of the authors, building on the original LEP submission.

The suggested changes range from minor changes to text to improve clarity without necessarily altering meaning or interpretation to relatively substantial changes in the wording and application and finally to identification of knowledge gaps where further R&D may be considered in order to provide science-based information to support future changes to the ASEL.

A broad summary of suggested changes and issues is presented here along with links to the earlier chapters of this report where each issue is discussed in more detail.

- There are numerous examples where changes to wording of the ASEL will improve clarity and consistency and reduce redundancy (6.5.2, Appendix A).
- There is scope for improvement in the pathways and processes that allow relevant R&D outputs to contribute effectively into regular review of existing standards and to allow timely modification of standards where appropriate (6.5.2, 6.5.3).
- The ASEL should be consistent with Australian animal welfare standards and guidelines (6.5.2).
- The land transport components of the Standards could be simplified by referring to the National Land Transport Standards without additional criteria that must be met or checked (6.5.2, 6.5.3, Appendix A).
- Existing standards should be revised to ensure they are clear, essential, consistent, verifiable, risk-based and underpinned by sound science. They should be outcomes-focussed where possible and less process-focussed (6.5.2, Appendix A).
- Prescriptive standards that are not supported by R&D outcomes should be removed from ASEL (6.5.2, 6.5.3, Appendix A).
- ASEL should follow a ‘standards and guideline’ format, clearly defining mandatory standards and optional guidelines (6.5.2).
- Components of the current ASEL which are prone to frequent change (for example, livestock treatments, veterinary kit) should not be enshrined within the standard but should be covered by complementary guidelines (6.5.2)
- A number of areas in Section 6 describe issues and suggestions relating to development and application of QA. These areas are covered in more detail in following parts of the summary and in Section 9.

- There are multiple areas where there appears to be a lack of scientific evidence to support the requirements of the ASEL, where available evidence is not consistent or where a potential problem has been identified with a lack of evidence to support a particular standard requirement. These cases may require expert review or additional specific R&D investment to produce credible science-based evidence to inform the ASEL. Examples include minimum requirements for time on feed (6.5.3, 6.5.1.2), *Salmonella* risk mitigation strategies for sheep (6.5.3), shearing sheep shortly before export (6.5.3), refinement of HotStuff (6.5.3), restrictions placed on different classes of livestock (6.5.2, 6.5.1.2) and slippery flooring in export vessels (6.5.1.2).
- Clarification of the role of AAVs and stockpersons, whether there is sufficient benefit from presence of an AAV over a stockperson to warrant requiring an AAV to accompany every export voyage, and the value of additional development of resource material and training for AAVs and stockpersons (6.5.1.2).
- Consideration of improved approaches for routine monitoring of industry performance on key animal health and welfare outcomes through the export chain to underpin industry QA. These approaches will also have other applications such as contributing to R&D decision making and strategic decisions regarding market development and operational efficiency (6.5.1.2, 6.5.3).
- In a related issue there is a need to define terms and to clearly define requirements for routine export performance reports such as the daily voyage and end of voyage reports (5.7).
- Recommendations presented in the 2012 DAFF report on sheep pre-embarkation procedures are generally supported with the exception of Recommendation 5. The authors support the findings outlined in W.LIV.0171 and favour a considered approach that improves inspection procedures at the RP while retaining individual animal inspection procedures at the port (6.5.4).

11.3 ASEL regulatory framework

A regulatory framework includes both the legally enforceable instruments by which governments impose mandatory requirements on businesses and any voluntary codes or advisory guidelines for which there may be a reasonable expectation of widespread compliance.

The term ASEL regulatory framework is interpreted as covering the parts of the export chain that start with livestock preparation and selection on the property of origin and end with disembarkation at a foreign port.

Disembarkation at a foreign port marks the beginning of the ESCAS part of the export regulatory framework which is outside the scope of this report.

11.4 Problems with the current ASEL regulatory framework

There are problems associated with the fact that the current regulatory framework has both Commonwealth and state/territory regulations, standards and guidelines (or other documents). The problems mainly seem to be associated with inconsistencies between different standards, confusion over responsibilities for regulatory enforcement and general lack of clarity for jurisdictional responsibilities. Issues relating to land transport of livestock intended for export is a particular example of this but there are others.

There are also a number of examples where the current standards have been criticised for lack of clarity, inconsistency, redundancy and lack of evidence to support requirements outlined in the current ASEL.

There are also a number of gaps identified where further R&D is warranted to provide information to guide modification to the standards.

There is a need for more effective processes that allow regular review of the standards and modification or amendment where appropriate.

There is clear direction from Government for a move from prescriptive standards with heavy government involvement in regulatory compliance to a co-regulatory model with increased involvement of process and performance based regulatory measures, provided that the new system is both more efficient and effective than the current system.

Sections 4, 5 and 6 of this report provide more detail on these issues.

11.5 Useful attributes from other systems or frameworks

A number of alternative regulatory frameworks and QA schemes were reviewed in the course of preparation of this report (see Section 7). Additional information on principles of QA and on specific QA recommendations has been presented in the related W.LIV.3014 report.

The framework that was considered to have most relevance to the livestock export situation and that offer example approaches that may be considered for development by the export industry is the meat export framework under AEMIS (see Section 7.2.1). A number of the other schemes or programs that were reviewed had selected elements that were considered useful in development of a more effective regulatory framework for the livestock export industry or were potentially useful as component QA systems within a broader QA framework.

It is not suggested that the AEMIS framework be applied directly to the livestock export situation but there are a number of elements and characteristics of the structure and function of the AEMIS that are considered applicable, including the following:

- The Commonwealth retains responsibility for approvals and certification of product for export and also retains responsibility for specifying standards and control measures.
- Meat exporters must develop an *Approved Arrangement* that either involves retaining the old-style government regulatory compliance model or involves development of an industry QA system to document performance against the standards.
- The QA system involves quality checking procedures involving industry QA officers, DAFF officers and independent accredited providers of auditing and verification services.
- Operators with excellent compliance and QA systems are rewarded with a reduced requirement for DAFF audits and compliance checks.
- The end result is a system that provides a high level of confidence to the public and to markets that standards are being met, complies with principles of good regulation, involves a co-regulatory model with reduced government regulatory involvement and has incorporated commercial flexibility to allow more efficient and effective management of QA and compliance costs.

We believe that retaining Government involvement in a co-regulatory framework is an important step in strengthening social licence. It will require an acceptance by stakeholders that reporting non-compliance particularly at sub-critical levels is a necessary part of a QA program and that if non-compliance is detected early and acted upon effectively through corrective action then there may need to be little or no further sanctions applied. This is discussed in more detailed in Section 5.10. QA options that rely on independent programs without Government retention of key gatekeeper roles as outlined above, are likely to fail in the social licence area and this will mean substantial pressure will continue to be directed towards ever increasing levels of regulation. Social licence is identified as a key facilitator of

improved regulatory systems – it is viewed not as a burden but as a necessary business requirement and that will result in improvements in the performance of the industry and will reposition the industry towards a more sustainable long-term position.

With respect to the other regulatory frameworks and QA systems that were reviewed there were additional elements that were identified that have application to this report.

The first was the flexibility designed into the Livestock Management Act (2010) in Victoria that allows livestock operators to be a part of existing QA schemes (such as *truckCare*, *APIQ*, or others) that have been assessed and approved and to have this involvement recognised as evidence of compliance with standards as required under the LMA (see Section 7.2.3). This process is dependent on appropriate standards being incorporated into the QA schemes and on appropriate monitoring and existence of measures for detecting and responding to non-compliance that are real and effective. The benefit of this flexibility is through reduction in the need to build additional and redundant QA systems by building on and strengthening involvement in existing systems. Incorporation of multiple different QA schemes into a larger overarching program may present challenges for development of assessment and accreditation procedures and also management of monitoring and reporting. These are considered as implementation challenges.

The second was that several of the QA schemes that were reviewed were considered useful as existing QA schemes that might contribute to a broader QA program for the live export industry. A prime example of this was *truckCare* (Section 7.2.4) though others such as LPA (Section 7.2.7) and NFAS (Section 7.2.5) may also be relevant. *truckCare* has been modified to ensure compliance with the Land Transport Standards and with other regulatory requirements that are applicable. There are a number of requirements within the current ASEL that relate to aspects of land transport of livestock and that may be different to the requirements within the Land Transport Standards. As suggested elsewhere in this report this is a source of confusion that needs to be resolved either by removing differences in the ASEL and referring to the Land Transport Standards or by retaining different requirements but justifying these and making clear how they might be measured and compliance enforced. *truckCare* is an existing QA program that could be incorporated into a broader export supply chain QA system with coverage limited to the land transport of livestock within Australia. If there are requirements specific for export operations that are not contained within the existing *truckCare* then it may be possible to incorporate such measures into an export specific version of *truckCare*. As mentioned if a non-*truckCare* transporter is used, it would be necessary for the operator to demonstrate compliance to the LTS, within their own QA arrangements.

QA programs such as LPA (tier 2) may be applicable for livestock producers who provide livestock for export, saleyard QA for livestock sourced through saleyards and NFAS for management of registered premises. In some cases existing systems may not be suitable for specific requirements within the export chain but they may be able to be modified and incorporated into the broader QA system.

11.6 Whole-of-chain vs modular components

The live export chain is made up of a number of quite different components that are broadly arranged into three components:

- within Australia, comprising movement of animals from property of origin to port of loading;
- voyage, comprising movement of animals by ship (or by air) from the port of loading at an Australian port to the port of discharge at a destination in a different country; and,
- within the destination country, from the port of discharge to processing.

Within each of these broad components there may be additional steps that are quite different, particularly for animals of different species and that are managed for longer periods of time in one or more locations within one or more destination countries.

The Farmer Review and the opinions expressed in a number of reports and other material considered for this review are strongly supportive of whole-of-chain QA. It is assumed that this refers to a QA system that covers performance across the entire chain from property of origin to point of slaughter in a foreign country rather than a requirement for a single system that applies the same standards across the chain.

The development of ESCAS has seen the scope of the regulatory framework being extended to include activities in other countries to cover the parts of the chain from disembarkation to point of slaughter. Australian exporters are the regulated entities that are required to ensure compliance with ESCAS, in part because Australia cannot regulate entities in other sovereign nations. Exporters are required to ensure that livestock are handled in accordance with internationally accepted World Organisation for Animal Health (OIE) standards up to and including the point of slaughter.

At the time this report was prepared, the regulatory framework exists as two largely separate components. The first covers the chain from property of origin to disembarkation with ASEL being the major source for standards. The second (ESCAS) covers the chain from disembarkation to slaughter in a foreign country.

There are advantages and disadvantages in managing the regulatory framework as two separate components.

From an international perspective, it may be helpful to have the ESCAS component clearly differentiated from regulatory activities in other parts of the chain. It allows the ESCAS activities to be promoted as a move to ensure compliance with international (OIE) standards and differentiated from other parts of the chain that require compliance with Australian standards that may not necessarily be the same as international standards. This separation of ESCAS ensures that other countries do not perceive ESCAS as an attempt by Australia to impose Australian standards or regulatory requirements on other sovereign countries. Since all Australia's livestock trading partners are OIE member countries and it is understood they all support in principle the OIE standards[37], a move to require compliance with international standards is likely to be more palatable to other countries than any moves that may be perceived as requiring compliance with Australian standards.

However, there are also advantages associated with incorporating ESCAS requirements into a single whole-of-chain system, mainly associated with efficiencies from having a single set of standardised protocols and procedures and ensuring reporting that can track whole-of-chain performance i.e. relate performance across the entire chain (to point of slaughter) back to consignment or even property of origin.

It seems likely that the most efficient and effective approach may be to adopt a modular development approach under a standardised set of over-arching protocols or guidelines.

There are major long term advantages in having a modular, scalable system that can link component modules through unique identifiers at different levels such as animal, mob, consignment, exporter and voyage levels. There are generic characteristics of QA programs that will need to be implemented across all modules. The modular approach will ensure flexibility to allow modules to be developed and modified to meet specific requirements and constraints for different parts of the chain or for different destination countries while retaining the ability to link data for analyses and reporting purposes so that whole-of-chain performance can be assessed.

There are also general advantages in having an overarching set of principles and guidelines that might include universal standards for procedural templates, terms, key measures and data types, and rules for linkage and data flow between modules. It seems logical to have the same approach to presentation of the standards (ASEL and ESCAS) for ease of reading and clarity of understanding. Having the same general approach and defined terminology and data fields will help ensure that modules can link together to provide whole-of-chain coverage and reporting. There are real benefits at multiple levels from whole-of-chain performance assessment and reporting from a QA perspective as well as for commercial and strategic decisions by exporters and peak industry bodies.

11.7 Options and implementation

A co-regulatory framework is preferred for managing livestock exports (see Section 7.5 for a detailed explanation and justification). It is important to note that this must be clearly distinguished from the co-regulatory model implemented in 1998 and replaced in the early 2000's following the Keniry review (Section 1).

The co-regulatory model outlined in this report retains government responsibilities for granting licences and approvals to export, and for setting or approving the standards and control measures. It incorporates an integrated QA program designed to document performance against standards to maintain a high level of public confidence in compliance.

We have suggested a staged transition into a co-regulatory model (Section 9.5.10). During implementation the current government controlled, prescriptive regulatory framework would be run in parallel with the co-regulatory system until the new framework can be deemed to be operating effectively and that performance is satisfactory. Then the new framework would move to a tiered operational arrangement that enables operators with a proven QA system and performance to earn concessions from some existing regulatory requirements.

It is suggested that the system be loosely modelled on attributes of the existing AEMIS system with a requirement for an approved arrangement to be in place but allowing operators to choose one of two broad pathways to achieving this (see Section 7.2.1 for details on AEMIS). The first allows an individual operator to have an arrangement where all compliance checking and certification is done by government officers on a cost recovery basis. The second allows an operator to develop a QA plan that is reviewed and approved by the regulator and that involves a combination of industry led QA and a reduced regulatory compliance burden, while QA demonstrates performance that is compliant with standards. One of the benefits of this approach is that it allows smaller operators to choose to continue to operate under a government controlled regulatory framework. See Sections 7.5, 9.5.10 and Appendix D for more details on this matter.

Section 9.5 contains more detailed discussion on options for risk-based QA for the export industry.

We support the recommendation in W.LIV.3014 for the creation of an independent new, wholly owned company that retains ownership of the QA Program. This entity could involve representatives of key industry stakeholders including (but not necessarily limited to) such bodies as Australian Livestock Exporters Council, Cattle Council of Australia, Goat Industry Council of Australia, LiveCorp, Meat & Livestock Australia, and Sheepmeat Council of Australia (Section 9.5.6). An alternative for a skills based Board is preferred and should also be considered.

Initial one-off investment will be required for development and implementation of the QA system followed by annual costs for routine operations (Section 9.5.9). A sustainable QA system would be expected to generate sufficient funds to cover operating costs in the longer term but the system may require additional investment for the implementation period that could take some time before all procedures and systems are fully developed and operating in a mature fashion.

A detailed budget for development and operations is directly dependent on final decisions concerning scope, structure, staffing and operations (Section 9.5.9 and Appendix C). We have attempted to provide budget estimates for development and operating costs with due caution that these estimates are directly dependent on assumptions and should be viewed as indicative figures only.

Our estimates suggest that development and first year running costs for an industry owned QA program may exceed $500,000 and that annual operating costs may be around $345,000 (See Appendix C for details on assumptions and component costs and Section 9.5.3 for discussion of funding options).

These figures do not include any private commercial costs associated with certification and auditing operations that may be provided on a fee-for-service basis by independent third parties. They also do not include any costs incurred by individual exporters to develop and implement systems within their own organisations.

12 Recommendations

12.1 ASEL

Recommendation 1: A number of changes to ASEL are necessary to address inconsistencies and redundancy, to improve clarity, to address areas where evidence supports change, to move where possible to outcomes-based measures and to generally make the standards function more effectively and in accordance with the principles of good regulation.

- Existing standards should be revised to ensure they are clear, essential consistent, verifiable, risk-based and underpinned by sound science.
- Standards should be based on valid science where possible and standards that are not consistent with current science-based knowledge should be removed or modified to reflect current science.
- Where there is not clear scientific evidence to support a particular position, the precautionary principle should be used in developing standards based on limited knowledge.
- The APS should be revised, such that it provides context to ASEL and that duplication is removed.
- Revision of ASEL should recognise state regulation, adoption of AAWS standards and guidelines and other regulation (for example Export Control Order, Marine Order 43). Standard 2 on Land Transport of Livestock, is covered by the Land transport Standards and Guidelines, which represents an unnecessary degree of repetition.
- The revision of ASEL should incorporate the development of measurable performance indicators where possible to allow clear assessment of compliance with standards.
- ASEL should follow a ‘standards and guideline’ format, clearly defining mandatory standards and optional guidelines.

- Components of the current ASEL which are prone to frequent change (for example, livestock treatments, veterinary kit) should not be enshrined within the standard.

Recommendation 2: There needs to be an effective process that allows regular review and timely modification of the standards in response to advances in research-based knowledge, stakeholder input, operational experience and technical advances.

- The role of LESAG in the standard revision process should be reviewed and altered to ensure regular meetings and associated procedures and protocols to allow issues to be identified and carried formally forward in a timely manner to achieve modification of standards where appropriate.
- The review process would be aided by the use of technical and policy expertise where required to consider policy and regulatory impacts of advances in science-based knowledge or other relevant matters and to provide policy briefs with draft changes for consideration.

12.2 General regulatory framework

Recommendation 3: A co-regulatory framework is recommended with an integrated whole-of-chain QA program.

It is suggested that the co-regulatory framework have the following characteristics:

- Be based on principles of good regulation and general principles of effective and efficient QA.
- Developed using elements of ESCAS and AEMIS as models for extension across the export chain.
- Commonwealth to retain responsibilities for granting licences and approvals to export and for setting or approving the standards and control measures.
- ASEL and ESCAS to be developed as separate, modular components of the regulatory framework to allow differentiation of international standards from Australian standards but the general approach and procedures for demonstrating compliance should be similar.
- Consideration should be given to the development of a co-regulatory system with characteristics in common with the AEMIS system as a way of detailing performance indicators, targets and checklists for all outcomes relevant to the performance at every step in the chain.
- An advisory group should be tasked with regular meetings to consider material relevant to ASEL and that makes recommendations about changes to standards and guidelines (see Recommendation 2).
- Incorporation of an integrated QA program designed to maintain a high level of public confidence in compliance with the regulatory framework and associated standards.

12.3 Integrated, modular QA

Recommendation 4: An integrated, effective and efficient QA program should be developed that is capable of providing a high level of confidence in performance across the export chain that is compliant with standards and with early and effective corrective action where non-compliance is detected.

It is suggested that the QA program should have the following characteristics:

- Be based on international QA standards and in accordance with good regulatory practice.

- Build on the reporting and compliance activities that are already required under the existing regulatory framework and strengthen these where necessary.
- Be based on a detailed, risk-based guideline that in turn is outcomes-based and that has performance indicators and targets for key outcomes identified in the relevant standards. This will contribute in turn to the development of procedures (SOPs) and work instructions that incorporate QA activities including training, document and data management, monitoring and measuring, reporting, identification of deviation and non-compliance, corrective actions and measuring effectiveness of corrective actions.
- Incorporate a range of activities aimed at measuring performance against standards:
  - industry QA officers performing monitoring and verification tasks;
  - independent QA officers from appropriately accredited organisations who may be involved in verification and audit tasks including check-the-checker (review of industry QA officer activities); and,
  - DAFF officer activities including regular inspection, verification and certification activities and intermittent audits (desktop and field visit).
- Incorporate frequent checks for selected QA measures to provide near-continual performance assessment as well as other QA activities that may be less frequent.
  - Selected performance indicators may be measured and reported frequently (in a similar fashion to the daily voyage report) and Critical Control Points should have more frequent QA reporting.
- Incorporate a sanctions or non-compliance policy that provides appropriate powers to authorised officers (inspectors and auditors), defines types of non-compliance and details possible sanctions.
- Incorporate existing QA programs as providing evidence of compliance with standards where possible (*truckCare*), provided that such QA programs are assessed by appropriate criteria and that participation in such programs provides verifiable confidence of performance in compliance with relevant standards.
  - The Victorian LMA is identified as a useful model for the approach to compliance management. Operators may be members of an approved and independent QA program (such as *truckCare* for land transport activities) in which case the compliance with the regulatory framework is managed through the QA program. Operators may choose not to be members of these QA programs and in this situation they then incur additional audits and other regulatory compliance measures to document compliance, at full cost recovery. See Section 7.2.3 for more details on the LMA approach.
- Incorporate a flexible requirement for audits and additional verification processes that is performance based and allows excellent performance to be rewarded with reduced regulatory burdens while requiring additional regulatory audits and compliance verification when performance is less than optimal (punishment for non-compliance).
- Prosecution of individuals or organisations for breaches of regulatory requirements to remain as a final punitive option.
- Funding based on cost recovery with consideration of additional support during development and implementation.
- Structure and management of the QA program should be based on an independent entity to ensure appropriate standards of governance with a skills based Board reflecting livestock production, export, quality assurance and risk management and corporate governance.

12.4 Consultation

Recommendation 5: That an Industry Standards and Integrity Committee (ISIC) be appointed for the purpose of managing comprehensive consultation with stakeholders to achieve consensus on regulatory reform proposals including the

development of a detailed implementation plan and budget for consideration by industry and government.

12.5 Implementation

Recommendation 6: That consideration be given to tasking a joint industry-government working group to manage and provide advice on the development and implementation of the new regulatory arrangement including consideration of interim projects required to underpin the new systems.

There are precedents for joint groups working on regulatory reform. The Export Certification Reform Implementation (ECRI) process was used to form Ministerial Taskforces for the meat export regulatory reform that led to the new AEMIS framework and there had been a Live Animal Export Ministerial Taskforce set up in 2009 to explore alternative regulatory frameworks. Industry Government Working Groups for cattle and sheep were also set up in 2011 to advise the Minister on the new regulatory framework that subsequently led to the development of the ESCAS framework. A similar process is expected to be required to develop options for the development and implementation of any new regulatory arrangement considered for the future including consideration of interim projects required to underpin the new systems.

It is recognised that development of effective and efficient QA programs may require investment in additional activities to develop documentation and procedures, training, and information management systems (databases, web-interfaces) to handle reporting.

Appendix A Proposed changes to ASEL

Table A. 1: Proposed amendments - summary of recommended changes arising from review activities conducted for this project. Adapted from a table of proposed changes included in a submission from the LEP to the government review of the ASEL in September 2012.

Standard No.	Proposed amendments to standard and comments on inclusions and deletions (additions and deletions to existing standards or new standards are in yellow)	Rationale and further comments
Australian Position Statement	• The Position Statement should be reviewed to reflect the new regulatory environment and any changes to ASEL.	
	• The APS should be revised, such that it provides context to ASEL and duplication is removed. The APS is a statement of intent which is not sufficiently supported by the existing standards. • The Position Statement removes the need to have supplementary/non-essential information in the standards (specifically, the 'Overviews' and the 'Linkages to other parts of the export chain'). • The Overviews and the Linkages to other parts of the export chain components of ASEL should be reduced significantly or deleted.	• The Overviews and the Linkages are non-essential and unenforceable in the ASEL. They duplicate the Position Statement (as indicated by the note at the end of each Overview which refers the reader back to the Position Statement). • Removing this information would simplify and streamline the current document and increase the focus on and clarity of the enforceable standards. • This deletion would be in line with the structure of the Land Transport Standards (LTS), which minimises the non-essential information additional to the standards and guidelines.
Acronyms	• LESAG - Livestock Exports Standards Advisory Group	• Update – will need to reflect the outcome of the LESAG review.
Acronyms	• NOI - notice of intention	• Corrects the error
ASEL		
Introduction and Interpretation Guiding Principle and Required Outcomes	• In line with the Land Transport Standards (LTS) format, an introduction could be added identifying the purpose, the scope and the interpretation of ASEL. • The interpretation would establish how each component of the Standards relates to each other, which is particularly relevant to the Guiding Principles/Required Outcomes. • It is currently unclear how the different components in ASEL relate to each other – particularly the Guiding Principles/Required Outcomes and the individual standards (set out in each standard as Division 2). A	• A statement of interpretation covering the purpose of the Guiding Principles/Required Outcomes and how they interact with the specific standards will provide clarification of the expectations of exporters and other parties involved in the export process. • It is noted that the Guiding Principles/Required Outcomes would have more weight if the regulatory structure was outcomes focused (eg. the objective/standards/guidelines approach used in the LTS) or there was more flexibility for exporters in how they met their obligations. However, because the

	statement of interpretation is required to clarify this relationship. • The statement of interpretation should indicate that the 'Guiding Principles' and 'Required Outcomes' provide overarching guidance to the relevant government authority in making decisions where there is a lack of clarity or where there is a situation that was not foreseen or considered during the drafting of the ASEL. • The statement should also indicate that compliance with all of the relevant individual standards is a prima facie demonstration of compliance with the Required Outcomes and Guiding Principle.	current regulatory structure focuses on prescribing operational elements, the only interpretation that is appropriate is that compliance with the standards is prima facie demonstration of compliance with the Required Outcomes/Guiding Principles.
Definitions	• There should be a single definition section which covers the entire ASEL. Definitions should be uniform across the document. • A comprehensive review of the document should be undertaken to identify words or terms that are not immediately clear and the Steering Committee should seek to determine any unclear definitions in consultation with industry. • Definitions used throughout ASEL should be consistent with regulation and the Animal Welfare Standards and Guidelines. • Some terms requiring definitions include: voyage length (sea), voyage length (air), journey and sourcing, older, dissimilar size, class, younger, killing method, humane killing, first opportunity, reasonable action, blunt trauma, competent person, direct supervision, sourcing, unusual mortalities, conditioned, isolation, Inspection, Master's representative, , adequate thermoregulation	• Definitions should be consistent throughout the standards and they would be easier to access if located in a single reference point.
STANDARD 1	SOURCING AND ON-FARM PREPARATION OF LIVESTOCK	
Title/guiding principle/required outcomes	• Sourcing and on-farm preparation of livestock for transport by sea	• Clarification that the sourcing requirements apply to sea transport only.
Humane destruction appendix	• There are currently no humane destruction standards in ASEL, although S2.20 states that an appendix on euthanasia is under construction. Humane destruction is something that applies across the supply chain and potentially this appendix should be included in Standard 1 and then	• The development of an appendix for humane destruction is foreshadowed in s2.20 and it is appropriate that it is incorporated in a manner that can see it applied to the whole of the supply chain (ie. included in Standard 1 as an appendix and then

	referred back to in other Standards. • The development of the LTS led to the production of comprehensive nationally agreed standards and guidelines for the humane destruction of livestock, including species specific guidance. It is unreasonable to adopt all of this information into ASEL, particularly given the guidance material is not mandatory under the LTS. However, it would be useful to reference the LTS guidance material within ASEL. • The following is proposed for inclusion into ASEL as an Appendix to Standard 1. It essentially duplicates the LTS standards. Words surrounded by *'s will need definitions. S1 A person must ensure *humane killing* methods for livestock result in immediate loss of consciousness followed by death while unconscious. S2 A person must ensure that livestock are *humanely killed* at the * first opportunity* if they are: • *moribund* • Suffering from distress, disease or injury that cannot be reasonably treated and will ultimately result in their death. S3 A person killing livestock must take *reasonable action* to confirm that the animal is dead. S4 Firearm use must be in the frontal or poll positions. When using a captive bolt, the poll position must not be used for cattle. S5 Captive bolt use must be: • in the frontal or poll positions, subject to the restriction outlined in Section 4. • accompanied by appropriate restraint • applied in contact with the skull. • S6 *Blunt trauma* to the brain must only be used on the following species if less than 24 hours old - alpacas, camels, cattle, deer, goats and sheep. S7 Bleeding-out by neck cut must be done only by a *competent* operator or under the *direct supervision* of a competent operator, but only in situations where there is no firearm or	referenced elsewhere in ASEL). • ASEL will need to be reviewed to ensure that the relevant standards which reference euthanasia reference this appendix – these should include S1.27, S4.12, S5.7 s6.9 and s6.23.

	captive bolt available, and only for deer, goats or sheep. **Note –** further information and guidance on the humane destruction of livestock is available in the Australian Animal Welfare Standards and Guidelines – Land Transport of Livestock. The following definitions are proposed for inclusion in the definitions section: Killing method: Means any procedure which causes the death of an animal, (OIE) Humane killing: The activity that results in immediate loss of consciousness and then death of the animal. The primary consideration is to prevent the animal from suffering further pain or distress. First opportunity: Appropriate action for livestock is done at the first opportunity except where a reasonable delay is caused by a significant reason relating to resources, skills, safety or the immediate welfare of other livestock. Reasonable action: Those actions regarded as reasonable to be done by an experienced person in the circumstances to address a problem as determined by accepted practice and by other similarly experienced people. Blunt trauma: A single blow to the forehead, causing immediate loss of consciousness. Competent person: A person is competent for a task when they have the knowledge, skill, attitude and behaviour to undertake the requirements of the relevant standard(s) in a manner that does not compromise animal welfare. Ways to gain competency can include relevant experience, prior learning, on-the-job training or formal training. *Note:* Formal qualifications are not required. Direct supervision: Ongoing, continuous and direct personal supervision of an activity.	
S1.1	Livestock sourced for export must meet any relevant animal health and welfare requirements under state and territory legislation and relevant requirements under national Model Codes of Practice for the Welfare of Animals.	• Consideration of the development of animal welfare standards and guidelines under AAWS process • Mapping ASEL standards against animal welfare standards and guidelines to ensure consistency
S1.4	Livestock sourced for export and intended for human consumption must comply with Australian food safety requirements, including standards for chemical residues or environmental contaminants.	• Covered by regulations
S1.5 and S1.5A	Fat Bos taurus cattle must not be sourced for export from or through the	• LIVE 104A covers the requirements of the standard

	ports of Darwin, Weipa or Wyndham from 1 October to 31 December (inclusive). **Note**. "Fat" means having a body condition score, under Table A1.1.2, of 5 or more: see clause 1.5. *Bos taurus* cattle bred in an area of Australia south of latitude 26° south must not be sourced for export to the Middle East from May to October unless an agreed livestock heat stress risk assessment indicates that the risk is manageable. [less than a 2% risk of 5% mortality]	with a best practice recommendation • Needs to be consistent with Land transport standard • R&D output relevant to this clause includes: ○ The causes of injury and lameness following loading onto ships require further investigation. ○ There is a need to investigate the role of ventilation, particularly air flow, in predisposing to heat stress and pneumonia. This may include a need to define the minimum ventilation standards required for cattle during sea transport and to ensure that ships meet such standards, particularly when carrying *Bos taurus* breeds from southern ports during the northern hemisphere summer. ○ There is a need to identify those cattle pens where air flow is minimal or nil, particularly on ships with a history of poor performance. There is a need to investigate the use of ducts or other methods to improve ventilation in cattle pens where air flow is minimal or nil. ○ Formal training and accreditation in selection of livestock for export is required. ○ Examination of the links between the condition of animals and the outcomes of the export process - eg. heat stress model
S1.6	Sheep must not be sourced for export from or through the ports of Darwin, Weipa or Wyndham from 1 November to 31 May in the following year (inclusive).	• R&D output relevant to this clause includes: ○ Literature review required covering management of salmonellosis in sheep. ○ Development of best practice guidelines to reduce salmonellosis in exported sheep
S1.7	Livestock sourced for export must be fit to enter the export chain. Livestock sourced for export must be inspected ~~on-farm~~ at the property of purchase (eg. on-farm, saleyard, feedlot) and any animal showing signs consistent with the rejection criteria below, or any other condition that could cause the	• Livestock may be sourced from a range of property types rather than just on-farm. • Further investigations of specific hypotheses about why some sheep become inappetent and on-farm

	animal's health and welfare to decline during transport or export preparation, must not be prepared for export. Such conditions include those shown below:	factors required • Rejection criteria need to be defined
1.7 – Table	Blindness in ~~one or~~ both eyes	• The LTS sets out seven specific conditions as mandatory standards under which an animal is not fit for land transport. All of these are consistent with ASEL except that it allows the transport of animals that are blind in one eye. • With the Land Transport Standards (LTS) now enforceable, it will be more difficult to ensure producers and transporters are aware of the smaller variations between the LTS and ASEL and therefore there is a high risk that these animals could be delivered to registered premises (and subsequently needing to be drafted out). • Amending this point would harmonise ASEL with the mandatory not fit to load standards in the LTS. It would remove inconsistencies between the standards and allow livestock transporters and producers to focus on the more specific and animal welfare relevant rejection criteria set out in ASEL. • Variations between regulations would add additional challenges in the education and training associated with the adoption of the LTS.
Rejection criteria – Duplication	The rejection criteria in 1.7 are applicable across the supply chain and the table is duplicated at 3.1.1 to 3.1.4 and 6.4. Each of these tables is slightly different. The justification for separate tables at 1.7 and 6.4 is potentially accepted (air verses sea), but there does not appear to be sufficient justification for duplicating 1.7 at 3.1.1 through 3.1.4. Having multiple tables increases the chance of inconsistencies/errors and increases confusion because it is not readily clear whether the tables are the same or not. It is noted that s2.11 already refers to 1.7 without duplicating it. It is proposed that tables 3.1.1 to 3.1.4 be removed and the requirement for keeping 6.4 be reviewed in light of any variations. The relevant sections at 3.1.1 to 3.1.4 could then refer to table 1.7.	• This change would reduce unnecessary duplication and inconsistency between tables.
Rejection criteria – Consistency	Each of the tables at 1.7 and 3.1.1-3.1.4 are slightly different in their presentation and their content. Tables 3.1.1-3.1.4 are unnecessarily broken down into species (Table 1.7 shows that the criteria can be acceptably combined). In addition, some undesired inconsistencies appear to have developed – for example, table 1.7 refers to 'coughing' as a rejection criteria. 'Coughing' is repeated in 3.1.2. However, tables 3.1.1, 3.1.3, 3.1.4 and 6.4 refer to 'severe coughing.' In addition, tables 3.1.1 and 3.1.2 identify rejection for "Mobs with unusual	• It would be more effective to have one table containing rejection criteria that applied across the supply chain. • Inconsistencies in rejection criteria need to be resolved, for example, coughing and mob mortality. • It is noted that 'unusual mortalities' is vague and undefined.

	mortalities or mortalities of more than 0.5 % over the whole period of pre-export preparation." Table 1.7, 3.1.3, 3.1.4 and 6.4 state that the rejection criteria is "Mobs with unusual mortalities over the whole period of pre-export isolation." The issue of inconsistencies could be removed by having only one or potentially two tables (sea and air) that set out the rejection criteria with other standards referring back to them.	
Required definition - Sourcing	There is currently no definition of sourcing and this adds to the confusion around when the parameters specified in Standard 1 apply. The separate standards in Standard 1 use the term 'source' but its interpretation varies between the standards. For example, one of the rejection criteria is that animals must not be sourced where there is unusual mob based mortalities during pre-export isolation. This cannot be applied until the animal is in isolation. The Steering Committee should consider whether the use of the term 'sourcing' is effective or whether better descriptions could be used (some are suggested below).	
S1.8	Livestock must not be sourced for export if they are in an emaciated or overfat body condition. That is: a) cattle and buffalo must be from condition scores 2 to 6 (inclusive) on a scale of 1 to 7; b) pregnant cattle must be from condition scores 3 to 6 (inclusive) on a scale of 1 to 7; c) sheep, goats and deer must be from condition scores 2 to 4 (inclusive) on a scale of 1 to 5; and d) camels must be from condition scores 2 to 4 (inclusive) on a scale of 1 to 5. e) alpacas must be from condition scores 2 to 4 on a scale of 1 to 5. Included in appendix - 1.1 in ASEL	• Needs to be consistent with Land transport standard • Formal training and recognized competency in the selection of livestock for export is required. • R&D output relevant to this clause includes: ○ Further examination of the links between the condition of animals and the outcomes of the export process ○ Investigation into the use of the AUS-MEAT system to adequately describe fat-tailed breeds. ○ Consistency of judging body condition score eg. sheep with fleece
S1.9	Cattle and buffalo sourced for export as slaughter and feeder animals: (a) must have been weaned at least 14 days before ~~sourcing for export~~ entry into the registered premises; (b) must have an individual liveweight of more than 200 kg and less than 650 kg on the day of loading for export or, if outside these weights, have written prior approval from the relevant Australian Government agency;	• There is a lack of clarity around when the weight limit measurement applies and when the weaning date applies. • The appropriate time to ensure the weight of the animal is not at sourcing, but at loading for export when the weight of the animals is more relevant to the future welfare of the animal and it can be measured more accurately (eg. weigh bridge). • No changes are proposed to where body condition is assessed (ie. selection and in preparation) and this would ensure that up to loading animals are in appropriate condition for preparation. • Pregnancy testing - consistency between states and

		competency of testers - should be in-line with cattle standards and guidelines • Exporters are now sourcing animals for export earlier and then growing them out in systems that prepare them better for the export process (eg. separate to the registered premise). This clarification supports greater preparation under the control of the exporter. • R&D requirements: ○ Effect of weaning age on export outcome ○ Effect of live weight on export outcome
S1.9	(c) Females must have been determined not to be pregnant, using the following criteria: (i) have been pregnancy tested during the 30 day period before the expected date of export and certified in writing as not detectably pregnant by the registered veterinarian or competent pregnancy tester who pregnancy tested the cattle or buffalo; or	• Clarifies only females to be tested. • The inflexibility of this provision is putting at risk the welfare of cattle for export. • The pregnancy test for cattle is a stressful and intrusive process and it is best practice to ensure that there is as much time as possible between the date of testing and the export. In line with this, exporters seek to test animals as far out from the day of export as possible (30 days). • Due to the lack of flexibility provided under ASEL for DAFF to exercise discretion, it is possible that if a shipment is delayed and the days go beyond 30 that a strict reading would require animals to be yarded and subjected to the significant additional stress of an additional and unnecessary intrusive pregnancy testing immediately prior to them going through the loading, transport and shipping process. It should also be noted that when the ship is delayed the heifers will already be in quarantine and not in contact with male animals. • Some flexibility for DAFF to make judgments in the interest of animal welfare is required. • The proposed change would allow this flexibility and would allow DAFF the ability to monitor any delays (ie. DAFF is aware of the expected date of export through the export documents). • This issue was noted in the Farmer review on page 48 and the Review suggested on page 62 that "insistence on the 30-day limit for the period between pregnancy diagnosis and departure should be subject to discretion by AQIS where there is a low pregnancy risk."

		• The inclusion of a discretion instead of the proposed amendment would also address this issue.
S1.10	Cattle and buffalo must only be sourced for export for breeding if they: (a) have been weaned at least 14 days ~~sourcing for export~~ on entry into the registered premises; (b) have an individual liveweight of more than 200 kg and less than 650 kg on the day of loading for export or, if outside these weights, have written prior approval from the relevant Australian Government agency; (c) Females have been pregnancy tested within the 30 day period before the expected date of export and certified in writing as no more than a maximum of 190 days pregnant .	• As per previous comments. • The flexibility is equally if not more important for animal welfare if the animals are pregnant. • Pregnancy testing - consistency between states and competency of testers - should be in-line with cattle standards and guidelines
S1.11	Ewes with a weight of 40 kg or more and all does (goats) must only be sourced for export as slaughter and feeder animals if they have been pregnancy tested by ultrasound within 30 days of the expected date of export and certified not to be pregnant, by written declaration, by a person able to demonstrate a suitable level of experience and skill. (a) all female Damara sheep breeds sourced as feeder or slaughter must be pregnancy tested within 30 days of the expected date of export by ultrasound and certified not to be pregnant, by written declaration, by a person able to demonstrate a suitable level of experience and skill.	• It is noted that ultrasound is less intrusive than manual palpation. However, the process still requires yarding and manual handling of the animals immediately prior to the loading and export process. This change would again reduce the risk of perverse animal welfare outcomes from the standards. • Pregnancy testing - consistency between states and competency of testers - should be in-line with animal welfare standards and guidelines • Reference to Damara breeds reviewed
S1.12	Unless approved by the relevant Australian Government agency, lambs and goat kids must only be sourced for export if: (a) they have been weaned at least 14 days ~~before sourcing for export~~ on entry into the registered premise; (b) lambs have a liveweight of more than 28 kg on entry into the registered premise; and (c) goat kids have a liveweight of more than 22 kg on entry into the registered premise.	• There is no clarity about when the weight limits are applied. • The weight of the lambs and the goat kids can be better verified on unloading into the registered premise (eg. weigh bridges) than at 'sourcing.' • Applying the weight restriction to unloading into the premises would also ensure the animals are at an appropriate size to handle the stress of the process before loading for transport. • There is also no clarity about when the weaning days are counted from.
S1.13	Sheep and goats sourced for breeding must only be sourced for export if they have been pregnancy tested using ultrasound foetal measurement within 30 days of the expected date of export and certified, by written declaration, by a person able to demonstrate a suitable level of experience and skill, to be not more than a maximum of 100 days pregnant at the scheduled date of departure.	• As S1.11.
S1.13A	Alpacas and llamas sourced for breeding must only be sourced for export if they have been pregnancy tested using ultrasound within 30 days of the expected date of export and certified, by written declaration, by a registered veterinarian with demonstrable current experience in camelid pregnancy diagnosis, to be not more than a maximum of 228 +/- 2 days	• As for S1.11.

	pregnant at the scheduled date of departure.	
S1.14	Deer sourced as slaughter and feeder animals must only be sourced for export if they have been pregnancy tested by ultrasound within 30 days of the expected date of export and certified, by written declaration, by a person able to demonstrate a suitable level of experience and skill, not to be pregnant.	• As for S1.11.
S1.14A	Deer sourced for breeding must only be sourced for export if they have been pregnancy tested by ultrasound foetal measurement within 30 days of the expected date of export and certified, by written declaration, by a person able to demonstrate a suitable level of experience and skill, to be not more than a maximum of 140 days pregnant at the scheduled date of departure.	• As for S1.11.
S1.15	Horned cattle and buffalo must only be sourced for export as slaughter and feeder animals: (a) for cattle, if the horns are 12 cm or less in length and tipped (blunt); (b) for buffalo, if the horns are no longer than the spread of the ears and are blunt; and (c) if de-horned, wounds are healed. Otherwise, horned cattle and buffalo must only be sourced for export with the approval of the relevant Australian Government agency.	• No specific standards for horned livestock with the Land Transport Standards and Guidelines. Therefore new standard needs to cover this area.
S1.16	Horned sheep or rams must only be sourced for export as slaughter and feeder animals if the horns: (a) are not turned in so as to cause damage to the head or eyes; (b) would not endanger other animals during transport; (c) would not restrict access to feed or water during transport; and (d) are one full curl or less, or are tipped back to one full curl or less. Otherwise, horned sheep or rams must only be sourced for export with the approval of the relevant Australian Government agency.	• As for S1.15
S1.17	Horned cattle and buffalo must only be sourced for export as slaughter and feeder animals: (a) for cattle, if the horns are 12 cm or less in length and tipped (blunt); (b) for buffalo, if the horns are no longer than the spread of the ears and are blunt; and (c) if de-horned, wounds are healed. Otherwise, horned cattle and buffalo must only be sourced for export with the approval of the relevant Australian Government agency.	• As for S1.15
S1.19	Sheep must only be sourced for export if they: (a) have wool not more than 25 mm in length, unless approved by the relevant Australian Government agency based on an agreed heat stress risk assessment model; and (b) are 10 days or more off shears on entry into the registered premise; or (c) if they are less than 10 days off shears on entry into the registered premises or are to be shorn during the 10 day period before export, ~~in which case~~ they must be accommodated in sheds on the registered premises.	• Clarification of 10 days off shears required

S1.20	Goats must not be sourced for export unless they have become conditioned to being handled and to eating and drinking from troughs for a minimum of 21 days before transfer to registered premises.	• Definition of 'conditioned' • R&D requirements: ○ Recommendations for best management practices required

S1.21	Deer must only be sourced for export if they:
	(a) are at least 6 months old when loaded for export;
	(b) have been weaned for at least 2 months ~~before sourcing for export~~ on entry into the registered premise; and
	(c) have become conditioned to being handled and to eating and drinking from troughs for a minimum of 14 days before the expected date of export.
		• Similar to previous comments – for (a) and (b) this clarifies the point of measurement.
		• The change to (c) allows for the potential use of registered premises to condition the deer.
		• R&D requirements:
		  ○ Pre-export preparation of deer
		  ○ Criteria for export to be developed

S1.22	Male deer must only be sourced for export if: (a) they have had hard antler removed leaving only buttons; (b) they are not in the first week after velveting; (c) velveting wounds have healed; and (d) they are not in rut, if they are over 1 year of age.	• As for S1.21

S1.23	Camels, including wild-caught camels, must only be sourced for export if they:
	(a) have become conditioned to being handled and to eating and drinking from troughs for a minimum of 14 days before the expected date of export; and
	(b) meet transport and shipping height requirements of the intended transport (ie camels standing in their natural position do not touch any overhead structures).
	Bull camels that are more than 5 years of age and are in rut must not be sourced for export in the period 1 May and 30 September.
		• Clarification on duration of conditioning process - 14 days before expected date of export
		• This component should be revised to allow some of the conditioning to occur in a registered premise.
		• The conditioning should be allowed to occur on a registered premise as they may be either the only available facilities (eg. transported straight from the wild to the RP) or the highest quality facilities. This also allows for them to be fed on the same pellet formulation they will receive on the vessel.
		• R&D requirements:
		  ○ Pre-export preparation of camel
		  ○ Criteria for export to be developed

S1.25	A record of all vaccines, veterinary medicines and agricultural chemicals used to vaccinate or treat livestock sourced for export must be kept for at least ~~2 years~~ 1 year after the date of export.	• Reduced to 1 year • Given the lack of clarity as to what sourcing is, what period of time is this referring to? What records is this referring to? Who is meant to record or keep these records? • In-line with legislation and animal welfare standards and guidelines • Recommended that should be part of on-farm QA requirements

S 1.27	Livestock sourced for export that become or injured during on-farm preparation must be excluded from export, and arrangements must be made for their prompt and humane handling and care.	• Rejection criteria needs to be defined
STANDARD 2	LAND TRANSPORT OF LIVESTOCK	
	Review the need to retain ASEL Standard 2 in light of the Land Transport Standards (LTS) being enacted. The approach suggested is to develop a brief standard that highlights some of the key specifics including rejection criteria (S2.11), importing requirements (S2.2), the requirement to rest animals after receival on a 14 + hour journey (S2.21) and a reference to the LTS (S2.1). Alternatively, these could be incorporated into other standards so as to allow the removal of standard 2 If Standard 2 of ASEL remains then it is recommended that LTS and Standard 2 (ASEL) are mapped to resolve areas of contradiction and remove duplication.	• The LTS is the first nationally consistent and enforceable set of legislated animal welfare standards and it has the support of the Australian Government, State and Territory Governments and industry. • Standard 2 of the ASEL stipulates specific requirements for the road transport of livestock destined for export. In some cases these requirements appear to be unnecessary replication of requirements under the state/territory regulatory framework as outlined in the Land Transport Standards. • The incorporation of LTS into the ASEL would also be difficult given the different approaches (standards and guidelines, vs standards only).
STANDARD 3	**MANAGEMENT OF LIVESTOCK IN REGISTERED PREMISES**	
Duplication and lack of clarity in the roles	There is a significant degree of duplication between Standard 3 and the legislation for the establishment and operation of a registered premise under the Export Control (Animals) Order 2004. Some of this duplication relates to areas specific to the construction or location of the registered premises which are only relevant to the application/establishment of a registration premises and which occur prior to the involvement of an exporter. These standards include S3.0 (DAFF decides this under the order before a registered premises is approved); S3.2 (information on this is provided as part of the application for approval of a registered premise); s3.4 (drainage requirements - these are construction features); S3.5 (the shelter requirements relate directly to construction and location); S3.6 (fencing); S3.16 (d) (this needs clarification – see below). Other standards relate to management of livestock in the premises and although this reflects some duplication with the Operations Manual (required under the Order), they are more relevant to the maintenance of animal welfare through the export supply chain. On this basis, the standards which relate to construction and location should be removed to reduce unnecessary duplication with the Order In the event that these above recommendations are not accepted, some	• It is important to identify what ASEL seeks to achieve and what the Order seeks to achieve. The Order in particular covers the application process (which is further duplicated in many cases by local government/state government planning and EPA requirements) and this should be viewed as separate to ASEL. • By removing the construction/location requirements for a registered premise, ASEL then focuses solely on the management factors relevant to animal welfare over which an exporter can have control. The management aspects are the key factors that will vary between consignments.

	more detailed refinements to the identified provisions are provided below.	
Responsibilities	The Standard should be reviewed to clearly identify which entity is responsible for delivering against each standard. Where the standard duplicates a responsibility attributed to the operator of the registered premises under the Order this link must be clearly made.	• The Order requires that the registered premise operator deliver against a range of conditions as part of the approval process and under the Operations Manual. The exporter is not a party to this process and it must be clear that the responsibility for compliance with these standards lies with the registered premise operator. The exporter's main influence is towards any specific preparation requirements as set out in the contractual/commercial arrangements.
Definition	"Operator of the registered premises" The operator of the registered premise is the person, or a representative of the person, named on the government registration issued in accordance with the *Export Control (Animals) Order 2004* or its successor instruments.	• There needs to be an agreed definition of who the operator of the registered premise is and therefore who is responsible in relation to the standards where this phrase is mentioned. • The Export Control Order implies that the definition of the operator of the registered premise is the person who has applied and been successful in registering the property.
S3.0	The operator of the registered premises must ensure that the location of the registered premises, used for inspection for 'leave for loading', must not be more than 8 hours journey time from the port of embarkation, with the exception of camels for export through northern ports, unless approved by a relevant Australian Government agency.	• Delete this standard as it is a condition that would have been applied and considered by DAFF during the application process for registering a premises.
S3.1	The operator of the registered premises must employ sufficient appropriately trained staff for the effective day-to-day operation of the premises and management of the livestock.	• This standard is unverifiable and unclear. • It is unclear what the staff meant to be appropriately trained in and what is sufficient? • The requirements in the rest of the standard (eg. daily inspection by a competent stock person) would already require this standard to be met, as would requirements under the Order. A failure to provide this would breach the conditions of the registered premises under the Order. • Personnel must be competent to perform their required task, or must be supervised by a competent person. • There must be a responsible person involved with management of livestock in registered premises • Competencies required for processes described • Description of responsibilities of all individuals involved in management of livestock at registered premise • Guidelines to include elements of responsibility and competency for staff involved in the day to day

		operation of the premises.
S3.2	Livestock handling facilities and sheds at registered premises must comply with the following: (a) Sheds must be constructed with sufficient drainage and ventilation to ensure that the shed is free draining. (b) Sheds with slatted or mesh floors must be designed and maintained to prevent entrapment of feet. (c) Livestock handling facilities must be constructed to handle the number of livestock (ie the number of stock at the premises, whatever that may be, depending on the consignment size) with a minimum of stress and injury. (d) Floors of yards, sheds, pens and loading ramps must have non-slip surfaces.	• R&D requirements: ○ relative merits of raised and concrete flooring ○ literature review required covering management of salmonellosis in sheep. ○ development of best practice guidelines to reduce salmonellosis in exported sheep ○ development of tools to rapidly measure salmonella contamination in the environment.
S3.3	Isolation of livestock: (a) Where a period of pre-export quarantine or isolation is required by the importing country, animals forming the consignment must at all times be physically isolated from all other animals (whether for an alternative export market or domestic use) to prevent contact. (b) Where handling facilities used for loading, holding, treating or inspecting livestock (including roadway and lanes) are to be used for both domestic and export livestock (including livestock of differing export status), the operator of the premises must have procedures in place to ensure that: (i) handling facilities are not used simultaneously by livestock of differing pre-export quarantine or isolation status; (ii) a minimum livestock traffic separation of 2 m is maintained at all times, or livestock are separated by a physical barrier such as a fenced road or lane or a fully fenced empty paddock, unless specified otherwise by the importing country; and (iii) handling facilities and equipment used by different consignments of animals are managed in accordance with the pre-export quarantine or isolation requirements of each importing country.	• Not an animal welfare standard • No defined animal welfare outcome • Importing country requirements • Does not cover isolation of sick and/or injured animals • Definition of ‘isolation’ is required • R&D requirements: ○ Isolation and treatment guidelines for sick and/or injured stock.
S3.4	Isolation of livestock: (a) Where a period of pre-export quarantine or isolation is required by the importing country, animals forming the consignment must at all times be physically isolated from all other animals (whether for an alternative export market or domestic use) to prevent contact. (b) Where handling facilities used for loading, holding, treating or inspecting livestock (including roadway and lanes) are to be used for both domestic and export livestock (including livestock of differing export status), the operator of the premises must have procedures in place to ensure that:	• Recognition of legislation and national Standards and guidelines • R&D requirements: ○ Development of tools to rapidly measure salmonella contamination in the environment ○ Literature review required covering management of salmonellosis in sheep.

	(i) handling facilities are not used simultaneously by livestock of differing pre-export quarantine or isolation status; (ii) a minimum livestock traffic separation of 2 m is maintained at all times, or livestock are separated by a physical barrier such as a fenced road or lane or a fully fenced empty paddock, unless specified otherwise by the importing country; and (iii) handling facilities and equipment used by different consignments of animals are managed in accordance with the pre-export quarantine or isolation requirements of each importing country.	○ Development of best practice guidelines to reduce salmonellosis in exported sheep • Definition of 'consignment' requires clarification. This is also significant for reporting requirements.
S3.5	The operator of the registered premises must ensure that the registered premises are~~be~~ either constructed or located in such a manner as to provide animals with protection from extreme climatic conditions. ~~by means of:~~ ~~(a) shade;~~ ~~(b) windbreaks;~~ ~~(c) shelter; or~~ ~~(d) other means approved by the registration authority.~~ **Note**. Specific requirements may vary according to the type of registered premises, taking into account the species, class and maximum number of animals to be held at the premises and the types of operations to be carried out. Preferred option is for it to be removed to reduce duplication with the Order.	• Under the Order, DAFF already has the ability to approve or reject an application for a registered premise based on the protection of animals from extreme climatic events and therefore this is unnecessary duplication. • At a minimum, there is no need to include further additional detail or to include a discretionary power for DAFF which is already available to it under the Order. • It should also be clear who is responsible for ensuring the standard is met.
S3.6	Fencing at registered premises must: (a) be appropriate to hold livestock and to prevent the entry of livestock; (b) be maintained in a good state of repair; (c) ~~be inspected before the entry of each consignment and twice a week while livestock are in the registered premises; and~~ (d) be consistent with the importing country requirements.	• This provision is unnecessarily detailed. (c) represents a method (eg. guideline) for how to ensure the outcomes set by (a) and (b) are met.
S3.7	To ensure adequate supply of feed and water: (a) where feeders, self-feeders and water troughs are used, they must be of a design that allows for complete cleaning of all surfaces, prevents spoilage of feed during inclement weather, and minimises faecal contamination and injuries (b) all livestock feed for use at the registered premises must be stored in a manner that maintains the integrity and nutritional value of the feed, and protects it from weather, pests and external contaminants (including chemical spray drift) and from direct access by animals (c) where feeders and self-feeders are used, the feed trough allowance for sheep and goats held in paddocks at the registered premises is to be calculated on a paddock-by-paddock basis and must be: (i) for ration feeding, no less than 5 cm of feed trough per head; (ii) for ad *libitum* feeding, no less than 3 cm of feed trough per head; (iii) during any or all of May, June, July, August, September and October	• Revision required so in-line with AAWS standards and guidelines - Animals must be provided with access to feed and water to meet their nutritional requirements and to minimise harmful metabolic and nutritional conditions (Sheep and Cattle Standards and Guidelines).

	feeding must occur from fully sheltered feed troughs, with the exception of areas of Australia north of latitude 26° south. (e) the quantity of feed available should meet at least minimum feed requirements, which are: (i) cattle/buffalo — 2.5% of their bodyweight, of a quality feed able to meet daily maintenance requirements; (ii) sheep and goats — 3% of their bodyweight per day for sheep younger than 4 tooth and 2% of their bodyweight per day for 4 tooth or older, of a quality feed able to meet daily maintenance requirements; and (iii) deer — 2% of their bodyweight per day of a quality feed able to meet daily maintenance requirements. (f) all livestock in the registered premises must have access to drinking water at all times (unless under curfew) (g) water troughs must be: (i) positioned apart from hay and feed sources to prevent fouling; and (ii) kept clean. (h) the water quality must be suitable for the livestock and there must be sufficient backup storage or a contingency plan to ensure continuity of supply at peak demand for 2 days.	
S3.9	'Pastoral Sheep' and 'Station Sheep'	• There is currently no definition for pastoral and station sheep in ASEL. The use of pastoral and station sheep as a descriptor should be revised to determine whether there is a more appropriate approach (eg. focused on preparation and pathways rather than restrictions) that could be applied.
S3.10	The operator of the registered premises must have arrangements in place at the premises to prevent unauthorised entry and access to the feed when livestock are being prepared for export. Access to the premises must be controlled at all times, with: (a) all entry points to premises being clearly signed; (b) only those persons necessary for the day-to-day operation of the premises and state and territory government officials having direct access to the area of the premises; and (c) all non-employees reporting to reception for appropriate biosecurity checks relevant to the requirements of the facility.	• The intent of this standard needs to be reviewed. It has at least three issues within it – biosecurity, access to premises and access to feed. • Under the Order, the Operations Manual and the application for a registered premise must already include details of the prevention of unauthorised access and security to the satisfaction of DAFF. • This provision should be deleted as it does not add to the Order and is only tentatively linked to animal welfare and animal health given it is based largely on requiring the Operator of the Registered Premise to take action to prevent the illegal actions of other parties.
S3.11	Stocking density at registered premises must provide at least the following minimum space per head (cattle with horns must be provided with additional space), unless a variation is required and approved by the relevant Australian Government agency: (a) for cattle or camels held for 30 days or more, a minimum of 9 m^2, based on an individual liveweight of 500 kg (this allowance can be varied by 0.09 m^2 for each 5 kg change in individual liveweight)	• Needs to be compatible with intensive sheep industry and beef feedlot standard - covered by AAWS Standards and Guidelines.

	(b) for cattle or camels held for less than 30 days, a minimum of 4 m^2, based on an individual liveweight of 500 kg (this allowance can be varied by 0.04 m^2 for each 5 kg change in individual liveweight) (c) for sheep and goats held in sheds for 10 days or more, based on an individual liveweight of 54 kg: (i) penned in groups of less than 8 animals, a minimum of 0.9 m^2 (ii) penned in groups of 9–15 animals, a minimum of 0.8 m^2 (iii) penned in groups of 16–30 animals, a minimum of 0.6 m^2 (iv) penned in groups of thirty-one (31) or more animals, a minimum of 0.5 m^2 (d) for sheep and goats held in sheds for less than 10 days, based on an individual liveweight of 54 kg: (i) penned in groups of less than 8 animals, a minimum of 0.6 m^2 (ii) penned in groups of 9–15 animals, a minimum of 0.53 m^2 (iii) penned in groups of 16–30 animals, a minimum of 0.4 m^2 (iv) penned in groups of 31 or more animals, a minimum of 0.33 m^2	
S3.12	When receiving and identifying livestock, the operator must obtain a copy of the vendor declarations regarding the property of source and health and welfare status of the livestock before accepting the livestock for the purpose of preparation for export.	• Part of existing traceability requirements - Vendor declaration
S3.13	Unloading and inspection: (a) Livestock must be unloaded as soon as possible after arrival at the registered premises. Facilities must enable safe and efficient unloading of livestock. (b) Livestock must be individually inspected at unloading to determine whether they are suitable for preparation for export. (c) Livestock for export must be held and assembled at the registered premises in accordance with the relevant approved NOI and CRMP.	• Recognition of legislation and national Standards and guidelines • Literature review required covering management of salmonellosis in sheep. • Development of best practice guidelines to reduce salmonellosis in exported sheep • R&D requirements: ○ Practices pre-shipment, and whilst in transit be reviewed where appropriate, with the objective of reducing death rates in entire males during export. Current best practices in use include segregation of horned and polled rams, drafting of groups on a weight basis (and if appropriate, on an age basis-adult rams separate to hogget and ram lambs) and removal and segregation of at risk sheep.
S3.15	Livestock must be penned in accordance with the criteria in S2.10 (a) to (e).	• This will need to be amended if Standard 2 is revised as suggested. This will require moving the current content of s2.10(a) to (e) to replace 3.15.
S3.16	The operator of the registered premise must ensure that daily monitoring of health, welfare and mortality is undertaken and ~~must~~ includes the following:	• This clarifies that the registered premises operator is responsible for the daily monitoring of health, welfare

	(a) All livestock must be inspected daily by a competent stock person ~~(b) All sick or injured livestock must be given immediate treatment, and veterinary advice must be sought if the cause of a sickness or injury is not obvious, or if action taken to prevent or treat the problem is ineffective~~ (b) All livestock identified while in the registered premises as being sick, injured or showing signs consistent with the rejection criteria in S1.7 must be treated immediately or rejected from the proposed export consignment. (c) Investigation by a registered veterinarian must be conducted if mortalities in any one paddock or shed exceed 0.1% or 3 deaths, whichever is the greater, on any one day for cattle and buffalo, or 0.25% or 3 deaths, whichever is the greater, on any one day for any other species of livestock. Dead livestock must be collected and disposed of on a daily basis. Animals must not be able to access the area for disposal of carcases (d) Records of each consignment must be kept for at least one year ~~2 years~~ after the date of export and must include details of the identity, method of treatment, euthanasia or disposal of all rejected animals.	and mortality. • The revised (b) links the monitoring to ongoing assessment against the rejection criteria. It also allows for the removal of the tables in Division 3 by linking 1.7 into the monitoring processes. • The revised (d) incorporates part of the existing 3.17. There is scope for further information on what records must be kept to clarify requirements if desired. • Unless the Steering Committee can identify cases where the records held by registered premises have been called upon and used after more than a year, (d) should be reduced to one year to reduce the regulatory burden. It also more effectively reflects the duration of registration. • Registered veterinarian should be defined to avoid confusion with AAVs. • This revised standard provides much more accountability and clarity as to the roles and expectations of the entities involved. • Recognition of legislation and national Standards and guidelines • Guidelines required for mortality investigation
S3.17	Any livestock identified at unloading as being distressed, injured or otherwise unsuitable for export must be marked by a permanent method and isolated from the rest of the consignment. A record must be kept that details identity, the method of treatment or euthanasia and disposal of all rejected animals. Criteria for rejection are outlined in Appendix 3.1.	• This standard duplicates the requirement for individual animal inspection at unloading at S3.13(c). • The suggested addition to s3.16(d) and new s3.16(b) also removes the need to retain this. • Rejection criteria need to be defined • Differentiation between livestock that are 'unfit for transport' and those that are 'unfit for export' • Identification of animals not suitable for export should be part of the daily inspection and therefore the scope of the standard needs to be the whole pre-export period and not key events such as unloading • For conditions that prohibit export there needs to be a measure of severity with associated corrective action, for example pink eye
Division 3	Delete	• In light of the comments at S1.7 this should be deleted as unnecessary duplication.
STANDARD 4	**VESSEL PREPARATION AND LOADING**	
S4.3	Before loading of livestock for export begins, a loading plan must be prepared in accordance with the specifications in Appendix 4.1, including details of: (a) the net available pen area on the ship (excluding the area of the	• Not a standard in current format (specifications in the appendix could be used to form the standard) • Legislative requirement • Pen area on vessel verified by AQIS

	hospital pens) according to the vessel's record of equipment for the carriage of livestock; and (b) the number of livestock that may be loaded on the vessel, based on the minimum pen area per head for the relevant livestock species and class as specified in Appendix 4.1, Tables A4.1.1–A4.1.7.	• Hospital pen requirements verified by AQIS • Purpose of load plan • No recommend specific changes to current stocking densities, although the project identified that standards have been mostly established as a result of experience, rather than on scientific research and the biology of the animals.
S4.4	Pregnant cattle/camels must be kept in pens that have an average floor area for each animal of at least: (a) for pregnant heifers of a *Bos taurus* breed — the minimum area required for cattle under Table A4.1.2; (b) for pregnant heifers of a *Bos indicus* breed — the minimum area required for cattle under Table A4.1.1; (c) for pregnant cows of a *Bos taurus* breed — an area 5% larger than the minimum area required for cattle under Table A4.1.2; (d) for pregnant cows of a *Bos indicus* breed — an area 5% larger than the minimum area required for cattle under Table A4.1.1; and (e) for pregnant camels — an area 5% larger than the minimum area required for camels under Table A4.1.7. In this standard: ***cow*** means a female bovine animal that has produced a calf or is over 3 years of age. ***heifer*** means a female bovine animal less than 3 years of age that has not produced a calf.	• Personnel must be competent to perform their required task, or must be supervised by a competent person (cattle and sheep standards and guidelines) • Not a standard in its current format • Part of AQIS operational procedures
S4.10	Livestock for export must be loaded onto the vessel by or under the supervision of a competent stock handler in a manner that prevents injury and minimises stress.	• Stevedores are used for loading vessels and the exporter has no way of determining their stock handling competency. However, there is always a competent stock handler present to oversee the operations and supervise stevedores. • It is noted that Appendix 4.1, 4.1.1 (1) requires a competent person be appointed to oversee the loading process. This provides additional support for the competent supervision. • Personnel must be competent to perform their required task, or must be supervised by a competent person (Cattle and sheep standards and guidelines) • Not a standard in its current format • Not verifiable in current format • Individual responsibilities throughout the export chain could be described at the beginning of the new ASEL standard
S4.11	Livestock for export must be presented for loading, and penned on the vessel, in lines segregated by species, class, age, weight, criteria in	• S2.10 (e) (i) to (iii) were changed for version 2.3 to be 2.10 (e) to (g).

	S2.10(e) to (g) ~~(i) to (iii),~~ and any other relevant characteristic (and, where relevant, port of destination), in accordance with the approved loading plan.	• Note that this reference may need to be changed further depending on the changes to Standard 2. • Definitions required for; older, dissimilar size, class, younger • R&D requirements: ○ rationale behind live export guidelines, particularly in the area of segregation of animals for live export. ○ Review of the literature needed to investigate the significance of segregation of animals for land transport. ○ Practices pre-shipment, and whilst in transit be reviewed where appropriate, with the objective of reducing death rates in entire males during export. Current best practices in use include segregation of horned and polled rams, drafting of groups on a weight basis (and if appropriate, on an age basis-adult rams separate to hogget and ram lambs) and removal and segregation of at risk sheep
4.1.2 (tables 4.1.1, 4.1.2, 4.1.3)	The tables end on different weights. The table should be extended to include the linear interpolation of live weights between 200 and 650 kilograms – consistent with the sourcing criteria in Standard 1.	• Inconsistent information and does not cover the weight ranges provided under the sourcing criteria in Standard 1.
4.1.5	Stocking densities general.	• A MLA/LiveCorp project is underway assessing potential refinements to ASEL stocking densities.
4.1.8	(2) When camels are loaded onto a ship, the clearance between the hump and the deck head of the ship must be at least 100 mm.	• Deck head is the appropriate term.
4.1.9	On behalf of LESAG, the LEP committed significant resources to reviewing the vet kits for short haul and long haul cattle and for sheep and goats. This was a complex process, which involved wide ranging consultation. The LEP is now finalising this review and will provide it to the Steering Committee as soon as possible. The LEP believes that once its review findings have been provided the Steering Committee must update the vet kit to ensure that it reflects current practice. The Steering Committee should also consider whether it is appropriate for a component as constantly changing (as treatments develop) and as integral to welfare outcomes as the vet kit, to be enshrined in ASEL where they are difficult to update.	• Components of the current ASEL which are prone to frequent change (for example, livestock treatments, veterinary kit) should not be enshrined within the standard but should be covered by complementary guidelines

Appendix 4.2 – table 4.2.1	There is no pellet specification for cattle and buffalo. The camel specification and the sheep and goat pellet specifications are identical. It is recommended that the sheep and goat specifications include cattle and buffalo.	• This will clarify uncertainty about pellet specifications for cattle.
Appendix 4.4	**PLUs**	
4.4.3	(1) The maximum number of PLUs per voyage/consignment is 5 (not including 1 additional empty PLU, if identified in the CRMP as a hospital/isolation area), unless approval is provided by the relevant Australian Government agency. A definition is required for voyage and consignment.	• Voyage and consignment are not defined and are not the same thing. It needs to be clarified whether the intent is to limit it per ship voyage or per consignment. • There is a wide range of designs of PLUs, with some – such as the CATS (further information can be provided on request) – highly modified to manage animal welfare. • The restriction to five containers stymies innovation in this area and prevents their economic viability. • It is recommended that DAFF be provided with the authority to approve consignments with greater than five shipments (eg. where it can be demonstrated that the PLUs can deliver animal welfare equivalent to that provided by an ACCL approved vessel). • This discretion would provide an incentive for the development and use of high performing PLUs (in use elsewhere in the world).
4.4.2	(1) The stocking density must be set in accordance with standard S4.3(b), with an additional 15% space allocation to account for the following as necessary: (a) species and class; (b) size and body condition; (c) wool or hair length; (d) horn status; (e) predicted climatic conditions; (f) design and capacity of the PLU.	• There is a lack of clarity and scientific rigour as to why the 15 per cent additional allocation is required for characteristics that elsewhere only require a 10 per cent increase or that are not considered at all. • It is also unclear whether the 15 per cent is mandatory (given the inclusion of 'as necessary') and if there is discretion in its application what the conditions for that discretion are.
4.4.4	(1) PLUs must not be used to transport livestock from a port of loading to a port of discharge if there is a regular service between those ports of vessels that: (a) are permanently equipped for the carriage of livestock; and (b) have valid ACCLs; (c) unless approval is provided by the relevant Australian Government agency.	• This restriction provides an unfair and distorted barrier for companies engaged in the use and development of PLUs. • The use of PLUs allows for smaller shipments of livestock to be made to markets that do not require the numbers necessary to make a livestock vessel shipment economically feasible. • Further, from an animal welfare perspective there is more known about the risks during shipment for those voyages that livestock ships already service which would allow for better assessments of performance.

4.4.4	(2) If PLUs are used to transport livestock, the voyage must not be more than 10 days; unless approval is provided by the relevant Australian Government agency.	• It is noted that the exercise of this power would be restricted to situations where the PLUs could be shown to deliver animal welfare outcomes equivalent to that of an ACCL approved livestock vessel.
4.4.8	(2) PLU's must not be stacked on top of each other, unless approval is provided by the relevant Australian Government agency.	• Marine Order 43 currently prevents stacking. If access and freedom to move animals (eg. winch) could be maintained despite stacking this restriction may be able to be lessened. • This will provide the opportunity for DAFF to allow stacking if the Marine Orders are revised and the restriction on stacking is removed.
STANDARD 5	**ONBOARD MANAGEMENT OF LIVESTOCK**	
Definitions – Voyage length (sea) and Journey	***day 1*** of the voyage means the first day at sea after leaving the first port of loading. ***long haul*** means any journey greater or equal to 10 days. 'Journey' and 'voyage' are intermittently used throughout ASEL without being defined. Currently there are inconsistent references to journeys and voyages, neither of which is defined. The common practice of measuring a long haul journey is to measure from the first day at sea to the day of arrival. The following is proposed as a starting point for discussions on defining these terms, but further discussion between government and industry is likely to be required to ensure the definition does not have perverse outcomes on the operations of export businesses: Voyage length (sea) – The voyage length is measured from the first day at sea after leaving the first port of loading in Australia to the anticipated day of arrival at the first port of discharge.	• There is currently a lack of clarity around this point and a consistent definition needs to take into account the use of the word voyage as a means of calculating stocking densities and necessary food provisions etc. • The proposed definition is put forward to stimulate discussion within the Steering Committee and to highlight the issue with the interpretation of the terms voyage, day 1, long haul, journey etc. Careful consideration is required to ensure that the definition reflects the current situation and does not change the categorisation of current shipments. • The definitions should also consider any definitions of voyages used within the marine legislation to try and ensure consistency.
S5.1	The onboard management of livestock for export by sea must ensure that the health, welfare and physical needs of livestock are met during the voyage: (a) An accredited stock person must accompany each consignment of livestock and must remain with the consignment until the vessel has completed discharging at the final port of discharge. (b) An accredited veterinarian must accompany each consignment of livestock where required by the relevant Australian Government agency and must remain with the consignment until the vessel has completed discharging at the final port of discharge. (c) Accredited stock persons and/or veterinarians must work with the vessel's master and crew to maintain the health and welfare of the livestock on board. (d) All personnel handling and caring for livestock or who are otherwise responsible for animals during the voyage must be able to demonstrate an adequate level of experience and skill to allow them to undertake their duties.	• 'The onboard management of livestock for export by sea must ensure that the health, welfare and physical needs of livestock are met during the voyage' - not achievable. Suggested re-wording - 'To assist in maintaining the health and welfare of livestock' • PART A: - Repeats requirement for accredited stockman and veterinarian • Definitions required for: - Competent - Adequate experience

S5.5	All livestock on the vessel must have access to adequate water of a quality to maintain good health and suitable feed to satisfy their energy requirements, taking into consideration any particular needs of the livestock species, class and age: (a) There must be a contingency plan to provide satisfactory tending, feeding and watering of the livestock in the event of a malfunction of the automatic feeding or watering systems, but without compromising the safe navigation of the vessel. (b) Adequate feed must be supplied to livestock waiting to be discharged, and where practicable, during the discharge period. (c) Adequate water must be supplied to livestock waiting to be discharged and during the discharge period.	• Livestock are more difficult to unload when there is feed in the troughs causing the process to be slower. There may also be curfew requirements in place in importing countries for the in-market road transport legs. • The phrasing suggested would require feeding while waiting to be discharged, but allow a judgment to be made while discharging (when animals are unlikely/should not be feeding). • The water provision has remained unchanged, but has been separated to reflect the changes to the feed requirements. • Animals must be provided with access to feed and water to meet their nutritional requirements and to minimise harmful metabolic and nutritional conditions (Sheep and Cattle Standards and Guidelines). • Definition of Adequate feed to maintain energy requirements is required • 'Adequate feed and water' is not verifiable • R&D requirements: ○ feed intake during shipping - as it will have a much more significant effect on the exchangeable electrolytes in the body than provision of current electrolyte mixes. ○ The nature of the fluid losses in sheep and cattle during shipping - The composition of the lost fluid will depend on the composition of sweat, the loss of respiratory water vapour, and losses due to diarrhoea ○ measured losses and determination of whether cattle will drink more concentrated electrolyte solutions. ○ Methods to assess pellet integrity and the development of guidelines for feed assessment and presentation. ○ provision of feed troughs on the inside of the pens as a possible method of reducing the incidence

		of shy feeders. ○ stock water delivery systems to reduce leaks and facilitate the ease of cleaning to reduce wet pens.
S5.6	Livestock and livestock services on the vessel must be regularly inspected (day and night) to ensure that the health and welfare of the livestock are maintained while the livestock are on the vessel: (a) A meeting must be held daily to discuss all issues relating to the health and welfare of the livestock. This must include the master and/or the master's representative, accredited stock person and veterinarian. (b) Livestock must be systematically inspected to assess their health and welfare. (c) Feed and water supply systems must be monitored day and night and maintained in good order. (d) The pen stocking density must be checked regularly throughout the voyage and adjustments made as required. (e) Ventilation must be monitored regularly each day to ensure adequate thermoregulation of the livestock. (f) Washing down of decks and disposal of faeces and litter must be carried out with regard to the health and welfare of livestock.	• R&D requirements: ○ Inspection methods appropriate for use on the vessel - Animal-based methods with an animal welfare outcome • Structure of daily meeting • Responsibilities and inspection competencies • Definition of the following required; Inspection, Master's representative, competency, adequate thermoregulation • Individual inspection of all stock may not be practical • Does 'monitored day and night' mean around the clock? • PART D: Not a standard in the current format
S5.7	Any livestock identified as being sick or injured must: (a) be given prompt treatment; (b) be transferred to a hospital pen, if required; and (c) if necessary, be euthanased humanely and without delay (the carcases of any dead livestock must be disposed of in accordance with the requirements of Annex V of MARPOL 73/78. **Note**. International Convention for the Prevention of Pollution from Vessels, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL 73/78). Annex V: Prevention of pollution by garbage from vessels.	• R&D requirements: ○ Guidance on diseases and conditions with associated treatment protocols ○ Use of hospital pens ○ Procedures for isolation of sick animals
S5.9	When bedding is used, it must be maintained in adequate condition to ensure the health and welfare of the livestock.	• Not a standard in the current format - Cannot be verified • Prescriptive standards for bedding are required
S5.10	A contingency plan for the following emergencies must be prepared for each consignment as part of the consignment risk management plan: (a) mechanical breakdown; (b) a feed or water shortage during the voyage; (c) an outbreak of a disease during the voyage; (d) extreme weather conditions during the voyage; and (e) rejection of the consignment by the overseas market.	• CRMP therefore does not need to be part of ASEL • Verified by AQIS prior to export
Reporting	The Government's ASEL review should examine each of the reports below in detail with a view to standardising format and establishing consistency of	• Differences between the reports can lead to confusion on board vessels when they are trying to

	definitions across all three documents. Appendix 5.1 – Daily Reports to the Australian Government Appendix 5.2 – End of Voyage Reports to the Australian Government AMSA Marine Orders Part 43 "Cargo and Cargo Handling – Livestock", Issue 6, Appendix 1, Form 5, Master's Report – Carriage of Livestock	complete reports and it increases the potential for errors. • There is a need to define terms and to clearly define requirements for recording and reporting using standardised data and information. It is understood that there may be separate levels of reporting for Parliamentary reports as opposed to daily reports and end of voyage reports and it is suggested that mortality investigations be based on more detailed data requirements as defined for daily or end of voyage reports.
STANDARD 6	**AIR TRANSPORT OF LIVESTOCK**	
Div 1 – Linkages	(1) In the planning phase, the exporter must specify the livestock to be exported in the CRMP.	• There is confusion as to whether a CRMP is required with the NOI for air freight.
Definitions	***reportable level*** in respect of a species, means the percentage listed below or 3 animals, whichever is the greater number of animals: (a) sheep and goats: 2%; (b) cattle and buffalo, ~~voyages ≥ 10 days:~~ 1%; (c) ~~cattle and buffalo, voyages < 10 days: 0.5%;~~ (d) camelids: 2%; (e) deer: 2%.	• Voyages and voyages of over ten days do not apply to air transport
Definitions	Certified crates – means a wooden, metal or composite crate certified under the LiveCorp Crate design certification program.	• There are concerns about the potential for cheap wooden crates not to withstand the forces of the animals, loading and flight conditions. MLA/LiveCorp completed a research program which designed a certification system for single use wooden crates. This is documented on the LiveCorp website.
New Standard	x.x Aircraft used for the transportation of livestock must have adequate ventilation to cope with the livestock load.	• Proof of adequate ventilation will be provided through LATSA or an approved declaration from the airline (main deck vendor declarations).
S6.1	Livestock sourced for export must meet any relevant animal health and welfare requirements under state and territory legislation and relevant requirements under national Model Codes of Practice for the Welfare of Animals.	• A number of gaps where the competency expectation could not be met through current resources - relating to airfreight
S6.4	Livestock sourced for export must be fit to enter the export chain. Livestock sourced for export must be inspected on farm and any animal showing signs consistent with the rejection criteria below or any other condition that could cause the animal's health and welfare to decline during transport or export preparation must not be prepared for export	• Rejection criteria need to be defined • Difference in rejection criteria for air transport
S6.6	Female livestock must only be sourced for export for breeding if they have been pregnancy tested (cattle using manual palpation, other species by ultrasound foetal measurement) within 30 days of the expected date of export and certified, by written declaration, by a person able to	• As for similar provision for sea transport.

	demonstrate a suitable level of experience and skill, to be not more than the following maximum number of days pregnant at the scheduled date of departure:	
S6.6A	Female cattle and buffalo sourced for export as slaughter and feeder animals must be pregnancy tested within 30 days of the expected date by a registered veterinarian and certified not to be pregnant. A declaration must be made in writing by the registered veterinarian who pregnancy tested the cattle or buffalo. If the veterinarian: Accredited under the National Cattle Pregnancy Diagnosis Scheme; and determines that cattle or buffalo are too small to be manually palpated safely The veterinarian may base this certification on assessment of the animals by a method other than manual palpation.	• This addition provides allowances for immature animals to be excluded from manual palpation. It essentially seeks to extend the allowance provided in 6.6 for breeder animals to 6.6A and slaughter/feeder animals.
S6.6B	All female Damara breed sheep sourced as feeder or slaughter must be pregnancy tested within 30 days before the expected date of export by ultrasound and certified not to be pregnant. The certification must be in writing, and given by a person able to demonstrate a suitable level of experience and skill.	• As for similar provision for sea transport
S6.8	Ewes with a weight of 40 kg or more and all does (goats) must only be sourced for export as slaughter and feeder animals if they have been pregnancy tested by ultrasound within 30 days of the expected date of export and certified not to be pregnant, by written declaration, by a person able to demonstrate a suitable level of experience and skill. ~~(a) all female Damara sheep breeds sourced as feeder or slaughter must be pregnancy tested within 30 days of export by ultrasound and certified in writing, by a person able to demonstrate a suitable level of experience and skill, not to be pregnant.~~	• As for similar provision for sea transport – except s6.8(a) duplicates s6.6B.
S6.9	Unless approved by the relevant Australian Government agency, lambs and goat kids must only be sourced for export by air transportation if: (a) they have been weaned at least 14 days before ~~sourcing for~~ export; (b) lambs have a liveweight of more than 20 kg when loaded for export; and (c) goat kids have a liveweight of more than 14 kg when loaded for export. For cria (d) cria at foot have a liveweight of more than 12kg and are 3 months old on the day of loading for export.	• There is no clarity about when the weight limits are applied. • There is also no clarity about when the weaning 14 day count back occurs from. • Calculating when loading for export is practical because of the need to have accurate weights in accordance with 6.1.1 (2)(a).
S6.9A	Cattle must only be sourced for export by air transportation if they have a minimum weight of 150 kg on the day of loading for export.	• This is intended to be the minimum weight for export. This just clarifies when the weight restriction must be applied. • Calculating when loading for export is practical because of the need to have accurate weights in accordance with 6.1.1 (2)(a).
S6.13	Goats must not be sourced for export unless they have become conditioned to being handled and to eating and drinking from troughs for a	• The requirement for a 21 day preparation period was inserted in response to issues with the preparation of

	minimum of 21 days before transfer to registered or approved premises the expected date of export.	feral goats for sea export and aimed at ensuring that they were conditioned to using troughs. Goats exported via air are generally shipped in small, frequent shipments for slaughter within very short timeframes. There is little feedlotting of goats exported via air freight and therefore the conditioning has little direct benefit to the welfare of the goats.
S6.14	Deer must only be sourced for export if they: (a) are at least 6 months old when loaded for export; (b) have been weaned for at least 2 months before ~~sourcing for export~~ transport to an approved or registered premise; and (c) have become conditioned to being handled and to eating and drinking from troughs for a minimum of 14 days before the expected date of export.	• For (a) and (b) this clarifies the point of measurement. • The change to (c) allows for the conditioning of deer at an approved/registered premise. • If animals are not going to an intensive trough feeding situation, then the inclusion of conditioning to trough eating and drinking may be unnecessary and counteractive to animal welfare (eg. densities of animals).
S6.16	Camels, including wild-caught camels, must only be sourced for export if they: (a) have become conditioned to being handled and to eating and drinking from troughs for a minimum of 14 days before the expected date of export; and (b) meet transport and shipping height requirements of the intended transport (ie camels standing in their natural position do not touch any overhead structures). Bull camels that are more than 5 years of age and are in rut must not be sourced for export in the period 1 May and 30 September.	• There is a lack of clarity about when the 14 days is measured from. • This component should be revised to allow some of the conditioning to occur in a registered premises. • The conditioning should be allowed to occur on a registered premise as they are likely to be either the only available facilities (eg. transported straight from the wild to the RP) or the highest quality facilities. This also allows for them to be fed on the same pellet formulation they will receive on the vessel. • The addition at the bottom replicates the sea shipment provision. • If animals are not going to an intensive trough feeding situation, then the inclusion of conditioning to trough eating and drinking may be unnecessary and counteractive to animal welfare (eg. densities of animals). • R&D requirements: ○ pre-export preparation of camel ○ Criteria for export should be developed
S6.18	A record of all vaccines, veterinary medicines and agricultural chemicals used to vaccinate or treat livestock sourced for export must be kept for at least ~~2 years~~ 1 year after the date of export.	• Refer S1.25.
New Standard	X.x Livestock must be loaded into crates for loading into aircraft. Only certified crates shall be used	• This is obvious but is not stated elsewhere in ASEL. It requires crates to be certified under the LiveCorp system. A transition period would be required to

		allow crates to be certified if this was implemented.
S6.21	At the point of loading of livestock at the aircraft terminal for export by air, responsibility for the livestock must be transferred to the ~~airline~~ carrier, ~~which then notifies~~ who will notify the captain of the aircraft prior to departure, who has overall responsibility for the livestock and must be advised of the species, location and quantity of all livestock and of any special requirements of the livestock on board the aircraft.	• The exporter has no control over the animals once they are in the terminal awaiting loading on to the aircraft. Therefore it is impossible for the exporter to take responsibility.
S6.24	Feed and water must be offered to all livestock for export by air while in ~~transit~~ transhipment if climatic conditions, species and class of livestock and total journey time warrant.	• This clarifies that the provision of water and feed refers to the situation where the livestock are disembarked from the aircraft to wait for a connection. Transit is generally taken to refer to a refuelling stop where the animals are not disembarked.
S6.25	A contingency plan for the following emergencies must be prepared for each consignment as part of the consignment risk management plan: (a) unavailability of the aircraft to be used for the air transportation; (b) mechanical breakdown; and (c) rejection of the consignment by the overseas market.	• Unclear whether a CRMP is required.
Definition of air transport journey	Air transport journey – The period from the aircraft takeoff at origin to the arrival at final destination. S6.24 should be amended to state 'air transport journey' rather than 'journey' S6.28 should be amended to state end-of-air-transport-journey report.	• Currently there is no specific definition and for clarity it is recommended that the long term interpretation used by the government and the industry (as suggested) be adopted. • Changing to air transport journey also improves consistency with the terminology already used, specifically at Appendix 6.2.
Maximum time off water	There is anecdotal evidence that the maximum water deprivation times from A.2.1 are applied for air transport and that as a result there is no provision for the application of the extended time component because the provisions of 2.1.2 (2)(a) through (d) do not take into account air travel. If the maximum water deprivation times are removed along with Standard 2, there may be a need to develop appropriate times for air transport (with revised provisions for accessing the extended time) into Standard 6.	
6.1.1 General	(1) Tables A6.1.1 to A6.1.4 define the minimum area per head. Any decrease in the final stocking density will be determined by the certifying veterinary officer based on animal health and welfare considerations.	• Lack of clarity in the imposition of a 10% penalty for some air consignments. This needs to be reviewed to include the basis on which a DAFF vet can impose extra stocking density.
6.1.1 General	(d) In multi-tier penning there may be a loss of floor and height area in the upper tier due to the contour of the plane and the overall height limitation.	• In practice it has been reported that the area under the contour is currently completely excluded, which is excessive. Consideration should be given as to how this area could be effectively included.
6.1.1 General	(j) When livestock are loaded with mixed non livestock cargo in aircraft lower holds, the pen area per head must be increased by 10%.	• Definition of mixed cargo required

6.1.1 General	6.1.1 (2) (h) For total air transport journey time ~~(from start to finish)~~ scheduled in excess of 24 hours, the pen area per head must be increased by 10%.	• Applies the proposed definition which reflects current practice. • The requirement for pen area to be increased for journeys in excess of 24 hours is not supported by scientific data.
6.1.1 General	(m) For cattle weighing more than 650 kg, exporters must submit a detailed management and loading plan to the relevant Australian Government agency as part of the NOI. This plan shall take into account the social needs of the animal(s) involved	• This addition is to take into account the need to have bulls together in a crate and not isolated which has been the cause of problems in the past

Appendix B Analysis of cattle export data

Data on counts of livestock exported by voyage and numbers of deaths were obtained from reports available on the DAFF website that relate to the 6-monthly reports on livestock mortalities that are tabled in each House of Parliament. These reports provide details of port of loading, date of loading, duration of voyage, total animals loaded and numbers of deaths.

Analyses of sheep exports from southern ports derived from this same data source have been described in a prior report completed as an earlier milestone for this project.

This section provides high level summaries of data for all species and then focuses on more detailed analyses of cattle exports to complement the analyses already conducted on sheep exports.

Data were compiled for all voyages from 2006 to 2012 and included data on cattle, sheep, goats, buffalo and camelids.

The resulting dataset contained one row per export voyage and included a total of 1834 voyages over the 7 year period. For each animal species there was a total count of animals loaded and a total count of deaths during the voyage.

Appendix B.1 Overall mortality rate by species

Initial models were run for each species to produce an overall mortality rate (across all voyages for each species). Data were analysed using negative binomial regression for count outcomes (outcome = count of deaths) and reported as a mortality rate, expressed as a cumulative incidence rate (percentage mortality) and in some cases as an incidence density (deaths per 1000 cattle days). All models incorporated adjustment for clustering at the level of exporter and at the level of voyage, recognising that animals from the same voyage and those from the same exporter may be correlated in some way.

Table B. 1: Summary statistics for mortality rate by species, average over all voyages between 2006-2012, CI=confidence interval.

	Cattle	Sheep	Goats	Buffalo	Camelids
No. of voyages	1,728	363	66	82	6
Total loaded	5,287,645	23,146,817	57,612	22,930	553
Number died	6,658	206,982	336	45	0
Mortality rate (deaths per 100 animals)					
Mean mortality rate	0.104	0.84	0.69	0.16	0
95% CI: lower	0.095	0.79	0.42	0.09	-
95% CI: upper	0.113	0.88	0.96	0.22	-

Camelids, goats and buffalo were never exported as the sole species on board a ship. They were always loaded in combination with other livestock (typically cattle and/or sheep).

No further analyses were done using camelid data because there were so few voyages with camelids and there were no deaths recorded.

The mean mortality rate estimates provided in Table 4 are not the same as the crude measure estimated by dividing the total deaths by the total loaded. This is because of the modelling approach used to estimate the mortality rates. Models incorporated a fixed effect for exporter, were adjusted for clustering at the voyage level and were completed using negative binomial models. The estimates in Table 4 are considered to be unbiased representations of the overall mean mortality rate across all voyages over the period 2006-2012.

Appendix B.2 Comparison of cattle voyage summary to MLA reports

There were a total of 1,728 voyages that carried cattle.

In an initial validation of the data, coding was developed that was similar to that used in the annual MLA reports on *National Livestock Export Industry Performance*. These reports are published each year by MLA and draw on data provided to the authors from the ship Masters' Reports as well as additional detailed data recorded in customised books or electronic recording formats developed by the authors. The livestock mortality data provided on the DAFF website and used in all analyses in this section, is also drawn from the ship Masters' Reports and therefore we expected to see similar descriptive results to those presented in the annual MLA reports.

There are differences in the summary statistics between our analyses (the bulk of the following table) and the MLA annual summaries (Table 5). Possible explanations for these differences include variation in assignment of voyages to one year or another and possibly discrepancies in counts of animals based on which counts may be used as the source material and availability of data when reports were finalised.

The MLA reports have access to detailed data on numbers of animals loaded at each port for those voyages that loaded at more than one port in Australia. The MLA reports then treat the consignment loaded at each port as if it were a separate voyage and as a result the number of voyages is inflated a little. In Table 5, the entry under MLA annual reports for 2006 for the row labelled Voyages (No.) displays "240 (21)". This means that in 2006 there were a total of 21 voyages that loaded cattle from multiple ports and that the figure of 240 voyages for the year is inflated because consignments of cattle on the same ship that were loaded at different ports have been treated as if they were separate voyages.

The MLA reports also have access to more detailed data on the destination ports where animals are unloaded and as a result they can assign animals to specific countries where they are unloaded. In our case, the DAFF datasets do not provide any details on numbers of animals unloaded in each country for those voyages that travel to more than one destination port. We have assigned the entire shipment of animals to the country of the first destination port.

All of these issues mean that our results may be expected to differ somewhat from the results presented in the annual MLA reports. However, in general there is excellent agreement between the summary findings derived from our analysis of industry data aggregated from files downloaded from the DAFF website and the summary statistics presented in the annual MLA reports.

Table B. 2: Summary statistics for cattle exports by year and destination region. The second row of data within each year provides similar summary statistics drawn from the annual MLA report from each year. The authors of the MLA reports identified all voyages where cattle were loaded from multiple ports (the number inside the brackets) and for these split-voyages the consignments from each port have been treated as separate "voyages".

Year		No. of voyages	Cattle loaded	Cattle died	deaths as % of loaded	Voyages with nil mortality
2006	Current report	221	622,052	1,088	0.175	83
	MLA Annual Reports	240 (21)*	618,645		0.180	91
2007	Current report	262	723,731	746	0.103	111
	MLA Annual Reports	282 (20)*	713,047		0.100	119
2008	Current report	288	865,354	1,024	0.118	125
	MLA Annual Reports	298 (13)*	860,691		0.120	127
2009	Current report	339	939,515	963	0.102	140
	MLA Annual Reports	353 (15)*	945,257		0.100	148
2010	Current report	269	865,324	1,330	0.154	117
	MLA Annual Reports	285 (13)*	864,741		0.150	131
2011	Current report	167	682,458	853	0.125	64
	MLA Annual Reports	189 (20)*	681,700		0.120	72
2012	Current report	182	589,211	654	0.111	69
	MLA Annual Reports	Not available				
All	Current report	1728	5,287,645	6,658	0.126	
	MLA Annual Reports	Not available				

* No in brackets is the No. of voyages with split loadings

Appendix B.3 Descriptive analyses of cattle voyage data

The results in Table B.3 show that the largest number of voyages and the largest total count of cattle carried on export voyages, involve ships carrying between 2,000 and 4,999 cattle. The largest capacity ships (those carrying 5,000+ cattle), account for a smaller number of voyages but cumulatively carry the second highest total of exported cattle. The smaller categories of carrying capacity still account for a relatively large number of voyages but fewer total cattle carried.

Table B. 3: Summary statistics for voyages carrying cattle from Australia to overseas destinations for the period from 2006-2012, arranged by category of total cattle numbers loaded onto the ship.

Category of total cattle loaded on ship	Number of voyages	Cumulative total cattle carried	Count of cattle per voyage			
			Min	Median	Average	Max
5,000+	184	2,114,942	5,000	9,386	11,494	25,817
2,000 to 4,999	782	2,203,347	2,000	2,807	2,818	4,998
1,000 to 1,999	576	860,154	1,002	1,499	1,493	1,999
<1,000	186	109,202	39	690	587	995
Total	1,728	5,287,645	39	2,174	3,060	25,817

Table B.4 shows the majority of cattle exports travelled to countries in the South East Asian region, followed by the Middle East. Countries in the Other category include Madagascar (one voyage), Mauritius (12 voyages), Mexico (11 voyages) and Russia (23 voyages). The following plot (Figure B.1) shows the breakdown of numbers by destination region for each year from 2006-2012. South East Asia remains the main destination for Australian cattle but the proportion of exports going to South East Asia has dropped considerably in the last three years from a peak of 84% of all Australian cattle exports in 2009 to 61% in 2012.

Table B. 4: Summary statistics for voyages carrying cattle from Australia to overseas destinations for the period from 2006-2012, arranged by destination region.

Destination region	Number of voyages	Cumulative total cattle carried	Count of cattle per voyage			
			Min	Median	Average	Max
SE Asia	1,278	3,871,563	187	2,245	3,029	25,817
Middle East	250	940,380	39	1,778	3,762	19,990
E Asia	154	331,804	851	1,926	2,155	6,015
Other	46	143,898	616	2,828	3,128	12,764
Total	1,728	5,287,645	39	2,174	3,060	25,817

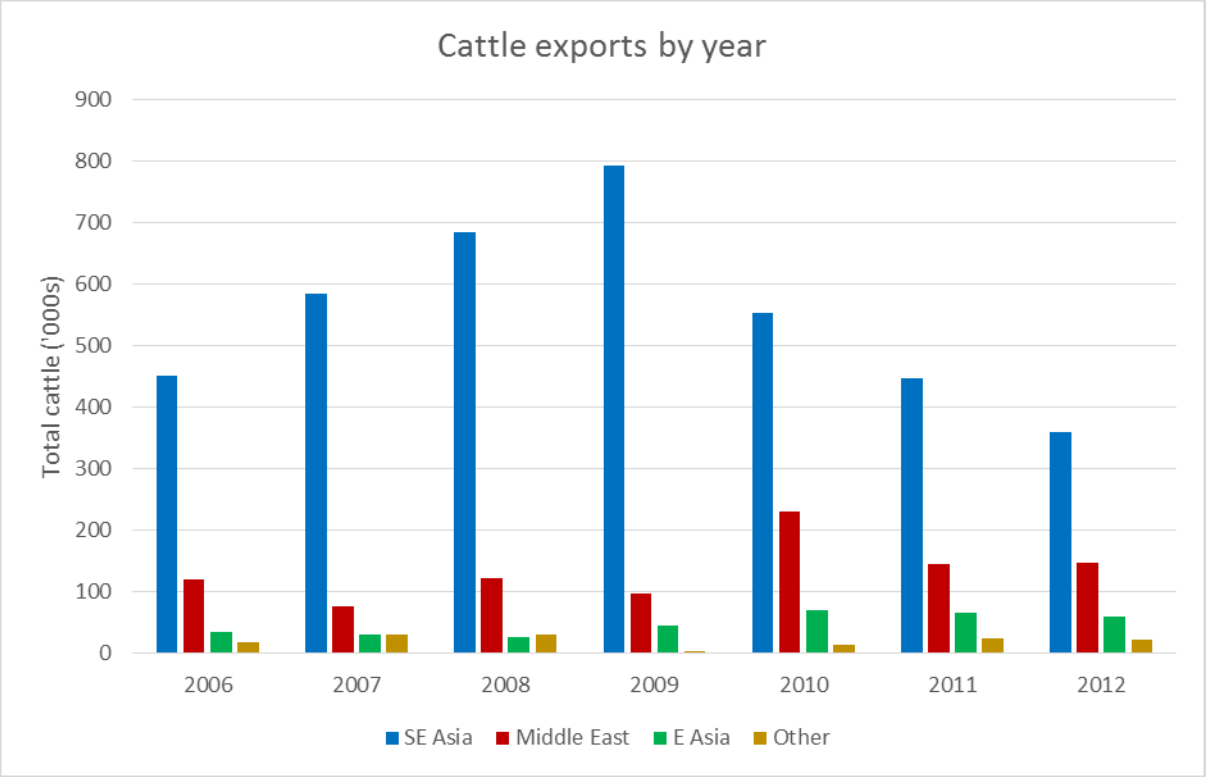


Figure B. 1: Summary statistics showing total count per year of cattle exported (in '000s) by destination region

Table B.5 shows that the shortest voyages are those to South East Asian countries and the longest voyages involve trips to Middle Eastern countries or countries in the Other category. It is important to note that ship speed will influence duration and that ship speed may in turn be influenced by design, age (newer ships may be faster) and perhaps capacity (larger ships may be faster than smaller ships but this may not always be the case).

Table B. 5: Summary statistics for duration of voyage in days based on size of the shipment and destination region

Size of cattle shipment		SE Asia	E Asia	Middle East	Other
5,000+ cattle	Number of voyages	102	3	73	6
	Minimum duration (days)	4	14	16	21
	Mean duration (days)	11.5	19.0	26.6	27.7
	Standard deviation	4.2	4.6	5.5	5.9
	Maximum duration (days)	24	23	41	35
2,000 to 4,999 cattle	Number of voyages	646	69	44	23
	Minimum duration (days)	3	9	16	16
	Mean duration (days)	6.7	18.3	20.5	25.5
	Standard deviation	1.9	4.6	4.3	6.7
	Maximum duration (days)	17	37	34	41
1,000 to 1,999 cattle	Number of voyages	455	78	32	11
	Minimum duration (days)	3	12	15	12
	Mean duration (days)	7.5	17.2	19.9	22.6
	Standard deviation	2.1	3.0	4.8	9.6
	Maximum duration (days)	15	32	33	40
<1,000 cattle	Number of voyages	75	4	101	6
	Minimum duration (days)	5	17	11	13
	Mean duration (days)	8.5	18.3	22.8	14.5
	Standard deviation	1.9	1.3	4.5	1.0
	Maximum duration (days)	13	20	32	16

Table B. 6: Summary statistics for cattle exported from Australia, arranged by the combination of total animals of all types loaded onto the ship, whether or not the ship was carrying cattle only or mixed species, and destination region. Statistics shown in the body of the table are the total count of voyages for each combination, the total count of cattle exported over those voyages, and the maximum number of cattle on any one voyage.

			Destination region				
Total load of all species on the ship	**Cattle only vs mixed species load**	**Variable**	**SE Asia**	**Middle East**	**E Asia**	**Other**	**Total**
<2,000 animals	Cattle only	No. voyages	457	11	82	9	559
		Total cattle exported	661,031	17,449	123,556	13,449	815,485
		Max No. cattle/voy	1,999	1,889	1,995	1,902	
	Mixed species load	No. voyages	36	-	-	6	42
		Total cattle exported	33,917			5,902	39,819
		Max No. cattle/voy	1,883			1,806	
2,000 to 4,999	Cattle only	No. voyages	622	23	69	19	733
		Total cattle exported	1,736,890	73,114	190,484	60,654	2,061,142
		Max No. cattle/voy	4,998	4,653	3,975	3,994	
	Mixed species load	No. voyages	53	1	-	5	59
		Total cattle exported	97,831	2,934		11,901	112,666
		Max No. cattle/voy	3,930	2,934		3,305	
5,000 to 49,999	Cattle only	No. voyages	68	8	3	6	85
		Total cattle exported	750,639	104,292	17,764	48,130	920,825
		Max No. cattle/voy	25,817	1,990	6,015	12,764	
	Mixed species load	No. voyages	42	12	-	1	55
		Total cattle exported	591,255	100,824		3,862	695,941
		Max No. cattle/voy	22,788	17,478		3,862	
50,000+	Cattle only	No. voyages	-	-	-	-	0
	Mixed species load	No. voyages	-	195	-	-	195
		Total cattle exported		641,767			641,767
		Max No. cattle/voy		16,460			

Table B. 7: Summary statistics for cattle exported from Australia, arranged by the combination of category of total count of cattle loaded onto the ship, whether or not the ship was carrying cattle only or mixed species, and destination region.

Total load of cattle only on the ship	Cattle only vs mixed species load	Variable	Destination region: SE Asia	Middle East	E Asia	Other	Total
<1,000 cattle	Cattle only	No. voyages	34		4	2	40
		Total cattle exported	29,892		3,643	1,661	35,196
		Max No. cattle/voy	995		978	850	
	Mixed species load	No. voyages	41	101		4	146
		Total cattle exported	30,830	40,280		2,896	74,006
		Max No. cattle/voy	993	992		847	
1,000 to 1,999 cattle	Cattle only	No. voyages	423	11	78	7	519
		Total cattle exported	631,139	17,449	119,913	11,788	780,289
		Max No. cattle/voy	1,999	1,889	1,995	1,902	
	Mixed species load	No. voyages	32	21		4	57
		Total cattle exported	42,454	31,324		6,087	79,865
		Max No. cattle/voy	1,883	1,995		1,806	
2,000 to 4,999 cattle	Cattle only	No. voyages	622	23	69	19	733
		Total cattle exported	1,736,890	73,114	190,484	60,654	2,061,142
		Max No. cattle/voy	4,998	4,653	3,975	3,994	
	Mixed species load	No. voyages	24	21		4	49
		Total cattle exported	65,390	64,133		12,682	142,205
		Max No. cattle/voy	3,930	4,302		3,862	
5,000+ cattle	Cattle only	No. voyages	68	8	3	6	85
			750639	104292	17764	48130	920,825
			25817	19990	6015	12764	
	Mixed species load	No. voyages	34	65			99
		Total cattle exported	584,329	609,788			1,194,117
		Max No. cattle/voy	22,788	17,478			

While Tables B.6 and B.7 are complicated, they do show a number of interesting patterns.

As shown in Table 9, large capacity ships that are capable of carrying more than 50,000 animals in total, were only recorded travelling to the Middle East and they tended to carry a relatively large number of sheep and some cattle (all these voyages are mixed species voyages).

The majority of all cattle that were exported from Australia, were exported on ships that carried cattle only (about 72%). Most of these exports were on ships carrying between 2-5,000 animals.

The biggest loads of cattle were on ships travelling to South East Asia. It is difficult to precisely estimate the number of cattle exported into Indonesia because summary data in this dataset may not indicate precisely the number of cattle unloaded at each port for voyages that had multiple destination ports. However, other data indicate that Indonesia accounts for more than 90% of the total cattle recorded as being exported to South East Asia.

There were a large number of voyages that carried fewer than 2,000 animals in total. Most of these are going to SE Asia (predominantly Indonesia).

Appendix 2.4 Multivariable statistical models of cattle voyages

Multivariable statistical modelling was used to analyse the cattle voyage data.

The outcome of interest was the number of cattle deaths on voyages expressed as a mortality rate and in this case the mortality rate was expressed as deaths per 1,000 cattle-days at risk.

There are three component measures that must be present to allow estimation of mortality rates for export voyages:

- Count of deaths – a count of the number of cattle that died during the voyage.
- Count of animals at risk of dying – the total count of live animals that were loaded onto the ship at the start of the voyage.
- The duration of the voyage in days.

It is necessary to take the length of each voyage into account since two separate voyages may have exactly the same daily risk of cattle dying but appear to have different overall mortality rates solely because one voyage was longer than the other. Voyage duration and the total count of animals loaded onto the ship are then combined to produce the total cattle-days at risk (cattle loaded * voyage duration in days). A ship that loaded 1,000 cattle and embarked on a 5-day journey to SE Asia would have accumulated a total of 5,000 cattle days for the purposes of the statistical modelling. A similar ship loading 1,000 cattle and completing a 20 day journey to the Middle East would have accumulated 20,000 cattle days.

When producing mortality rates we then divided the total number of cattle-days at risk by 1,000 just to provide larger units and the resulting estimates of mortality rate are expressed as deaths per 1,000 cattle-days. This allows direct comparison of the daily mortality rate for voyages that are of different durations.

Negative binomial regression models were used for all analyses in part because of evidence of overdispersion in preliminary modelling. Negative binomial models are commonly used for modelling mortality rates and are more robust to problems with overdispersion than poisson models.

The dataset included one row per voyage. A number of explanatory variables were considered in the modelling exercise including:

- Year of departure from Australia: 2006-2012.
- Month of departure from Australia coded as 1 to 12 or as seasons (1 to 4).
- Port of loading:
    - 1= Ports in southern and central areas of Australia (Fremantle, Portland, Adelaide, Devonport, Geelong, Brisbane, Newcastle, Port Kembla). This included those voyages where cattle were loaded in southern ports and then additional cattle were loaded at a northern port.
    - 2= Ports in northern parts of Australia (Mackay, Mourilyan, Townsville, Karumba, Weipa, Port Hedland, Wyndham, Darwin, Broome, Geraldton).
- Voyage duration coded as a continuous measure of days or as a categorical variable (1=up to 10d, 2=11-23d, 3= 24+d).
- Size of shipment: coded as a categorical variable reflecting the number of cattle loaded onto the ship for that voyage (1=5,000+, 2=2-4,999, 3=1-1,999, 4=<1,000).
- Cattle vs mixed voyages: a binary variable coding for whether or not a voyage contained only cattle or cattle loaded with other species (sheep, goats, camelids or buffalo).
- Exporter: a numeric variable coding for exporter was coded to allow for adjustment for clustering between different voyages operated by the same exporter.
- Destination region: the first destination port listed in the DAFF dataset was used to identify the destination country and all animals on that voyage were then assigned to the first destination country. Countries were then assigned to a categorical variable coding for region as follows:
    - Middle Eastern countries: Bahrain, Egypt, Israel, Jordan, Kuwait, Libya, Oman, Pakistan Qatar, Saudi Arabia, Turkey and United Arab Emirates.
    - SE Asian countries: Brunei, Indonesia, Malaysia, Philippines, Singapore, Vietnam.
    - E Asian countries: China, Japan, South Korea.
    - Other countries: Madagascar, Mauritius, Mexico, Russia.
- Ship capacity: a categorical variable was developed based on the total number of animals loaded onto the ship for each voyage. In cases where cattle were carried with sheep the total number of animals may have been very different to the number of cattle on the voyage.
    - 1= less than 2,000 total animals
    - 2= 2,000 to 4,999 total animals
    - 3= 5,000 to 49,999 total animals
    - 4= 50,000 animals or more

The modelling approach is best described as exploratory or hypothesis generating. We were particularly interested in exploring the associations between various candidate explanatory variables and the risk of mortality during export voyages. In a number of cases variables were retained in models even though they were not significant because of this interest.

Model outputs are expressed as marginal mean cumulative incidence rates (deaths per 100 animals loaded onto a ship) for various explanatory factors.

Preliminary modelling indicated that the effects of voyage duration category and destination region were related. This was considered plausible since most voyages to South East Asia were likely to be shorter in duration while voyages to the Middle East and East Asia were likely to be longer in duration. A decision was made to include a variable coding for destination region and not to include any variable coding for voyage duration.

There were only 46 voyages to regions in the Other category of destination region. This level was omitted from the final model, leaving a three-level region variable coding for SE Asia, Middle East and E Asia. The results of the model are summarised in the following sections.

Effect of month of the year

There was specific interest in evaluating the effect of month of departure by destination region because it seemed possible that voyages to the Middle East for example might have higher risk of mortality at certain times of the year whereas this might be less evident for South East Asian destinations. Month of departure was therefore modelled as a main effect and as an interaction term with destination region. Both month of departure (p=0.2) and month#region interaction (p=0.5) were not significantly associated with mortality risk. There was also no effect of year of departure (p=0.2). See Figure B.2.

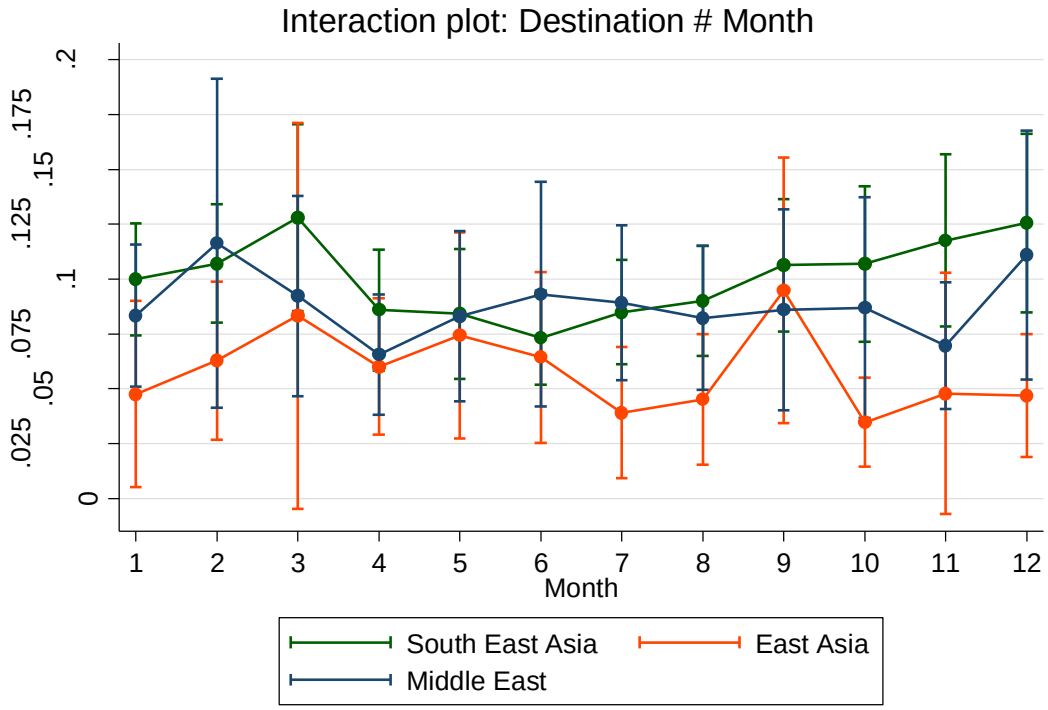


Figure B. 2: Interaction plot from final multivariable model showing marginal mean cumulative mortality by month of year with separate lines for each destination region. Adjusted for the effects of all other factors in the model. Bars represent the 95% confidence interval.

It is important to understand what Figure 4 is showing.

The marginal mortality rate is predicted from the multivariable model and is therefore adjusted for the effects of all other factors in the model. The marginal rate is expressed as deaths per 1,000 cattle-days to allow comparison between voyages of differing durations. It does make the assumption that mortality rate is constant over the duration of each voyage which may not be correct – it is considered likely that there may be a change in the daily mortality rate during a voyage. However, the results do show some interesting patterns.

There was no statistical difference between mortality rates for voyages to SE Asia when compared to voyages travelling to the Middle East, when they are expressed as deaths per 1000 cattle days (p>0.05). This raises the question of whether voyage length may be a major driver for higher overall mortality counts on voyages to the Middle East compared to

voyages to SE Asia. More work is needed to explore this hypothesis. With the exception of October and December, there was also no difference between voyages to East Asia and those going to the other two destination regions ($p>0.05$). In October and December, voyages to East Asia had significantly lower mortality rates than either voyages to SE Asia or the Middle East ($p<0.05$).

There were patterns over time within the regions.

Within voyages to SE Asia, there was an initial peak in mortality rate in March, followed by a decline to a low level in June. The drop from March to June was statistically significant ($p=0.007$). There was then a progressive rise in mortality rate towards a peak in December. When compared to the mortality rate in June (for SE Asia) the mortality rate rise was significant by November ($p=0.03$) and December ($p=0.01$). These changes may be associated with seasonal variation in climate (temperature, humidity, rainfall).

There were some similar patterns for voyages to the Middle East with a peak in mortality rate in February followed by a decline to a nadir in April, a rise to June and then a second rise in December. The fluctuation was less consistent with a broader single pattern and there were no significant differences between monthly mean mortality rates for voyages to the Middle East ($p>0.05$).

There was also considerable fluctuation for mortality rates on voyages to East Asia

There was a general pattern with a higher mortality rate for those voyages travelling to the Middle East compared to South East Asia while voyages to East Asia appeared to fluctuate between the other two. The only significant change for voyages to East Asia was the drop from the peak in September to the nadir in October ($p=0.006$). Caution is urged in interpreting this because it may have been due to the effects of one voyage.

It wasn't possible to explore the interaction between port of loading (southern vs northern ports within Australia) and the effect of season and destination region because there were not voyages from both loading port categories that went to every destination region at every month.

Main effect of destination region

While there was numeric variation in mortality rate depending on the destination region, these differences were not statistically significant ($p=0.28$), when mortality rate was expressed as deaths per 1,000 cattle-days (Table B.8).

Table B. 8: Marginal mean mortality rate (deaths per 1000 animal-days) by destination, sem=standard error of the mean, CI=confidence interval. Derived from a multivariable model.

Destination region	Mean mortality rate deaths per 1,000 animal-days	sem	95% CI Lower	95% CI Upper
SE Asia	0.101	0.007	0.088	0.115
East Asia	0.058	0.011	0.037	0.079
Middle East	0.088	0.011	0.066	0.111

Year of departure

The dataset contained records from 2006 to 2012 inclusive (seven years).

There was no difference between years with respect to mortality rate (p=0.26).

Port of loading

The overall mortality rate for cattle loaded in southern ports (0.13 deaths per 1,000 cattle days, 95% CI from 0.1 to 0.16), was significantly higher than the mortality rate for cattle loaded in northern ports (0.082 deaths per 1,000 cattle-days, 95% CI from 0.07 to 0.09; p=0.003).

Size of shipment

The total number of cattle loaded onto each ship was used to develop categories of size of shipment.

There was a significant difference in mortality rate depending on the size of the shipment (Table B.9).

Table B. 9: Marginal mean mortality rate by size of shipment

Size of shipment (cattle Nos.)	Mean mortality rate deaths per 1,000 animal-days	sem	95% CI Lower	95% CI Upper
5,000+ cattle	0.133	0.026	0.082	0.184
2,000 to 4,999 cattle	0.085	0.009	0.067	0.103
1,000 to 1,999 cattle	0.088	0.009	0.069	0.106
<1,000 cattle	0.128	0.020	0.089	0.166

The highest mortality rate measures were seen in those ships that had the largest cattle shipments and those that had the smallest shipments.

The mortality rate in the largest shipment category was higher than the mortality rate in the next category (2,000 to 4,999 cattle; p=0.04) but was not different to the other levels (p>0.05).

The mortality rate in the smallest shipments was significantly higher than both the middle two categories (p<0.05).

Ship capacity

Ship capacity was a measure of the total livestock carrying capacity of ships (Table B.10).

Table B. 10: Marginal mean mortality rate by ship capacity

Ship capacity (total animal Nos.)	Mean mortality rate deaths per 1,000 animal-days	sem	95% CI Lower	95% CI Upper
<2,000 total animals	0.161	0.028	0.107	0.216
2,000 to 4,999 animals	0.117	0.014	0.090	0.144
5,000 to 49,999 animals	0.065	0.012	0.041	0.089
50,000+ animals	0.036	0.005	0.025	0.047

The maximum number of cattle loaded onto a single ship in the dataset was 25,817. This means that those ships in the larger two categories by total number of animals, were more likely to be loading other species in addition to cattle.

There was a significant association between ship capacity and mortality rate ($p<0.001$).

There was no difference in mortality rate between the smaller two levels of ship capacity ($p=0.12$).

However, all other comparisons were significantly different. As the vessel capacity increased the overall mortality rate progressively and significantly declined ($p<0.05$).

While there may appear to be some discrepancy between the results for total ship capacity and the previous results for the size of the cattle shipment, it is important to note that they are measuring different things.

The smallest two categories based on ship capacity included voyages that predominantly carry cattle only. There are some voyages in these categories that carried mixed species but they were the exception. Because smaller ships tended to carry cattle only, the elevated mortality rate in the smallest category of ship based on total livestock capacity, is probably measuring the same thing as the elevated mortality rate in the smallest category of ship based on the number of cattle being carried.

Ships in the larger two categories by total livestock carried, were more likely to be carrying mixed species loads and in fact all ships in the largest category by total livestock were carrying mixed species. In fact in these two larger categories based on total livestock carried, the number of cattle being carried was quite variable and may have been quite small. The ships with the largest total counts of cattle loaded were in fact in the third category size based on total livestock carried. Many of the ships in the larger two categories based on livestock carried were actually carrying relatively few cattle. This explains why there might be a higher mortality rate in the ships carrying the largest numbers of cattle and at the same time a lower mortality rate in the ships carrying the largest number of total livestock.

Mixed species voyages vs cattle only voyages

Voyages were classified as mixed species meaning that there were cattle and one other species loaded onto the same ship (sheep, goats, camelids or buffalo). Voyages that were classified as cattle only had no other species loaded onto the ship.

The mortality rate for voyages containing cattle only was 0.09 deaths per 1,000 cattle-days (95% CI from 0.08 to 0.1), while the mortality rate in cattle for those voyages containing both cattle and at least one other species of livestock was 0.13 deaths per 1,000 cattle-days (95% CI from 0.1 to 0.16). These two estimates were different (p=0.007).

A follow-up model was run to further investigate the possible interaction between size of shipment and whether or not the ship was mixed.

In the largest and smallest size cattle shipments, there was no difference in mortality rates between ships that carried cattle only and those that carried cattle plus another species of livestock. In the middle two categories of cattle shipments, voyages that carried cattle only had significantly lower mortality rates than voyages that carried cattle plus another species.

Appendix 2.5 Notifiable mortality events for cattle exports

A notifiable incident is defined in the ASEL as having occurred when the reportable level of mortality defined for a species and voyage type is exceeded. For cattle export voyages the reportable mortality levels are 0.5% for voyages less than 10 days in duration and 1% for voyages greater than or equal to 10 days in duration.

A reportable mortality must be reported to DAFF and as notifiable incidents these events are then identified in 6-monthly reports on livestock export mortalities that are tabled in each House of Parliament every six months, and they are the subject of subsequent investigation by DAFF.

Reports of investigations conducted of consignments with reportable mortality events are available as downloadable files from the DAFF website[39]. All reports relevant to cattle were downloaded from this site and reviewed against the data available in the six-monthly reports to Parliament summarising mortalities. In most cases, voyages with reportable mortality events were identified in the six-monthly compilations of summary statistics with an asterisk and these could be directly linked to the relevant DAFF Mortality Investigation Report.

There were a small number of discrepancies noted when comparing the written Mortality Investigation Reports with the summary data contained in the Excel files presented to Parliament every six months. Discrepancies were mostly due to small changes in either the numerator count (deaths) or the denominator count (consignment total loaded). In some cases this was because the row totals presented in the Excel sheets (six-monthly Parliamentary reports) were total animals loaded onto a ship when in fact the total may have been comprised of two (or more) separate consignments. Sometimes there was a reportable mortality even in one consignment comprising part of the total animals loaded and when the mortality was expressed as a percent of the total voyage load it did not exceed the reportable threshold. Sometimes the number of mortalities differed between the two separate records and where this occurred it was mainly because the written record of the Mortality Investigation Report had a higher mortality count because of deaths that occurred at the destination port (after animals had left the ship) and where those deaths were

[39] http://www.daff.gov.au/aqis/export/live-animals/livestock/aqis-mortality-investigations

subsequently deemed to have occurred during unloading and therefore were included in the voyage totals. There was one occasion where a voyage was marked with an asterisk in the Excel sheet and where there was no matching Mortality Investigation Report.

The two sources of information were combined and the data file of all exports was revised to reflect consignment counts and deaths reported in the Mortality Investigation Reports.

The subsequent dataset contained information on 20 consignments that were associated with a reportable mortality event and 1710 consignments that did not have any reportable mortality events recorded.

The presence or absence of a reportable mortality event was coded as a binary outcome (o=no, 1=yes) and was used as the outcome variable for a logistic regression analysis.

Modelling started with other explanatory variables coded as they were for the previous section but this was revisited based on preliminary modelling because of problems with unbalanced data. Because there were only 20 case rows, variables with multiple levels were often resulting in no voyages in some levels (empty cells). Several variables were aggregated to create simpler coding systems with fewer levels.

Because of the relatively low numbers of voyages classified as cases (voyages with reportable mortality events), a decision was made to develop binary coding (yes, no) for variables of particular interest in order to increase the likelihood of avoiding unbalanced cells that might interfere with the ability of models to converge.

There was particular interest in assessing associations between the outcome (case vs control) and port of loading (north vs south) and destination region (SE Asia vs other regions). Preliminary screening also suggested that size of the shipment (number of cattle loaded on the ship) may also have an association with the outcome.

Other variables such as year (screening p=0.34), season (screening p=0.38) and voyage duration (screening p=0.22) appeared on screening and preliminary modelling to have less association with the outcome. There was an association between voyage duration and destination (r^2=0.64) and shorter voyages tended to be heading to South East Asia while longer voyages tended to be heading to other destinations.

Following initial screening, modelling focused on three variables (port of loading, destination region and size of shipment).

There was also an indication that there might be an interaction between port of loading and destination region.

It is interesting to note the results of the screening analyses as displayed in Table B.11.

Voyages that loaded cattle in other ports (ports in the southern half of Australia including Fremantle, Portland, Adelaide, Devonport, Geelong, Newcastle, Port Kembla, Brisbane), had a higher odds of being a case voyage compared to voyages that loaded cattle in northern ports. In addition, voyages that were headed for destinations in South East Asia had a lower odds of being a case voyage compared to voyages headed for other destinations.

However, when the interaction between port of loading and destination region was considered, there appeared to be an increase in the odds of a case voyage for those voyages that were loaded in the south of Australia and that headed for South East Asia. In contrast, for voyages loaded in the north of Australia, there was a reduction in odds of being a case voyage for voyages that headed to South East Asia compared to voyages going to

other destination ports. The ability to assess the interaction term was hampered by the fact that there were no case voyages that were loaded in northern ports and that headed for other regions.

In order to consider these variables in a single multivariable model, a single randomly selected voyage from the empty interaction cell (Loaded in a northern port and headed for destinations other than SE Asia), was re-coded from outcome=0 to outcome=1. This meant that all combinations of the two terms for the interaction between port of loading and destination region contained at least one voyage, therefore eliminating numeric problems associated with empty cells.

Table B. 11: Results of screening

		Counts			95% CI		
Variable	**Level**	**case voyages**	**control voyages**	**Odds Ratio**	**Lower**	**Upper**	**p-value**
Port of loading	Northern ports	8	1181	Reference			
	All other ports	12	529	3.35	1.36	8.24	0.009
Destination region	Other regions	8	443	Reference			
	South East Asia	12	1267	0.52	0.21	1.29	0.16
Size of shipment	5,000+ cattle	4	182	Reference			
	2,000-4,999 cattle	4	778	0.29	0.08	1.1	0.07
	1,000-1,999 cattle	5	571	0.4	0.11	1.5	0.17
	<1,000 cattle	7	179	1.78	0.51	6.18	0.4
Interaction term involving port of loading and destination region							
Port of loading = Northern ports							
Destination region	Other regions	0	16	Reference			
	South East Asia	8	1165	0.15	0.02	+INF	1
Port of loading = Other ports							
Destination region	Other regions	8	427	Reference			
	South East Asia	4	102	2.09	0.62	7.08	0.24

The findings from a multivariable logistic regression model are presented in Table B.12 but should be treated with some caution. These findings are better considered as exploratory or hypothesis generating rather than as confirmatory analyses because of the relatively low number of case voyages which has in turn led to the need for simplified coding structures (using binary coding) and the need to recode one voyage to allow the interaction term to be explored.

Table B. 12: Results from multivariable logistic regression analysis. OR=odds ratio, se=standard error, z=z-statistic, CI=confidence interval. Analysis performed with a single voyage randomly selected and recoded to a case voyage to avoid empty cells in the interaction term.

			95% CI		
Variable	**Level**	**Odds Ratio**	**Lower**	**Upper**	**p-value**
	Northern ports	Reference			
Port of loading	All other ports	0.20	0.02	1.78	0.15
	Other regions	Reference			
Destination region	South East Asia	0.12	0.01	1.07	0.06
Port of loading # Destination region					
All other ports	SE Asia	24.13	1.96	296.65	0.013
Size category for voyage	5,000+ cattle	2.20	0.56	8.56	0.30
	2,000 to 4,999 cattle	0.78	0.22	2.76	0.70
	1,000 to 1,999 cattle	Reference			
	<1,000 cattle	3.93	1.16	13.30	0.03
Intercept		0.050	0.005	0.50	0.01

Nonetheless, there are some interesting findings in these results.

The results suggest that there is an increased odds of being a case voyage (voyage with a reportable mortality event) for those voyages carrying smaller loads of cattle (<1,000 cattle loaded onto the ship in Australia), in comparison to loads of 1-1,999 cattle (p=0.03) and loads of 2-4,999 cattle (p=0.01). There appeared to be a rise in odds of being a case voyage for the largest size shipments (5,000+ cattle) but this was not significant in comparison to any other shipment size.

The other substantive finding of the analysis is the effect of port of loading and destination region which is made up of four possible combinations. These were compared using follow up tests:

- Port=North & Destination=Other vs Port=North & Destination=SE Asia
  - There was a tendency for a reduction in odds of being a case voyage (OR=0.12, 95% CI from 0.01 to 1.07, p=0.06) for voyages that loaded in the north and travelled to other destinations compared to those voyages that loaded in the north and travelled to SE Asia. The effect was associated with a tendency towards significance (p=0.06).
- Port= South & Destination=Other vs Port= North & Destination=Other
  - There was a non-significant reduction in odds of a case voyage (OR=0.2, 95% CI from 0.02 to 1.78, p=0.15) for voyages that loaded in the south and travelled to other destinations compared to those voyages that loaded in the north and travelled to other destinations.
- Port=South and Destination=SE Asia vs Port=North & Destination=Other
  - No difference in odds of being a case voyage (p=0.6).
- Port= South & Destination=Other vs Port= North & Destination=SE Asia
  - No difference in odds of being a case voyage (p=0.35).
- Port=South and Destination=SE Asia vs Port=North & Destination=SE Asia

    - There was a significant increase in the odds of being a case voyage for those voyages that loaded cattle in the south and travelled to SE Asia compared to voyages that loaded in the north and travelled to SE Asia (OR=4.73, 94% CI from 1.4 to 16.3, p=0.014).
- Port=South and Destination=SE Asia vs Port=South & Destination=Other
    - No difference in odds of being a case voyage (p=1).

The findings suggest that there was an increase in risk of reportable mortality events for vessels carrying smaller loads of cattle and some increase (not significant) for vessels carrying the largest cattle loads.

There was also an increase in risk of a reportable mortality event for those voyages loading cattle in southern ports and travelling to SE Asia, compared to cattle from northern ports also travelling to SE Asia.

Appendix B.4 Summary

The major findings from a review of reportable mortality events and analyses of summary data from export voyages between 2006-2012 include:

- Analyses of mortality rate for voyages between 2006-2012:
    - There was relatively little evidence for a season pattern in mortality rates in voyages to the Middle East whereas there was some evidence for a season pattern in mortalities for voyages travelling to SE Asia.
    - There was little difference in mortality rate between voyages to SE Asia and voyages to the Middle East when expressed as deaths per 1000 cattle-days (adjusted for length of voyage).
    - Cattle from southern ports in Australia had a higher mortality rate than cattle loaded from northern ports.
    - The lowest mortality rates were seen on ships carrying mid-level numbers of cattle and the highest mortality rates were in ships with either the smallest or the largest categories of cattle shipments. In the middle two categories of cattle shipment size, those ships that carried mixed species had higher mortality rates than those ships that carried cattle only.
- Analyses of the odds of a voyage including a reportable mortality event:
    - Screening (unadjusted) analyses indicated that voyages loading cattle from southern ports had a higher odds of experiencing a reportable mortality event compared to voyages loading cattle from northern ports.
    - More detailed modelling indicated that this was really only the case for voyages travelling to SE Asia. Voyages loading cattle from southern ports and travelling to SE Asia had a higher odds of experiencing a mortality event compared to voyages loading cattle from the north and travelling to SE Asia.
    - Voyages with smaller cattle shipments had a higher odds of a mortality event.
- Review of DAFF Mortality Reports
    - Of 20 mortality reports, half involved long haul voyages to the Middle East, Turkey and other destinations and half involved short haul voyages mainly to Indonesia and elsewhere in SE Asia.
    - Recommendations arising from these reports do highlight areas where further review and R&D may be beneficial and where changes to the regulations may be warranted.

Appendix C Draft budget for a QA system

This section provides details of draft cost estimates for implementation and operation of a QA system.

Table C.1 outlines the anticipated principle implementation requirements for the QA scheme, implementation responsibilities and broad cost estimates. These estimates do not include any estimate of costs to industry operators in implementing the QA arrangements within their own operations, or the on-going cost of maintaining certification.

Table C. 1: Set-up costs and costs for first year of operations – broad estimates only

System Component	Requirements	Implementation and Operational Responsibility	Estimated Cost
Ownership and set-up	Legal advice on structures	LiveCorp/MLA	$12,000
Board	Board selection	LiveCorp/MLA	$25,000
	Directors Fees Yr 1	LiveCorp/MLA	$100,000
	Board meeting Costs Yr 1	LiveCorp/MLA	$60,000
Company funding - deed	Legal costs	LiveCorp/MLA, Board	$12,000
Independent service provider (ISP)	Role description, selection and appointment	LiveCorp/MLA, Board	$10,000
ISP	Operating Costs	Board	$60,000
	Industry wide risk management assessment and strategy development	ISP/Board	$40,000
QA system rules	Legal advice	ISP and Board	$12,000
Company documentation	Board and committee charters	ISP and Board	
	Codes of conduct	ISP and Board	
	Company processes – standards and certification	ISP and Board	
	Corporate governance	ISP and Board	
	Company procedures	ISP and Board	
	Stakeholder register	ISP and Board	$50,000
Certification body	Selection criteria	ISP and Board	
	Selection and appointment	ISP and Board	$20,000

Auditors	Criteria for approval	ISP and Board	
	Invite expressions of interest	Certification body	
	Appointment	Certification body	
Integrity and Standards Committee (ISC)	Terms of reference and operating arrangements	ISP and Board	
System documentation	Standards	ISC	
	Rules - Certification and auditors	ISP and Board	
	Instructive manuals	LiveCorp MLA and ISP	
	Application forms	ISP	
	Audit check-lists, report templates	Certification body	
	Certification register	Certification body	
	Fee schedule	ISP and Board	$50,000
Training	Needs analysis	ISP and Board	
	Training development	ISP and Board	$40,000
	Training	ISP	Cost recovery
Communications	Industry communications and awareness activities	ISP	$30,000
Total Set-Up and Year One Cost estimate			**$521,000**

Table C. 2: Annual operating cost -- broad estimates only

System Component	Requirements	Operational Responsibility	Estimated Cost
Board	Directors fees	ISP	$100,00
Board	Six Board meetings	ISP	$60,000
ISP	ISP annual fee	Board	$90,000
ISP	ISP Operating expenses	Board	$60,000
ISC	Meeting costs	ISP & Board	$15,000
Certification body	Operating Costs	ISP & Board	
Auditors	Operating expenses	Certification body	
Communications	Industry communications and awareness activities	ISP	$20,000
Estimated annual operating costs			**$345,000**

Appendix D Transition to co-regulation

Appendix D.1 Introduction

The two major challenges in successfully introducing QA to the livestock export sector as a co-regulatory arrangement are:

- Ensuring there are drivers in place that encourage operators to become certified under a through-chain QA arrangement. As already discussed this requires that there be some incentives in terms of regulatory recognition and concessions.
- Ensuring government has sufficient confidence in the QA scheme to reliably meet the required standards, and deliver equivalent or better outcomes. This will require a period of parallel operation of ongoing full government regulation and the QA certification scheme.

The delay between implementation and the granting of regulatory concessions by government will require a strongly supportive government and industry commitment to an agreed transition timetable and strategy.

The following options for broad principles are suggested as a basis for this commitment:

1) Industry and government agreement to industry QA being adopted as a mechanism to assist in verifying livestock export industry regulatory compliance.
2) A framework for transition to a co-regulatory arrangement be agreed.
3) The transition to:
    a. have as a starting point existing arrangements and documentation; and,
    b. enable proof of capability to be demonstrated to ensure delivery of equivalent outcomes or better.
4) Potential medium-term cost savings for industry and government to be identified.
5) Mechanisms to reward consistently good performance and encourage continuous improvement.

Appendix D.2 Mandatory or voluntary

Whether QA certification is embraced as a mandatory requirement for supply-chain operators or is just one option for verification of compliance needs to be considered. Under a voluntary arrangement, some operators may choose not to participate in the transition to QA certification, and remain within the existing regulatory framework. A further option exists to introduce it as a voluntary arrangement and to defer any decision on whether to make certification a mandatory requirement, until proof of capability is apparent.

Advantages of a voluntary arrangement include:

- The scheme is market based and will need to demonstrate value for money.
- Other QA providers may emerge that provide a superior service.
- Does not require up front sign-off from government.
- It offers the supply-chain operators a choice.

Advantages of a mandatory arrangement include:

- The scope of the scheme is known, facilitating more accurate planning by both the QA scheme operator and government.
- Government will not need to maintain an on-going full regulatory capability for those who choose not to participate in QA. This may be a more significant issue for through-chain QA that includes the ESCAS arrangements.

Options

1) Voluntary
2) Voluntary with mandatory registration of supply-chain operators with the QA scheme operator
3) Mandatory

Appendix D.3 How a tiered transition may operate

Detail of specific tier requirements and transition arrangements will need to be finalised with the involvement of the certification body to ensure compliance with their accreditation obligations and to facilitate system development and credibility. These arrangements will also need to be developed in consultation with DAFF to ensure agreement with the transition and confidence in outcomes.

The following is provided as an example based on 3 tiers, with operators able to progressively embrace QA if they wish, leading to regulatory compliance concessions. The tiers involve:

Tier 1 - Base level –- Existing regulatory arrangements with any amendments introduced following the government ASEL review. Mandatory registration of supply-chain operators with the QA scheme operator

Tier 2 Certification - operators within a supply-chain achieve certification. DAFF assesses arrangements prior to agreeing concessions

Tier 3 Certification - The operator's quality system is embedded and demonstrating effectiveness at verifying required outcomes, with additional regulatory concessions

Appendix D.3.1 Tier 1 - Transition option

Table D. 1: Tier 1 - Base level –- Existing regulatory arrangements with any amendments introduced following the government ASEL review. Mandatory registration of supply-chain operators with the QA scheme operator

Documentation/Requirement	Responsibility	Verification responsibility and method	Comments
O&G manual	Exporter or supply-chain Operator	DAFF approval • O&G Manual • NOI & CRMP • Approved Export Program (AEP)	Some supply–chain operators are currently embraced under an exporters O&G manual. This could continue, or supply-chain operators could seek separate certification
Amended ASEL sets tier 1 standards	DAFF	DAFF – LESAC (or replacement)	
Registered premises	Operator	DAFF - inspection	
Inspection at Registered Premises		DAFF	
Application for Permission to Load and health Certificate	AAV/Exporter	DAFF	
Loading and on-board vessel	Exporter/AAV	DAFF - inspection	
Application for Export Permit	Exporter	DAFF - approval	
AAV	Exporter	DAFF – accreditation and training requirements	Approval & requirement for voyage participation & reporting
Stockman	Exporter	LiveCorp training	Existing reporting requirements to exporter and AQIS
Registration as a supply-chain operator with the QA scheme	Supply-chain operator	QA scheme ISP	Tier 1 - provides the regulatory base. Mandatory registration would enable QA system operators to offer progression through QA tiers

Regulatory concessions – nil

Appendix D.3.2 Tier 2 Certification

Table D. 2: Tier 2 - QA Certification Requirements for advancing to Tier 2

Documentation/Requirement	Responsibility	Verification responsibility and method	Comments
Development of O&G manual including: • Approach outlined in the QA Scheme Instructive Manual • Draft Standard Operating Procedures (SOP's) to incorporate an enterprise risk management plan and outcome targets	Exporter or Supply-chain operator	QA Certifying body – documentation audit and approval DAFF	Operators for segments of the supply-chain seeking Certification would be required to prepare a QA manual
Site audit by QA scheme approved auditors	Auditor	Auditor	In association with a trial shipment assessing QA manual
Two consignments using the QA scheme documentation without major non-conformance and with any corrective action reports closed out	Exporter or Supply chain operator	Auditor and Certifying body	
Recognition as a tier 2 Operator	Certifying Body	Certifying Body	

Table D. 3: Tier 2 - QA Operational Requirements

Endorsement of other QA arrangements for suppliers through the supply-chain, including: • On-farm QA • Transport operators e.g. truckcare • Assembly depots	QA Scheme operator in association with the Certifying body	Approved QA scheme operator	
Trial of the QA manual and SOP's during a consignment	Exporter or Supply-chain operator	Operator – internal audit DAFF inspections	
Review enterprise QA manual, including incorporation of CRMP, SOP's and trial findings	Exporter or Supply-chain operator	QA Certifying Body – documentation audit and approval	
Failure to address major non-conformance to lead to removal of tier 2 certification	Exporter or supply chain operator	Auditor and Certifying body	Operator may re-apply following successful further consignments and re-recognition as tier 2 operator

Regulatory concessions for certified tier 2 operators

- Annual audit by DAFF and approval of O&G manual no longer required as the QA Manual and modifications will be approved by the certifying body and on-site audits conducted
- CRMP approval by DAFF no longer required as consignment risk is addressed through the enterprise risk assessment and risk management plan and outcomes incorporated in the enterprise QA, subject to independent audit

Appendix D.3.3 Tier 3 Certification

Table D. 4: Tier 3 - QA Certification Requirements for advancing to Tier 3

Documentation/Requirement	Responsibility	Verification responsibility and method	Comments
Five consignments as a tier 2 operator, without any major non-compliance and with corrective action taken and verified	Exporter or supply chain operator	Auditor	
The operator has embraced QA in all operations and has a robust risk management, internal audit and staff training systems in place	Exporter or supply chain operator	Auditor and Certifying body	

Table D. 5: Tier 3 - QA Operational Requirements

Annual documentation audit (external) and two consignment audits	Exporter or supply chain operator	Auditor and Certifying body	
Annual review of Risk Management Plan with updates to QA Manuals and Operating Procedures	Exporter or supply chain operator	Auditor and Certifying body	
Failure to address major non-conformance to lead to removal of tier 3 certification. If evidence of QA system breakdown, the Certifying body could review certification to tier 1	Exporter or supply chain operator	Auditor and Certifying body	Operator may re-apply following successful further consignments and re-recognition as tier 2 operator
Failure to address			

Regulatory concessions for certified tier 3 operators

- Annual audit by DAFF and approval of O&G manual no longer required as the QA Manual and modifications will be approved by the Certifying body and on-site audits conducted
- CRMP approval by DAFF no longer required as consignment is addressed through the enterprise risk assessment and risk management plan and outcomes incorporated in the enterprise QA, subject to independent audit
- Approvals based on AAV inspection and exporter tier 3 certification and documentation for DAFF issuing:
    - Permission to load
    - Health Certificate
    - Export Permit

On-going regulatory requirements

- Monitoring and audit of QA scheme certification and audit processes by DAFF, annual approval as an Approved QA Scheme
- Random or targeted consignment DAFF audits
- Pre-export DAFF inspection of each consignment

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