Final report

Uptake of training and animal health and welfare practices

Project code	LC.RDE.0004
Prepared by	Marc Levingston
Date published	8 July 2022

Published by	LiveCorp PO Box 1174 NORTH SYDNEY NSW 2059	Meat & Livestock Australia Limited Locked Bag 991 NORTH SYDNEY NSW 2059

In partnership with

MINTRAC

Abstract

Animal health and welfare constitute a significant priority for all stakeholders throughout the livestock export supply chain. The objective of this project was to identify the risks, required capabilities, and the capacity for change that can be achieved through animal health and welfare training across the livestock export supply chain. The outcome of this project was to develop a sustainable training strategy that is informed by best practices and lessons from other industries and in consideration of the livestock export industry's specific requirements.

The project utilised qualitative and quantitative methodologies, where appropriate including the use of 'human-centred' design principles. It also incorporated extensive stakeholder consultation across the livestock export supply chain.

Recommendations from this project are segmented into two tiers.

Tier 1 consists of strategic recommendations that are proposed for immediate action. Strategic recommendations provide a framework for supporting longer-term, sustainable changes which lead to positive animal health and welfare outcomes.

Tier 2 consists of a series of tactical recommendations. While these recommendations are also important, stakeholder consultation revealed these could be addressed at later stages. Implementation of Tier 2 recommendations alone will not lead to the sustainable improvements in animal health and welfare outcomes that the industry is seeking.

Defining strategic and tactical recommendations emphasises how a combined approach will achieve sustainable improvements to animal health and welfare outcomes.

Executive summary

Background

The importance of animal health and welfare is a critical consideration for all stakeholders throughout each sector in the Australian livestock export supply chain. The project focused on each of the following:

- Identifying the key risks, required capabilities, and the capacity for change that can be achieved through animal health and welfare training across the livestock export supply chain. This is critical to ensure that all stakeholders have the requisite knowledge, skills, and capabilities to deliver high quality animal welfare outcomes.

- Engaging stakeholders across all sectors of the livestock export supply chain. This included stakeholders who were situated in market.

- Developing a sustainable training strategy informed by best practices and lessons from other industries and in consideration of the livestock export industry's specific requirements.

Objectives

The objectives of this project were to:

- Complete a comprehensive review and risk assessment of animal health and welfare practices in the livestock export industry that could be improved through best practice training and development.
- Deliver a training strategy and implementation plan that considers the training recipients' needs and includes recommendations for key risk areas that would benefit from animal health and welfare training.

Methodology

The following methods were used to undertake research and consult with industry stakeholders:

- **Online surveys.** Two online surveys were developed and deployed to supervisors and front-line workers. Surveys collected data determining animal handling and welfare risks, and identified current training activities, needs and gaps.

- **Remote video interviews.** One-on-one interviews enabled the collection of insights and intelligence to support survey findings. Where participants had not provided an online survey response, the same questions were used to structure conversations.

- **Secondary research.** Desktop research was conducted in the form of literature reviews. This method was particularly helpful within the context of locating existing training courses/materials.

Throughout the research, 'human-centred' design principles were adopted. This helped to develop a high degree of empathy when consulting with diverse stakeholders both in Australia and in market.

Results/key findings

An online Training Needs Analysis (TNA) was conducted across all sectors of the supply chain which included:

- Livestock production
- Livestock export
- Transportation
- Ports
- Government agencies
- In market

The results from the TNA uncovered the following needs and opportunities:

1. Training to offer an increased focus upon injury/illness identification.
2. The need for knowledge retention and access due to staff turnover.
3. Desire for access to information to support animal health and welfare outcomes across the supply chain.
4. A desire to evaluate training effectiveness/track training participation and completion.
5. A need to uplift animal handling training and general welfare knowledge.
6. Provision of summaries to assist with understanding legislative updates.
7. Training that focuses on understanding animal behaviour.
8. A greater awareness of high-risk animal handling activities involving animals/humans, such as loading and offloading.
9. Understanding how to identify equipment which is outdated and potentially faulty/damaged.
10. Access to current and relevant training materials.
11. Understanding better practices for recapturing escaped livestock.
12. Appreciating and understanding the importance of cultural nuances.
13. Training that supports stakeholders to improve cross-cultural awareness and communication skills, conflict resolution and facilitating behavioural change.

Project deliverables and collateral

The following key deliverables were developed because of the project:

- **Competency Profile** – The Competency Profile provides an outline of the key competencies required in key animal handling roles across sectors from the end-to-end supply chain.

- **Training Plan** – The Training Plan enables stakeholders in the key roles identified, to follow a training pathway to build animal handling and welfare skills to meet the identified key competencies required for their roles.

These are available as separate documents.

Recommendations

The recommendations are broken down into two tiers.

Tier 1 consists of strategic recommendations proposed for immediate action. Adoption is intended to establish industry standards, deliver a centralised learning hub for industry, create a long term and sustainable program for industry capability development, and an initiative to enhance the status of employers who seek to embed strategic industry practices into their employment operations.

Tier 2 consists of a series of tactical recommendations. While these recommendations are also important, stakeholder consultation revealed these could be addressed at later stages.

The table below also proposes indicative timelines for implementation.

Table 1 - Strategic and tactical recommendations and timeline for implementation

TIER	RECOMMENDATION	SUMMARY	TIMELINE FOR COMMENCEMENT
Tier 1 - Strategic	1. Implementation of a 'Standards of Competency' program for industry	Extension and adoption program to drive uptake of industry competency standards	2022/23
	2. Development of an industry 'Learning Hub'	Creation of centralised industry portal for learning management	2022/23
	3. Development of a Continual Professional Development (CPD) program framework for all industry sectors	Implementation of a CPD program to maintain and track industry capability	2023/24
	4. Development of an industry 'Employer of Choice' (EOC) concept	Initiate an EOC program to reward and recognise employer training excellence	2023/24
Tier 2 – Tactical	1. Opportunity to update/ digitise/ summarise existing materials 2. Opportunity to consolidate and digitise courses focusing upon legislative awareness	Conversion of hard copy learning content into online digitised and summarised form	2022/23
	3. Opportunity to develop tailored courses Stage 1	• Animal handling • Development of additional modules to assist with injury/illness identification • Development of a 'shipboard crew animal welfare induction' program • Legislative compliance • Work Health and Safety	2022/23

TIER	RECOMMENDATION	SUMMARY	TIMELINE FOR COMMENCEMENT
	4. Opportunity to develop new courses not currently available Stage 2	• Cultural awareness/sensitivity courses • 'Climate change impacts on animal welfare' training program • Mental health courses • Customised 'soft-skills' courses	2023/24

Benefits to industry

A structured training framework for the livestock export industry will reduce the duplication of costs for compliance in training individuals, provide access to more skilled workers, and increase the widespread use of best practices in livestock handling and management.

- **Lifting competency standards** - With successful completion of the project, and the identification of key competencies for animal handling roles across the supply chain, employees and employers will benefit by adopting and implementing the proposed core competencies as a benchmark to drive a high quality and consistent level of capability development across the supply chain.

- **Efficient and reliable access to learning content and knowledge** – The establishment of a centralised learning hub for industry will enable the workforce to more easily identify training programs available, and to engage with training providers more effectively to undertake learning which can be monitored and tracked.

- **Adopting a program of continual learning across industry** – Deploying a Continual Professional Development program (CPD) in the livestock export industry will lead to lifelong learning for the workforce. Leveraging a CPD program provides industry with greater assurances that the workforce is retaining and continually enhancing its capabilities, and that the most recent and relevant programs of learning are being undertaken. This ensures best practices are understood, and regulatory and compliance knowledge is being maintained.

- **Delivering a more attractive 'Employee Value Proposition'** – The adoption of an Employer of Choice initiative that recognises employers' investments in training and acknowledges their commitment to investing in the development of their workforce can be promoted by employers to attract new hires. This will not only help to attract staff, but organisations will also continue or start to make critical investments in the development of the livestock export workforce.

In addition to the above benefits, an extension and adoption plan has been included. Some of the key features of this plan encompass the following:

- Identification of existing 'gaps' as part of stakeholders' knowledge, skills, and capabilities pertaining to animal health and welfare, and how to address these.

- Opportunities to promote, track and evaluate stakeholders' ongoing professional development.

- Tangible communication strategy to promote opportunities for State and Federal government funding.

Future research and recommendations

Implementation of each of the key recommendations will require the initiation of dedicated research programs to collect necessary inputs required to deliver project objectives. Section 6 of this report explains key considerations to execute future research.

Table of Contents

List of Figures

List of Tables

1. Background

1.1. Project concept and scope

1.1.1. Engaging with the research

Animal health and welfare is a matter of significant importance throughout the Australian livestock export supply chain. This project investigated two fundamental issues:

- Identifying animal handling and welfare risks, required capabilities and the capacity for change that can be achieved through training and development across the livestock export supply chain.

- Developing and implementing a sustainable training strategy that is informed by best practice and lessons from other industries and considers the livestock export industry's specific requirements.

The research highlighted how animal health and welfare is a multidimensional concept. Not solely confined to the physical treatment of livestock, animal health and welfare also has implications for the animals' mental state. Identifying this throughout her research, Australian Accredited Veterinarian, Dr. Renee Willis commented "Animal welfare is a multidimensional concept that embraces the physical and mental aspects of the animal, including positive, neutral, and negative mental states" (Willis et al, 2020, p.1). Further research published by Fleming et al (2020) outlined the diversity of opinions held by stakeholders throughout the livestock export supply chain. Fleming discussed the need for the implementation of 'objective measures' indicating how livestock respond to environmental conditions (Fleming et al, 2020). Such measures would require implementation at each stage throughout the livestock export supply chain.

Research including a literature review and engagement with a diverse range of stakeholders revealed several factors and (potential) risks pertaining to animal health and welfare. These risks are reflected in the following 'Heat Map.' The Heat Map demonstrates a range of risks reported by participants, which may arise because of poor animal handling and welfare measures. These risks have been assessed against the consequence or severity of the risk, and the likelihood of the risk arising.

It is relevant to acknowledge that use of the term 'disease' was common practice among the participant group. Research and feedback suggest that this term was used interchangeably with 'injury and illness'. This is important to highlight so that risks relating to significant animal diseases can be taken in context compared to more common injuries or illnesses. This is also relevant due to the current low levels of actual disease affecting the national herd in Australia.

In addition to risk identification, the research also focused on assessing the current animal handling and welfare knowledge, skills, and capabilities of stakeholders in each sector. Stakeholders were categorised into supervisor roles or front-line animal handling roles. The rationale for devising these categories was based on the premise that courses on leadership, for example, would be more applicable to supervisors. Additionally, supervisors would be able to decide upon, and/or facilitate access to the proposed training courses recommended for their staff. Online surveys and interview questions were targeted at the specific role type of each participant.

The outcomes of risk assessment and training needs analysis data led to the development of competency profiles. Five competency groupings were identified and underpinned the requisite animal handling competencies applicable for each role.

2. Objectives

2.1. Objective 1

This objective involved identifying the critical animal health and welfare risks or opportunities along the livestock export supply chain that could be mitigated or improved through the provision of training or competency development.

Key deliverable(s):

An online survey was developed and deployed to collect risk assessment data, identifying common themes, competencies, knowledge, and skills.

Outcome(s):

Risks throughout the livestock export supply chain were identified and are contained in a Risk Heat Map in this report. The Heat Map categorises risks according to their consequence and likelihood of occurring.

2.2. Objective 2

This objective involved developing a training strategy and implementation plan that considered the training recipients' needs.

Key deliverable(s):

The online survey developed and deployed contained questions relating to the training needs of participants, current training activity, and perceived gaps in training. In addition, one on one interviews with stakeholders were conducted to:

- validate survey findings

- enable further evaluation of industry training needs

- develop a 'point of view' to inform training proposals and plans.

Stakeholder engagement incorporated 'Service Design' principles, ensuring that training plans and programs responded to a validated demand for training services. Training opportunities were assessed based on the learners' needs. Direct stakeholder input was incorporated to ensure that programs were designed to create value for learners.

Outcome(s):

The training needs analysis identified specific knowledge, skills, and competencies relevant to animal handling and welfare. A comprehensive list of relevant courses and materials was also compiled in the form of a training plan.

2.3. Objective 3

This objective included the development of recommendations to address key risk areas by leveraging animal health and welfare training.

Key deliverable(s):

Using a Service Design approach, a clear picture of industry competency development and training needs was developed in relation to improving animal welfare practices. Appropriate training programs and opportunities were identified by conducting a "scan" of available animal handling and welfare programs. The scan encompassed both accredited training within the Australian Qualifications Framework (AQF) and non-accredited training options.

In addition, an extension and adoption roll out plan was developed that also encompassed:

• A set of project recommendations and findings to address identified industry learning needs and gaps. This was specifically in the form of training and competency development requirements.

• An extension and adoption plan, reiterating why the training needs to be taken up to meet compliance and market standards. The plan highlighted how the proposed training offerings and competency development programs supported industry to adopt better practices, change behaviours, and make informed decisions to comply with animal welfare standards, obligations, and duties of care.

Outcome(s):

A training program inventory was developed because of the training scan. This resulted in strategic and tactical recommendations to uplift animal handling training.

3. Methodology

3.1. Quantitative research

Two surveys were developed to collect baseline industry responses to animal welfare risks and identify training needs. One survey focused on managers. The second survey focused upon workers directly involved in animal handling activities. Both surveys were reviewed by an external management consultant. The LEP RD&E Program team distributed survey links to identified industry stakeholders.

Eleven responses were received. The program team reported that the livestock export community was experiencing a level of 'survey fatigue', and that other export industry surveys were in circulation at the same time. The small number of responses received was attributed to this. To ensure that a suitable and representative sample of industry intelligence was collected, stakeholder engagement proceeded to the next stage involving one on one interviews.

3.2. Qualitative research

In-depth video conference interviews were conducted with stakeholders identified by the LEP RD&E Program team. Interviews spanning one hour consisted of a combination of questions derived from the online surveys. These questions formed the basis for detailed, yet informal conversation. Each interview focused on the following areas:

1. Animal health and welfare risk assessment
2. Animal health and welfare records management
3. Animal health and welfare training needs analysis

The use of 'human centred' design thinking principles as part of the stakeholder engagement was a successful approach to gaining stakeholder trust and facilitated free flowing information gathering. The combination of qualitative and quantitative research enabled the collection of diverse stakeholder perspectives.

A total of 36 stakeholders were consulted across the livestock export supply chain, of which 12 participated directly in interviews. While these contacts provided valuable insights, many indicated they were employed at a management level. As a result, additional stakeholders with roles involving frontline, animal handling and welfare responsibilities were identified and included in the interviews.

4. Results

There was consensus from stakeholders that improved disease and condition identification skills was the most important area to address. Multiple risks were identified by stakeholders (particularly at the supervisory level) where animal loading and unloading activities occur, and they felt inadequate training in these sectors posed a likely or significant risk to the industry and to the wellbeing of the animals. However, different sectors of the supply chain placed emphasis on differing skills or priority areas.

Following are the key results for each supply chain sector, and a specific table summarising links between the risks identified, competency development needs, opportunities for training, and associated recommendation(s).

CONSEQUENCE	1 Unlikely	2 Possible	3 Likely	4 Highly likely	5 Certain
5 Critical					
4 Significant		Lack of knowledge of biosecurity risks	Elevated animal welfare risk during transportation (via truck) / Elevated animal welfare risk during loading/ offloading livestock	Lack of injury/illness identification capability	
3 Major			Equipment not 'fit-for-purpose' – risks to humans & livestock	Staff turnover impacting knowledge retention	
2 Moderate		Insufficient animal handling skills	Risk of low adoption of lengthy reference materials (e.g., legislative documents)	Difficulties in evaluating training effectiveness	
1 Minor		Inability to recognise & understand 'cultural nuances'		Existence of outdated training resources / Inability to access data from other sectors	Difficulties in tracking training participation & completion

LIKELIHOOD

Figure 1 – Risk heat map

KEY

- Low risk
- Moderate risk
- High risk
- Critical risk

4.1. Production sector

4.1.1. Increased focus upon injury/illness identification capability

Feedback from producers clearly acknowledged that injury/illness identification was a specific area warranting greater training and capability development for staff. This feedback was reiterated by stakeholders in other sectors as a need across the livestock export supply chain. Competencies encompassing 'awareness' and/or 'observation' skills were identified by producers as being two of the most effective ways of recognising injured, and/or potentially sick animals. Producers and stakeholders across all sectors of the supply chain stated that injuries or conditions such as 'pink eye,' 'respiratory' problems, and leg injuries were overlooked on several occasions. Consequently, an inability to detect conditions and/or injuries has an adverse impact upon the health and welfare of animals.

To overcome the prevalence of this risk, producers reiterated the importance of staff having experience working with livestock. This was particularly important within the context of ensuring that animals were managed in an appropriate manner to minimise stress. Stakeholders reported that the use of low stress handling techniques minimised the potential for animals to develop certain conditions or be subjected to injuries.

4.1.2. Staff turnover/retention of knowledge/ability to access skilled labour

The onset and lingering impacts of COVID-19 were identified as a unique and ongoing challenge. Specifically, travel restrictions imposed by state and federal governments alike resulted in the inability to attract qualified, experienced staff from interstate. In an industry where the nature of employment is highly transient, this was identified to be a significant issue. To compensate for lost knowledge due to staff turnover, access to information repositories and sources was considered important to ensure that workers in training could gain the knowledge required to fulfil their obligations and deliver good animal welfare outcomes.

4.1.3. Access to information on animal health and welfare throughout other sectors

Feedback received from producers suggested that access to animal health and welfare performance reporting would be beneficial. This would enable producers to access information tracking health and welfare outcomes for animals at subsequent stages of the livestock export supply chain. Currently, no mechanisms for providing such information or feedback loops exist. This was considered preferable because not all health and welfare issues are immediately visible. As a result, animals may develop injuries and/or diseases further down the supply chain which may have originated while in the producers' care. Consequently, adopting practice change to prevent animal welfare issues down the supply chain is difficult. The following table highlights the relationship between the competency needs, risks, and associated recommendations.

Table 2 – Relationship between needs, risks, and recommendations for production sector

ISSUE	COMPETENCIES/SKILLS	RISK	RECOMMENDATION(S)	TIER
Lack of injury/illness identification capability	**Individual effectiveness** *Observation skills* **Compliance** *Using correct animal handling procedures*	High risk	Development of additional courses focusing on how to correctly identify animal illnesses and injuries. Course completion could be recorded online via a centralised industry hub.	Tiers 1 & 2

ISSUE	COMPETENCIES/SKILLS	RISK	RECOMMENDATION(S)	TIER
	Preparedness to learn *Willingness to acquire knowledge and skills* **Compliance** *One aspect of working towards becoming an 'EOC' is ensuring that all legislative requirements are observed*			
Staff turnover impacting retention of knowledge	**Compliance** *One aspect of working towards becoming an 'EOC' is ensuring that all legislative requirements are observed*	**High risk**	Establishing criteria for current and prospective employers to clearly understand requirements for becoming an EOC. Once criteria established, communicate via industry forums and the extension/ adoption plan.	Tier 1
Inability to access data from other sectors	**Compliance** *Producers understanding whether livestock have been correctly managed leaving property*	**Moderate risk**	Development of formal mechanism for other sectors to provide feedback to producers.	Tier 2

4.2. Transport sector

4.2.1. Increased focus upon injury/illness identification capability

The requirement for truck drivers to comply with 'Fit to Load' standards, as well as having the appropriate knowledge and skills to effectively identify and mitigate the risk of injury to animals was acknowledged as a risk by this sector. This was especially relevant considering the labour-intensive process of loading and offloading significant numbers of animals. The potential for animals to sustain injuries due to a fall or to become unwell while in transit were also valid considerations.

4.2.2. Increased animal handling training/general welfare knowledge

Truck drivers stated that improved animal handling skills would achieve better outcomes in the following situations:

- Improving the understanding of the appropriate use of 'prodding' devices and the process of loading/unloading livestock.
- Assisting truck drivers to recognise ideal times and conditions throughout the day to handle and transport livestock. Avoiding the heat was identified as an important aspect of future training initiatives.

While having access to online training materials was discussed, it is important to note that some truck drivers openly acknowledged they were not technologically literate. Additionally, stringent time constraints and driving through remote areas with little/no internet access were also raised as potential barriers. In line with these barriers, developing the basic technological capabilities of these stakeholders may be an opportunity for consideration.

Truck drivers revealed how the primary source of information relating to animal welfare stemmed from an informal, 'buddy' system. The buddy (or mentoring) system relied upon partnering younger, less experienced staff with senior personnel. Truck drivers consulted believed this was an effective way for less experienced drivers to learn the practical skills associated with the role. Teamwork, preparedness to learn, and individual effectiveness are all important hallmarks critical to the success of the buddy system. Despite the individual nature of a truck driver's role, each driver commented on the 'unspoken' agreement that drivers had with one another to stay behind and help to load or unload other trucks in instances whereby multiple trucks were present at the same premises (where possible).

4.2.3. Provision of summaries to assist with understanding legislative updates

Truck drivers discussed how the provision of summaries detailing any legislative updates to animal health and wellbeing would be beneficial to them. Drivers rely on their managers to distribute such information. In an industry which is heavily regulated, the provision of brief, user-friendly summaries detailing regulatory changes or updates was highlighted as potential opportunity to improve compliance standards. These summaries could also be developed across multiple formats including, but not limited to, online resources and printed materials. Using their smart phones, stakeholders who were comfortable accessing online materials could potentially review these by scanning a QR code.

Similarly, a preparedness to learn and undergo learning and skills acquisition was highlighted throughout an industry which is constantly evolving and subject to legislative changes. Discussions with truck drivers revealed a strong commitment to learn and develop new skills.

Table 3 – Relationship between needs, risks, and recommendations for transport sector

ISSUE	COMPETENCIES/SKILLS	RISK	RECOMMENDATION(S)	TIER
Lack of injury/illness identification capability	**Individual effectiveness** *Observation skills* **Compliance** *Using correct animal handling procedures* **Preparedness to learn** *Willingness to acquire knowledge and skills*	**High risk**	Development of additional courses focusing on how to correctly identify animal illnesses and injuries. Course completion could be recorded online via a centralised industry hub.	Tiers 1 & 2
Elevated animal welfare risk during transportation (via truck)	**Compliance** *Using correct animal handling procedures* **Individual effectiveness** *Driving skills*	**High risk**	Educating truck drivers to correctly identify the optimal time(s) of day to load/unload animals.	Tiers 1 & 2

ISSUE	COMPETENCIES/SKILLS	RISK	RECOMMENDATION(S)	TIER
Elevated animal welfare risk during loading/offloading livestock	**Compliance** *Using correct animal handling procedures*	**High risk**	Educating truck drivers on how to appropriately handle and manage livestock. Particularly, with respect to the use of 'prodding' equipment.	Tiers 1 & 2
Risk of low adoption of lengthy reference materials (e.g., legislative documents)	**Compliance** *Awareness of, comprehension, and ability to comply with legislative changes*	**Moderate risk**	Translating complex legislation into user-friendly summaries (e.g., podcasts, digital summaries).	Tier 2

4.3. Exporter sector

4.3.1. Staff turnover/transfer/retention of knowledge

A high level of staff turnover was identified, which meant that the ability to retain knowledge specific to animal health and welfare was challenging. Specifically, the time and/or expense involved with attracting and training new staff was a significant cost to organisations. To compensate for lost knowledge due to staff turnover, access to information repositories and sources was considered important to ensure that workers in training could gain the knowledge required to fulfil their obligations and deliver good animal welfare outcomes.

4.3.2. Evaluation of training effectiveness/tracking training participation and completion

The difficulty in tracking training completion was communicated as a challenge in this sector. When training completion was confirmed, evaluating the success of training interventions, and the competency of employees was also stated by stakeholders as an issue throughout the export sector. Currently, nothing more sophisticated beyond the use of simple participant surveys provided at the end of a course exists, thus additional measures reporting on overall effectiveness, and the return on investment of training warrants further investigation.

Table 4 – Relationship between needs, risks, and recommendations for exporter

ISSUE	COMPETENCIES/SKILLS	RISK	RECOMMENDATION(S)	TIER
Staff turnover impacting knowledge retention	**Preparedness to learn** *Willingness to acquire knowledge and skills*	High risk	Development of knowledge repository to ensure that valuable knowledge and skills are not lost.	Tiers 1 & 2
Difficulty in tracking training participation and completion	**Compliance and administration** *Inability to track/audit completion rates of training*	Moderate risk	Implementation of a 'centralised' industry hub. Completion rates and effectiveness could be recorded.	Tier 1

4.4. Registered Enterprises (RE) sector

4.4.1. Increased focus upon injury/illness identification capability

The possibility for livestock to develop injuries and/or contract diseases was an issue identified throughout the registered enterprises sector. Stakeholder feedback confirmed the importance of being able to identify early warning signs and/or symptoms for various conditions and injuries.

4.4.2. Increased animal handling training /general welfare knowledge

Stakeholders reiterated how most of the training was conducted 'on-the-job.' The absence of (or access to) formal training to be able to competently handle animals, and/or understand changing health and welfare requirements is an issue representing risks to good animal health and welfare outcomes.

4.4.3. Staff turnover/transfer/retention of knowledge

Staff turnover was also identified as being an issue. The transient nature of the workforce often meant that staff relocated interstate, subject to the season and/or availability of employment. For employers, this meant it was challenging to retain the services of skilled labour which resulted in the loss of animal welfare and handling knowledge. To compensate for lost knowledge due to staff turnover, access to information repositories and sources was considered important to ensure that workers in training could gain the knowledge required to fulfil their obligations and deliver good animal welfare outcomes.

Table 5 – Relationship between needs, risks, and recommendations for the Registered Enterprise sector

ISSUE	COMPETENCIES/SKILLS	RISK	RECOMMENDATION(S)	TIER
Lack of injury/illness identification capability	**Individual effectiveness** *Observation skills* **Compliance** *Using correct animal handling procedures*	High risk	Development of additional courses focusing on how to correctly identify animal injury/illness. Course completion could be recorded online via a centralised industry hub.	Tiers 1 & 2

ISSUE	COMPETENCIES/SKILLS	RISK	RECOMMENDATION(S)	TIER
	Preparedness to learn *Willingness to acquire knowledge and skills*			
Staff turnover impacting knowledge retention	**Preparedness to learn** *Willingness to acquire knowledge and skills*	**High risk**	Development of knowledge repository to ensure that valuable knowledge and skills are not lost.	Tiers 1 & 2
Insufficient animal handling skills	**Compliance** *Using correct animal handling procedures* **Preparedness to learn** *Willingness to acquire knowledge and skills*	**Moderate risk**	Development of courses to ensure that staff receive appropriate training to manage animals. Development of knowledge repository to ensure that valuable knowledge and skills are not lost.	Tier 2

4.5. Port (stevedores) sector

4.5.1. Increased focus upon injury/illness identification capability

Stevedores have close contact with livestock, which can raise the risk of animals and humans sustaining an injury. This risk is elevated during the process of loading and unloading. The ability for stevedores to correctly identify cases where animals are unfit to load was highlighted by stakeholders. This was particularly the case with animals that had developed an illness or injury prior to arrival at the port.

4.5.2. Risks to animals/humans – loading and offloading

Stakeholders identified the need to be able to identify and create awareness of risks to staff and animals while loading and offloading livestock. For example, use of outdated equipment no longer fit for purpose increased the prospect of an accident occurring. Stakeholders revealed that existing equipment provided by the port (in some cases) was no longer fit for purpose and it was important for newer staff to identify risks associated with its use and alert the appropriate people to rectify the issue.

During conversations with stevedores, the issue of safely recapturing livestock which escape was also raised. While stakeholders reported that this was not a regular occurrence, the resulting stress caused to animals was highlighted as being significant. Interruptions to the process of loading and/or unloading may result in a heightened degree of unpredictable behaviour from livestock. Such behaviour has the potential for animals to react, leading to an increased likelihood of physical injuries.

4.5.3. Access to formalised training opportunities off the job

Stevedores relied on the informal approach to on-the-job training referred to as 'buddying.' Stakeholders highlighted how very few options for additional training existed beyond this informal approach. Despite this, stevedores displayed strong enthusiasm to participate in additional training. The implementation of

online training, whereby staff could undertake self-paced learning, would enable stevedores to undertake training outside of working hours.

Table 6 – Relationship between needs, risks, and recommendations for the port (stevedores) sector

ISSUE	COMPETENCIES/SKILLS	RISK	RECOMMENDATION(S)	TIER
Lack of injury/illness identification capability	**Individual effectiveness** *Observation skills* **Compliance** *Using correct animal handling procedures* **Preparedness to learn** *Willingness to acquire knowledge and skills*	High risk	Development of additional courses focusing on how to correctly identify animal diseases. Course completion could be recorded online via a centralised industry hub.	Tiers 1 & 2
Equipment not 'fit-for-purpose' – risks to humans and livestock	**Compliance** *Ensuring that WHS obligations are strictly adhered to. Minimises risk of injury to both humans and livestock.*	High risk		Tiers 1 & 2
Staff turnover impacting knowledge retention	**Preparedness to learn** *Willingness to acquire knowledge and skills*	High risk	Development of knowledge repository to ensure that valuable knowledge and skills are not lost.	Tier 1

4.6. Shipboard transport sector

4.6.1. Increased focus upon injury/illness identification capability/animal handling skills

Identification of disease, injury, and health conditions was a feature during discussions with LiveCorp Accredited Stockpersons and Australian Accredited Veterinarians (AAVs). Participants commented on the philosophy of prevention rather than cure being an important aspect to maintaining good animal welfare outcomes. Stakeholders reiterated the importance of having appropriate animal handling knowledge, skills, and capabilities. Feedback was received indicating that some on-board crew or animal handlers lacked relevant industry experience which raised animal welfare risks during ship journeys.

The importance of accounting for variations in animal behaviour was also discussed in terms of animal handling. It was reported that handling some breeds of cattle was likely to be more challenging than others. This was believed to be a result of the conditions and environment from where animals came from, and how comfortable animals were with human contact. This was particularly the case for exports of Australian cattle to destinations including Indonesia.

4.6.2. Importance of 'cultural nuances'

Accounting for cultural nuances was identified as being significant. Specific terminology may have different connotations in different cultures. Updates to existing, and/or the development of new training materials

would need to consider the appropriateness of language used. For example, animal "wellbeing" often has a different connotation and may not be appropriate to use within the context of animal health and welfare. The importance of recognising cultural nuances was also reiterated by one of the participants at the LEP RD&E Program's AAV forum.

The ability to communicate and work effectively with people from diverse cultures is an important part of the livestock export supply chain. Cross cultural communication, particularly on board ships was identified on several occasions by stakeholders as being important. Working with individuals from diverse cultures at times presented linguistic challenges. Stakeholders also commented on the importance of body language and how this can be interpreted (or misinterpreted) across different cultures.

4.6.3. Educating stakeholders to improve communication skills/ conflict resolution/facilitating behavioural change

On multiple occasions, stakeholders mentioned that some vets did not consider the knowledge and advice of experienced stockpersons. Specific advice in terms of what to feed livestock, and how to cool them down throughout warmer temperatures was at times disregarded, for instance.

Table 7 – Relationship between needs, risks, and recommendations for the shipboard transport sector

ISSUE	COMPETENCIES/SKILLS	RISK	RECOMMENDATION(S)	TIER
Lack of injury/illness identification capability	**Individual effectiveness** *Observation skills* **Compliance** *Using correct animal handling procedures* **Preparedness to learn** *Willingness to acquire knowledge and skills*	**High risk**	Development of additional courses focusing on how to correctly identify animal diseases. Course completion could be recorded online via a centralised industry hub.	Tiers 1 & 2
Inability to recognise and understand 'cultural nuances'	**Individual effectiveness** *Observation and communication skills* **Preparedness to learn** *Willingness to acquire knowledge and skills*	**Low risk**	Development of courses to facilitate awareness of and understanding of cultural nuances/differences.	Tiers 1 & 2

4.7. Government agencies

4.7.1. Increased focus upon injury/illness identification capability

The ability to identify diseases correctly and appropriately was highlighted during consultation with the Department of Agriculture, Fisheries and Forestry (DAFF). While nothing was mentioned that hadn`t previously been identified, it does emphasise the significance of this issue throughout the livestock export supply chain.

4.7.2. Risks to animals/humans – loading and offloading

Correctly and safely ensuring that animals were loaded and offloaded was also identified. Specifically, this issue was perceived as one of the primary reasons why animals incurred physical injuries. If an animal incurred an injury during the process of boarding a vessel, it was noted that sometimes this went unnoticed due to the significant volume of animals involved. DAFF highlighted that time pressures loading and unloading livestock at various points throughout the supply chain do increase the likelihood of health and welfare risks.

4.7.3. Improved animal handling training/general welfare knowledge

An uplift in animal handling knowledge/skills was noted during discussion with DAFF. Stevedores located in certain locations may not have had sufficient opportunities throughout the year to work with livestock. This was particularly the case with stakeholders located in Fremantle, Western Australia, as the number of shipments leaving this port was limited.

Table 8 - Relationship between needs, risks, and recommendations for government agencies

ISSUE	COMPETENCIES/SKILLS	RISK	RECOMMENDATION(S)	TIER
Lack of injury/illness identification capability	**Individual effectiveness** *Observation skills* **Compliance** *Using correct animal handling procedures*	High risk	Development of additional courses focusing on how to correctly identify animal injury/illness. Course completion could be recorded online via a centralised industry hub.	Tiers 1 & 2
Elevated animal welfare risk during loading/offloading livestock	**Compliance** *Using correct animal handling procedures*	High risk	Development of additional courses focusing on how to correctly identify animal injury/illness. Course completion could be recorded online via a centralised industry hub.	Tiers 1 & 2

4.8. In-market sector

4.8.1. Increased focus upon disease identification capability

Disease identification was reported as an important issue in-market. Stakeholders reiterated the importance of staff having the appropriate level of knowledge, skills, and capabilities to ensure that they were firmly abreast of new treatments, outbreaks, and/or research.

4.8.2. Increased focus upon livestock handling/understanding animal behaviour

Stakeholders believed that livestock handling and interpreting animal behaviour were both issues. The ability to understand the nuances and different characteristics between various breeds of cattle was identified as a weakness. In Indonesia for example, one stakeholder commented that the same skills and competencies required to handle shipments of Australian cattle were vastly different to domestic livestock. Domestic cattle in Indonesia were used to having regular interaction with humans, while Australian cattle were highly unpredictable, having in most circumstances limited prior contact with human beings. As a

result, Indonesian staff required a more broadly developed skillset to successfully manage Australian cattle shipments. This was highlighted as a potential risk in terms of the health and welfare of animals and staff.

'Aggressive' handling was also identified throughout feedback. Specifically, the willingness in some circumstances to rely on the overuse of prods and/or other potentially dangerous instruments to move livestock was linked to an increased risk of injury. It was also observed how, by imposing increased stress, this could consequently lead to animals losing weight.

4.8.3. Currency and relevance of existing training materials

In-market stakeholders referred to outdated training materials. In some instances, it was mentioned how training materials had not been updated or revised for more than a decade. One consistent theme throughout discussions with stakeholders was a need to reflect changes and update best practices. Out of date materials can also potentially be a deterrent for training future staff.

4.8.4. Staff turnover/transfer/retention of knowledge

High levels of staff turnover were also identified, for instance as a serious issue in Indonesia. An in-market stakeholder indicated that three staff occupying supervisory positions were responsible for monitoring over 300 sites. Time to train staff was estimated at 12 months. Once training was completed, stakeholders believed that staff (on average) remained in their roles for 6 to 12 months. This represented significant turnover and re-training costs. Retaining animal health and welfare knowledge over extended periods remained a challenge.

4.8.5. Evaluation of training effectiveness/tracking training participation and completion

The difficulty of evaluating the success of training interventions and the competency of employees was a recurring theme during stakeholder engagement. The inability to track, measure and evaluate the success of specific training initiatives was identified by several stakeholders. Beyond simple surveys provided at the end of a course, overall effectiveness, and the return on investment of training warrant further investigation.

Table 9 - Relationship between needs, risks, and recommendations for the in-market sector

ISSUE	COMPETENCIES/SKILLS	RISK	RECOMMENDATION(S)	TIER
Lack of injury/illness identification capability	**Individual effectiveness** *Observation skills* **Compliance** *Using correct animal handling procedures* **Preparedness to learn** *Willingness to acquire knowledge and skills*	**High risk**	Development of additional courses focusing on how to correctly identify animal diseases. Course completion could be recorded online via a centralised industry hub.	Tiers 1 & 2
Insufficient animal handling skills	**Individual effectiveness** *Observation skills* **Preparedness to learn** *Willingness to acquire knowledge and skills*	**Moderate risk**	Development of module(s) to facilitate capability uplift in understanding how to interpret and respond to differences in animal behaviour.	Tiers 1 & 2

ISSUE	COMPETENCIES/SKILLS	RISK	RECOMMENDATION(S)	TIER
Existence of outdated training resources	**Preparedness to learn** *Willingness to acquire knowledge and skills* **Compliance** *Ensuring that training materials reflect best practice*	Moderate risk	Review and update of outdated resources.	Tiers 1 & 2
Staff turnover impacting knowledge retention	**Preparedness to learn** *Willingness to acquire knowledge and skills*	High risk	Investment in an industry hub to accurately record participation in training, knowledge and skill acquisition, and requirements for future development.	Tiers 1 & 2

5. Conclusions

Analysis of the research and stakeholder feedback reveals existing risks to animal health and welfare outcomes if not addressed. Initially, the perception across the supply chain was that most risks were evident in land transport. Research findings have identified that these risks are spread across all sectors in the supply chain. The identification and assessment of risks also highlighted opportunities to mitigate these threats. Project recommendations have been developed in direct response to these opportunities, to deliver uplifts in training and improved animal welfare and handling outcomes.

The project has delivered the following key resources that underpin investment into future research:

- Competency profile for each sector, by key roles.
- Training plan for each sector, by key roles.

6. Future research and recommendations

6.1. Tier 1 - Strategic

6.1.1 Implementation of a 'Standards of Competency' program for industry

One of the key deliverables of this project has been to undertake an industry training needs analysis to identify core animal handling and animal welfare competencies across key roles in each sector of the supply chain. These competencies have been captured in the 'Competency Profile' matrix. With the completion of the project, it stands to reason that the next step in the extension process is to implement these competencies as endorsed standards within industry. MINTRAC proposes that these core competency standards be positioned as an industry 'benchmark' for adoption. While not a mandate, LiveCorp can influence employers to adopt these standards into their job description documents, highlighting alignment with industry best practice. This will drive consistency in the competencies being developed in animal welfare and handling roles. Employers can use alignment to the standards to attract new talent to their organisations by demonstrating a commitment to best practice and employee training. Attainment of the skills and competencies outlined in the standard can then feed into a 'Continual Professional Development' (CPD) program for industry.

6.1.2 Development of an industry 'Learning Hub'

Being able to direct industry learning and track activity can be achieved by creating a centralised location for training. A 'Learning Hub' that becomes the industry's learning management centre is critical to supporting a CPD framework that can be tracked and monitored. Establishment of a Learning Hub will deliver the following benefits for industry:

- The Learning Hub will become the access point for employees to undertake CPD training. The portal can record and track training and inform employees how they are progressing towards achieving their CPD learning requirements.
- When customised, the Hub can allow employees to view training program offerings, enrol in training programs, access course completion certificates, and view the learning records of their historical course completion.
- Training program offerings will be those programs captured in the MINTRAC developed Training Plans, which are a component of the MINTRAC developed Competency Profiles for each key role across each sector. This design forms the core of the CPD program.
- Both nationally accredited and non-accredited training program offerings will be accessible in the portal. Non-accredited training program providers can be contracted to report on program enrolments and completion data as a reward for having their programs promoted in the industry portal. This will enable adoption and take up data to be tracked, addressing a key flaw in the current training delivery model.

6.1.3 Development of a Continuous Professional Development framework for all industry sectors

The current state 'decentralised' model for industry training makes it difficult (if not impossible) to track training delivery and completion data. Stakeholder feedback confirmed this as a key blocker for driving training uptake. By decentralised, MINTRAC means that there is no centralised function or source that tracks enrolments and completion of training across a multitude of training programs, which are being delivered by various training providers, and with no sharing of training completion and outcome data. The

introduction of a Continuous Professional Development (CPD) framework can achieve (for example) the following benefits for industry:

- The premise of a CPD program is to stipulate a set amount of training hours or content that an employee must undertake, usually throughout a set period. This ensures that employees remain competent in both the knowledge and skills to perform specific types of roles. In this case, any role responsible for animal handling and animal welfare.
- CPD programs direct and guide employees (in specific roles) to undertake and pursue training activities which are aligned to best practices and industry standards. A component of the Competency Matrix developed by MINTRAC is a training plan for each key role across the supply chain. Assigning CPD hours or credits for undertaking industry endorsed programs will drive consistency in training activity and can align to the industries defined 'Core Standards of Competency.'
- By virtue of creating a CPD framework, a more centralised model for training can be created by the endorsement of training programs that will be undertaken. Training providers can then also be engaged/contracted to share training program enrolment and completion data which are the critical insights needed to measure training uptake and adoption.

Existing CPD frameworks throughout other industries/professions including Learning and Development, Insurance Broking, and/or Chartered Accountancy are structured based on members accruing a minimum number of hours and/or points per annum. Specific courses, conferences, and other programs will usually attract a certain number of points upon successful completion. Similarly, as part of the Veterinary profession in Australia, the Australasian Veterinary Boards Council (AVBC) and the Australian Veterinary Association (AVA), require a minimum of 60 CPD points must be attained over a consecutive three-year cycle. (AVA, 2021).

6.1.4 Development of an industry 'Employer of Choice' (EOC) concept

The concept of 'Employers of Choice' is not new and is well recognised. EOC programs revolve around several key characteristics, one of which is an organisation's commitment to and investment in employee training. MINTRAC sees an opportunity for the livestock export industry to develop an EOC initiative that engages livestock export employers, and drives excellence in industry training, particularly in the animal welfare and animal handling space. Stakeholders throughout each sector of the supply chain reported how attracting and retaining employees was challenging. While anecdotal, the veracity of this feedback is supported by the current shortage of skills reported nationally by employers. The introduction of an EOC program would assist by creating an 'Employee Value Proposition.' That is, employers could leverage their status as an EOC to attract the most suitably qualified and experienced candidates. Furthermore, an EOC program might encourage employers to promote industry training and embrace an industry CPD program. An element of the EOC concept could be the introduction of Annual Training Awards which recognise employer excellence and investment in animal welfare and animal handling training.

6.2. Tier 2 - Tactical

6.1.5 Opportunity to update/digitise/summarise existing materials

Where important resources are voluminous and/or potentially outdated, the opportunity to update the content is also pertinent. This is particularly the case with existing legislation and/or regulations. Developing relevant, easily accessible summaries of important legislative principles is important for

stakeholders throughout the entire supply chain. Currently, the complexity of having a myriad of applicable legislation and/or regulations is exacerbated by the fact it is also subject to a stakeholder's location (jurisdiction). Furthermore, the currency of existing materials is an issue which must be addressed.

6.1.6 Opportunity to consolidate and digitise courses focusing upon legislative awareness

Legislative compliance is an inherent requirement throughout all sectors of the supply chain. Currently, the voluminous and complex nature of these documents often inhibits stakeholders from understanding their responsibilities. Specifically, the opportunity to digitise what is most relevant for stakeholders throughout each sector would lead to an overall uplift in capability. Introducing brief, micro-learning modules tailored to the needs of stakeholders would also assist with the retention of knowledge. Additionally, ensuring that the equivalent resources were made available in hard copy format is important. Some stakeholders may not have regular access to, nor be conversant with using mobile devices to acquire new knowledge and skills.

6.1.7 Opportunity to develop tailored courses Stage 1

In line with stakeholder feedback based on their emerging needs, there is clear demand for the development of several new industry training programs that will support both animal welfare and animal handling capability. The top five for immediate program development opportunities are:

- **Animal handling** – The development of training to ensure different livestock species are correctly handled. Feedback indicates that animals from different regions display different behaviours and characteristics, and as such, (may) require different handling skills/techniques.
- **Development of modules to assist with injury/illness identification** – Feedback suggests the need for better industry education in injury/illness identification which is fundamental to achieving good animal welfare outcomes.
- **Development of a 'shipboard crew induction' program** - Leveraging virtual reality and immersive technology so that shipboard staff can be better prepared for the realities of life on board prior to their first voyage. A large component of this is addressing the challenges of animal handling and welfare in confined spaces and varying temperatures.
- **Legislative compliance** – Development of bespoke micro-learning modules to enable easier digestion of complex and lengthy legislative and standards documentation. This could also include the development of simplified and shortened legislative/standards guides for printing.
- **Work Health and Safety** – Feedback indicated a need for training in correct use of safety equipment, understanding stockpersons' rights, and greater preparation for conditions on board.

6.1.8 Opportunity to develop courses not currently available Stage 2

While also important, development of the below courses may also be considered at a later stage:

- **Development of cultural awareness/sensitivity courses** – Feedback suggests there is value for shipboard staff working in multicultural environments to understand cultural nuances, e.g., regional views on animal handling, plus customs, practices, and behaviours of multicultural workforces.
- **Development of an 'climate change impacts on animal welfare' training program for transportation sectors** - There is mounting evidence that global warming and climate change are influencing animal welfare outcomes.

- **Development of mental health courses** - Greater degree of emphasis upon resilience, self-awareness, and isolation particularly for shipboard staff operating in challenging environments.
- **Development of customised 'soft-skills' courses** – Tailored courses focusing upon the importance of skills encompassing time management, resilience, observation, and effective communication.

6.3. Extension and adoption plan

Implementing the outcomes and recommendations from this project will improve the uplift and adoption of animal health and welfare training across the livestock export supply chain.

Table 10 – Proposed extension activities and adoption indicators

EXTENSION ACTIVITIES	ADOPTION INDICATORS
- Conduct industry briefings and engage forums/ networks to promote the existence of the competency and training plan - Target industry HR and training leaders with communications to raise awareness - Promote/advertise training vendors/offerings in one centralised industry Learning Hub - Implement industry CPD program to uplift program enrolments and uptake of training - Industry wide promotion of 'Employer of Choice' program - Launch an Awards program recognising employers' commitment to training - Link CPD hours to uplift compliance training enrolments - Simplify complex regulations tailored to the needs of the supply chain - Develop compliance training micro-learning modules - Develop training offerings to address 'gaps' - Promote federal/state-based training funding schemes during industry briefings - Invite government funding agencies (federal and state) to attend industry forums providing training funding information - Careers expos to promote accredited and non-accredited training	- Monitor industry briefing attendance - Track accredited learning enrolment and program completion data (where possible) - Monitor and report on participation in CPD programs - Track employers who opt into the Employer of Choice program - Leverage LIVEXCollect data to track non-compliant performance - Monitor/track welfare breach notices/data - Track industry Learning Hub analytics - Track funded courses, qualifications and skill set enrolment numbers to determine uptake - Online training engagement survey data - Track stockperson training enrolments

6.1.8 Communication channels

Several channels can be leveraged to engage with industry as follows:

Table 11 – Communications channels for the livestock export supply chain

CHANNEL	FREQUENCY	ENGAGEMENT METHOD
MINTRACker	Monthly/quarterly	Email
Social media	Monthly/quarterly	LinkedIn
LiveCorp website	Monthly/quarterly	Links from electronic newsletters
Targeted industry messaging	Quarterly	Direct email marketing
Peak industry councils	Quarterly	Industry newsletters, publications, conferences, events
Industry Forums e.g., LC/MLA forums	Monthly/quarterly	Face-to-face/virtual events
Industry 'Learning Hub'	Monthly	Website portal

7. References

Australian Government Australian Animal Welfare Standards and Guidelines. [Accessed on 31 January 2021]; Available online: https://www.agriculture.gov.au/animal/welfare/standards-guidelines.

Australian Government. Australian Standards for the Export of Livestock 3.2. Department of Agriculture, Water and the Environment, Australian Government; Canberra, Australia: 2021. https://www.agriculture.gov.au/biosecurity-trade/export/controlled-goods/live-animals/livestock/australian-standards-livestock

Continuing Professional Development. Australian Veterinary Association. Available online: https://www.vpb.nsw.gov.au/continuing-professional-development [Accessed on 30 March 2021].

Fleming, P. A., Wickham, S. L., Barnes, A. L., Miller, D. W., & Collins, T. (2020). Varying Opinions about Animal Welfare in the Australian Livestock export Industry: A Survey. Animals, 10(10), 1864. https://doi.org/10.3390/ani10101864

Fleming PA, Wickham SL, Dunston-Clarke EJ, Willis RS, Barnes AL, Miller DW, Collins T. Review of Livestock Welfare Indicators Relevant for the Australian Livestock export Industry. Animals. 2020; 10(7):1236. https://doi.org/10.3390/ani10071236

What are the Five Domains and How Do They Differ from the Five Freedoms? Available online: https://kb.rspca.org.au/knowledge-base/what-are-the-five-freedoms-of-animal-welfare/#references [Accessed on 20 October 2021].

8. Appendix 1 – Stakeholder surveys

8.1. Survey questions (supervisors and workers)

8.1.1. Uptake of training and animal health and welfare practices – supervisors

The first questions relate to current animal health and welfare issues and challenges confronting your business and throughout the industry more broadly.

1. Which sector does your business operate in throughout the livestock export supply chain?

- Producer
- Exporter
- Transport
- Registered Premises
- Port
- Other

2.Which of the following situations are you observing animal health and welfare risks? Please select all that apply

- Loading livestock
- Offloading livestock
- Transportation (In-transit via truck)
- Transportation (In-transit via sea)
- Other

3. In your role, what tasks do you believe pose the most risk to animal health and welfare?

4. In the broader industry, what activities, tasks or environments do you believe pose the most risk to animal health and welfare?

5. Which of the following interventions do you believe could minimise or avoid these risks? Please select all that apply.

- Correct use of ramps
- Reducing animal movement throughout transportation
- Using non-slip ramps/surfaces
- Appropriate temperature conditions
- Appropriate vehicle capacity for livestock
- Correct handling of animals
- Other

6. Over the last 12 months, which of the following processes has your business used to monitor animal health and welfare? Please select all that apply

- Random/frequent animal welfare checks
- Use of CCTV surveillance

- Increased ratio of staff to livestock
- Tracking and traceability systems
- Disease and data collection programs
- Other

7. Throughout the past 12 months, are there clear measures or evidence demonstrating an improvement in animal health and welfare outcomes in your business?

- Yes
- No
- Not sure

8. Please describe the measures or evidence which you believe illustrates the improved outcomes? Please provide as much detail as possible.

9. Have you implemented any animal health and welfare initiatives, training, or policies? If so, what improvements were seen?

Animal health and welfare records management:

The following questions relate to animal health and welfare records management.

10. How is animal health and welfare verified throughout your business?

11. What records or data collection systems are being used to track animal health and welfare issues?

12. What records or data collection systems are being used to monitor training or qualifications?

Animal health and welfare training:

The following questions specifically focus upon animal health and welfare training for your staff and yourself.

13. Have your staff ever participated in, or received any training related to animal health and welfare handling? If so, when did they complete this training?

- Yes - Please see below
- No
- Not sure

When did they complete this training?

- In the last month
- 1-3 months ago
- 4-6 months ago
- 7-12 months ago
- I`m not sure

14. If you currently provide training for your employees, do you rely on internal resources or do you engage external consultants/providers?

- Internal employees
- External consultants
- A combination of both
- Other

15. How often do you provide animal health and welfare training opportunities for employees?

- Weekly
- Monthly
- Quarterly
- Annually
- Other

16. Would you be interested in your staff participating in future animal health and welfare training initiatives?

- Yes
- No
- If no, why?

17. What was the most recent animal health and welfare training you undertook and when?

18. What types of animal health and welfare training would you like to participate in?

19. What's your preferred format for participating in future animal health and welfare training?

- Online/Webinars
- Face-to-face
- Blended learning
- Self-paced eLearning
- Hard-copy resources
- e-copy resources
- Other

20. What are some of the key areas future training initiatives in animal health and welfare should focus on?

- Biosecurity risks
- Injury/illness identification
- Knowledge of relevant legislation
- Livestock behaviour
- Livestock handling
- Other

21. Are you aware of any formal accredited or non-accredited courses currently available relating to certifications in animal health and welfare or animal transportation? If so, which ones?

22. What specific learning resources and reference materials relating to animal health and welfare do you require to successfully fulfill the requirements of your role? For example: online resources, knowledge of relevant legislation and standards.

23. Do you currently have access to these resources?

- Yes
- No
- If no, why?

24. Are there specific minimum requirements or qualifications that you expect of your staff, relating to animal health and welfare? If so, please provide details.

25. Are there any additional comments or feedback relating to animal handling and welfare you would like to provide?

26. Are you willing to participate as part of a further conversation to explore animal health and welfare?

- Yes
- No

8.1.2. Uptake of training and animal health and welfare practices – workers

The first questions relate to current animal health and welfare issues and challenges confronting your business and throughout the industry more broadly.

1. Which sector does your business operate in throughout the livestock export supply chain?

- Producer
- Exporter
- Transport
- Registered Premises
- Port
- Other

2. Which of the following best describes your role and responsibility in the business?

- Stock-handler
- Livestock Leading hand
- Feedlot Operator
- Truck Driver
- Export Agent/Rep
- Veterinarian
- Stevedore
- Graduate
- Stockwoman

- Operations officer
- Vessel crew (Ship)
- Flight and ground crew (Plane)
- Animal Welfare Officer
- Farmers
- Other

3. Which of the following situations are you observing animal health and welfare risks?

- Loading livestock
- Offloading livestock
- Transportation (In-transit via truck)
- Transportation (In-transit via sea)
- Other

4. In your role, what tasks do you believe pose the most risk to animal health and welfare?

5. In the broader industry, what activities, tasks or environments do you believe pose the most risk to animal health and welfare?

6. How could these risks to animal health and welfare be minimised or avoided? Please select all that apply.

- Correct use of ramps
- Reducing animal movement throughout transportation
- Using non-slip ramps/surfaces
- Appropriate temperature conditions
- Appropriate vehicle capacity for livestock
- Correct handling of animals
- Other

7. How is animal health and welfare currently monitored by your employer?

- Random/frequent animal welfare checks
- Use of CCTV surveillance
- Increased ratio of staff to livestock
- Tracking and traceability systems
- Disease and data collection programs
- Other

8. What changes throughout the supply chain do you feel would deliver improved animal health and welfare outcomes? Please provide as much detail as possible.

Animal health and welfare training:

The following questions specifically focus upon animal health and welfare training.

13. Over the last 12 months have you participated in, or received any training related to animal health and welfare handling?

- LiveCorp Stockpersons course
- LiveCorp ASEL 3.0 Training modules
- ESCAS Contractor Training course
- Livestock handling for cold winter climates (videos)
- No Training undertaken in the past 12 months
- Other

Was this training compulsory?

- Yes
- No
- Not sure

10. When did they complete this training?

- In the last month
- 1-3 months ago
- 4-6 months ago
- 7-12 months ago
- I`m not sure

11. How would you assess your current level of knowledge of animal health and welfare?

- Beginner/Developing
- Intermediate
- Advanced

12. Do you feel you have any knowledge gaps in animal health and welfare that need to be addressed?

13. What competencies/skills are required for effective animal health and welfare management?

14. What are some of the key areas future training initiatives in animal health and welfare should focus on?

- Biosecurity risks
- Injury/illness identification
- Knowledge of relevant legislation
- Livestock behaviour
- Livestock handling
- Other

15. What's your preferred format for participating in future animal health and welfare training?

- Online/Webinars
- Face-to-face
- Blended learning
- Self-paced eLearning
- Hard-copy resources

- e-copy resources
- Other

16. Are you aware of any accredited or non-accredited courses currently available relating to certifications in animal health and welfare, or animal transportation? If so, which ones?

17. What specific learning resources and reference materials relating to animal health and welfare do you require to successfully fulfill the requirements of your role? For example: online resources, knowledge of relevant legislation and standards.

Do you currently have access to these resources?

- Yes
- No

18. Are there any additional comments or feedback relating to animal handling and welfare you would like to provide?

19. Are you willing to participate as part of a further conversation to explore animal health and welfare?

- Yes
- No

8.2. Summary of survey responses

Table 12 – Responses from supervisors and workers summary

SECTOR REPRESENTED	POSITION	RISK OBSERVATION	MANAGING RISK	TRAINING PARTICIPATION (12 MONTHS)
Registered Enterprise	Stockperson	Transportation in trucks (in-transit)	Reducing animal movement on trucks	ESCAS Contractor Training course
Registered Enterprise	Stockperson	Offloading of animals	Appropriate temperature conditions Appropriate vehicle capacity for livestock	LiveCorp ASEL 3.0 Training modules ESCAS Contractor Training course
Other agricultural agency	Veterinarian	Loading of animals	Correct use of ramps Appropriate vehicle capacity for livestock	LiveCorp ASEL 3.0 Training modules ESCAS Contractor Training course

9. Appendix 2 – Stakeholders

Table 13 – Stakeholders consulted during project

ORGANISATION	SECTOR	INTERVIEW DATE
AUSTREX	Export	8/11/2021
Meat & Livestock Australia	In-market	9/11/2021
Independent animal welfare & husbandry advisor Market Development Manager – Asia Pacific	In-market	10/11/2021
AUSTREX	Export	11/11/2021
RETWA	Export	15/11/2021
Halleen	Export	18/11/2021
Australian Lot Feeders Association	Feedlot	19/11/2021
Livestock, Bulk and Rural Carriers Association NSW	Transport	1/12/2021
Frasers Livestock Transport	Transport	1/12/2021
Darwin Port	Port	6/12/2021
Emanuel Exports	Export	8/12/2021
Qube Ports	Port	9/12/2021
Qube Ports	Port	9/12/2021
Department of Agriculture, Water and the Environment (since changed to Department of Agriculture, Fisheries and Forestry)	Government agency	22/12/2021
Frasers Livestock Transport	Transport	23/12/2021
Frasers Livestock Transport	Transport	23/12/2021
Frasers Livestock Transport	Transport	23/12/2021
Frasers Livestock Transport	Transport	23/12/2021
Frasers Livestock Transport	Transport	23/12/2021
Frasers Livestock Transport	Transport	23/12/2021
LiveCorp Accredited Stockperson & Pen rider	Registered Enterprise	14/1/2022
LiveCorp Accredited Stockperson & Veterinarian	Transport	14/1/2022
AUSTREX	In-market (Indonesia)	19/1/2022
LiveCorp Accredited Stockperson	Shipboard Transport	24/1/2022
Independent	Shipboard Transport	24/1/2022

ORGANISATION	SECTOR	INTERVIEW DATE
Independent	Shipboard Transport	24/1/2022
Independent consultant/AAV	Government agency	31/1/2022
NorthStar Pastoral	Registered Enterprise	31/1/2022
Stock person	Registered Enterprise	31/1/2022
LiveCorp Accredited Stockperson & Veterinarian	Shipboard Transport	31/1/2022
Independent	Shipboard Transport	2/2/2022
Farmer/Owner	Producer	2/2/2022
Kimberley Pilbara Cattlemen's Association	Producer	2/2/2022
LiveCorp Accredited Stockperson	Shipboard Transport	9/2/2022
Halleen	In-market (Vietnam)	24/2/2022

10. Appendix 3 – Survey feedback on training topics

What are some of the key areas future training initiatives in animal health and welfare should focus on?
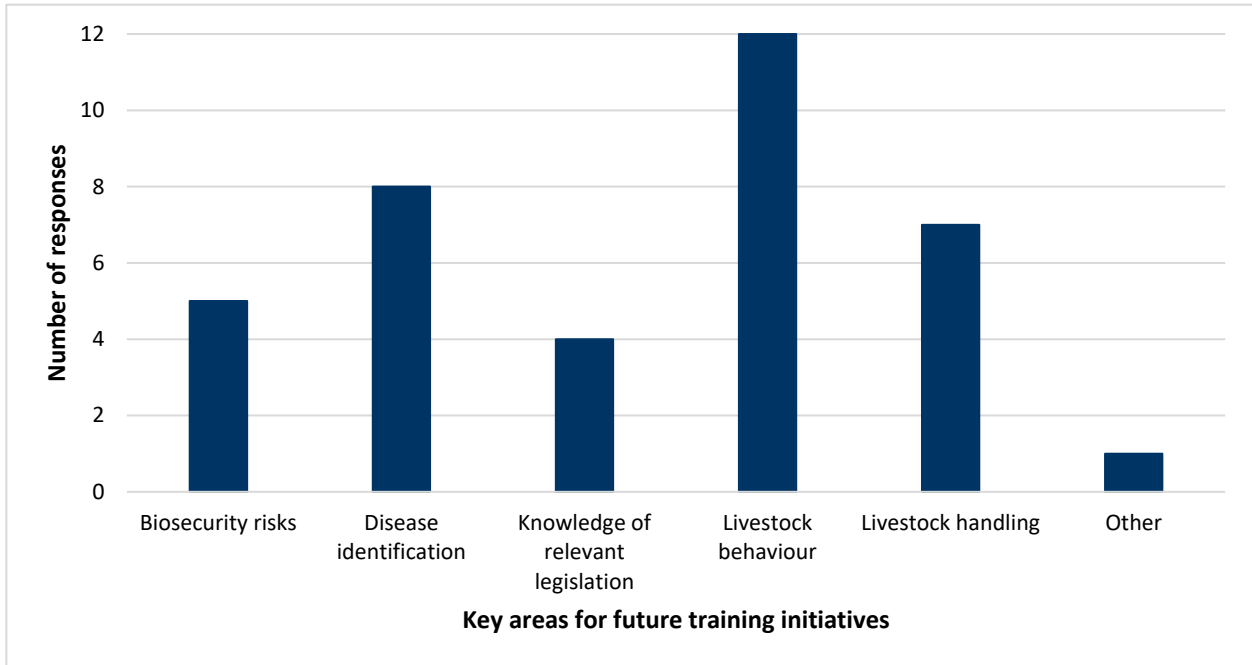

Figure 2 – Graph of the number of survey responses on the key areas for future training initiatives