



final report

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Australian Goatmeat Supply Profile

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Overview

In 2006 Meat & Livestock Australia commissioned the report "Supply profile of the Australian goatmeat industry" in order to quantify and qualify the supply potential of the Australian goatmeat industry. Since that time the Australian goatmeat industry has continued a trend of rapid expansion with goatmeat exports peaking at 25,911 tonnes in 2010, alongside a live export market of 81,000 animals as well as a growing domestic market.

The 2006 report concluded that the current supply was sustainable and that the adoption of best practice was fundamental to securing the future of the industry.

Limited research has been undertaken since the previous report in an attempt to quantify the Australian goat population. Best estimates based on the latest surveys suggest a range of between 3 and 4.4 million goats in Australia, comprising of between 2.6 and 4 million rangeland goats and 400,000 domestic farmed goats.

In 2010, according to ABS over 1.75 million goats were either slaughtered for export or domestic markets or exported live.

This rapid expansion in the market has been driven by not only a rapid rise in the demand for goatmeat around the world due to population growth and increasing Gross Domestic Production (GDP) in many countries driving demand for protein, but also by a global shortage of sheep meats, particularly mutton and the practice of substituting goatmeat into previously traditional mutton markets.

Whilst domestic farmed goat populations are driven by economics relating to demand and the competition for land use by competing agricultural pursuits, the population of rangeland goats is largely determined by environmental factors.

When environmental conditions are favourable, goat populations can increase by 50% per year. Such conditions are currently being experienced in many goat producing areas and have been in recent years.

As a result many processors and exporters are highly optimistic that the current supply of goats is sustainable. It is shown that whilst this may be correct, it is a view that if not challenged, could lead to a significant risk of the goat supply declining below levels that would sustain demand..

Supply for the domestic market is already below demand levels and the reliable supply of consistent product throughout the year is a major hurdle in increasing that demand further. Domestic farmed goat populations appear to be declining and the absence of significant numbers of new entrants joining the industry will further compound this problem.

The conclusions of this supply profile estimate that the export market requires a rangeland population of 3 million goats to satisfy the current level of demand whilst favourable environmental conditions exist. However, when the current favourable environmental conditions do not prevail and a return to average or below average seasons occurs, a significantly higher population of rangeland goats will be required to meet the current level of demand. If this core population does not exist, a rapid decline in the goat numbers will occur that would see the populations drop below sustainable levels.

The industry has several tools at its disposal to assist in minimising this risk. These include the use of quantitative genetics to select for more productive animals, to increase farm production through the encouragement of new entrants into the industry and to implement extension and supply chain development initiatives to bolster the supply of goats derived from the rangeland or pastoral environment.

Introduction

The Australian goatmeat industry is largely based upon a commodity sourced from low input production systems in Australia's rangeland environments. A smaller, more intensive goatmeat production industry exists in higher rainfall areas. Goatmeat is also produced as a by-product of the goat fibre and dairy industries.

The Australian goatmeat industry has experienced a phase of dramatic growth in the last ten years with shipped weight exports increasing from 12,527 tonnes in 2000 to 25,911 tonnes in 2010. Australia is the world's largest exporter of goatmeat. The Australian domestic market for goatmeat is small but growing.

In 2006, Meat & Livestock Australia commissioned the report "Supply profile of the Australian goatmeat industry", in order to quantify and qualify the supply potential of the Australian goatmeat industry.

Since this time, the goatmeat industry has developed further and goat depots have emerged as an important sector during this period.

Meat & Livestock Australia has therefore commissioned this report, "Australian Goatmeat Supply Profile" in order to update the finding of the 2006 report and to establish the goatmeat industry's current supply capability.

This information will assist Meat & Livestock Australia in strategic planning and will support the development and sustainable growth of the goatmeat industry through the prudent investment of goatmeat marketing and research and development levies.

Methodology

In order to establish the goatmeat industry's current supply capability, a number of activities were undertaken.

A literature review was undertaken to clarify if any new research material on goatmeat supply had been undertaken since the previous report. An analysis of all available goatmeat statistical data was also undertaken to update production figures.

Meetings and discussions were then held with key industry participants from export and domestic abattoirs, live exporters, producers, depot operators and marketers in order to understand supply issues in each sector.

Finally, the results of these investigations were analysed and interpreted in order to provide an update of the Australian goatmeat supply profile.

Conclusions from "Supply profile of the Australian goatmeat industry"

The 2006 report commissioned by Meat & Livestock Australia titled "Supply profile of the Australian goatmeat industry" provided a number of conclusions. These included:

- There were 2.6 million feral and rangeland goats and 450,000 domestic farmed goats in Australia;
- 94% of goatmeat production was exported;
- Average export carcass weight was 15.5kg and domestic carcass weight was 14kg;
- Breed was of no concern in the export market and of little concern in the domestic market, with the main product specification being leanness;
- Supply at the current level was sustainable and had the potential to increase as management practices in rangeland regions were refined;
- Seasonality of supply was becoming less pronounced as the industry matured and management practices improved; and
- The adoption of best practice was fundamental to securing the future of the industry.



Background to the Australian goatmeat industry

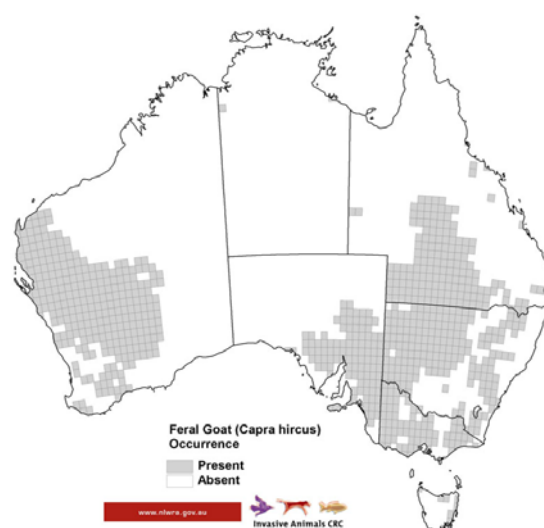
As detailed in "Supply profile of the Australian goatmeat industry", goats (*Capra hircus*) were introduced to Australia from England with the First Fleet as a source of meat, milk and fibre. Cashmere and Angora goats followed in the 1800's and were farmed for fibre production, along with the more recent inclusion of the South African Boer goat used extensively as a specialist meat breed to improve the productivity of existing herds.

Feral goat populations became established after the deliberate release or escape of domestic stock, and today the rangeland goat population represents the mixed origins of the fibre, meat and milk goat breeds that have been imported into Australia over the last 230 years. Recently, feral goat populations have established from goats used to control weeds in plantation forests and woody weeds (McLeod 2004).

Feral goat numbers have increased on several occasions because of the collapse of the goat fibre industry (Jago 1999) as goats were abandoned to mix with the feral population. Conversely the commercial harvest of goats for slaughter and to a lesser extent, live export has seen goat numbers fluctuate at times.

In 1996 Parkes et al. reported that the feral goat population occupied about 1.21 million square kilometres, or 16% of the Australian landmass. In a more recent survey it is stated that feral goats presently inhabit an estimated 28% (ie 2.13 million square kilometres) of Australia and occur in all states and territories, and on some large coastal islands (West 2008).

Figure 1: Feral goat occurrence throughout Australia (2008)



Source: West 2008

West provides more detail as to the distribution of feral goats in Australia reporting that feral goats:

- Are abundant across large areas of NSW, SA, QLD and WA, and occur in many remote and dry regions;
- Only exist in one location in the NT and are known to occur only in a few locations in TAS;
- Occur mainly at occasional and common abundances throughout their range;
- Are absent from over 70% of Australia; and
- Are mainly localised in WA and widespread throughout the eastern and southern regions of Australia.

Previous attempts to account for the number of feral goats in Australia have been made by Southwell et al. (1993) who estimated that eastern Australia had nearly one million feral goats, and a few years later Parkes et al. (1996) estimated that Australia had about 2.6 million feral goats. However, the authors

considered this a conservative figure in view of the number of animals harvested – about one million per year from 2001 to 2003 (Forsyth and Parkes 2004).

Other population studies of feral goats in Australia range from 1.5 million (Pople et al. 1996) to 3 million (English and Chapple 2002) and as high as 5 million (DAFF 2005).

The range in population statistics is expected due to the undomesticated nature of the resource and the nomadic movement habits of the animal. It could be said though that a current best estimate of the Australian goat population may be at the upper end of these studies, given the knowledge now available of the much wider distribution of the feral goat population.

Australia also has a significant population of domestic farmed goats. These goats are generally specialist meat, fibre or dairy goats or used for weed control. Similarly to the feral goat population, the number of domestic farmed goats is also an unknown. Previous studies have suggested a population of between 300,000 (DAFF 2005) and 450,000 (Parkes et al. 2006).

Domestic farmed goats can be classified as either:

- Fibre goat: Australia currently has a population of 155,000 Angora goats (Mohair Australia 2011) and 10,000 Cashmere goats (Australian Cashmere Growers Association 2011).
- Dairy goats: It is unclear as to the number of dairy goats in Australia. A best estimate is approximately 25,000. Many herds are very small being less than 10 animals.
- Meat goats: These are generally Boer or Boer X goats used for meat production or in some cases weed control. Anecdotally, from producers and processors, the number of Boer and Boer X goats has declined over the past 5 years. This is said to be due to either:
 - the lack of a price premium (compared to 'feral') in the goat meat market for this type of goat, making the cost of production prohibitive; or
 - reports of the Boer goats not surviving the rangeland environment and the influence of the breed diminishing.

Whilst it is difficult to quantify the numbers of Boer and Boer X goats in Australia, one major Boer Goat producer estimated the number at no more than 200,000.

From these latest figures, it appears that the previous reported figures of domestic farmed goats appear to be currently correct, with a population of approximately 400,000. This is lower than the latest ABS estimate of 512,745 (ABS, 2011). However, ABS warns that this estimate has a relative standard error of 10% to less than 25% and should be used with caution. Furthermore, it is unknown the number of managed rangeland goats that may be included in this estimate. Therefore, the previous population of 400,000 will be used.

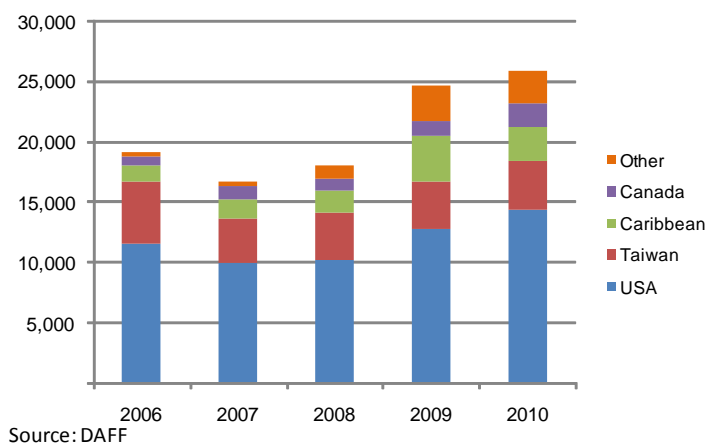
Combining the estimates of the feral goat population with those of the domestic farmed goat herd, estimates for the total Australian goat herd would range from 1.9 million to over 5.4 million, with a more likely range (based on the later surveys) of between 3 and 4.4 million.

Australian goatmeat industry productivity

In 2010 DAFF reported that Australia exported 25,911 tonnes of goatmeat. Figure 2 demonstrates the rapid gains in goatmeat exports over the last 5 years.

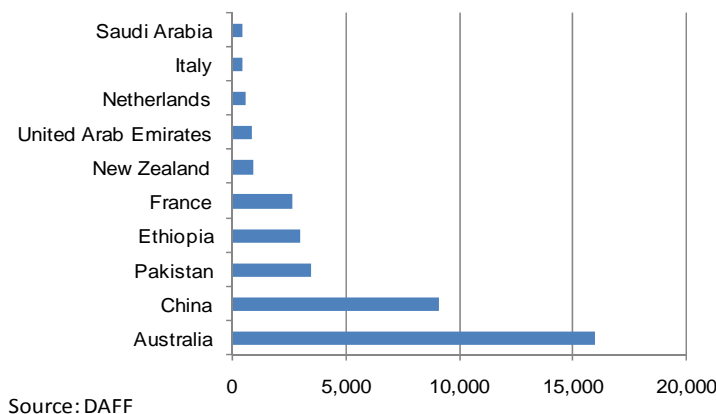
Whilst Australian goatmeat is exported to many countries, the USA continues to grow in dominance as the major driver behind the rapid growth in the Australian goatmeat industry, with the Caribbean also increasing significantly in relative terms in recent years.

Figure 2: Goatmeat Exports (tonnes)

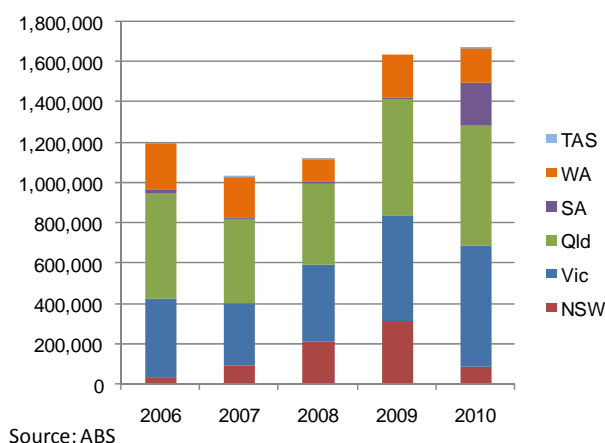


This level of export activity places Australia as the largest exporter of goatmeat in the world. In the latest available global export figure available (2007), Australia exports over 40% of the total global goatmeat exports and 75% more goatmeat than the second largest exporter (China).

Figure 3: 2007 Global Goatmeat Exports (tonnes)



In terms of the number of animals slaughtered, the Australian Bureau of Statistics (ABS) reported that in 2010 1,676,161 goats were slaughtered in Australia. In line with export figures, slaughter numbers represent a dramatic increase in productivity over the last 5 years.

Figure 4: Goat Slaughter Numbers (head)

Based on a carcase weight of 15.5kg as identified in "Supply profile of the Australian goatmeat industry", 25,911 tonnes of goatmeat export (as reported by DAFF in 2010) would equate to 1,671,677 goats. This is very close to the ABS 2010 figure of 1,676,161.

However, it would be expected that the ABS slaughter figures would be well above the DAFF export figures, given that the DAFF figures do not take into account domestic consumption.

This apparent discrepancy may in part be explained by heavier carcasses. Discussions with processors revealed a significant increase in carcase weight over the recent years. This was explained by:

- Better than average seasons being experienced in many rangeland environments, resulting in heavier goats; and
- The establishment of goat depots causing a reduction in the numbers of 'no commercial value' (NCV) goats arriving at abattoirs, but instead being kept on farms to increase weight and therefore value.

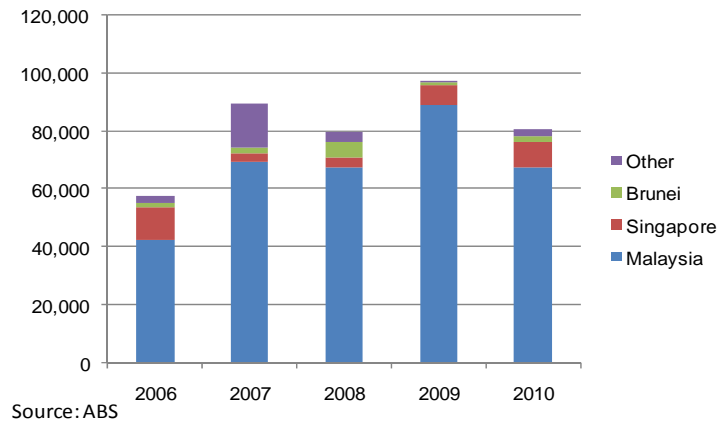
As a result most processors were reporting a carcase weight increase of 1-2kg.

Revising the previous average carcase from 15.5kg to 17kg (increase of 1.5kg) would result in the DAFF export figures equating to approximately 1,524,176 goats. This would leave an additional 151,985 goats that could be accounted for by the domestic market. In percentage terms, this would suggest the domestic market accounts for 9.1% of the total goatmeat market. This figure is in line with anecdotal evidence and previous findings.

Alongside the slaughter of goats for export and domestic consumption, there are considerable numbers of goats that are exported live. In 2010, ABS reported that 81,014 were exported, with the majority destined for Malaysia. Whilst not to the same scale of goatmeat exports, there has been a considerable increase in live goat exports over the past five years. This may be in part, due to the 9th Malaysian Plan increasing demand for cross bred Boer does for the export breeder market as identified in "Supply profile of the Australian goatmeat industry".

From reports from those involved in live exporting, it is estimated that 20% of goats exported live are Boer and Boer X breeders, with the remainder being slaughter animals.

Figure 5: Live Goat Exports (number)

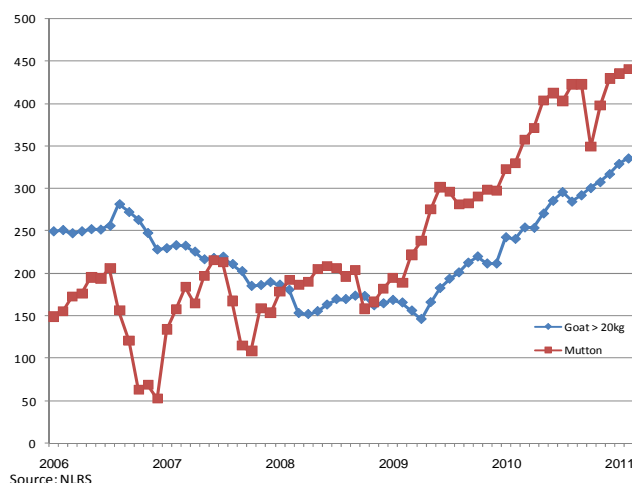


According to ABS, 1,757,175 goats were either slaughtered for export or domestic markets, or exported live in 2010. While pragmatically this figure may not be exact, given the absence of reporting for home kills and the small service kill industry, it is considered appropriate for the findings of this supply profile.

Demand Drivers of the Australian goatmeat industry

Whilst it is clear from export data and discussions with processors and exporters that demand for Australian goatmeat is increasing similar to other red meats, due to population growth and increasing GDPs in many countries driving demand for protein. Many processors have stated that goatmeat was being used extensively as a substitute to mutton in many export markets. This was reported as a growing trend as mutton prices have increased sharply over the last three years. In addition to this Australian is now recognised as a consistent supplier of goatmeat to world markets making it the first choice for many importing countries.

Figure 6: Mutton and Goat Price Comparison (c/kg cwt)



Whilst it is not the aim of this report to investigate potential price drivers of mutton, given the clear relation between goatmeat and mutton prices over the past three years, it is important to have some understanding of what has driven the mutton price, and subsequently, at least in part, the goatmeat price over recent years.

In 2010 the Australian sheep flock was reported as 67.7 million (Athas 2011). Whilst a slow rebuilding phase has begun from this low base, the current population of around 70 million represents a significant decline from the 2006 population of 91 million (Athas 2011) and an enormous decrease from the record population of 180 million recorded in 1970.

This has resulted in a period of very tight supply. Mutton sheep numbers have continued to fall as producers have battled with years of below average seasons and a lack lustre wool market that resulted in many sheep being sold for slaughter (instead of used for wool production and breeding).

At the same time strong export demand has been experienced for both mutton and live sheep, leading to the inevitable price rises that have been achieved over the past three years.

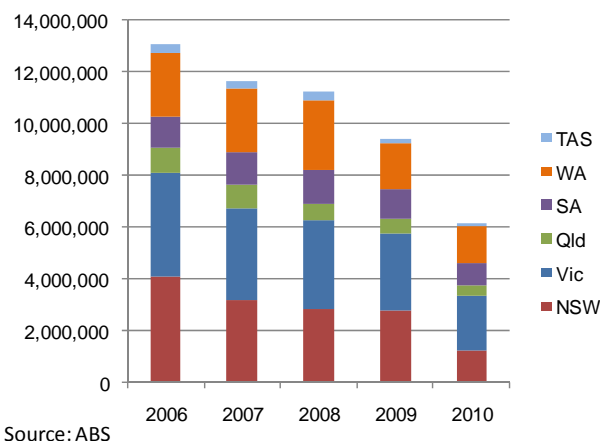
This scenario has in part lead to a similar rise in goatmeat prices as exporters have sought to fill orders with cheaper goatmeat, driving up the demand for goatmeat.

Whilst a contributor to mutton price and therefore goatmeat price, the supply of mutton is also having a significant effect on the price of goatmeat in its own right. Feedback received from many long term goat processors suggested that their own goat throughput had not increased greatly over recent years and that the additional goat slaughter numbers being reported were due to traditional sheep and lamb processors turning to goat in order to keep their processing plants operating.

Meetings held with several of these sheep and lamb processors during the research phase of this project confirmed that this was indeed the case.

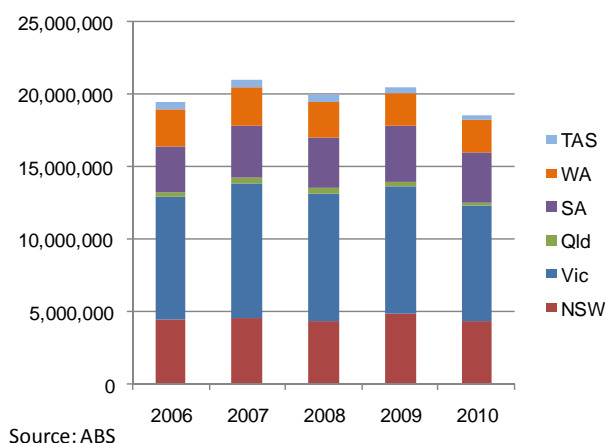
This situation is resulting in upward pressure on goatmeat prices due to more competition for slaughter goats as processors attempt to top up supply of sheep and lamb with goats.

Figure 7: Sheep Slaughter Numbers (head)



Over the past five years sheep slaughter numbers have decreased by nearly 7 million head, or approximately 60%. Over the same period, the number of lambs slaughtered, has decreased by 4.2% or 780,000 head.

Figure 8: Lamb Slaughter Numbers (head)



The decline in slaughter numbers has resulted in a combined decrease in processing throughput of nearly 7.8 million head per year. These production shortfalls have only been slightly offset by the numbers of goats slaughtered over the same period increasing by 46% or 475,000 head

Supply Drivers of the Australian goatmeat industry

The supply of the approximately 400,000 domestic farmed goats in Australia is driven largely by demand influences (and their direct effect on price), along with competition for land use from alternative agricultural pursuits. The recent large increases in sheep and lamb prices has had a detrimental effect on domestic farmed goats numbers as many producers have opted to focus more on sheep production. Many domestic goat producers could also be classified as hobby farmers, meaning that lifestyle choice is an alternative factor in the numbers of domestic goats.

However, the supply of the rangeland goat which makes up the majority of goats in Australia that contribute to overall goatmeat supply is not entirely driven by demand.

Demand however does play an important part in determining supply of rangeland goats. As demand (and price) increases so does the willingness of goat 'harvesters' to capture and transport goats to processors. Likewise, as demand increases the number of processors also increases in order to capture the profits of that demand. With increased processor numbers, comes increased competition, which in theory, puts upward pressure on demand and therefore prices.

As demand for goatmeat has increased, industry participants seize their opportunity to generate a return on investment in their capital infrastructure that has been established to benefit from this increase in demand.

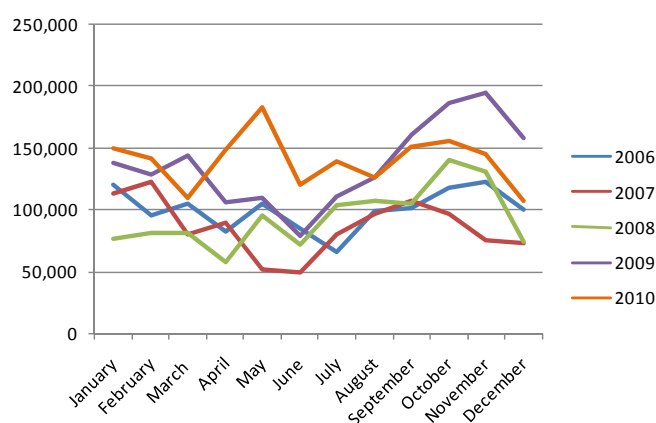
Possibly the most significant of these opportunities has been the development of the goat depot industry. Depots, which generally act as collection points for harvested goats have been an important driver of the supply of goats in recent years through a number of ways:

- Depots have made it more feasible to sell small numbers of goats that individual producers / harvesters may have available, by amalgamating with other small numbers in order to achieve economies of scale, particularly in relation to freight costs.
- Depots have generated more confidence amongst processors that supply will be available. As a number of depots are located 'on the bitumen', weather interruptions to transport are also reduced, resulting in a more consistent supply.
- Depots draft goats according to live weight in an attempt to reduce the number of undersized (no commercial value) goats being supplied to processors. These animals can be kept on farm to grow out prior to being sold. This has the potential to reduce wastage in the supply chain which ultimately takes pressure off supply.

Many processors have reported that they rely entirely on depots for supply, with many processors having set up their own depots to at least partly ensure supply.

A major issue that many processors report is the problems associated with seasonality of supply.

Figure 9: National Goat Slaughter Seasonality (head)



Source: ABS

Generally, goat supply is limited during the colder months where water tends to be more freely available throughout the rangeland landscape. This reduces the ability to trap goats at watering points. Again, depots are reported as playing a major role in reducing this seasonality by being able to even out the supply of goats onto the market.

Whilst the above supply drivers are based loosely around economics and the relationship with demand, possibly the largest of the supply drivers is not related to economics at all, but instead, the environment.

Goats become sexually mature within their first year, have extended breeding seasons with the potential for at least 3 litters within 2 years under favourable environmental circumstances. Twins and triplets are common. This can result in goat populations increasing by up to 50 percent each year in unmanaged populations (Parkes et al. 1996).

Based on this knowledge, the supply of goats in rangeland Australia is influenced greatly by environment. Being an environment based on extremes, goat populations vary greatly from year to year and season to season. In the last decade, Australia has witnessed extremes of climatic conditions, ranging from many years of below average rainfall and drought being replaced by above average rainfall and floods

The favourable environmental conditions experienced in the rangeland areas of eastern Australia during the last three years have coincided with very favourable economic conditions as they relate to demand. This current increased demand has served to keep the numbers of rangeland goats at a satisfactory level, thereby limiting their potential to cause significant environmental damage.

Sustainability of Supply

Rapidly increasing demand and favourable environmental conditions over recent years has led to great optimism in the Australian goatmeat industry. When surveyed most processors considered that the current supply of goats was sustainable and that as long as demand was sustaining relatively high prices, goat supply would be assured.

Whilst possibly correct, this view could lead to a significant risk of the goat supplies declining below levels required to sustain demand, particularly if seasons returned to average or below average.

In terms of sustainability of supply, it is particularly useful to examine the domestic and export markets separately.

Domestic Market

In many instances, the domestic market is currently supplied by individual producers or marketers who accumulate goats from other producers to increase volume. All of these producers reported that the domestic demand for goatmeat, particularly at the high end food service industry, well exceeded supply and that if they had access to a more consistent supply of quality goats they could supply multiple times their current volume into the domestic market.

Whilst opinions differ as to the carcass specifications of this market, most agree that the domestic market is looking for a carcass which is not as lean as the export market and therefore more than likely from a Boer or Boer X animal. However, there are also many reports of rangeland goats entering the domestic market as well, however probably not into the high end food service industry.

So why aren't more producers turning to goat production if the current supply to the domestic market is unable to meet demand? Whilst this issue requires more stringent research, the following have been raised as hurdles to new entrants:

- Goats are seen as difficult to manage. Containment and parasites are both areas of concern.
- Competitive land uses are also experiencing high demand and low supply conditions making many sheep and cattle producers, who may otherwise look for a change in enterprise, comfortable to remain with-in their current practices.
- The stigma that can be associated with goat production. Many grazing enterprises would see goat production as hobby farming and not something that is done on a large or commercial scale.

Unless these issues can be overcome, it appears that at least in the short term, there will not be an increase in the number of domestic farmed goats that can supply the domestic market, particularly the high end food service market that is more specific in relation to carcass specifications. In fact, a large decline in Boer or Boer X animals has been reported over recent years, which has been attributed to the lack of market premiums being available in the domestic market over the commodity driven export market, resulting in the additional cost of producing the high end goat not being rewarded.

Export Market

In 2010 some 25,911 tonnes of goatmeat or the equivalent of approximately 1.5 million goats were exported from Australia. By far the majority of these goats were supplied from the rangeland herds. Previous research has indicated that a rangeland population of between 2.6 and 4 million exists in Australia.

Based on favourable environmental conditions, the goat population can increase by 50% every year if not managed. Hypothetically, if harvesting was to cease a goat population of between 3.9 and 6 million would be possible within 12 months.

With 1.5 million goats being harvested each year, this would reduce to between 2.4 and 4.5 million.

From these simple calculations it can be surmised that a current population of 3 million rangeland goats is required in order to achieve sustainability. Being in the lower part of the current estimates, it could be concluded that goat supply is likely to be sustainable.

However, if the current favourable environmental conditions fail to prevail and the current demand for export goatmeat does continue at current rates (or increases), there is a real and looming risk that the rangeland goat population could drop below sustainable levels. Given the size of the current demand, the decline could occur very quickly.

This outcome is of course based on the current estimates of goat populations being reasonably accurate. If for example there are 5 million goats in Australia, it would be safe to conclude that goat supply would be sustainable. However, there is no real basis upon which to make this conclusion and therefore to do so would put an industry worth some \$100 million per year at risk.

In fact, anecdotal reports from stakeholders involved in goat harvesting or supply of goats indicate at present, the Australian goat population is actually decreasing and goats are becoming harder to find. Whether that is due to a general population decline, activities of predators (eg wild dogs) or some other environmental factors is difficult to conclude without a proper benchmark study of the existing goat population.

The magnitude of the wild dog problem and its effect on goat supply is worthy of special mention. In many areas of Australia, producers, harvesters and processors are reporting that the growing presence of wild dogs in areas of previous rangeland goat habitat have severely reduced the goat population. This seems to particularly be the case in Western Australia where wild dog sightings are becoming common in areas where up until 10 years ago wild dogs did not exist.

Ensuring Sustainability

From the research undertaken, it is possible to conclude that the supply of goatmeat, both for the domestic and export markets is not sustainable at current levels of demand and needs to increase, or at the very least, in the case of the rangeland population, be better managed.

The Australian goatmeat industry has several ways in which it could assist in ensuring sustainability of supply, or in the case of the domestic market, creating additional supply to meet current demand.

Increasing Carcase Weight and Quality

As a bulk commodity market, goatmeat export is based on tonnage of meat and not number of head. Therefore, an increase in carcase weight should see a corresponding decrease in the number of animals required to meet demand.

Whilst the establishment of depots has assisted in this area by returning undersized animals to the paddock, in the short term, environment is the largest single determinant of carcase weight. Under adverse seasonal conditions, it becomes difficult for grazing goats to achieve suitable live weights and body condition for marketing. Based on the knowledge that good seasons don't last forever, the industry should act now to ensure sustainable carcase weight and quality improvements can be achieved in the long term.

One of the most effective way of increasing carcase weight as well as quality on a long term basis is through the use of genetics, more specifically quantitative genetics.

The Boer breed has demonstrated an ability to increase carcase weight and quality, however their use has declined due to the perception and sometimes reality that they are not as hardy as rangeland goats and cannot compete in the rangeland environment. Whilst this may be true, it is likely that there are animals existing within the current Boer breed that display above average phenotypic hardiness characteristics that could be actively selected for (along with other commercially important traits) to improve the success of increasing Boer genetics, resulting in an associated increase in carcase weight and quality, within the rangeland goat population.

Likewise, within the vast and genetically diverse rangeland population, specific genotypes would exist with favourable characteristics, that if selected for, would increase carcase and other commercial traits in a reasonably rapid manner.

It is possible that in some markets larger carcasses would not be seen as favourable, especially if they contain fat. If this is the case genetic selection still has a role to play by increasing goatmeat produced per hectare by allowing animals to be turned off at existing carcase weights but at younger ages.

To aid in this process a robust and well managed genetic benchmarking program is required to both deliver genetic gain to the industry as well gain the confidence of breeders to engage in the quantitative genetic path.

Sheep Genetics, funded by MLA and Australian Wool Innovation (AWI), owns and manages KIDPLAN™ as part of its suite of genetic benchmarking programs that also includes LAMBPLAN™ and MERINOSELECT™.

KIDPLAN™ has enjoyed limited success with only a handful of active users engaged in the program. It is unclear why this is the case, however some breeders suggest a lack of confidence in the system or the inability to implement in an extensive rangeland environment. It is just as likely though that a lack of understanding of the principals of quantitative genetics and a preference to use the show ring as a benchmarking system has led to the low uptake of the system.

As has been experienced in the beef, lamb, sheep and wool industries, quantitative genetics programs similar to KIDPLAN™ have been responsible for the delivery of significant genetic gains in terms of commercial output. Coupled with a robust and stringent visual assessment program for non measurable traits such as confirmation, KIDPLAN™ has the potential to deliver similar productivity gains to the goatmeat industry.

It is difficult to clarify how many significant seed stock producers of goat genetics are currently operating in Australia. Anecdotal reports suggest that there are 12 Boer studs with more than 300 does and an unknown number of rangeland producers, which by definition are seed stock producers themselves.

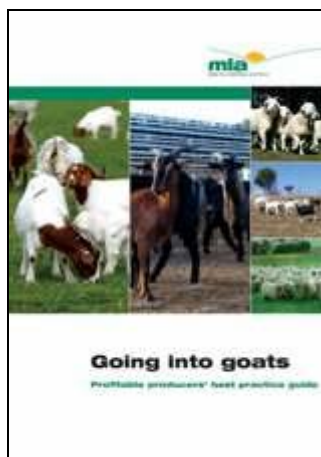
This information will need to be clarified and specific seed stock producers targeted through an extension program that raises the awareness and benefits of quantitative genetics, further develops KIDPLAN™ in line with industry requirements and engages the industry in its use.

An alternative and complementary program to increase carcase weights and quality is through the application of appropriate nutrition in order to improve the finished quality of the currently available animals. Whilst difficult in a rangeland environment, the development of depots does provide an opportunity to finish animals in a feed lot environment and specifically target carcase specifications for various markets.

Greater Farm Production

Great potential exists for overall goatmeat production to be increased through a sustained increase in domestic farmed goats.

In 2006, Meat & Livestock Australia released *Going into Goats: Profitable producers best practice guide*. This guide is aimed at promoting a more professional approach to goat production through the adoption of best practice management amongst existing producers and to encourage new producers into the industry.



The guide is of high quality and contains relevant and up-to-date information. Whilst those that have used the guide have reported increases in their own production, in general it has failed to result in a significant increase in overall production or encourage new entrants to enter the industry.

With the exception of several potential issues raised previously, it is unclear as to why producers of other agricultural products seem to shy away from considering goats as part of their enterprise mix. Research into the attitudes of these producers towards goats and their production would form the basis of a new extension program, using *Going into Goats* as a basis, to encourage wide spread adoption of goat production amongst current producers of other commodities.

As part of this extension program, there is a need for training courses targeted at producers, agents, consultants and students in the areas of goat management, husbandry and marketing to enable them to become more aware of the opportunities within the farming of goats.

Managed Harvesting

According to Parkes et al, (1996) in most feral goat populations there is generally an equal number of male and female kids born and that the proportion of females increases among older age groups with a ratio of 1:0.8 of females to males.

So, assuming that 50% of the rangeland herd is female and 80% of those are breeding age, between 1.04 and 1.6 million breeding does currently exist in Australia. Currently there appears to be only a limited number of harvesters placing any selection criteria on population sustainability when goats are harvested and marketed.

Being an unmanaged population it is difficult to justify the release of young breeding does in order to generate another generation as the resulting offspring will unlikely benefit the individual that chooses to release the doe. Just as likely, another person will harvest the doe and sell her.

Within an unmanaged population it is difficult to justify the release of young breeding does for the purposes of generating another generation. This is because goats (and their offspring) being nomadic, could easily wander to another land holding and be harvested by another individual. Most harvesters adopt the attitude of not releasing any captured goat unless there are good fences in place to retain these goats. This situation is not allowing any remnant females to build up into sustainable breeding herds.

However, in a semi managed environment where goats are controlled behind some level of fencing, the concept of classing does (by age, confirmation etc) at the point of harvest for either selling for meat or breeding should be further encouraged.

Whilst market forces will determine the success of such an outcome, producers may be encouraged to consider the option through an extension program aimed at raising awareness of the issue. Success in programs that identify genetically superior animals or increase current farm production will also result in the retention of breeding does being a viable option.

Wild Dog Management

The Australian goatmeat industry is one of many agricultural industries that is currently being threatened by growing populations of wild dogs around Australia. Work is currently being undertaken by various R&D organisations, government agencies and producer groups in attempt to reduce this threat. The entire goatmeat industry should ensure that support for these programs is forthcoming and continued.

Ensuring sustainability of the Australian goatmeat supply will require a multi faceted approach. A combination of at least the four tools highlighted above will be required to achieve long term outcomes.

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