

# final report

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## **Development of work instructions for the pre-slaughter and slaughter management of sheep and goats**

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## **Abstract**

The introduction of the new regulatory framework for livestock exports (Exporter Supply Chain Assurance System – ESCAS) has resulted in exporters being responsible for the well being of livestock from vessel discharge to slaughter. Animal welfare outcomes through the supply chain must be consistent with internationally recognised animal welfare guidelines (OIE). In order to help comply with the regulatory framework in July 2011 standard operating procedures (SOPs) were developed for the slaughter of cattle in overseas markets (W.LIV.0388). These SOPs are currently being implemented in Indonesian supply chains. In addition to the cattle SOPs, project W.LIV.0399 introduced a series of SOPs for the slaughter of sheep and goats. The purpose of this project was to develop effective and practical work instructions (WIs) to supplement the published SOPs for sheep and goats.

## **Executive summary**

In March 2010, an independent expert review of the animal welfare conditions for Australian cattle in Indonesia was commissioned by Meat & Livestock Australia (MLA) and LiveCorp. The expert panel identified three critical aspects significantly influencing animal welfare. These were:

- Animal management; including handling, nutrition and animal suitability
- Slaughter; including facilities and method of slaughter
- Animal welfare standards and their practical application

Project W.LIV.0388 developed and reviewed Standard Operating Procedures (SOPs) for the handling, transport, feedlotting and slaughter (with and without stunning) of Australian cattle in overseas markets. In addition to the cattle SOPs, project W.LIV.0399 introduced a series of SOPs for the slaughter of sheep and goats. The main conclusion from both projects was that the uptake and implementation of SOPs could be significantly improved by the introduction of supporting work instructions.

This project has successfully developed Work Instructions (WI) for each of the following key processes:

- WI 1: Use of livestock handling equipment
- WI 2: Restraint of animals using v-restraint devices
- WI 3: Slaughter procedures (no stun)
- WI 4: Emergency slaughter procedures
- WI 5: Selecting and maintaining knives for slaughter
- WI 6: Cleaning and maintaining electrical stunning equipment
- WI 7: Operating electrical stunning equipment
- WI 8: Identifying and managing ineffective stunning
- WI 9: Slaughter procedures (stunning)
- WI 10: Performing a livestock inspection
- WI 11: Handling escaped animals
- WI 12: Performing an inspection of facilities
- WI 13: Management of hospital pen facilities
- WI 14: Inspecting trucks and transport equipment
- WI 15: Monitoring water quality

The project concluded that the development and implementation of work instructions is likely to lead to continuous and sustainable improvement within the export industry by maximising the uptake of SOPs (incorporating OIE and DAFF requirements).

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## **Background**

The introduction of the new regulatory framework for livestock exports has resulted in exporters being responsible for the well being of livestock from vessel discharge to slaughter. Animal welfare outcomes through the supply chain must be consistent with internationally recognised animal welfare guidelines (OIE). In order to help comply with the regulatory framework in July 2011 standard operating procedures (SOPs) were developed for the slaughter of cattle in overseas markets (W.LIV.0388). These SOPs are currently being implemented in Indonesian supply chains. In addition to the cattle SOPs, project W.LIV.0399 introduced a series of SOPs for the slaughter of sheep and goats. The purpose of this project was to develop effective and practical work instructions (WIs) to supplement the published SOPs for sheep and goats.

## 1 Project objectives and methodology

The aim of the project was to develop and introduce a series of work instructions to support the existing Standard Operating Procedures (SOPs) for sheep and goats in overseas markets. Work instructions are an important component of an effective management system for the supply chain. They provide detailed written task instructions, reduce risk and serve as an effective training tool, leading to improved animal welfare outcomes, product quality and operator safety. The methodology adopted in the development of the work instructions was based on identifying and addressing the critical components of the SOPs. The work instructions were distributed by MLA through a number of networks both in Australia and the Middle East, including exporters, importers, feedlots and abattoirs. The objective of the project was to:

- Identify the components of the SOPs that are critical in achieving animal welfare outcomes
- Develop 15 identified work instructions to sufficiently cover the identified areas
- Perform in market observations and collect suitable photographic material for identified WIs
- Ensure that WIs align with the current SOPs for the pre-slaughter management and slaughter of Australian livestock overseas
- Incorporate the requirements of the DAFF Animal Welfare performance targets and measures and MLA Supply Chain Procedures Checklist
- Ensure that the work instructions meet the requirements of the OIE guidelines.
- Where relevant ensure WIs reflect minimum Australian standards
- Cross reference the WIs with SOPs and relevant MLA guidance material and indicate where supporting records are required
- Review and amend draft WIs after practical implementation in a feedlot/abattoir environment

It was important that the work instructions were produced in a visual format. The majority of workers in overseas markets speak English as a second language and visual documentation has been shown to overcome problems encountered when using English language text instructions. Work instructions that include the use of pictures with fewer words provide a very effective solution to potential problems with language and lead to more consistent training and assessment. The agreed format was a series of pictures used to depict a specific task, with documented steps listed alongside.

## 2 Results and discussion

Project W.LIV.0399 developed and reviewed SOPs for the handling, transport, feedlotting and slaughter (with and without stunning) of Australian sheep and goats in overseas markets. One of the main conclusions from this project was that the uptake and implementation of SOPs could be significantly improved by the introduction of supporting work instructions. During the implementation exercise (part of project W.LIV.0399: Review and revise a SOP for slaughter of Australian sheep and goats in overseas markets) it was found that the execution of the SOPs was reasonable during animal handling with most handlers displaying an acceptable level of competency. However, there still remained several processes that could be improved by the introduction of task specific instructions. This project aimed to fill the gap between the documented requirements of the

SOPs and the actual practice observed by the introduction of task-specific work instructions and guidance material. Work instructions ensure that personnel are provided with the information to perform an individual task correctly and consistently, whilst maintaining the required animal welfare outcome. They also provide a mechanism for practical training in the working environment and a tool for the assessment of competency.

Priorities for WI to improve welfare outcomes were identified as follows:

- Animal handling, use of handling equipment and handling escaped animals
- Use of restraint devices for stunning and slaughter without stunning
- Slaughter procedures, including knife techniques and assessment of brain death
- Electrical stunning, including use and maintenance of equipment and assessment of effective stunning
- Identification of sick and injured animals and appropriate action
- Correct use and maintenance of facilities and equipment
- 

After identification of the main welfare issues, work instructions were developed for each of the following key processes:

WI 1: Use of livestock handling equipment

WI 2: Restraint of animals using v-restraint devices

WI 3: Slaughter procedures (no stun)

WI 4: Emergency slaughter procedures

WI 5: Selecting and maintaining knives for slaughter

WI 6: Cleaning and maintaining electrical stunning equipment

WI 7: Operating electrical stunning equipment

WI 8: Identifying and managing ineffective stunning

WI 9: Slaughter procedures (stunning)

WI 10: Performing a livestock inspection

WI 11: Handling escaped animals

WI 12: Performing an inspection of facilities

WI 13: Management of hospital pen facilities

WI 14: Inspecting trucks and transport equipment

WI 15: Monitoring water quality



Each work instruction consisted of a step-by-step instruction for each task (including and verification and recording processes). Figure 1 illustrates a single step a WI for operating electrical stunning equipment. Photographic material and supporting information was gathered by observing the completion of each of the identified tasks throughout the supply chain. The work instructions were produced in a visual format. A pictorial approach is commonly used in the electronics industry as it converts typical, complex instructions into understandable, usable documents. The majority of workers in overseas markets speak English as a second language and visual documentation has been shown to overcome problems encountered when using English-language text instructions. Work instructions that include the use of pictures with fewer words provide a very effective solution to potential problems with language and lead to more consistent training and assessment.

**1. Check that the equipment and operational procedure is correct before stunning**



- Follow the appropriate work instructions;
  - WI 07: Operating electrical stunning equipment
  - WI 06 Cleaning and maintaining electrical stunning equipment
- Following the correct work instructions will ensure that the stunning inputs are correct;
  - Applied voltage and current
  - Stun duration
  - Clean and well-maintained equipment
  - Electrode position
  - Consideration of animal factors, for example, horned animals

**Figure 1: WI step - showing the beginning of the process for electrical stunning**

The work instructions were designed in such a way that they can be laminated as a single A4 sheet representing each individual task. This will ensure that work instructions can be used on the processing floor at specific work stations where necessary (Figure 2).







WORK INSTRUCTION	Restraint of livestock using v-restraint devices		Associated documents
Comments	This work instruction contains a series of steps which must be followed by the equipment operator every time restraint equipment is used (with or without stunning). Consult the manufacturer's instructions for more detailed information on initial set-up, repairs and <b>operator safety</b>		
Step	Instructions	Step	Instructions
<b>1. Inspect the restraint equipment and approach race</b>  <div style="background-color: red; color: white; padding: 2px; display: inline-block; font-weight: bold;">ANIMAL WELFARE</div>	<ul style="list-style-type: none"> <li>Before the first animal, complete the pre-start check prior to operation</li> <li>Check for protrusions and damage to the supporting belts</li> <li>Check for damage to the framework</li> <li>Check that the speed of the conveyor is correct</li> <li>Check that the width setting of the restraining conveyors is correct for the size of animal</li> </ul> <p><b>WARNING:</b> Struggling can be caused by a restrainer that is too tight or too loose</p>	<b>2. Move the animal into the restraining device</b> 	<ul style="list-style-type: none"> <li>If the animal balks, slips or falls, allow it to settle before attempting to move into restraint.</li> <li>If the animal refuses to move forwards use increasing levels of pressure to encourage forward movement</li> <li>Work with the slaughter team to maintain the flow of animals to the stunning or slaughter point</li> <li>Adjust the speed of the conveyor if required</li> <li>Move the remaining animals out of the restraint during break times</li> </ul>
<b>3. Monitor animal movement into the device</b> 	<ul style="list-style-type: none"> <li>Record any instances of livestock tripping, falling or losing balance on entry into the v-restraint</li> <li>Present this information to management or the animal welfare office (AWO) for the implementation of corrective action</li> </ul>	<b>4. Move animal to stunning/slaughter point</b> 	<ul style="list-style-type: none"> <li>The operative controlling the v-restrainer should move the animal to the end of the conveyor for either stunning or slaughter</li> <li>If stunning, stop the conveyor once the animal reaches the end of the v-restraint</li> <li>If slaughtering without stunning, run the conveyor until the animal can be manually restrained at the end and positioned on the bleeding table for slaughter</li> </ul>
<b>5. During a breakdown remove livestock from the v-restraint</b>  <div style="background-color: red; color: white; padding: 2px; display: inline-block; font-weight: bold;">ANIMAL WELFARE</div>	<ul style="list-style-type: none"> <li>If a breakdown occurs lasting more than 30 minutes, remove animals from the v-restraint and race</li> <li>Return the livestock back to the lairage pens until the breakdown has been fixed</li> </ul> <p><b>WARNING:</b> Animals must not be left in restraint during breakdowns or break-times</p>	<b>6. Wash and check the restraint equipment at the end of production</b> 	<ul style="list-style-type: none"> <li>Wash the restraint equipment to remove any faeces and dirt</li> <li>If during operation you notice any faults, damage, leaks or unusual noises, report to the service technician and do not continue to use the equipment until you are given the all clear.</li> <li>At the end of the shift, follow the routine maintenance instructions in the Manufacturer's manual</li> </ul>

Figure 2: An example of a task-specific work instruction

### **3 Conclusion**

The development and implementation of work instructions is likely to lead to continuous and sustainable improvement within the export industry by maximising the uptake of SOPs (incorporating OIE and DAFF requirements). The introduction of work instructions, guidance material and training initiatives has the benefit of encouraging consistency in the supply chain and providing a bench-mark standard for objective monitoring in the future.

It is recommended that WI's are translated into local language dialects and reviewed periodically.