MEAT & LIVESTOCK AUSTRALIA

Going into Goats

Module 11

Edition 2: Updated July 2018

Goat depots

Introduction

These guidelines were originally developed with the input of goat depot operators and extensive consultation with the Australian goat industry. The aim is to encourage best practice and to help ensure the continued growth of the industry.

What is a goat depot?

Depots play an important role in the Australian goat industry. Their main function is to consolidate significant numbers of goats for marketing purposes. Figure 1 shows the key position of a depot in the Australian goat supply chain.

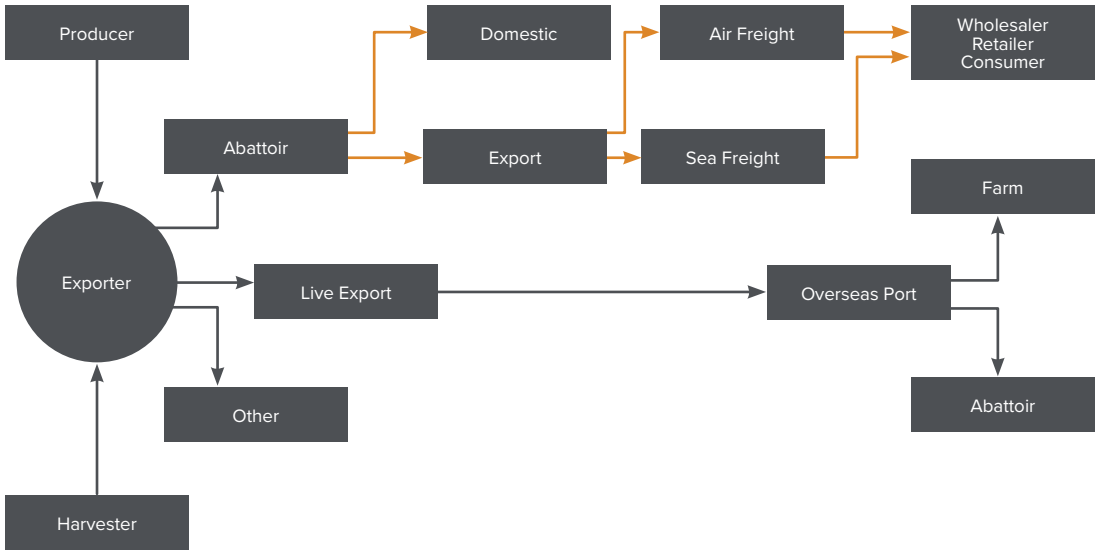

Figure 1: Position of goat depots in the supply chain

Goat depots vary in nature but can be broadly defined as:

A holding area where goats are brought together or accumulated before they are transported for slaughter, export or distribution to other businesses.

While goats are not generally farmed in depots, a depot operator may retain undersized goats on associated land and grow them out to meet particular specifications. Goats may also be prepared in a depot to meet market specifications through drafting and various animal husbandry practices. Depots may coordinate harvesting to facilitate supply or buy them from producers, harvesters or other sources.

Goat depots may gain an exemption from National Livestock Identification System tagging requirements if they are registered as a goat depot with their relevant state jurisdiction and:

- have a PIC specifically for the depot
- have this PIC fully LPA accredited
- agree to participate in an annual LPA audit
- agree to comply with all NLIS requirements relating to the ongoing operation of the goat depot – see *Tool 11.5*

- have a goat depot NLIS database account
- have a letter from a goat meat processor indicating that the depot is, or will be, a supplier of goats on a commercial basis
- be managed to include proper husbandry practices and provide adequate shelter, feed, water and good animal welfare.

It is likely that animals will only remain at the depot for a short time (4-10 days); however, this will depend upon the target market and the capability of the depot as well as the type of goats aggregated in the facility. For example, the *Australian Standard for the Export of Livestock* insists that goats destined for live export are conditioned to being handled and to eating and drinking from troughs for a minimum of 21 days.

What to consider?

Establishing and operating a successful depot requires economic sustainability, good standards of welfare, both for people and animals, and attention to biosecurity, quarantine and animal health.

This module, which has been developed from the collective experience and knowledge of goat industry participants across Australia, considers each of these factors in the context of the day-to-day planning and operation of a goat depot under three broad headings:

- depot planning, design and construction
- handling and husbandry
- health, nutrition and depot hygiene.

Depot planning, design and construction

What to do?

Economic sustainability	• Depot profitability depends on efficiency of operation – maximise your efficiency. • Planning will significantly influence the long-term profitability of your business – plan to succeed. • Depots should be dynamic and able to respond to market demand – maximise depot functionality.
Welfare considerations	• The safety of people and animals at the depot is paramount – ensure the safety of both people and animals is considered in all development plans and day-to-day activities. • Depot design and construction impacts on the welfare of both people and animals – consider welfare in the design process.
Biosecurity, quarantine and health	• Depot security, induction processes and sound operating procedures are central to maintaining biosecurity – ensure appropriate systems are in place. • Your clients along the supply chain demand healthy animals and food safety– manage the health and food safety risks.

Planning, design and construction lay the foundation for implementing a successful goat depot and how each of these elements is approached can make the difference between success and failure

How to do it?

Thorough planning is critical to the development and operation of a successful goat depot. This should extend to the design and construction of the depot, as well as the operation of the business. See *Module 1 – Property planning* and *Module 2 – Financial analysis for more information*.

Planning

Business planning is particularly important in intensive farming situations such as in the operation of a goat depot. Depot operators should document the nature of the business, the sales and marketing strategy and develop a budget for the business.

Your business plan will help you identify and manage risk and assist you in developing measures to minimise risk. It will also assist you in communicating your ideas and goals to business partners, employees, stakeholders and your family.. Refer to *Module 2 – Financial analysis for more information*.

The location and site of the depot are also important considerations. The location should ensure good access to goat supply and markets and consider aspects such as all-weather access and compliance with regulation. The site should be chosen based on critical aspects such as access, water supply and topography. Good drainage is important when aggregating large numbers of animals.

Biosecurity is particularly important in a depot situation due to the typically high throughput of goats and the intensive nature of the business. A well considered biosecurity plan should be developed prior to operations commencing. For sources of further information relating to biosecurity, see *Tool 11.1*.

Design

A well-designed depot is essential for efficient operation and animal welfare.

Goats are intelligent animals and you need to work with them. They also develop habits based on their experiences, i.e. if goats are exposed to poor structural fences, especially when they are young or the first time they are contained, they will tend to treat all fences as if they are poor and look for opportunities to escape. The reverse is also true and goats exposed to well-constructed fences and yards from an early age will tend to habitually respect them.

Working areas should be designed to incorporate shade and allow ease of movement for stockmen while working. Drafting, loading and treatment races should be wide (to account for varying animal sizes and for horns) and designed for efficient flow and handling. Both circular and bugle designs are ideal.

Make sure animals can be segregated by size, weight and gender and to meet specific market or transport requirements.

The design of the depot should include an adequate number of holding areas (paddocks or yards) to ensure animals are not overcrowded. This will be influenced by the capacity throughput of the depot. Each holding area must be able to be supplied with both water and feed.

Yards should be of sturdy construction with a design that encourages the easy flow of goats using low stress stock handling techniques. This typically involves a minimal number of corners with strategically located blinded panels to encourage flow. Panels and fences should be high enough to discourage goats from escaping.

The sighting and design of the depot needs to make provision for adverse weather conditions including wind and excessive cold or heat. Natural contours and vegetation can assist in providing wind breaks and drainage although it is important for vegetation be protected from browsing if it is to remain effective. Artificial windbreaks may also be incorporated in the design and sprinklers should be installed to allow for dust suppression.

Remote sensor monitoring to assist depot operation and reinforce welfare considerations may also be applicable.

Weigh stations, feed storage, quarantine and hospital pens, loading ramps, drafting facilities, laneways, feeding troughs, watering points, goat handling facilities and store rooms for vet drugs and chemicals, tools and equipment all need to be considered in depot design.

Existing cattle and sheep yards can often be converted into functional goat depots. Stays and other elements can be used as potential steps or ramps for goats to climb and should be modified to prevent escape. Wherever possible, stays should be located on the outside of the yards or high pressure areas.

Vehicle access is important. The road width, location of the loading ramp and availability of turning circles should be planned to allow large vehicles easy passage in and out of the property under a variety of weather conditions.

"A well-designed set of yards equipped with proper stock handling equipment will improve time efficiency, reduce costs and goat losses due to stress and improve operator safety."
Rick Gates, 'Burndoo Station', Wilcannia, NSW

For more information on goat behaviour and infrastructure, please see *Factsheet 4: Understanding goat behaviour and handling* and *Factsheet 5: Infrastructure for goats*. These publications can be viewed on the MLA website – mla.com.au/goats.

Construction

Depots can be constructed using a combination of materials including prefabricated fencing products such as ringlock or hinge joint, weld or sheep yard mesh, barbed or plain wire, steel or timber posts and flat or corrugated iron and conveyor belting. The optimal combination of materials will be influenced by budget, availability and design elements. The welfare of the goats and the handlers should be considered when selecting material for different applications.

Fencing should be no less than 1.2m high (higher than most sheep yards). Electric fencing can be used successfully in some depot situations and may help reduce construction costs.

More information on fencing can be seen in *Module 4 – Infrastructure*.

Well-designed and constructed depot yards will improve efficiency and reduce stress.
Generally, a fence which contains a flock of non-wool breed or crossbred sheep will contain goats.

Handling and husbandry

What to do?

Economic sustainability	• Appropriate handling and husbandry will deliver more goats to market in better condition – understand goat behaviour. • All activity at the depot needs to be planned to optimise efficiency and enhance profitability – work with goats, not against them.
Welfare considerations	• All husbandry activities must include decisions to maintain high standards of animal welfare – understand stress indicators. • Correct feed rations and good quality water are essential to optimise animal performance – be aware of nutritional requirements.
Biosecurity, quarantine and health	• Biosecurity and quarantine are about minimising risk – implement procedures to reduce the risk of introducing illness or disease into the depot. • All live export markets have quarantine requirements – understand live export market quarantine requirements

Low stress handling is essential to the successful operation of a goat depot. Handlers need to understand the behaviour of goats and handle them accordingly. Management and husbandry procedures need to be attentive to the requirements of goats and safeguard welfare at all times from when the goats are unloaded and inducted into the deport until they are dispatched from the depot.

Loading and unloading have been identified in particular as potentially stressful practices. Care should be taken to minimise stressors at these times and goats that have been transported long distances should be allowed time to recover before being handled.

Care should be taken to avoid stress during loading and unloading

Always communicate closely with the transport company to ensure the movement of animals is carefully planned and controlled by experienced truck drivers. Depot operators are advised to insist upon a minimum standard for goats arriving at a depot that acknowledges 'fit to transport' requirements. MLA's 'Is it fit to load?' publication can be found on the MLA website, search for the title.

Upon arrival at the depot, goats should be drafted according to characteristics such as gender, size, weight and condition. Drafting and separating goats in secure yards is a key component of depot handling because it reduces competition for space, food and water. This should also prevent bullying by the older and larger bucks and dominance behaviour between bucks and does. Successful drafting will reduce stress levels in the herd.

Density per pen of goats must be carefully monitored to avoid overcrowding. Goats will pack together and smother and care must be taken to ensure they remain standing when being worked in small yards or handling races. For further information, refer to *Tool 11.2*.

Traceability is an important requirement in goat production. Depot operators must be aware of their responsibilities regarding traceability and ensure that they are up-to-date with current state and federal regulations.

The National Livestock Identification System (NLIS) is Australia's system for identification and traceability of livestock. It is a requirement for goat depots to be registered with their relevant state jurisdiction in order to move goats tag-free. For further information, refer to Tool 11.5.

How to do it?

- Goat behaviour

Successful goat handling requires an understanding of the natural behaviour patterns of the animal. Goats are intelligent, inquisitive, agile, alert and have a nervous disposition. It can be useful to observe goats to see how they respond to different situations. This can then be used to the handler's advantage during the day to day operation of the depot.

The use of low-stress stock handling strategies is critical to the effective and efficient handling of goats, especially in an intensive depot environment. This is particularly the case for harvested rangeland goats for which transport, exposure to humans, deprivation of feed and water (during transport), ration change and socialisation need to be carefully planned and managed to minimise stress.

Low-stress stock handling practices should be used at all times

Carefully considered and implemented induction processes through which the welfare and production requirements of the goats are attended to when they arrive at the depotare critical for a successful business outcome.

For more information on the behaviour and handling of goats refer to *Module 6 – Husbandry* and *Factsheet 4: Understanding goat behaviour and handling*. These publications can be viewed on the MLA website – mla.com.au/goats

Unloading and loading

The point at which goats are loaded and unloaded during transport has been identified as a critical control point for ensuring animal welfare. Goats should be loaded or unloaded during cool conditions in hot environments and should not be handled after dark as this can increase stress. Feed and water should be made available soon after unloading and operators need to be sure that the maximum time without water is not exceeded. Mature bucks and does should not be mixed together during transport to avoid dominance behaviour.

Avoid underloading or overloading goats for transport

Particular care should be taken when loading or unloading goats in extreme weather conditions. As many depots are located in the Australian rangelands, loading and unloading can be best scheduled to occur shortly after sunrise in the cool of the day. In extremely wet or cold conditions, it may be advisable to take particular precautions such as leaving the top exposed deck of a four deck livestock crate empty to minimise exposure.

Operators should neither underload nor overload animals. This is a joint responsibility between the depot manager and the driver (the driver has the final word on whether the company will transport the animals). For additional information on the movement of goats as applied to different states, refer to *Module 3 – Industry Obligations, Toolkit 3*.

◆ Loading densities for the land transport of goats (excluding for live export)

Table 1 provides an overview of loading densities to consider when transporting goats by land, excluding transport for live export.

Table 1: Loading densities – land transport of goats, excluding for live export

Mean liveweight (kg)	Minimum floor area (m^2/head)	Number head per 12.5m 2.4m deck
20	0.15	200
30	0.17	176
40	0.22	136
50	0.25	120
60	0.28	107

Source: *Land Transport of Livestock, Australian Animal Welfare Standards and Guidelines, Edition One*, Version 1.1, 21 September 2012

◆ Loading densities for the land transport of goats for export

Table 2 provides an overview of loading densities to consider when transporting goats by land specifically for live export.

Table 2: Loading densities – land transport of goats for live export

Mean liveweight (kg)	Floor area (m^2/head)	Head/pen length (2.4m wide tray)		
		3.0m	4.5m	6m
20	0.117	62	92	123
30	0.165	44	65	87
40	0.213	34	51	68
50	0.261	28	41	55
60	0.309	23	35	47

Source: *The Australian Standards for the Export of Livestock* – V2.3.
Note: Large-horned animasl require additional space depending on the size of horns

Drafting

Goats should be allowed sufficient recovery time in the depot after transport before they are drafted. Drafting should be based on market requirements and to minimise dominance behaviour which usually requires segregation based on gender, size, weight and whether horned or poll.

If young does arrive at the depot in an advanced state of pregnancy, they should be segregated and managed based on their condition.

Sick or injured goats should be identified at unloading and segregated. Regular inspections of the goats in the depot should identify sick or injured goats and these too should be segregated.

"If you wish to familiarise a mob of goats with your depot, then allow them to run through the yards (including the races) used for treatment or drafting without 'forcing' them. Allow them to find their way under gentle pressure."
Ian Firth, 'Oban', Dirranbandi, Queensland

Record keeping and documentation

All depots should have their own internal quality assurance system that can be used to monitor and record the movement, feeding and treatment of all goats. This should include information such as date of movement, number of goats, gender, weights (if available), Livestock Production Assurance (LPA) National Vendor Declaration (NVD) details, property identification code (PIC) or other unique identifying marks or numbers, vendor's details, agent's details, transaction date, animal rejections, animal condition scores, detail of injuries, records of all illness and treatments used.

Keeping such records and maintaining a quality assurance system helps ensure that management systems are sound and guards against possible disputes with other parties.

Traceability records are essential. The National Livestock Identification System (NLIS) and the LPA NVD play an important role in biosecurity, food safety and traceability. Depot operators must familiarise themselves with the requirements of LPA and NLIS and ensure they fully understand their obligations under these programs and those relating to the movement of animals which can vary depending on state or territory requirements. It is a requirement for goat depots to be registered with their relevant state jurisdiction in order to move goats tag-free.

For further information regarding NLIS and LPA NVDs, refer to *Toolkit 11.5*.

Market specifications

Understanding market specifications and supplying to those specifications is critical to successful depot operation. Such specifications in their most basic form typically stipulate a liveweight or carcase weight range required by the customer. Significant penalties often apply for supplying goats outside these specifications and so it is important to implement systems which facilitate the efficient weighing of goats and the estimation of carcase weight based on liveweight.

Standardised weighing procedures are important to ensure live weights and dressing percentages can be compared between consignments. This can assist the depot operator in refining depot operations to optimise returns which may include modifying internal systems or preferentially sourcing goats from regions or suppliers that perform better than others. Weighing can be done on an individual basis or on a group basis where, for example 30 goats may be weighed in a pen at the one time and an average weight applied to each animal.

Regular weighing when goats are held for extended periods allow the operator to gain an impression of how the goats are performing over time in a particular environment.

Weight specifications may be quoted as liveweight or carcase weight. To allow these weights to be compared and supply over-the-hooks with confidence, it is important to understand how to calculate dressing percentages. Refer to *Factsheet 3: Understanding dressing percentage when marketing goats*, which can be found on the MLA website by searching for the document title.

Live weighing scales are an important part of the marketing process.

For further information refer to *Module 8 – Marketing* and *Factsheet 2: Marketing goats*. Attention to detail minimises the number of 'out of spec' animals which have no profitable destination once they enter a depot.

- Handling equipment

Having appropriate equipment in the yards makes work easier, quicker and safer. Safety for the animals and handlers is important. A range of handling equipment to assist depot operators is available. Some examples of handling equipment can be seen in *Module 4 – Infrastructure* and *Factsheet 5: Infrastructure for goats*.

Quarantine requirements for live export

Overseas markets for live animals have specific requirements for import health conditions (protocols). These are managed by the Australian Government's Department of Agriculture and Water Resources (the Department) on behalf of the importing country.

Depot operators intending to supply a particular market must ensure they comply with all importing country requirements as well as the Department's requirements before sourcing livestock. Failure to comply with regulations will mean livestock cannot be exported.

Each export market has different requirements. Depot operators need to make themselves aware of the specific requirements of the markets they wish to supply and keep up-to-date with any changes in requirements that affect their operations.

Wherever possible, animals should be quarantined in their original social groups to minimise stress and the spread of disease.

The Department requires strict compliance with regulations regarding movement of animals for export. These regulations address issues such as time off feed and water prior to transport and inspection requirements. For further information, refer to *Toolkit 11*.

Goat health, nutrition and depot hygiene

What to do?

Economic sustainability	• Healthy animals are a key to profitability – monitor health on a regular and ongoing basis. • Nutrition is a key to profitable depot operation as well-nourished goats means more weight to sell – prepare a thoughtful feed budget using the most recent technical information available.
Welfare considerations	• Managing depot hygiene helps maintain animal health which is central to good welfare practice – underpin your welfare activities with good depot hygiene. • Good nutrition is about understanding the optimum feed ration for your animals – know the value of the feed in nutritional terms and match this to the animal's requirements.
Biosecurity, quarantine and health	• Unhealthy animals reduce productivity and cannot be transported or exported – manage goats to promote good health. • The quality of feed is critical – know the quality and source of the feedstuffs you use.

Good animal health is particularly important in goat depot operations and begins with good hygiene and minimising stress at induction. The high stock densities typically maintained in depots increases the risk of disease. As with all intensive production systems, health issues can quickly arise and escalate, presenting major animal welfare issues and leading to production losses. Being proactive through maintaining high standards of animal health and depot hygiene can be the difference between success and failure.

Nutrition is also a critical factor, particularly given that most depots rely on full ration feeding or at least supplementary feeding. Adequate supplies of appropriate feed must be kept on hand to cater for immediate needs as well as extra provisions to meet requirements in the event of an emergency. Ample supplies of cool, clean water must also be available at all times.

How to do it?

While *Module 6 – Husbandry* provides general information relating to goat health and nutrition, the following aspects are particularly important to depots.

◆ Stress management

The management of stress is one of the most important factors in goat husbandry especially, in a depot due to the intensive nature of the operation. As has been noted elsewhere in this guide, the aim is to minimise stress at all times.

Stress can result in reduced productive performance and even fatalities. Low-stress stock handling principles need to be practised. Such handling techniques reduce stress for both the goats and the handlers. For further information, refer to *Toolkit 11.2* or MLA's publications: *Factsheet 4: Understanding goat behaviour and handling and Requirements for handling goats to maximise eating quality*, which are available on the MLA website – search for the document titles.

Goats tend to stress under changing conditions, so it is advisable to maintain a constant environment within the depot. Stressors that should be avoided include:

- poor handling
- handling goats at night
- inappropriate use of goads (e.g. jiggers and prodders)

Further information about stress can be found in *Module 6 – Husbandry and Factsheet 4: Understanding goat behaviour and handling*. The stress of dislocation, transport, socialisation and diet change cannot be avoided but must be recognised and managed accordingly.

Food and feeding

The type of feed and the feeding environment are important to successful depot operation.

It is highly unlikely that weight gain will be achieved if goats are only in a depot for a few weeks as this time will be spent familiarising themselves with the environment and adjusting to the ration. Any gains in body weight over this period are generally associated with gut fill and rehydration rather than actual live weight gain. The aim should be to maintain body weight and condition.

The ration used in a depot should be designed with the target market in mind. For example, it is usually advisable for goats being prepared for live export to be fed the same ration they will receive during transport and following arrival at the export market. This must at least meet the maintenance requirements of the individual animals. The identification and procurement of such a ration should be done in consultation with the exporter or agent facilitating the consignment.

Goats entering the depot environment should be encouraged to feed as soon as possible. Highly palatable good quality pasture hay should be made available for the first few days after entering the depot with other rations gradually introduced over time.

Always feed in troughs or other feeders designed and positioned to prevent contamination with faeces or urine rather than on the ground. Troughs or feeders must be cleaned regularly as goats are reluctant to eat if the feeding area is contaminated and contamination can lead to the transmission of disease.

An important aim of the feeding regime is to avoid occurrence of diarrhoea and stress ailments. Diarrhoea can be caused by infectious agents, contaminated feed or too much concentrate in the diet too quickly. Refer to *Module 7 – Nutrition*.

Always be alert for shy-feeders. These should be removed from the main herd and given the opportunity to feed in a less competitive environment. Alternatively, they may be sold off before losing condition.

The *Australian Standards for the Export of Livestock (2011)* require that when feeding a ration, there must be no less than 5cm space/head when trough feeding. For ad lib feeding, there must be no less than 3cm/head. These measurements allow for session feeding where only some of the goats in a confined area are feeding at any one time.

While these standards do not apply directly to goat depots supplying Australian-based processors, they can be used as a useful guide in planning and operating a depot. Depots holding goats destined for live export are required by regulation to use fully sheltered feed troughs from May-October (with the exception of areas north of latitude 26° south). Refer to *Toolkit 11*.

How to best transition goats to a concentrated ration in the depot will depend on the ration to be fed. High concentrate rations (grain-based) need to be phased in gradually, whereas pellets with plenty of fibre can be introduced more quickly. See *Module 7 – Nutrition*.

Good animal health is particularly important in goat depot operations and this begins with good depot hygiene

Water

An ample supply of cool clean water should be available to the goats at all times. Automated systems are recommended to ensure a continual supply. Troughs must be cleaned on a regular basis as goats will not drink water contaminated with faeces or urine. For more information, refer to *Module 4 – Infrastructure* and *Module 7 – Nutrition*.

Weather

Goats are susceptible to cold or wet weather and extreme heat. The provision of shelter from wind and rain, as well as shade and water to mitigate the effect of heat, are important aspects of depot management to promote good goat health. See *Module 6 – Husbandry*.

Disease management

Diseases such as respiratory illness pose a particular threat within a depot environment due to the intensive nature of production. Early detection and rapid response is critical to controlling the spread of disease. A designated hospital pen should be available to allow affected goats to be quarantined, monitored and treated as required. See *Module 6 – Husbandry*.

Treatment and vaccination

Drenches are only usually necessary in depots if goats are held long-term or have been previously exposed to farmed operations. Vaccinations are generally based on export health protocols and are not usually needed for animals destined for slaughter in the near future. A major cost component in depot operation can be veterinarian fees, especially for depots focused on live export. Expense and lost production due to illness can can be minimised through good health and hygiene practices.

In consultation with a veterinarian, maintain adequate supplies of commonly required drugs and medicines to allow for the immediate treatment of common disease.. When using drugs or medicines, ensure that all treated animals are appropriately identified, the drugs used are recorded and that you take into consideration any withholding periods or export slaughter intervals. See *Module 9 – Parasite control*.

Parasites

Goats should be monitored for signs of both internal and external parasite infestation. Specific information regarding sampling for parasites is available from WormBoss (wormboss.com.au) and *Module 9 – Parasite control*.

Parasite treatment should be carried out immediately upon detection to minimise the spread of infection throughout the depot. Chemical treatments should be conducted in accordance with the chemical manufacturer's instructions, animal welfare codes and any chemical withholding periods.

Feeding should occur above ground out of feeders to minimise infection from internal parasite larvae hatched from eggs passed in faeces.

If a mob of goats enters the depot and is suspected of carrying a heavy internal parasite burden, they should be treated immediately and confined until the dung is free of eggs.

Not all chemicals are registered for use on goats. Only use agricultural and veterinary chemicals which are registered with the Australian Pesticides and Veterinary Medicines Authority (APVMA) or for which there is a minor use permit for use on goats. A veterinarian may also be consulted in situations requiring the off-label use of chemicals.

For more information on parasites in goats, refer to *Module 6 – Husbandry* or *Module 9 – Parasite* control. An up-to-date list of drenches and external parasite treatments currently registered for use in goats in Australia can be found at apvma.gov.au.

Predation

Goats in depots must be protected from predators, such as wild dogs, dingoes, eagles, crows, pigs and foxes. Measures should be taken to exclude these from the depot. For further information, see *Module 6 – Husbandry*.

Housekeeping

Depots should be cleaned regularly to maintain a good level of hygiene. Special attention should be paid to feeding and watering points. Keep the yards as dry as possible and ensure adequate drainage. This will help prevent feet issues which may lead to lameness.

Ensure the depot is clean before any new goats arrive. This will assist the control of disease. If practical, keep new arrivals separate from other goats for a day or two.

Under some circumstances, manure and yard waste can be a valuable resource, either as a saleable product or for application to pastures as fertiliser, in which case it should be composted properly prior to spreading to avoid contamination of grazing areas.

Animals that are brought to the depot directly from rangelands generally do not exhibit signs of illness or suffer from worm burdens if held for a short period. Such goats can; however, have reduced immunity once managed in a confined depot environment and should be monitored closely if held for more than a week or two.

Dust can be minimised using sprinklers; however, care should be taken not to over-water which can lead to wet areas and foot problems. In extreme conditions, dusty yards lead to eye problems in both animals and their handlers. The addition of hard aggregate on the ground (e.g. gravel or stones) could be a useful alternative to watering.

Undertake daily health monitoring and isolate any sick or scouring animals. Scouring is a critical health factor and results in a loss of condition. If scouring occurs, a veterinarian should be consulted to identify whether the condition is dietary or disease-based. Injured or diseased goats should be humanely treated or humanely destroyed according to animal welfare standards (refer to Tool 11.3)..

Performing autopsies on dead animals can be beneficial. Barber's pole worm and acidosis are easy to diagnosis on visual appraisal and early intervention may be possible.

Acknowledgments

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Toolkit 11 – Goat depots

Tool 11.1 – Finding further information

Tool 11.2 – Hints for managing goats in depots

Tool 11.3 – Humane destruction

Tool 11.4 – Hints to help your business and avoid pitfalls

Tool 11.5 – National Livestock Identification System

Tool 11.6 – Depot designs – depot operator's experiences

Tool 11.7 – Depot flow chart example

Tool 11.8 – Requirements for live export of goats

Tool 11.9 – Holding periods and stocking densities at export depots

Tool 11.10 – Goat export rejection criteria

Tool 11.11 – Acclimatisation to on-board ration for live export

Case studies

- Bringing together supply and demand
- Design and construct the depot to suit your needs

Tool 11.1: Finding further information

MLA goat publications

Available from mla.com.au

- Factsheet series
  - *Factsheet 1: Profitability in goat production*
  - *Factsheet 2: Marketing goats*
  - *Factsheet 3: Understanding dressing percentage when marketing goats*
  - *Factsheet 4: Understanding goat behaviour and handling*
  - *Factsheet 5: Infrastructure for goats*
  - *Factsheet 6: Managing livestock numbers*
  - *Factsheet 7: Production from a breeding doe*
  - *Factsheet 8: Grow out options to meet market specifications*
- The ***Going into Goats: Profitable producers' best practice guide*** (GiG guide)
  - *Module 1 – Property planning*
  - *Module 2 – Financial analysis*
  - *Module 3 – Industry obligations*
  - *Module 4 – Infrastructure*
  - *Module 5 – Goat selection*
  - *Module 6 – Husbandry*
  - *Module 7 – Nutrition*
  - *Module 8 – Marketing*
  - *Module 9 – Parasite control*
  - *Module 10 – Mohair production*
  - *Module 11 – Goat depots*
  - *Module 12 – Rangeland management*

Other MLA publications

Available from mla.com.au

- *Is it fit to export?*
- *Is it fit to load?*

Credible sources of information

- Departments of agriculture or primary industries – seek out goat specialists or experienced animal husbandry officers with expertise in a range of goat industry issues.
- Private consultants – there are a small number of experienced animal consultants in Australia that have specialist expertise with goat husbandry and the commercial goat industry.
- Veterinarians – some vets have specialist knowledge of small ruminant animals. In addition, the Australian Sheep Veterinarians (ASV) is a special interest group from the Australian Veterinarian Association and is the peak body for advice on small ruminant health in Australia. The ASV has members who are willing to advise on goat health and management issues. See asv.ava.com.au for details.

Useful references

- McGregor, G; Abud, D; Cunningham, H; Osborn, J; Jensen, D; Booth, W; Scott, and Esson, P. (2007). *Goat farming for the future*. Meat & Livestock Australia.
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- More, S and Brightling, T. (2003). *Minimising mortality risks during export of live goats by sea from Australia*. Meat & Livestock Australia and LiveCorp.
- Twyford-Jones, P; Slack, P and Mills, T. (1998). *Goat Meat for Export – A workshop.* Queensland Department of Agriculture and Fisheries.
- Wilkinson, J and Stark, B. (1987). *Commercial Goat Production*. Blackwell Scientific, Oxford.
- Williams, S. (2009). *Preparation of goats for export*. Meat & Livestock Australia.
- Meat & Livestock Australia. (2012). *Is it Fit to Load?* mla.com.au
- Animal Health Australia. (2016). *Australian Industry Welfare Standards and Guidelines for Goats*. Available from: animalwelfarestandards.net.au
- Department of Agriculture and Water Resources (2011). *Australian Standards for Livestock Export*, Version 2.3. Available from: agriculture.gov.au

Courses and workshops

- Goat husbandry courses: visit your state or territory department of primary industries website
- MLA events: mla.com.au/events
- EDGE Network courses: mla.com.au/edgenetwork

Websites

Use of chemicals including minor use permits and withholding periods for chemical treatments:

- Australian Pesticides and Veterinary Medicines Authority (APVMA) – apvma.gov.au

» Export of live animals:

- LiveCorp – livecorp.com.au
- Australian Livestock Exporters' Council – auslivestockexport.com
- Australian Government Department of Agriculture and Water Resources – agriculture.gov.au

» Welfare issues:

- Animal Health Australia – animalhealthaustralia.com.au

» Biosecurity issues:

- Farm Biosecurity – farmbiosecurity.com.au

» Red meat processing and export:

- Australian Red Meat Exporters – australianredmeatexporters.mla.com.au
- SAFEMEAT – safemeat.com.au

» National Livestock Identification System:

- NLIS – nlis.com.au

» State and Territory departments of primary industries

- NSW Department of Industry – industry.nsw.gov.au
- Primary Industries and Resources of South Australia – pir.sa.gov.au
- Department of Agriculture and Food, Western Australia – agric.wa.gov.au
- Queensland Department of Agriculture and Fisheries – daf.qld.gov.au
- Northern Territory Government – nt.gov.au/industry/agriculture
- Department of Primary Industries, Parks, Water and Environment – dpipwe.tas.gov.au
- Department of Economic Development, Jobs, Transport and Resources – agriculture.vic.gov.au

» Other contacts

- Goat Industry Council of Australia – gica.com.au
- Meat & Livestock Australia – mla.com.au
- AgriFutures Australia (Rural Industries Research and Development Corporation): agrifutures.com.au
- South Australia Research and Development Institute – sardi.sa.gov.au

Tool 11.2: Hints for managing goats in depots

Design and construction

- Portable panels are useful to test different configurations and ideas before you build permanent fencing.
- Weldmesh and netting should be used with caution, as goats can become caught by their heads or horns and can break legs in such structures. For further information, see *Module 4 – Infrastructure* and *Factsheet 5: Infrastructure for goats*, which can be found on the MLA website – search for the document titles.

Quarantine requirements

- Some prescribed goods (including live animals) intended for export must be prepared at registered premises. This means that your premises must be constructed, equipped and operate in an effective and hygienic manner and be approved by the Department of Agriculture and Water Resources.
- To register your premises, you must first submit an application form to the Department of Agriculture and Water Resources website: agriculture.gov.au/biosecurity/risk-analysis/guidelines

Stocking densities within the depot

- Simple 'rule of thumb' calculations for how many goats can fit comfortably into different holding, handling or treatment situations are provided in Table 3:

Table 3: Rules of thumb for stocking densities – holding/handling yards

Holding yard density	1 goat/square metre
Forcing yard density	3 goats/square metre

* This equates to 160 goats/deck for 12m crate for transport
Source: Australian Goat Notes, Australian Cashmere Growers Association

- The *Australia Industry Animal Welfare Standards and Guidelines for Goats* requires that goats should have enough space to be able to stand, turn around, stretch, lie down and have access to feed and water.
- The Australian Standards for the Export of Livestock indicates the stocking densities in Tables 4 and 5, these can be used as a guide, even though the reference relates to goats being housed in sheds for live export.

Table 4: Stocking densities for goats -live weight 54kg, held in sheds for 10 days or more

Head per pen	Minimum space per head
8 head or less	0.9m^2
9-15 head	0.8m^2
16-30 head	0.6m^2
31+ head	0.5m^2

Source: Australian Standards for Livestock Export, Version 2.3

Table 5: Stocking densities for goats live weight 54kg, held in sheds for less than 10 days

Head per pen	Minimum space per head
8 head or less	0.6m^2
9-15 head	0.53m^2
16-30 head	0.4m^2
31+ head	0.33m^2

Source: Australian Standards for Livestock Export, Version 2.3

Tool 11.3: Humane destruction

If an animal is found to have a serious injury or if a fallen animal is unable to rise on its own or walk unaided, the animal should:

- not be moved if moving will cause further pain or distress and be humanely destroyed in situ, or
- be moved to a hospital pen, only if such movement will not cause further pain or distress, and treated if recovery is likely, or be allowed to rest and transported when recovered and fit to load, or
- only be transported after obtaining veterinary advice.

The humane emergency destruction of an animal involves using a method that results in rapid loss of consciousness followed by death while unconscious.

This involves appropriately restraining the animal and, where legally allowed, either:

- stunning an animal with an appropriate stunning device and then cutting its throat, or
- shooting an animal with an appropriate firearm, or
- if stunning or shooting are not able to be undertaken, then in emergency situations, cutting the animal's throat with a sharp knife.

Stunning

Stunning should be performed using a penetrating captive bolt stunning device which is:

- appropriate to the size and class of goat
- accompanied by appropriate restraint, and
- applied in the poll position (Diagram 1) in contact with the skull according to the manufacturer's instructions (the temporal position is not an option).

Non-penetrating captive bolt stunners are not recommended.

Stunning should ensure the animal is unconscious and be followed by an effective procedure to cause death while unconscious, such as cutting the throat in a manner which severs both carotid arteries.

Captive bolts should be regularly cleaned and maintained in optimal working condition, according to the manufacturer's instructions.

Firearm

Where legally allowable, a firearm can be used for humane emergency destruction and should be undertaken with a firearm which is:

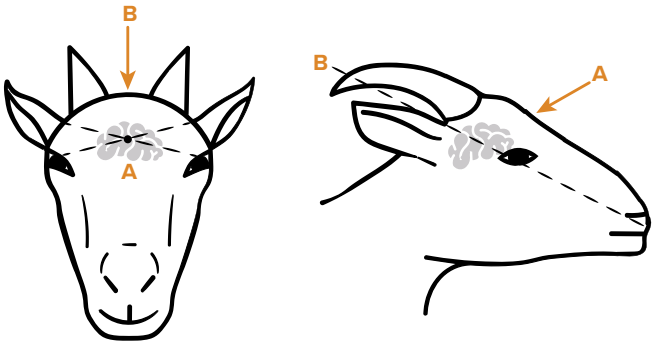
- of the appropriate size and calibre (typically any 0.22 rim-fire cartridge that produces in excess of 100 foot pounds of energy at the muzzle).

- held in the poll position (diagram 1, the temporal position is not an option)
- held such that the end of the firearm barrel and the animal is between 10cm and 100cm.

Following appropriate destruction using a firearm, the animal should be confirmed dead (see below).

Position for stunning or firearm

Diagram 1: Positions for firearm or stunning in goats



Note: (A) Position for frontal method
(B) Position for poll method – recommended for stunning and firearm

The dots indicate the point of aim and the arrows indicates the direction of aim for the positions. The diagrams are representational and individual anatomical differences should be taken into account.

Throat cut

Following stunning, or where stunning or shooting is not possible and the animal requires immediate destruction, the animal's throat can be cut using:

- a sharp knife of sufficient length so the point of the knife remains outside of the incision during the cut, and
- a single, deep, uninterrupted, fast stroke of the knife which severs both carotid arteries (Diagram 2) and results in the presence of a strong flow of blood from the wound.

Single means one stroke or a reciprocal pass of the blade provided the blade does not leave the wound during the process. The spinal cord should not be severed as this can lead to intense pain until loss of consciousness ensues.

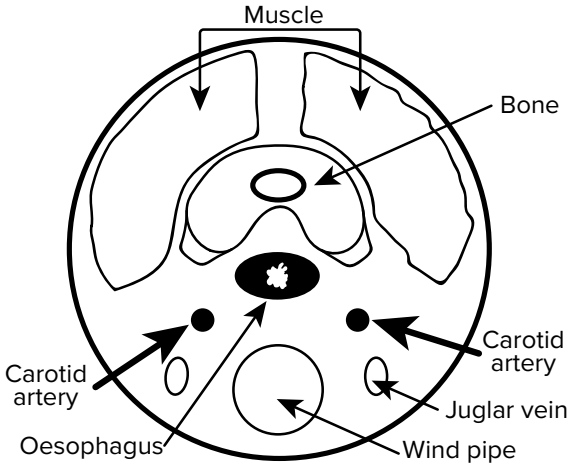


Diagram 2: Bisection of an animal's throat showing both carotid arteries

Following this, the animal should be left to bleed out until unconscious. The animal should not be moved until it has been confirmed dead.

Assessing unconsciousness

Signs that an animal is unconscious include two or more of the following:

- immediate collapse and no attempt to regain or to retain upright body posture
- absence of tracking by the eye of movements in the vicinity (often accompanied by spontaneous blinking)
- no spontaneous blinking and no blink in response to waving a hand in front of the eye
- when stunned, no rhythmic breathing.

Confirming death

Animals should be confirmed as dead following humane emergency destruction processes. Signs of death include:

- cessation of a strong flow of blood from the wound
- permanent absence of brain stem reflexes (such as no blink in response to waving a hand in front of the eye and no rhythmic breathing or gagging).

Stunning by blunt trauma to the head

- A single blow should be delivered to the centre of the forehead and should only be used on kids that are less than 24 hours old.

More information on humane destruction can be found within the *Australian Industry Standards and Guidelines for Goats*. See animalwelfarestandards.net.au

Tool 11.4 – Hints to help your business and avoid pitfalls

Do's

- Always prepare animals suited to the target market.
- Always use low-stress handling techniques.
- Look after your staff and suppliers. Make them your responsibility and, when you get paid, make sure they get paid regardless of any other considerations.
- Maintain an internal quality assurance system that includes good record keeping practices.
- Develop a sound business plan with regular reviews and updates to reflect the current circumstances.
- Do your best to understand the environment and climate and use this information to improve depot operations.
- Start your 'thinking' at the market, not at the fence and work back from there. A well-structured approach and business plan is vital.
- Maintain your standards through good quality products and consistency of supply.
- Depots need to be set up with a purpose in mind – that is, the depot must have commercial orientation.
- When making decisions, do not just think of the immediate situation, always plan for the future.

Don'ts

- Do not buy goats without completed documentation (i.e. NVD and NLIS).
- Do not lose sight of commercial reality; depot profitability depends on efficiency of operation – maximise your efficiency.
- Do not ignore any animal welfare or health issues. Act quickly to address any problems.
- Do not undertake or support any activity that might lead to negative publicity for the goat industry.
- Do not neglect any issues that might arise in regard to quarantine and biosecurity.
- Do not forget to continue evaluating export risks and that of your buyers. This includes mode of payment, politics, exchange rates and sudden changes in import requirements.
- Do not stop educating yourself about new technology and skills, measures to improve output and reduce costs and the means to keep your business strong when the economy gets tough.

Tool 11.5 – National Livestock Identification System (NLIS)

The National Livestock Identification System (NLIS) is Australia's system for identification and tracing of livestock for biosecurity, food safety, product integrity and market access purposes.

NLIS is endorsed by feedlot, agent, saleyard and processor bodies. It is also underpinned by state/territory legislation, which forms the regulatory framework for the system.

Throughout Australia, producers are required to know where the goats under their management have come from and where they are going. This means:

- All managed goats must be identified with an approved NLIS ear tag before leaving their property, whether destined for a saleyard, abattoir, sale over-the-hooks or another property with a different property identification code (PIC).
- All transported goats, not just managed goats, must be accompanied by accurate and fully completed movement documents (generally a Livestock Production Assurance (LPA) National Vendor Declaration (NVD)).

This system is reinforced through the centralised recording of movement information on the NLIS database. This mob-based movement recording requires the movement of all goats from one property to another with a different PIC to be recorded on the NLIS database. Harvested rangeland goats (also referred to as feral or rangeland goats):

- may be exempt from requiring NLIS ear tags if they are consigned from the property of capture either directly or via one depot to an abattoir for slaughter.
- may be moved into or out of a goat depot without NLIS ear tags if an 'approval' from your state department of primary industries/agriculture is in place. In this case, untagged goats are allowed to move from the property of capture directly to one depot (where they are allowed to be held for up to 10 days) and then directly to an abattoir for slaughter "over the hooks" (OTH).
- retained in a depot for more than 10 days must be tagged with a pink post-breeder NLIS ear tag embossed with the depot PIC before being moved from the depot.
- moved from a depot to another depot, saleyard, property or to export must be tagged with a pink post-breeder NLIS ear tag embossed with the depot PIC if they were originally moved to the depot untagged.

There are some state-based exemptions or additional requirements for dairy goats and show goats which can be discussed with your state department of primary industries/agriculture.

Goat depots must be registered

Goat depots must be registered as a goat depot with their relevant state jurisdiction.

To meet the requirements for registration, the goat depot must

- have a PIC specifically for the depot
- have this PIC fully LPA accredited: visit mla.com.au/lpa

- agree to comply with all NLIS requirements relating to the ongoing operation of the goat depot: go to gica.com.au and search 'NLIS depot user manual'
- agree to participate in an annual LPA audit: go to mla.com.au and search 'LPA audits'
- have a goat depot NLIS database account: visit nlis.com.au
- have a letter from a goat meat processor indicating that the depot is, or will be, a supplier of goats on a commercial basis: go to gica.com.au and search 'letter to processor'.

All goat movements to and from a depot must be accompanied by a fully completed LPA NVD and mob-based movements to and from a depot must be uploaded to the NLIS database within 48 hours of each movement.

To help depot operators complete the registration process, the Goat Industry Council of Australia and state governments have developed guides relating to the registration process for new and existing goat depots. Go to gica.com.au and search 'depot registration process'.

Depots which misuse the conditions of registration could be forced to tag all goats prior to leaving the depot or their property. Action will be taken on any breaches of NLIS requirements and serious breaches could be taken into consideration when assessing any future applications for approval to move harvested goats to slaughter without NLIS ear tags.

It is imperative to keep accurate movement records and ensure livestock movements are entered into the NLIS database.

Depot operators unsure of their obligations should contact local state or territory NLIS authorities or GICA for more information using the contact details listed below.

Contacts

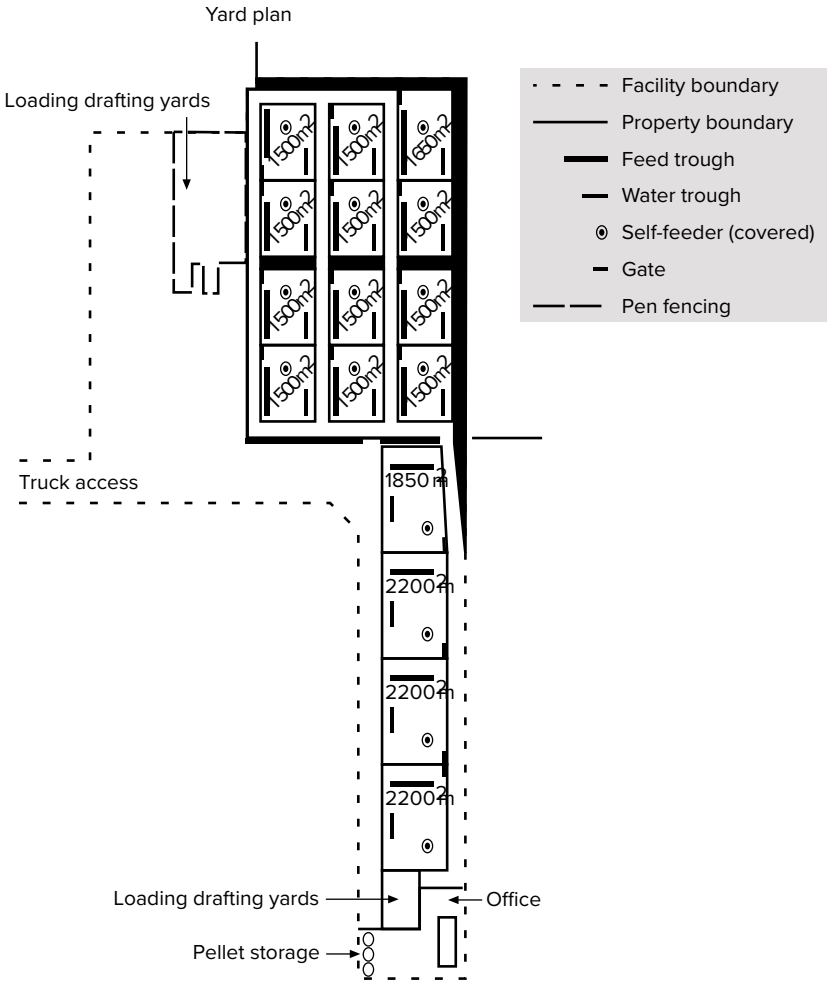
Federal contacts	
NLIS Helpdesk: 1800 654 743 Website: nlis.com.au Email: support@nlis.com.au	**Animal Health Australia** Phone: (02) 6232 5522 Website: animalhealthaustralia.com.au Email: aha@animalhealthaustralia.com.au
SAFEMEAT Phone: (07) 3246 8745 Website: safemeat.com.au Email: SAFEMEAT@agriculture.gov.au	**Goat Industry Council of Australia** Website: gica.com.au
Department of Agriculture and Water Resources Phone: 1800 900 090 Website: agriculture.gov.au	

State contacts	
Australian Capital Territory **Department of Territory and Municipal Services** Phone: (02) 6205 3737 Email: Wendy.Townsend@act.gov.au	**Queensland** **Department of Agriculture and Fisheries (DAF)** Biosecurity Queensland Business Information Centre: 13 25 23 Website: daf.qld.gov.au Email: nlis_admin@daf.qld.gov.au
New South Wales **Department of Primary Industries** NSW DPI Helpline: 1300 720 405 Email: enquiries.nlis@dpi.nsw.gov.au Website: dpi.nsw.gov.au **Local Land Services (LLS)** LLS Helpline: 1300 795 299 Website: lls.nsw.gov.au	**Northern Territory** **Department of Primary Industry and Resources** Phone: (08) 8999 2034 (Darwin) (08) 8973 9767 (Katherine) (08) 8962 4458 (Tennant Creek) (08) 8951 8125 (Alice Springs) Website: nt.gov.au Email: ntnlis@nt.gov.au
South Australia **Primary Industries & Regions of South Australia (PIRSA),** Biosecurity SA Phone: 1800 654 688 Website: pir.sa.gov.au Email: pirsa.nlisdatabasenotifications@sa.gov.au	**Tasmania** **Department of Primary Industries, Parks, Water & Environment ,** Biosecurity Tasmania Phone: 1300 368 550 Website: dpipwe.tas.gov.au Email: Andrea.Clark@dpipwe.tas.gov.au
Victoria **Department of Economic Development, Jobs, Transport and Resources (DEDJTR),** Biosecurity Division Phone: 1800 678 779 Website: agriculture.vic.gov.au Email: nlis.victoria@ecodev.vic.gov.au	**Western Australia** **Department of Agriculture and Food – Livestock Biosecurity** Phone: (08) 9780 6100 Website: agric.wa.gov.au Email: nlis@agric.wa.gov.au

Tool 11.6 – Depot designs – depot operator's experiences

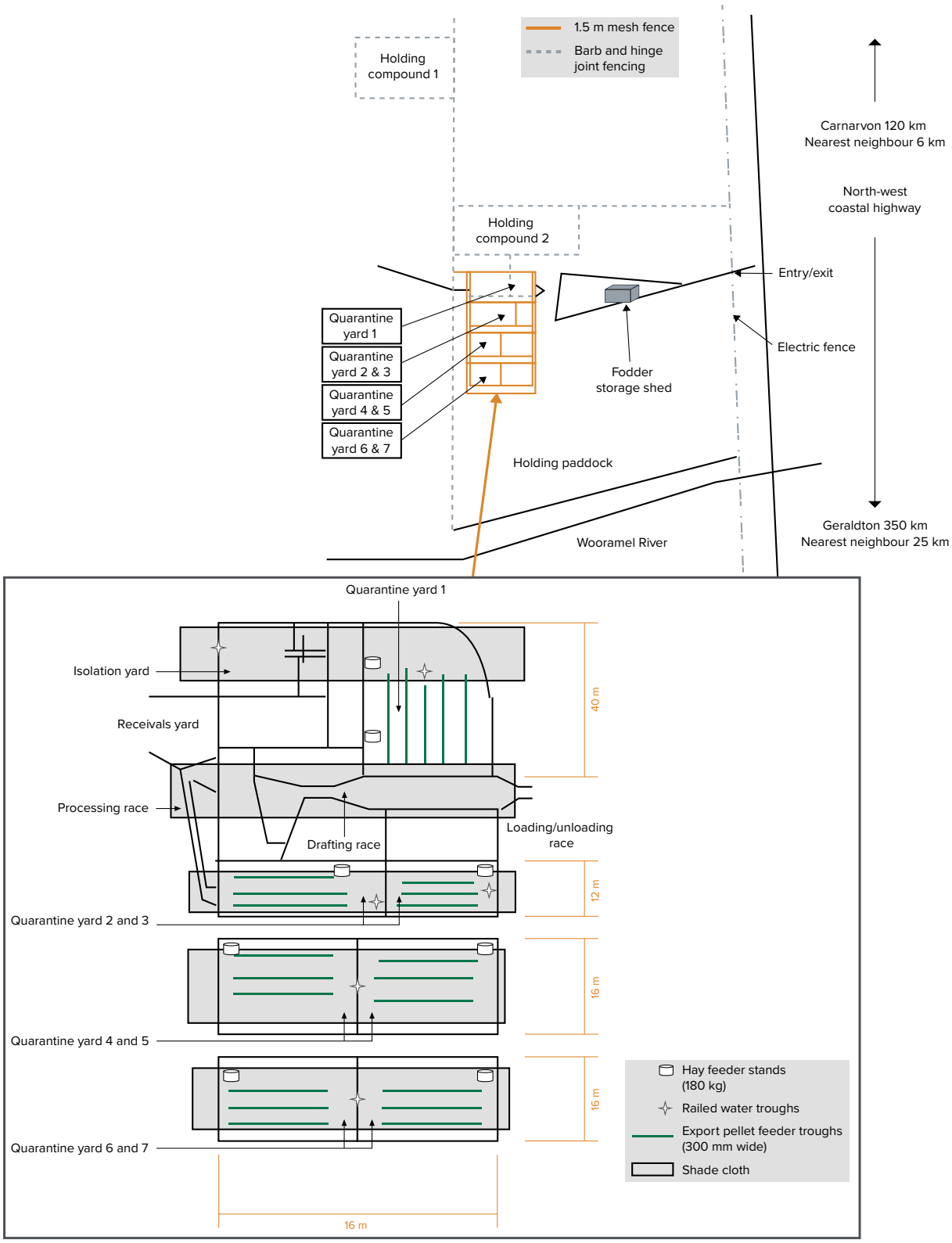
Depot 1: Gemma Cripps, 'Gladwyn Holding Yards'
Location: Geraldton, WA

This depot design demonstrates the importance of planning and design in depot construction. A significant amount of time was spent before any actual construction was undertaken to ensure adequate holding areas were available and to ensure animals could be moved easily and efficiently.



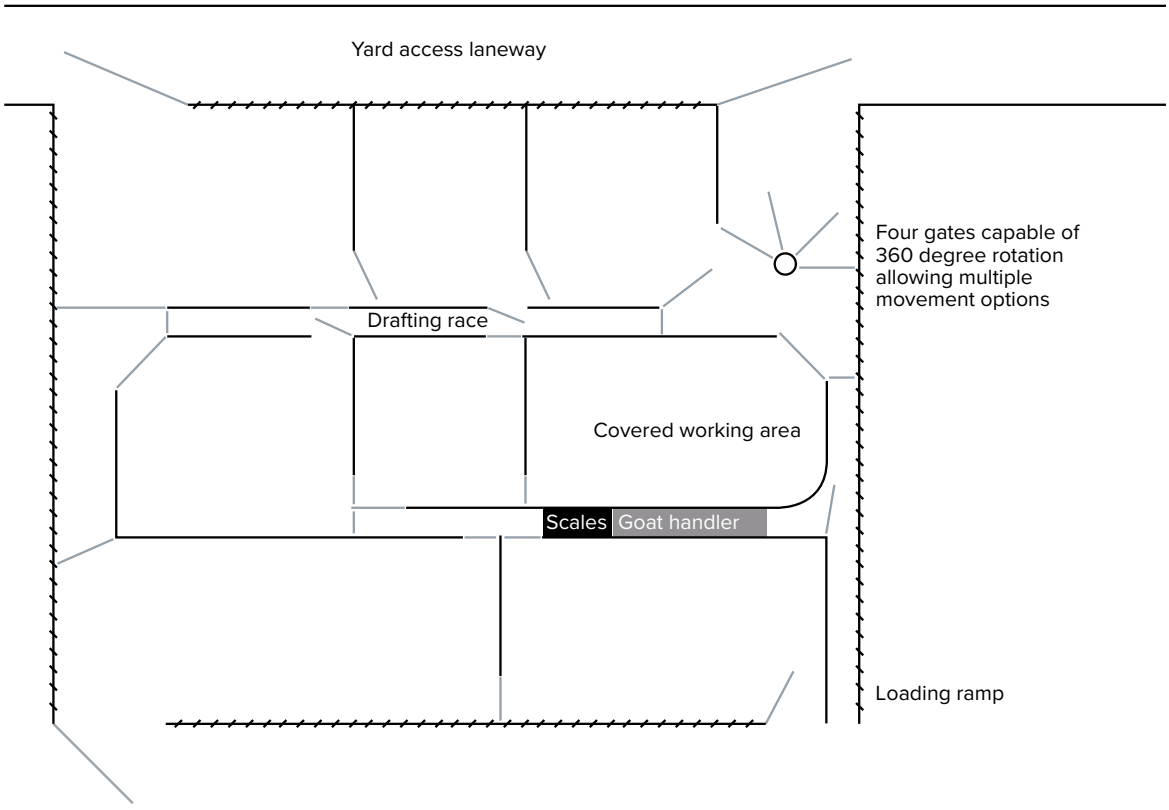
Depot 2: Justin Steadman, 'Wooramel Pastoral Company'
Location: Carnarvon, WA

This depot highlights the importance of site and location when deciding where a depot should be built. Not only does it ensure adequate space for the efficient movement and loading of goats, but it also considers all weather access and access for large trucks.



Depot 3: Laurie and Rosemary Bere-Streeter, 'Chevredor Boer Goats'
Location: Miles, Queensland

This depot design has evolved over time. As the business has grown, so has the goat depot. This highlights the importance of future planning when you are choosing your goat depot site and the importance of flexibility in your original design.



Perimeter of yard area = 20 m wide x 30 m long
Goat depot yards are the working heart of the depot. The whole depot is in excess of 20 hectares.

Tool 11.7 – Depot flow chart example

As part of a record keeping management system, a depot can maintain a goat flow chart (GFC) detailing each mob in the depot, their history and their future movement.

Table 6: A goat flow chart for depots

Seller details (inc PIC)	Agent details	NVD details	Transport into depot	Arrival date	Number Gender Type Weight	Rejection or injury details	Condition score	Paddock no.	Feed	Illness	Treatments used	Target market	Live target weight	Transport out of depot	Expected date out
Wagga B Night PIC: 12345678	Smith & Co	G0708	Goats Aboard	10/02/00	30 Cross bred Small Does	Nil	2	12	Hay	No	No	Dom abb	32kg	Transport R Us	15/02/09
Stockholm S Brown PIC: 87654321	Johne	G0807	Goats Aboard	15/02/09	10 Bucks	1 Broken leg	4	3	Mix 13	No	No		45Kg	Transport R Us	15/04/09
Dunedoo K Nife PIC 45600876	Smith & Co	G0876	Transport R Us	20/02/09	155 Mixed mob Does and kids	Nil	2-4	15	Hay	No	No	Dom abb	32kg	Transport R Us	25/02/09
Stanthorpe P Relief PIC: 00088876	Johne	G4567	Transport R Us	22/02/09	400 Weaners	Nil	3	6	Hay	No	No	Dom abb	32kg	Goats Aboard	26/02/09
Dalby R Man PIC: 45678910	N/A	G1234	Transport R Us	28/02/09	22 Bucks	Nil	4	4	Mix 14	1 death	No		45kg	Goats Aboard	30/04/09

Tool 11.8 – Requirements for live export of goats

The *Australian Standards for the Export of Livestock* are relevant to depot operators wishing to live export.

An electronic copy of the standards can be found at agriculture.gov.au – search 'asel'.

Trough space and self-feeders

Where feeders and self-feeders are used, the feed trough allowance for goats held in paddocks is to be calculated on a paddock-by-paddock basis and must be:

- for ration feeding, no less than 5cm of feed trough per head
- for ad libitum feeding, no less than 3cm of feed trough per head
- during May–October, feeding must occur from fully sheltered feed troughs, with the exception of areas north of latitude 26° south.

Amount of feed provided

The quantity of feed available should meet at least minimum feed requirements, which are:

- 3% of body weight/day for animals younger than 4-tooth
- 2% of body weight/ day for 4-tooth or older.

Condition score

Goats intended for live export must be from condition scores 2-4 (inclusive) as shown in Table 7.

Table 7: Body condition scores for goats intended for live export

Score	Backbone	**Short ribs**	**Eye muscle**
1	Prominent and sharp	Ends are sharp and easy to press between, over and around	Thin, the surface tending to feel hollow
2	Prominent but smooth	Smooth, well-rounded ends – can feel between, over and around each smoothly	Reasonably depth with the surface tending to feel flat
3	Can be felt, but smooth and rounded	Ends are smooth and well covered – firm pressure is necessary to feel under and between short ribs	Full and rounded
4	Detectable with pressure on the thumb	Individual short ribs can only be felt with firm pressure	Full with a covering layer of fat
5	Can be felt with firm pressure	Cannot be felt even with firm pressure	Muscle cannot be felt due to a thick layer of fat

Pregnancy status for slaughter

All does must only be sourced for export as slaughter and feeder animals if they:

- have been pregnancy-tested by ultrasound within 30 days of export; and
- are certified as not pregnant and such certification is provided by way of a written declaration made by a person able to demonstrate a suitable level of experience and skill.

Weaner goats

Unless approved by the relevant Australian government agency, goat kids must only be sourced for export if they have:

- been weaned at least 14 days before sourcing for export
- a live weight of more than 22kg.

Breeding females

Goats sourced for breeding must only be sourced for export if they:

- have been pregnancy-tested using ultrasound foetal measurement within 30 days of export; and
- are certified as not more than a maximum of 100 days pregnant at the scheduled date of departure and such certification is provided by way of written declaration made by a person able to demonstrate a suitable level of experience and skill..

Horned animals

Horned goats must only be sourced for export as slaughter and feeder animals if the horns:

- are not turned in so as to cause damage to the head or eyes
- would not endanger other animals during transport
- would not restrict access to feed or water during transport
- are no more than 15cm long and are blunt or are no more than 22cm long with tips no more than 20cm apart.

Pre-conditioning

Goats must not be sourced for export unless they have been conditioned to being handled and to eating and drinking from troughs for a minimum of 21 days before transfer to a registered premise.

Land transport to port

When livestock intended for export are loaded for transport by land:

- animals of different species must not be mixed in a single pen
- classes of animals of the same species must not be mixed
- young animals must be separated from older animals
- animals of a dissimilar size must be separated
- goats lacking horns may be mixed with goats with horns up to 22cm in length.

Loading densities for the land transport of goats for live export

Table 8 provides an overview of loading densities to consider when transporting goats by land specifically for live export.

Table 8: Loading densities – land transport of goats for live export

Mean liveweight (kg)	Floor area (m^2/head)	Head/pen length (2.4m wide tray)		
		3.0m	4.5m	6m
20	0.117	62	92	123
30	0.165	44	65	87
40	0.213	34	51	68
50	0.261	28	41	55
60	0.309	23	35	47

Source: *The Australian Standards for the Export of Livestock* – V2.3.
Note: Large-horned animasl require additional space depending on the size of horns

Time off water and rest periods

The time limit for any given journey by livestock and the requirement for rest periods are primarily determined by the maximum time that animals can be deprived of access to adequate water of a quality to maintain good health and welfare.

The time off water period is the total continuous period of water deprivation, starting when livestock last had access to water, and must include:

- time off water during mustering
- time off water when yarded after mustering
- curfew or 'empty out' time (the deliberate and variable withholding of water and/or 'green' fresh feed so as to minimise faecal and urine spoilage of the transport vehicle)
- all time on the vehicle, whether moving or stationary
- anytime without water after unloading, such as at a saleyard, rest stop or registered premises.

Table 9: Maximum time off water and rest period for goats

	Normal time off water	Extended time off water*	Rest period required after	Minimum rest period duration
Goats over 12 months old	32 hours	38 hours	32 hours of time off water	12 hours
Goats under 12 months old	20 hours	28 hours	20 hours of transport	12 hours unless the entire journey can be completed within a total of 28 hours.

* Extended time off water is permissible only if:

- animals are travelling well and not showing signs of fatigue, thirst or distress
- adverse weather conditions are neither prevailing nor predicted
- the extension will allow the entire journey to be completed within the extended time, and animals to be rested with feed and water for at least 12 hours immediately upon arrival at the registered premises
- the journey's duration, excluding time off water before loading onto a transport vehicle, is less than 14 hours.

During every specified rest period, goats of all ages must:

- be unloaded
- have access to food and adequate water of a quality to maintain good health, which may be withdrawn during the curfew period of up to a maximum of eight hours before reloading
- have enough space for exercise and rest.

Tool 11.9 – Holding periods and stocking densities at export depots

Table 10: Preparation of goats for export in premises north of latitude 26° south:

Holding arrangements	Requirements
In paddocks during May–October	Premises must have procedures to ensure that: • goats to be exported by sea are held at the premises for five clear days (excluding the days of arrival and departure) before export • livestock are fed ad libitum during that period • during the last three days of that period, livestock are fed ad libitum, but only on pelletised feed equivalent to that normally used during an export journey.
In paddocks during November–April	Premises must have procedures to ensure that: • goats to be exported by sea are held at the premises for three clear days (excluding the days of arrival and departure) before export • livestock are fed ad libitum during that period and only on pelletised feed equivalent to that normally used during an export journey.
In sheds during any or all months of the year	Premises must have procedures to ensure that: • goats to be exported by sea are held at the premises for three clear days (excluding the days of arrival and departure) before export • livestock are fed ad libitum during that period and only on pelletised feed equivalent to that normally used during an export journey.

Table 11: Stocking densities for goats -
live weight 54kg, held for live export in sheds for 10 days or more

Head per pen	Minimum space per head
8 head or less	0.9m^2
9-15 head	0.8m^2
16-30 head	0.6m^2
31+ head	0.5m^2

Source: Australian Standards for Livestock Export, Version 2.3

Table 12: Stocking densities for goats - live weight 54kg, held for live export in sheds for less than 10 days

Head per pen	Minimum space per head
8 head or less	0.6m^2
9-15 head	0.53m^2
16-30 head	0.4m^2
31+ head	0.33m^2

Source: Australian Standards for Livestock Export, Version 2.3

Tool 11.10 – Goat export rejection criteria

Category	Rejection criteria
General requirements	• Fail to meet requirements of protocol/import permit, such as sex, type, breed, tag number • Lactating animals with young at foot (this does not apply to livestock being exported by air) • Lactating does • Pregnancy status not confirmed as appropriate for journey
Systemic conditions	• Emaciated or over-fat • Anorexia (inappetence) • Uncoordinated, collapsed, weak • Unwell, lethargic, dehydrated • Illthrift
Musculoskeletal system	• Lameness – footrot, foot abscess, arthritis, fractures etc or abnormal gait • Abnormal soft tissue or bony swellings
Gastrointestinal	• Dysentery or profuse diarrhoea • Bloat
Nervous system	• Nervous signs (eg head tilt, circling, incoordination) • Abnormal or aggressive behaviour/intractable or violent
External/skin	• Generalised skin disease • Visible external parasites • Cutaneous myiasis (flystrike) • Significant lacerations • Discharging wounds or abscesses
Head	• Cancer eye • Keratoconjunctivitis (pink eye) • Excessive salivation • Nasal discharge • Blindness in one or both eyes • Long horns greater than one curl, except in approved NOI and CRMP • Horns causing damage to head or eyes • Bleeding horn stumps • Coughing • Respiratory distress – difficulty breathing • Scabby mouth
Other	• Mobs with unusual mortalities or mortalities of more than 0.5% over the whole period of pre-export preparation • Large disparities in size or age (redraft animals in this case)

Source: Australian Standards for Livestock Export, Version 2.3

Tool 11.11 – Acclimatisation to on-board ration for live export

When accumulating goats in a depot for live export, it is advisable and may be a requirement to introduce the goats to the ration they will be fed during the voyage for a period of at least two week before export. This allows their rumen time to adjust. Table 12 provides the pellet specifications for shipboard rations.

Table 12: Pellet specifications for goats

Pellet composition	Specification
Moisture content	<12%
Ash (as a percentage of dry matter)	<13%
Crude protein (as a percentage of dry matter)	<12%, >9%
Urea (as a percentage of dry matter)	<1.2%
Acid detergent fibre (as a percentage of dry matter)	18-35%
Metabolisable energy	>8.0 MJ/kg dry matter

Source: Australian Standards for Livestock Export, Version 2.3

Case study – Bringing together supply and demand

Depot operator	Rob and Marie Newton
Property name	Summerville
Location	Bourke, NSW
Size	60,000ha fenced; 2,000 head depot capacity
Number of goats (turnoff per year)	Throughput 100,000–150,000/year
Main goat enterprise	Depot and growing out undersized goats
Target market	Export meat market, skin-on domestic

Rob Newton, together with his wife Marie, manages a goat depot near Bourke in north-west NSW. They draw goats from an area within a 200km radius; a distance which seems to be a natural fit with other major, well-established depots in western NSW, and work in with regular suppliers as much as possible. These may be local landholders or contract musterers sourcing goats from private land or national parks.

Catering for suppliers

Most suppliers are looking for a quick offload and don't have the facilities, time or inclination to aggregate or draft goats, preferring to leave this to Rob who offers a full service for his suppliers, including arranging transport. When a landholder or contractor is arranging a muster, they will usually notify Rob several days in advance so space can be allowed for in the depot and trucks tentatively booked. Numbers are always uncertain until the goats are in the yards, but Rob runs a fleet of his own trucks and uses contractors so that anything from 50 goats on a trailer through to 1,280 goats on a road train can be catered for, with the average load being between 100 and 400 goats.

When the goats arrive at the depot they are drafted according to size and weighed, with the supplier being paid on a c/kg live weight basis. Underweight goats are tagged and released into a paddock to be grown out or consigned as a special order to a buyer to be grown out with Rob acting as a broker between the supplier and the purchaser.

Ensuring quick turnarounds

According to Rob, the less time goats spend in the depot, the better.

"It doesn't really matter how good the conditions are, goats prefer not to be confined," Rob said. Most goats spend a total of 2–3 days in the depot where they are fed lucerne hay, as Rob has found this to be the best feed for goats in confinement with very little being wasted. Hay that is about 12 months old is better than fresh lucerne hay which can be too rich and cause health issues. Oaten hay can be fed effectively in the paddock where the goats can supplement the hay with browse but tends to be wasted in the depot.

To facilitate a quick turnaround, Rob has established good relationships with a number of processors but generally supplies goats weighing 12kg or more to Western Meat Exporters at Charleville due to proximity and freight efficiencies. Goats weighing 6–12kg enter a specialised supply chain Rob has developed servicing the Sydney skin on goat wholesale and retail markets.

Rob has grown this market from being small and erratic 15 years ago to consistently taking up to 1,000 goats/week. These goats are processed in Nyngan where Rob has installed a dehairing machine.

Rob noted that operating a goat depot can be challenging and that the workload can be easily underestimated; particularly the administration and paperwork. Maintaining traceability is one of the most significant tasks, requiring a full time labour unit to ensure compliance.

Rob's top three tips for operating a successful depot are:

- **Foster good relationships –** develop, respect and protect relationships up and down the supply chain. This will help ensure goats arrive at the depot in good condition as and when expected and can be transferred to fill prearranged processor orders as soon as possible.
- **Ensure quick turnarounds –** a quick turnaround is good for business and underpins good animal welfare. The less time the goats spend in the depot, the better.
- **Workload –** don't underestimate the workload, particularly the administration and compliance requirements.

Case study – Design and construct the depot to suit your needs

Deport operator	Rick and Jo Gates
Property name	Burndoo Station
Location	Wilcannia, NSW
Size	25,000ha
Number of goats	Turn off more than 100,000 head/year
Main goat enterprise	Meat
Target market	Domestic and export

Rick and Jo Gates operate one of Australia's key commercial goat depots. The Gates have built a set of yards designed to suit their purpose and the environment at Wilcannia in NSW. In light of their growing market, they plan to build another set of yards in the future. A well-designed set of yards includes appropriate stock handling equipment that will improve efficiency and reduce losses due to stress.

Goats come from repeat suppliers who are situated within a 250km radius of the property. Rick and Jo's customers have built good relationships over the years and this guarantees that they can consistently buy healthy rangeland goats.

Rick commented that one of the major reasons they are able to supply a high volume of goats to their markets every year is that they have adequate paddock space surrounding the depot to aggregate and manage the goats that are consigned to them. Further, by maintaining a good set of yards, working with the goats is made easier for both people and the goats. Surplus stock are always kept handy in the adjacent holding paddocks to avoid short-term supply shortages.

The Gates have identified the key factors that contribute to an effective and efficient depot operation:

- A well-designed and properly constructed set of yards – this makes the work quick and easy, causes less stress to animals and allows you to operate smoothly at full capacity.
- The yards should have all the necessary stock handling equipment that you might need.
- The 'Burndoo Station' yards have the capacity to handle up to 2,500 goats at any one time. Equipment required to handle a big number of animals over a short time includes:
  - scales which can do group weighings of more than 30 goats
  - stock-lift handling machine which is used for tagging and earmarking and can handle more than 1,000 goats in an hour
  - adjustable loading ramp that can wind up to each deck of the truck in a short time.

These features reduce the turnaround time for trucks at the depot and increase efficiency.

Time and money spent designing the depot and purchasing equipment has been more than made up through improved efficiency and animal welfare.