

Applying the OIE *Terrestrial Animal Health Code* to the welfare of animals exported from Australia

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This paper (No. 04122013-00021-EN) has been peer-reviewed, accepted, edited, and corrected by authors. It has not yet been formatted for printing. It will be published in December 2013 in issue 32-3 of the *Scientific and Technical Review*.

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Summary

Australia has implemented a through-chain regulatory framework to address animal welfare issues in the livestock export trade. The framework places the responsibility for ensuring that the welfare of exported animals meets internationally accepted standards on those who hold the licences issued for the export of Australian livestock. It applies to all livestock (cattle, buffalo, sheep, goats, camels) exported from Australia, either for immediate slaughter or for feeding and eventual slaughter. The development of the framework began when the Australian Standards for the Export of Livestock were implemented in December 2004, to safeguard animal welfare from the point when the animals are selected for export up until the moment when they are offloaded in the destination country. The framework has recently been extended to incorporate animal welfare requirements through to the point of slaughter in the destination country. The requirements draw on, and are consistent with, the animal welfare chapters of the World Organisation for Animal Health (OIE) *Terrestrial Animal Health Code*.

Keywords

Animal welfare – Australia – Export – Feeder – Livestock – OIE – Regulatory framework – Slaughter – Supply chain – *Terrestrial Animal Health Code* – World Organisation for Animal Health.

Introduction

Animal welfare is of growing public interest globally. It was first identified as an international priority by the World Organisation for Animal Health (OIE) in recommendation six of its Third Strategic Plan 2001–2005 (1). At that time, OIE Member Countries gave the organisation a mandate to take the lead internationally on animal welfare, and to develop recommendations and guidelines on animal welfare. The first agreed-upon OIE chapters on animal welfare were published in the OIE *Terrestrial Animal Health Code (Terrestrial Code)* in 2005 (2) and more have been added since that time.

Improving and promoting animal welfare is an important objective for the Australian government. Australia is a Member of the OIE and supports the implementation of the *Terrestrial Code's* standards for animal welfare, both within Australia and internationally.

There is a need for the *Terrestrial Code's* recommendations to be applied where animals cross national borders. Significant trade in livestock occurs around the world. The Food and Agriculture Organization of the United Nations (FAO) estimates that 1.3 billion buffalo, camels, cattle, goats and sheep were slaughtered worldwide in 2010 (3). The supply chains involved in the livestock trade can be complex, often crossing national borders. Poor preparation of animals in one country can result in unacceptable welfare outcomes in the receiving country.

As a major exporter of cattle, goats and sheep for breeding, feeding and slaughter, Australia is involved in a number of these supply chains. Export markets include the following OIE Members: Bahrain, Brunei, the People's Republic of China, Egypt, India, Indonesia, Israel, Japan, Jordan, Kazakhstan, Kuwait, Malaysia, Mauritius, New

Zealand, Oman, Pakistan, the Philippines, Qatar, Russia, Saudi Arabia, Singapore, Sri Lanka, Sudan, Taiwan, Thailand, Turkey, the United Arab Emirates, the United States and Vietnam. Figures from the Australian Bureau of Statistics illustrate the size of the Australian industry and the value of Australia's livestock export trade (4). In 2011, 0.7 million head of cattle were exported, along with 2.5 million live sheep and 59,000 live goats. This represents an important source of income to some sectors of the Australian livestock industry. The value of live cattle and sheep exports from Australia from 2011 to 2012 was AU\$380 million and AU\$332 million, respectively.

However, live animal exports and animal welfare are sensitive issues of significant public interest in Australia. To enhance animal welfare outcomes for exported feeder and slaughter livestock, the Australian government has, since 2004 and in collaboration with the livestock industry, developed and implemented a through-chain regulatory framework.

This paper describes the progressive development of the new regulatory framework by Australia, and focuses on the application of *Terrestrial Code* standards to support animal welfare once animals are outside the direct control of the competent authority of Australia. The new regulatory framework was extended to cover all stages of the export chain up to the point of slaughter, in response to an independent review of the animal welfare arrangements covering Australia's livestock export trade, known as the 2011 Farmer review (5).

Implementation of OIE *Terrestrial Code* standards on animal welfare

The OIE Animal Welfare Working Group was inaugurated at the 70th General Session of the OIE in May 2002 and its first recommendations were adopted a year later. The OIE convened its First Global Conference on Animal Welfare in February 2004. The main objective of the Conference was to raise awareness of, and to explain, the OIE's animal welfare initiative. The Conference targeted Veterinary Services in OIE Member Countries, livestock producers

and representatives from the livestock industries, veterinarians, researchers and international non-governmental organisations working in animal welfare. The OIE recognised that the veterinary profession plays a leadership role in animal welfare issues and has much to contribute.

The first OIE chapter on animal welfare, which provides guiding principles, was added to the *Terrestrial Code*'s new animal welfare section in 2004. Since May 2005, the OIE has adopted a further nine animal welfare chapters (or standards) in the *Terrestrial Code* (6). These standards are updated to take account of significant and emerging scientific findings.

The OIE develops these standards through the work of expert *ad hoc* groups who develop draft texts for the *Terrestrial Code*. The draft texts are reviewed by the OIE Animal Welfare Working Group, which provides recommendations to the OIE Terrestrial Animal Health Standards Commission (Code Commission). After review by the Code Commission, draft texts are sent to OIE Member Countries for comment. Once changes have been made to address such comments, proposed new *Terrestrial Code* chapters on animal welfare are presented for consideration by all OIE Members at the General Session of the World Assembly of Delegates in Paris in May each year, and are adopted if unanimously endorsed.

Achieving agreement on universally acceptable standards of animal welfare can be challenging, given the often subjective nature of welfare assessments, and the financial and regulatory burdens that may be associated with improved animal welfare standards. The adoption of ten animal welfare standards in the *Terrestrial Code* over a ten-year period provides a substantial basis for OIE Members to implement controls that will underpin the delivery of sound animal welfare outcomes in an internationally acceptable manner.

Australia has established requirements that cover the treatment of livestock that are exported for use in other countries. The most recent requirement, called the Exporter Supply Chain Assurance System (ESCAS), requires planning, reporting and auditing to demonstrate

appropriate handling, treatment and control of animal movement from the time when the animals that have been sent for slaughter are off-loaded in the destination country, through to the completion of the slaughter process.

The ESCAS requirements include an animal welfare component. That component consists of six elements covering the treatment of Australian-sourced animals after they have arrived in an importing country. These elements aim to ensure sound animal welfare outcomes throughout the supply chain and cover the following:

- handling livestock
- land transport
- the feedlot or holding facility
- lairage
- slaughter with stunning
- slaughter without stunning.

The content of these six elements is based upon the guidance provided in the *Terrestrial Code*, to ensure that these requirements for sound animal welfare outcomes are acceptable in all countries to which the livestock are sent. This is in accordance with the OIE's Fifth Strategic Plan, which includes the objective of establishing 'standards and guidelines for animal welfare through a science-based approach and promot[ing] their application' (7). Under Australian law, the responsibility for applying ESCAS lies with the Australian exporter who has arranged the consignment.

Development of Australia's through-chain livestock export regulatory framework for animal welfare

Australian Standards for the Export of Livestock

The initial component of this framework is the document entitled *The Australian Standards for the Export of Livestock* (ASEL) (8). The development of the ASEL in 2004 was overseen by government and industry groups and the content has regularly been reviewed and updated since that time. This process takes into account advice from

the Livestock Export Standards Advisory Group (LESAG), a consultative committee which represents a broad range of stakeholders within Australia.

The standards in the ASEL were brought into force under the Australian Meat and Live-stock Industry Act 1997 (the AMLI Act) (9) in December 2004. The AMLI Act includes requirements to ensure good animal welfare outcomes from the selection and sourcing of livestock within Australia up until and including the export journey to a nominated destination country. It also includes requirements for reporting and triggers for formal investigations where the welfare outcomes are not deemed acceptable. Standard 5 of the ASEL requires immediate reporting of any incident that has the potential to cause serious harm to the health and welfare of animals, end-of-voyage health and welfare reporting, and daily reporting on the health and welfare of livestock on voyages of greater than ten days' duration, and defines acceptable upper levels of mortality during an export voyage. The ASEL's requirements are further reflected in the relevant industry quality assurance programmes. Moreover, the Master of the vessel is required to provide a separate, end-of-voyage report on livestock loaded and offloaded under Marine Orders – Part 43, subsidiary to the Navigation Act 1912 (10).

Compliance with the ASEL is achieved by regulating the activities of livestock exporters and government-accredited veterinarians, as well as other processes, including the registration of premises used in the livestock export trade.

Livestock can be exported from Australia only by the holder of a licence to export livestock issued under Division 2 of the AMLI Act. Compliance with the ASEL is a condition of such a licence. Sanctions on the exporter's licence can be applied under the AMLI Act, as well as action considered under the Export Control Act 1982 (11), if there is evidence that the requirements of the ASEL have been breached.

In 2004, the government also undertook to make the export trade more transparent and accountable for its animal welfare performance, particularly where voyages are undertaken by sea. Overall figures on

the mortality levels in the trade are reported to the Australian Parliament every six months (12), and the Australian competent authority reports to Parliament on any investigations it undertakes in response to breaches of the ASEL, including excessive mortality figures on particular voyages (13).

In 2012 the Australian government established a high-level committee to review the ASEL and the role and function of LESAG, in response to recommendations from the Farmer review (14).

Outcomes from implementation of the Australian Standards for the Export of Livestock

Animal welfare outcomes at any point in a supply chain reflect the cumulative impact of risks to the well-being of the animals involved (15, 16, 17). An overall assessment of the relative effectiveness of controls to manage animal welfare risk at all previous stages can therefore be made on the basis of readily measurable welfare outcomes at any given point in the chain. This can be done by:

- comparison with a ‘gold standard’ outcome figure
- comparison with other supply chains delivering animals to the same point
- comparison between outcomes achieved in the same supply chain operating under different controls.

When animals are transported, mortality levels provide a basis for comparing the animal welfare performances in those supply chains (16). Public reporting of mortality levels in Australia’s livestock export trade has covered export performance from 1 January 2000 to 31 December 2012 (12). Four of the five highest average annual mortality rates for buffalo, sheep and goats occurred in the five years from 2000 to 2004, before the introduction of the ASEL. For cattle, three of the five highest average annual mortality rates occurred in that same period.

The data for all species for those years are provided in Table I. Figure 1 presents these data to illustrate the impact of the ASEL since

their implementation on 1 December 2004, noting that no goats were exported during 2011.

Table I and Figure 1 near here

Development of the Exporter Supply Chain Assurance System

In 2011 the independent Farmer review of Australia's controls over animal welfare when exporting livestock for slaughter advised that requirements for animal welfare should be extended to cover the entire supply chain. On page 47, it states that: 'An alternative to extending ASEL is a quality assurance (QA) and audit programme ... through which the exporter would be required, under its export licence, to implement auditable welfare standards and report compliance'. Recommendation 10 of the Farmer report (5) states:

'The minimum requirements should be that all elements of the supply chain must meet, at a minimum, the OIE standards; that animals entering a supply chain must be accounted for; that there be independent third party assessment of each supply chain; and that the exporter demonstrate whole of supply chain control, enabling accounting for animals and ensuring treatment according to OIE standards.'

The Australian government accepted this recommendation and introduced ESCAS to address all these points (18). The ESCAS framework and its relationship with the pre-existing ASEL is illustrated in Figure 2.

Figure 2 will be presented near here

Thus, ESCAS is applied within a quality management framework and is a condition of maintaining an Australian livestock export licence. The animal welfare component of ESCAS is concerned with outcomes – but these outcomes are formulated to allow for different approaches in different countries, as long as an equivalent standard of welfare is reached. This is a key principle of the OIE, as stated in Article 7.1.2. of the *Terrestrial Code*: '8. That equivalent outcomes based on

performance criteria, rather than identical systems based on design criteria, be the basis for comparison of animal welfare standards and recommendations'. The key features of ESCAS include the fact that its animal welfare requirements are based on the content of the OIE *Terrestrial Code*'s chapters on animal welfare and that it requires Australian exporters to deliver animal welfare outcomes equivalent to those required in the *Terrestrial Code* at all points along the export chain, up to and including the point of slaughter.

Applying the OIE *Terrestrial Code* chapters when developing the Exporter Supply Chain Assurance System

After serious concern was expressed by the Australian public over the welfare implications of footage taken in 2011, of the slaughter of Australian-sourced cattle in another country, the Australian government established an Industry–Government Working Group (IGWG). The IGWG was composed of representatives of Australia's federal government, Australia's state and territory governments, exporters, a range of industry groups and other stakeholders. The role of the IGWG was to develop a regulatory framework to complement the existing ASEL by safeguarding the welfare of feeder and slaughter livestock after their arrival in the destination country.

The IGWG established a technical sub-group to create an auditable quality management system for animal welfare, based on the animal welfare requirements of the *Terrestrial Code*. The sub-group, chaired by the Australian Government Department of Agriculture (hereafter referred to as the Department), developed advice based on the guiding principles for animal welfare as well as specific guidance in the animal welfare chapters of the *Terrestrial Code*. The details of the advice were presented in the form of a checklist, to provide a through-chain animal welfare risk-management system covering Australian-sourced feeder and slaughter livestock, from the point of offloading in the destination country up to the time of slaughter.

Translating the *Terrestrial Code* into operational guidelines and checklists was challenging. Australia's objective was to provide a tool that facilitated regulatory audits and that did not require much

interpretation or animal welfare expertise, i.e. that was simple and easy to apply. However, the welfare impact of events early on in the chain can contribute just as much to poor welfare outcomes at slaughter as later events in the chain (19, 20). For that reason good practice was provided through all stages from the time of arrival in a destination country.

The process started with mapping the export chain in a destination country to the point where livestock are slaughtered. The technical sub-group then identified the animal welfare outcome at each stage that would be consistent with the *Terrestrial Code*'s principles and recommendations. From that 'animal welfare standard', it drew on the *Terrestrial Code* to develop advice that forms a through-chain animal welfare risk management system.

Since assessing animal welfare can be challenging, given the often subjective nature of assessments, the technical sub-group developed its advice in the form of a checklist that includes performance targets to assist in the assessment process. These targets are based, wherever possible, on published and accepted information (21, 22, 23, 24, 25). As a result of this approach, the advice is applicable and auditable within a performance management framework, in line with published expert recommendations (6, 24, 25, 26) and the options provided in the Farmer review (5).

In late August 2011, the Australian government accepted the key recommendation of the independent Farmer review of Australia's livestock export trade; i.e. that animal welfare outcomes consistent with the OIE standards should be provided for after the Australian-sourced livestock have been delivered to the importing country. It has implemented these requirements, which were developed through the IGWG process, as two 'ESCAS performance checklists' (to cover cattle and buffalo on the one hand, and sheep and goats on the other). These checklists provide the animal welfare elements of ESCAS, which also covers accountability, traceability and control throughout the supply chain for livestock exported from Australia for slaughter in other countries.

The cumulative impact of movement through a supply chain operating under these controls should protect animals from undue and avoidable stress in ways that are provided for in the OIE's animal welfare standards. All Australia's livestock export markets except Egypt are now covered by the ESCAS requirements (27).

Developing guidance consistent with the Terrestrial Code standards on animal welfare

The first step in this work was to develop agreed welfare outcomes to cover each stage in the export chain from offloading livestock from a vessel, where the requirements of the ASEL finish, through to the point of slaughter. The Department reviewed the advice in Chapters 7.1., 7.2., 7.3. and 7.5. of the *Terrestrial Code* and developed high-level welfare outcome statements for each step of the process (called a 'supply-chain element') for livestock that are being sent to slaughter, either directly or after a period of feedlotting.

For each supply-chain element, the high-level outcome statement was drawn from the *Terrestrial Code* (6), in accordance with the *Code's* guiding and specific principles. These are as follows:

a) General movement and handling of livestock

Moving and handling of livestock: OIE *Terrestrial Code* 2012, Section 7, Chapter 7.5., Articles 7.5.1. and 7.5.2.

Livestock are handled efficiently and in a way that minimises the risk of adverse animal health and welfare effects.

b) Land transport of livestock

Land transport of livestock: OIE *Terrestrial Code* 2012, Section 7, Chapter 7.3.

Livestock are loaded, transported and unloaded appropriately to avoid pain and injury and minimise the risk of adverse animal health and welfare effects.

c) Livestock in feedlots and holding facilities

Feedlots and Holding Facilities: OIE *Terrestrial Code* 2012, Section 7, Articles 7.2.3., 7.2.7. and 7.5.2.

Facilities are designed, maintained and operated to hold and feed an appropriate number of livestock without compromising their welfare.

d) Lairage of livestock

Lairage: OIE *Terrestrial Code* 2012, Section 7, Articles 7.5.3. and 7.5.4.

Facilities are designed and constructed to hold and slaughter an appropriate number of livestock in relation to class and the throughput rate of the slaughterhouse without compromising the welfare of the animals.

e) Slaughter of livestock

In order to ensure consistency with the overarching welfare outcome stated in OIE Article 7.5.1., that animals should be slaughtered without causing them undue stress, two outcome statements were developed for application, depending on whether stunning is used to help manage the animal welfare hazards at slaughter:

- Slaughter with stunning: OIE *Terrestrial Code* 2012, Section 7, Articles 7.5.7. and 7.5.8. Where performed, stunning effectively and reliably renders the animal unconscious until it dies from blood loss.
- Slaughter without stunning: OIE *Terrestrial Code* 2012, Section 7, Articles 7.5.9. Animals are restrained humanely and slaughtered competently to minimise any suffering involved.

To ensure that these animal welfare outcomes are reliably met, detailed guidance was then developed by the technical sub-group in a step-by-step manner.

The initial task was to ‘flesh out’ the specified high-level outcomes for each supply-chain element, in a manner that related to the actual process of moving animals through the supply chain. Open collaboration between members of the technical sub-group was

crucial, to ensure that no area was overlooked and that the practical experience of all involved and a sound working knowledge of the *Terrestrial Code*'s principles, as well as the specific information in its animal welfare chapters, were applied during the process. Table II contains these high-level outcomes, 'fleshed out' with suitable guidance to assist in the further development of a quality management system, consistent with the animal welfare guidance in the *Terrestrial Code*.

After agreement on these step-by-step requirements, the sub-group then developed thorough 'checklists' that drew from existing quality assurance manuals and the published literature (6, 15, 19, 20, 21, 26). The checklists provide information on the general principles for good handling of animals, regardless of where in the chain they are, as well as detailing good practice at every stage of the animal's movement through the chain until the point of its death. Each point in the checklist is a performance indicator, illustrated by further species-specific performance measures, to enable a general assessment of whether outcomes that comply with the OIE standards are being achieved.

To help in verifying that the welfare outcomes are being reliably met in specific circumstances, the performance measures include 'targets'. These were drawn, where possible, from internationally accepted standards, and use criteria that are readily assessable by auditors, such as numbers of falls or vocalisations. They are universally applicable, since they are based on international practice, published scientific papers and reviews, and industry experience (21, 22, 23, 24, 25).

The technical sub-group's recommendations were accepted by the IGWG, which refined the recommendations and included additional elements to ensure control and traceability along the feeder and slaughter livestock supply chain. It was agreed that compliance with these requirements would be an additional condition of the licence to export livestock from Australia.

These further steps in the regulatory framework for the export of feeder and slaughter livestock from Australia have been published as

ESCAS (18). This system has applied to all of Australia's feeder and slaughter livestock export markets (except Egypt) since 1 January 2013. The published animal welfare checklists in ESCAS provide sound guidance on the management of common animal welfare risks associated with handling livestock, land transport of livestock, feedlots, lairage and slaughter, and are based on information drawn from the relevant *Terrestrial Code* chapters and other sources. The checklists follow a clear statement of the animal welfare outcomes that are expected for animals in the supply chain. They include information on how personnel involved in handling and assessing livestock can perform their tasks and cause minimal stress to livestock. They are presented in a through-chain quality management framework and incorporate material on how a third party can assess whether the expected animal welfare standards are being met.

It is expected that the species-specific animal welfare checklists will be refined in the light of operational experience. It is also expected that additional interpretive material will be developed and distributed as needed, including by commercial operators in the livestock trade.

Australia will be assessing the effect of ESCAS over time, and intends that those performance data will be made publicly available. The aim is to provide clear guidance to industry participants on how to achieve internationally accepted animal welfare outcomes.

Stunning and slaughter

While all six stages of the supply chain are important to animal welfare, public interest is particularly concerned with the issue of animal welfare at the time of slaughter, particularly slaughter without prior stunning. Stunning is not a requirement in the *Terrestrial Code*, which states that animals should be managed so that restraint and slaughter are carried out without causing them undue stress. Slaughter without stunning, to meet religious requirements, is permitted in many countries, including Australia. The *Terrestrial Code* provides a number of measures to improve slaughter outcomes that are of benefit whenever slaughter is performed, with or without stunning.

Consequently, the ESCAS animal welfare requirements do not demand stunning.

However, a particular area of interest for Australia is facilitating humane slaughter through the use of stunning. A review of risks to animals at slaughter concluded that these risks are higher for animals that are not used to being closely handled by humans (20). This is the case for most of Australia's livestock population, which is reared in extensive production systems. Australia's experience is that humane slaughter of such animals can be ensured when effective stunning is incorporated into the slaughter process.

The practice of reversible stunning before slaughter is widely accepted in Australia, including for the production of halal meat. Of the approximately 32 million animals slaughtered in Australia during 2010 to 2011, commercial estimates are that less than 0.8% or approximately 265,000 animals were slaughtered without prior stunning (28). Australia supports the use of stunning in those markets to which it exports livestock, providing that those countries accept stunning.

Overview of Exporter Supply Chain Assurance System regulation

Under Australian law, the ESCAS regulatory regime places the responsibility for the welfare of feeder and slaughter livestock exported from Australia onto the Australian exporter of the livestock. That responsibility only ends when the animals have been slaughtered. The regulation of the livestock export chain is illustrated in Figure 2. In Australia, livestock species are defined in the Export Control (Animals) Order 2004 (29). The list covers buffalo, camelids, cattle, deer, goats and sheep, and the young of these species.

Only exporters licensed under the AMLI Act can export livestock from Australia. Under the Australian Meat and Live-stock Industry (Conditions on live-stock export licences) Order 2012 (30), exporters must comply with Australian legislative requirements, with the ASEL and with ESCAS.

The Australian Standards for the Export of Livestock govern the conduct of the livestock export trade, covering activities from sourcing livestock through to disembarkation in the importing country. Their purpose is to ensure that the welfare of suitable Australian-sourced animals is protected during those stages of the export supply chain, so that animals arrive at the port of entry in sound condition and with a health status that accords with the stated requirements of the importing country. The Exporter Supply Chain Assurance System complements the ASEL by providing for internationally acceptable animal welfare outcomes from the point at which livestock arrive in the destination country up to and including the point at which they are slaughtered.

The Export Control (Animals) Order 2004 (the ECA Order) (25) documents the requirements that must be met when an exporter applies to the Department (the Australian Competent Authority) for an export permit. The export permit provides legal authority for livestock to be exported from Australia under listed conditions. It is issued after documentation and other assurances have been provided to the Department that all Australian and importing country entry requirements have been met, and that the animals will be accepted by the importing country.

Division 2.4 of the ECA Order specifies that an exporter must demonstrate to the Department that four key components of ESCAS will be met before an export permit will be issued for feeder and slaughter livestock.

These components cover the off-shore export supply chain in the destination country. They are:

- compliance with the six elements of the ESCAS/animal welfare performance checklists up to and including slaughter (based on the *Terrestrial Code*)
- control of the movements of livestock through the supply chain
- traceability for all livestock through the supply chain

– reporting and auditing, including independent auditing of animal welfare, traceability and control through the supply chain, with audit reports provided to the Department.

The ESCAS animal welfare performance checklists are publicly available for the benefit of all participants in the livestock supply chain (15).

Operation of the Exporter Supply Chain Assurance System

Exporters who do not comply with their approved ESCAS and other conditions imposed by the Department may face a range of regulatory actions, including, but not limited to, non-approval of future consignments or suspension or cancellation of their livestock export licence. The ESCAS regulations apply only to holders of Australian export licences, since the Australian government cannot regulate entities outside its borders.

Control of animal movement under ESCAS must be demonstrated from the point of disembarkation in the importing country through to the point of slaughter. Control through the supply chain can be achieved through vertical integration, so that all the supply-chain elements are under the direct control of the exporter or, alternatively, through formal commercial arrangements between the exporter and other participants in the supply chain.

To demonstrate traceability for buffalo and cattle, the exporter must provide evidence that individual animals can be identified and located at any point along the supply chain, through to the point of slaughter in the overseas abattoir. Australia has a mandatory national system of animal identification, the National Livestock Identification System (31), which enables the lifelong individual traceability of cattle, as required for the purposes of ESCAS. For goats and sheep, ESCAS requires exporters to implement a system of accountability based on the manual counting and reconciliation of goats and sheep throughout the supply chain.

Finally, each supply chain must be independently audited, with audit reports provided to the Department. A key component of the auditing activity is assessing whether the activities and processes along the supply chain meet the performance standards specified in the ESCAS animal welfare performance checklists.

The aim of all these activities is to assess whether the supply chain complies with the ‘Guidance on meeting OIE *Code* animal welfare outcomes: cattle and buffalo, version 2.2, 20 August 2011’ and/or ‘Guidance on meeting OIE *Code* animal welfare outcomes: sheep and goats, version 3.3, 21 August 2011’, including appropriate controls and traceability of livestock (18). The auditing must be performed by an auditor who is independent, has no conflicts of interest, and has an appropriate level of competence and expertise, obtained through formal qualifications and experience.

There are two key independent audit reports that a licensed exporter must submit to the Department for these purposes. The reports are to demonstrate that the supply chain meets the control, traceability and animal welfare requirements of the ESCAS framework, from disembarkation up to and including at the point of slaughter. The two reports are:

- the Independent Initial Audit Report (IIAR), which evaluates whether the exporter’s proposed ESCAS arrangements comply with the regulatory requirements. The IIAR must be submitted as part of the exporter’s application to export livestock and is part of the information that is considered by the Department when determining whether or not to grant approval to export;
- the Independent Performance Audit Report (IPAR), which evaluates the performance of the exporter’s ESCAS after buffalo and cattle have entered the supply chain. The outcomes of the IPAR are considered by the Department when making decisions on future applications by the exporter to export livestock.

In addition to the audit reports, exporters are required to provide an ‘end of processing report’ for each buffalo and cattle consignment, which reconciles the animals that have moved through that supply

chain with the terms of the export permit. This validates the control of animal movement in the ESCAS arrangement.

The operation of ESCAS for sheep and goats differs slightly from that for buffalo and cattle. An end of processing report is not required and the performance audit reports for each supply chain are due every two months for the first six months, and then on an ongoing basis, with the frequency of audit depending on the risks and performance of the supply chain for these species.

Conclusion

Australia has successfully established and implemented a comprehensive through-chain system to improve the welfare of exported feeder and slaughter livestock. For a number of years, Australia has ensured the welfare of the livestock it exports through the system of control established in 2004, the Australian Standards for the Export of Livestock. While respecting the sovereignty of other nations, and recognising that Australia's direct regulatory mandate cannot extend beyond its borders, the more recent regulatory system, ESCAS, extends the application of appropriate animal welfare standards up to and including the point of slaughter, by placing responsibility for these animals' welfare onto the licensed exporter responsible for supplying them to countries outside Australia.

The ESCAS animal welfare performance checklists draw extensively on the OIE *Terrestrial Code*, the international literature and experience. They provide species-specific information on the general handling of animals as well as on how to conduct operations for offloading, transportation, lairage, feedlotting, and the restraint and slaughtering of animals, in accordance with the recommendations in the animal welfare chapters of the *Terrestrial Code* and its guiding principles. In addition, performance measures and targets – again, consistent with the animal welfare chapters of the *Terrestrial Code* – are specified within the checklists to assist with auditing. Over time, these requirements will be refined in the light of experience and the data generated from compliance activities.

Australia will continue to work closely with the Australian livestock industry, livestock exporters and trading partners to ensure that measures that promote animal welfare are applied to the export of Australian livestock. Australia supports extending the use of stunning for Australian-sourced livestock in livestock export markets, where appropriate. Australia supports the livestock industry's efforts to develop and implement voluntary Codes of Conduct that are consistent with the OIE's approach to animal welfare, and that manage the risks to animal welfare at slaughter, including the appropriate use of stunning.

Acknowledgements

The authors gratefully acknowledge the assistance provided by numerous colleagues throughout the Australian Government Department of Agriculture in writing this paper.

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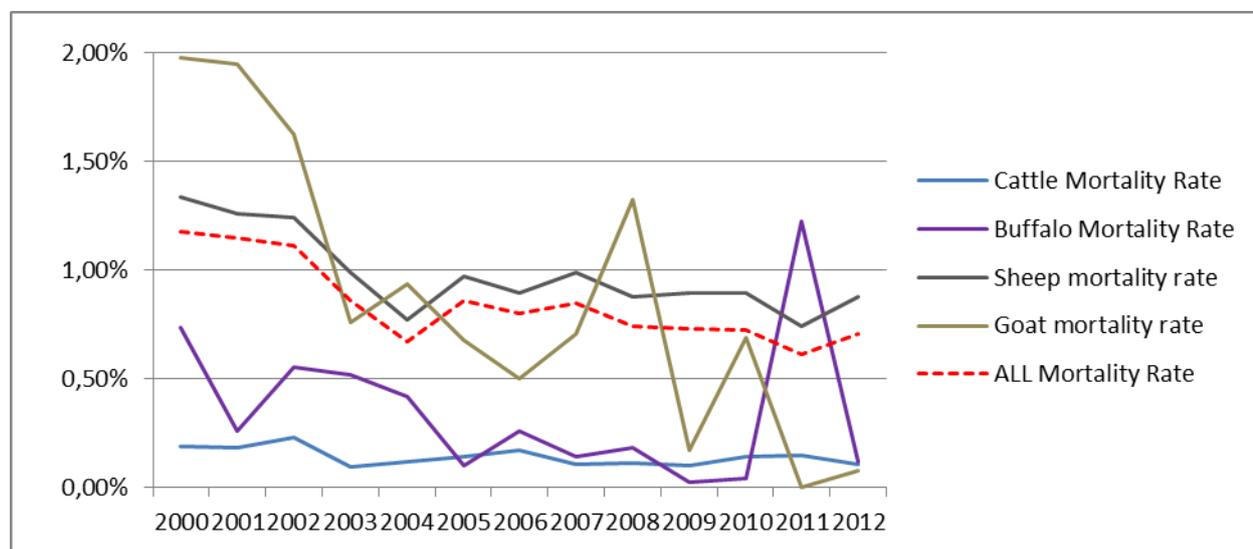


Fig. 1
Mean annual mortality percentages of livestock exported from Australia: 2000 to 2012 (inclusive)

Source: Reports of the Department of Agriculture, Fisheries and Forestry to the Australian Parliament (12)

<p>Planning the consignment (export licence and ASEL)</p> <p>↓</p>	<p>Planning begins well before the export consignment and covers the entire live export chain, from preparation and sourcing of the livestock in Australia for slaughter and feeder livestock, right through to the point of processing in the importing country. Australian exporters seeking a permit to export feeder or slaughter livestock must submit an ESCAS to the Department of Agriculture. Planning also includes the development of contingencies in the case of unexpected threats to the health and welfare of the livestock</p>
<p>Sourcing & non-farm preparation of livestock (ASEL)</p> <p>↓</p>	<p>The livestock exporter sources livestock in Australia that meets Australian and importing country health, welfare and commercial requirements. This may necessitate specific on-farm preparation of animals, including husbandry and animal health tests and treatments</p>
<p>Land transport (ASEL)</p> <p>↓</p>	<p>The initial land transport phase commences when the first animal is loaded onto a vehicle at the property of origin and ends when the last animal is unloaded at the premises approved or registered by the Department of Agriculture. A second phase of land transport commences when the first animal is loaded onto a vehicle to leave the premises and ends when the last animal is unloaded at the embarkation port. Where the property of origin is also the premises, the land transport phase commences when the first animal is loaded onto a vehicle and ends when the last animal is unloaded at the embarkation port</p>
<p>Pre-embarkation assembly (ASEL)</p> <p>↓</p>	<p>The pre-embarkation assembly of animals for export commences with the unloading of the first animal from the vehicle at the approved or registered premises and ends with the loading of the last animal onto the vehicle for departure from the premises, whether or not the animal is passed as fit for export</p>
<p>Vessel preparation & loading the vessel (ASEL)</p> <p>↓</p>	<p>Vessel preparation includes selection and preparation of a suitable vessel to transport livestock overseas. Loading of the vessel is said to commence with the arrival of livestock at the port of loading. Loading ends when the last animal has been loaded onto the vessel and an export permit and health certificate are issued by the Department of Agriculture. Loading includes an inspection of the livestock for health and fitness to travel at the port, before the animals are moved onto the vessel</p>
<p>Sea/air voyage (ASEL)</p> <p>↓</p>	<p>On-board management covers the period from the time the first animal is loaded onto the vessel until the time the last animal is unloaded at the final port of disembarkation</p>
<p>Disembarkation (discharge/unloading) (ASEL/ESCAS)</p> <p>↓</p>	<p>Disembarkation commences after the arrival of the vessel at the first overseas port (and acceptance of the consignment, or part thereof, by the competent authority of the country). It commences with the unloading of the first animal and ends when the last animal is unloaded from the vessel</p>

Post-disembarkation (ESCAS)	After disembarkation, the welfare of the livestock is the joint responsibility of the exporter and importer. The exporter ensures that the supply chain meets (at a minimum) the ESCAS specifications; that animals entering a supply chain are accounted for; that there is independent third-party assessment of each supply chain; and that there is whole-of-supply chain control, enabling accounting for animals and ensuring treatment that is consistent with OIE standards. The exporter is accountable for any breaches of the arrangements that have been approved for each consignment
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Fig. 2

Regulation of the livestock export chain

Not all steps are applicable for all species and for all purposes

ASEL: Australian Standards for the Export of Livestock

ESCAS: Exporter Supply Chain Assurance System

Table I
Live export data reported to the Australian Parliament: 2000 to 2012 (inclusive)

Export data	Year												
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
No. of cattle voyages	411	404	454	375	295	244	221	261	285	339	272	169	192
Head of cattle exported	752,381	767,348	953,754	731,703	654,419	547,356	623,052	712,320	983,653	939,722	848,265	718,025	626,504
Cattle mortalities	1,435	1,425	2,219	705	774	769	1,088	747	1,131	932	1,192	1,067	681
Cattle mortality rate	0.19%	0.19%	0.23%	0.10%	0.12%	0.14%	0.17%	0.10%	0.11%	0.10%	0.14%	0.15%	0.11%
No. of buffalo voyages	17	16	27	25	21	15	20	15	14	14	10	3	6
Head of buffalo exported	1,901	1,940	3,801	3,858	5,487	2,954	7,266	3,473	5,461	3,777	2,358	734	831
Buffalo mortalities	14	5	21	20	23	3	19	5	10	1	1	9	1
Buffalo mortality rate	0.74%	0.26%	0.55%	0.52%	0.42%	0.10%	0.26%	0.14%	0.18%	0.03%	0.04%	1.23%	0.12%
No. of sheep voyages	104	139	134	93	66	56	68	61	63	53	43	40	39
Head of sheep exported	4,553,189	6,257,120	6,069,702	4,379,920	3,638,413	3,651,584	4,158,671	3,768,953	4,584,756	3,578,182	3,001,976	2,592,028	2,199,999
Sheep mortalities	61,000	78,749	75,530	43,404	28,005	35,534	37,348	37,409	40,241	32,117	26,825	19,212	19,407
Sheep mortality rate	1.34%	1.26%	1.24%	0.99%	0.77%	0.97%	0.90%	0.99%	0.88%	0.90%	0.89%	0.74%	0.88%

No. of goat voyages	35	68	65	53	33	23	26	23	9	2	5	0	2
Head of goats exported	18,991	63,362	111,334	52,412	22,635	12,528	26,418	24,307	6,276	577	1885	0	1245
Goat mortalities	376	1,236	1,808	399	212	85	133	172	83	1	13		1
Goat mortality rate	1.98%	1.95%	1.62%	0.76%	0.94%	0.68%	0.50%	0.71%	1.32%	0.17%	0.69%		0.08%
Sum of all species:													
No. of voyages	567	627	680	546	415	338	335	360	371	408	330	212	239
Head exported	5,326,462	7,089,770	7,138,591	5,167,893	4,320,954	4,214,422	4,815,407	4,509,053	5,580,146	4,522,258	3,854,484	3,310,787	2,828,579
Mortalities	62,825	81,415	79,578	44,528	29,014	36,391	38,588	38,333	41,465	33,051	28,031	20,288	20,090
Mortality rate	1.18%	1.15%	1.11%	0.86%	0.67%	0.86%	0.80%	0.85%	0.74%	0.73%	0.73%	0.61%	0.71%

Table II
Methods of ensuring high-level animal welfare outcomes for each element of the supply chain that comply with the welfare guidelines of the World Organisation for Animal Health *Terrestrial Animal Health Code*

Supply-chain element	OIE outcomes
1 Handling of livestock	Livestock are handled efficiently and in a way that minimises the risk of adverse animal health and welfare outcomes
<i>Terrestrial Code</i> chapters: 7.5.1. and 7.5.2.	Suitable personnel to allow for handling of the livestock through the supply chain without undue stress and with a minimum of needless delay
2 Land transport of livestock	Livestock are loaded, transported and unloaded appropriately to avoid pain and injury and minimise the risk of adverse animal health and welfare outcomes
<i>Terrestrial Code</i> chapter: 7.5.2.	Loading/unloading facilities are suitable for loading/unloading livestock from vessels/vehicles Loading/unloading of vehicles is performed in ways and using facilities that prevent livestock experiencing undue stress, disease or injury Animals that are unfit for further transport by road are identified, documented and removed Animals that are unfit for further transport are treated or humanely euthanised to prevent them experiencing needless suffering Vehicles are clean and suitable for transporting livestock of the type involved for the distance required without causing undue stress or injury Vehicles are operated to deliver the animals to the destination with a minimum of delay and without causing undue stress or injury and with no interim loading of additional stock Animals identified as injured, ill or otherwise distressed are treated appropriately Suitable personnel to allow for handling of the livestock through the supply chain without undue stress and with a minimum of needless delay

3	Feedlot/holding facility	Facilities are designed and constructed to hold an appropriate number of livestock without compromising the welfare of the animals
	<i>Terrestrial Code</i> chapter: 7.5.2.	<p>The design and operation of facilities and equipment in place at feedlots/holding facilities facilitate the natural 'flow' of animal movement without causing undue stress and excitation or otherwise compromising the welfare of the livestock</p> <p>Animals in the facility should maintain their normal social groupings and have sufficient space in their pens to exhibit normal behaviours without risk of injury</p> <p>The design and operation of facilities in place at feedlots/holding facilities allow for the removal of distressed, aggressive, sick or injured animals with a minimum of disruption to other livestock in the area</p> <p>Animals identified as injured, ill or otherwise distressed are treated appropriately</p>
4	Lairage	Facilities are designed and constructed to hold and slaughter an appropriate number of livestock in relation to class and the throughput rate of the slaughterhouse without compromising the welfare of the animals
	<i>Terrestrial Code</i> chapters: 7.5.3. and 7.5.4.	<p>Animals are moved into the feed-race to be restrained at a rate that ensures no animal experiences undue delay before it is humanely slaughtered</p> <p>Animals at the processing establishment awaiting slaughter, either in races, forcing pens or in the lairage, are protected from excessive or potentially disturbing noises, smells or other stimuli that may be a source of stress</p> <p>Animals that become distressed while awaiting slaughter are moved away from animals being prepared for slaughter so as not to cause them unnecessary stress and are treated in accordance with the general guidelines for handling and treating animals until they can be expeditiously slaughtered without undue further distress</p> <p>Restraint of animals to facilitate effective and efficient slaughtering is provided in a way and using facilities so as not to distress or injure the animal and in a way that is adequate for the size and nature of the animals presented for slaughter</p> <p>Animals that cannot be effectively restrained using humane methods are not to be slaughtered</p> <p>Stressed animals should be humanely killed immediately if necessary</p>

5	Slaughter with stunning	Where performed, stunning effectively and reliably renders the animal unconscious until it dies from blood loss
	<i>Terrestrial Code</i> chapters: 7.5.7. and 7.5.8.	<p>Slaughtering of animals at processing establishments does not cause undue stress to the animals</p> <p>Where stunning is performed immediately following the neck cut (sticking) it effectively and reliably renders the animal unconscious until death supervenes from blood loss</p> <p>Where stunning is performed prior to sticking it immediately renders the animal unconscious until death supervenes from blood loss</p> <p>Stunning is to be performed on appropriately restrained animals using properly maintained equipment designed for the species and the purpose and operated in ways that provide for the required outcome</p> <p>Only competent* personnel are authorised to use the stunning equipment</p> <p>Slaughter staff effectively sever blood vessels in the neck to expedite death from blood loss with the least possible delay after the animal has been effectively restrained for slaughter or stunned</p> <p>Absence of brain-stem reflexes consistent with the animal being dead is to be confirmed prior to the commencement of hanging and/or dressing procedures</p>

6	Slaughter without stunning	Animals are restrained humanely and slaughtered competently to minimise any suffering involved
	<i>Terrestrial Code</i> chapter:	Slaughtering of animals at processing establishments does not cause undue stress to the animals
	7.5.9.	Livestock are restrained humanely, not tripped, thrown, dropped or suspended by their limbs whilst conscious
		Where stunning is not performed prior to slaughter, the neck cut (sticking) is to be performed as a single cut with a freshly sharpened knife
		Slaughter staff effectively sever blood vessels in the neck to expedite death from blood loss with the least possible delay after the animal has been effectively restrained for slaughter
		Where stunning is not performed immediately following the neck cut (sticking) the animal is not to be disturbed and the wound edges not allowed to touch or be touched until the animal loses consciousness
		Absence of brain-stem reflexes consistent with the animal being dead is to be confirmed prior to any movement of the carcass or the commencement of dressing procedures

*As determined by the relevant regulatory authority