

Meat - Being Competitive

Competiveness of Australia's Intensive Livestock Industry

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Introduction

This paper will examine the competitiveness of the various Australian meat sectors looking at comparisons within and between the domestic and international markets. Competiveness in terms of supplying the Australian consumer or international markets will not only be looked at in regard to the more recognised influences such as feed costs, the value of the A\$ and production efficiencies but also in regard to factors influencing the consumer acceptance of the meat product such as environmental impacts, welfare and state and federal regulation.

International competitiveness of meat sectors will be examined by comparing Australia's advantages and disadvantages with those of other international suppliers of meat.

Currently for the pig industry, where both exports and imports occur, competitiveness within both the domestic and international markets is interrelated.

While there are clear differences between the meat livestock industries in regard to husbandry and systems of farming many of the factors that affect the competitiveness of one meat sector are common to all.

The demand for animal proteins is expected to triple over the next 40 years and this demand for meat is expected to grow 3 times faster in developing countries compared to the developed. The use of grain for food is expected to increase by 45% in the next 20 years and by 60% for animal feeds.

The Meat Sectors

Chicken Meat

There has been a major increase in consumption of chicken meat to levels where it is now exceeding that of beef in Australia. Gross value of production is around A\$1.5 billion, which equates to an ex-plant value of approximately A\$3.3 billion and retail spending of around A\$4.4 billion. Produced by a limited number of predominantly vertically integrated companies using securely imported modern genetics, the resulting progeny being housed and maintained under sophisticated intensive husbandry systems. Chicken meat provides to the consumer one of the lowest cost meats with flexibility in presentation in both fresh and further processed products. Competition is strong between processors within the chicken meat sector which is at present not subject to the competitive pressures of what would be invariably lower cost imports. Exports are not a significant part of the industries market, estimated to be less than 3% of total production.

Beef

Beef remains a favoured meat by the Australian consumer and while consumption has remained relatively flat over the last decade, down from the large consumption seen in the 1970's, domestic demand remains high. Grain fed beef now makes up over 30% of all beef produced and exports play a very significant role in this meat sector. Recent export markets of Australian beef have been favoured by Australia's recognised health status advantages.

Lamb

Current consumption has declined to less than 50% of the highest consumptions seen in the 1960's and 1970's. Recent marketing strategies based around producing a more consumer acceptable product have seen a stabilisation in this decline. Most lamb is produced under extensive grazing conditions with only around 3% grown in feed lots currently but up to 10% under favourable grain price conditions. Exports are an increasing market with its full potential limited by the current level of production in Australia. Numbers are the lowest in 80 years. The production of lamb is becoming more primarily focused around dedicated prime lamb production, and not as it was historically, related to a by product of wool production. Australia also has a significant live sheep export market composed of lamb and mutton, where the later competes against the lower cost protein markets overseas, such as goat and lower cost red meat portions. Lamb exports have increased by 30% over the last 4 years with further increases being restrained by limited local production.

Pork

Consumption has shown steady incremental increases to levels exceeding that of lamb but still only around 50% of that for chicken and beef. The allowance of pig meat imports into Australia has dramatically changed the prospects of the pork industry, particularly for processed pig meat, with the industries cost of production not being able to be competitive with imports. Importing countries are advantaged by their governments providing subsidies or export enhancement assistance. Continued rationalisation of the industry will need to be undertaken if it is to remain a viable part of the Australian meat industry sector.

Factors Affecting the Relative Competiveness of the Various Meat Sectors

There are many factors that influence the competitiveness of each of the meat sectors with each other in local and export markets and against other international suppliers. Such factors may be biological, regulatory, environmental and political and include local and internationally controlled factors such as the value of the Australian dollar. The success of any meat sector is associated with increasing saleable production associated with sustainable profit margins that allow the sector to develop and invest in ongoing optimisation strategies.

There are concerns of all meat sectors that on the domestic market the dominance of the Australian supermarket sector is itself uncompetitive at the wholesale pricing level and not necessarily to the benefit to the consumer as retail prices don't always reflect proportionally the downward trends in wholesale pricing.

The more salient factors that influence competitiveness of the meat sectors of the Australian intensive livestock industries are examined in this paper.

Feed

With the exception of the lamb industry the chicken, feed lot beef and pork sectors are heavily dependent on grain as the main feed ingredient. The beef feed lot industry being the largest user of grain by volume, followed by chicken and pork. The improved seasonal conditions and the ample supply of failed crops to which lambs were given access actually saw improvements in lamb performance in the second half of 2007.

Feed which is predominantly grain contributes around 60 to 80% of live weight costs in intensively produced animals.

The recent high international futures for grain coupled with the increase in the Australian domestic basis price due to ongoing drought conditions have meant the highest grain prices on record for Australian livestock producers. While generally meat consumption has not decreased, the difficulty and delays incurred by producers to realise price increases have meant that profit margins have declined.

Generally as prices increase this happens proportionally across most sectors. The exception here is pork where consumers are more flexible with their pig meat consumption, often seeking other meats, particularly lamb and beef, as the price differential narrows.

There is now a developing world wide net shortage of grain for livestock and predictions are there is no short or even medium term resolution to this situation. Grain stocks are now at 60 years lows. The Australian intensive livestock industries are further impacted by the current restrictive approaches to grain imports. Imports are normally only considered for AQIS approval where there are considered to be extenuating circumstances regarding domestic supplies and such imported grains can be used only at coastal mills or in land after heat treatment. There are some concerns also by some sectors of the meat industries about the lack of transparency in grain merchandising. The lack of transparency in the Australian grain stock, unlike those of other markets such as the USA, results in increased domestic price volatility.

There are calls by the intensive livestock industries for increased deregulation of the grain markets to allow more competitive pricing of grains on the domestic market.

The single biggest issue here is the single desk operation of the Australian Wheat Board (AWB). The latter being supported by the grain growers. This is an example where competitiveness of the meat sectors can be influenced significantly by government policies in other agricultural sectors. All this makes government policy decisions difficult when attempting to achieve a balanced outcome.

Another influencing government decision is the one on GM crops. Here there is the balance of consumer concerns against the production efficiencies of feed sources. The lack of access to these GM crops can reduce the competitiveness of our meat sectors. It is not considered feasible for Australia to go down the path of all non-GM feed sources as a marketing strategy unlike that of the smaller markets of New Zealand. The story of GM's in Australia is further complicated by individual state moratoriums.

Feed utilisation or feed conversion efficiency* (FCE) does play a significant role in the competitiveness between meat sectors with chicken being standout in this area with FCE's in the range of 1.7 to 1.9. This is compared to pork at around 4 and lamb and

beef around 6 to 8. Age also plays a significant role here with older animals having poorer FCE's and thus the age of processing is important. Changes in market requirements such as those currently affecting the pork industry can affect the slaughter age.

Ruminants have the distinct advantage over pigs and poultry of being able to eat grass, when it is available. The drought in Australia has affected the availability of grass and necessitated the reduction of breeding stock and the increased dependence on fed lots to grow cattle out. Recent rains has allowed more cattle to be pastured saving on the high grain costs although this is offset by significantly slower growth rates and possible changes in meat quality and consistency and therefore its acceptability to some international markets. This factor is particularly important to the export beef market. There is also competitiveness within the beef industry between grain fed and grass fed products.

The northern part of Australia has provided good grazing conditions for beef while the southern part of the country has contrastingly provided poor grazing. Overall the number of cattle on feed fell by 36% in the year to December 2007.

Lamb production can take advantage of this improved pasture situation to not only increase the production of lamb meat but also to allow expansion of the breeding flocks to provide more progeny to meet the increasing and unfulfilled international demand for prime lamb from Australia into the future. Rising global grain costs are not expected to negatively impact on lamb's competitive position and it has the potential to increase its domestic share particularly against grain fed beef. Grass fed beef though will remain lamb's main competition in the domestic market, particularly given the decline of grain fed beef. Unlike chicken and pigs, beef cattle on feed lots are able to consume a more diverse range of available raw materials increasing some of the flexibility in ration formulation. Such feed sources include cotton seed, orange rind, almond kernels, *Leucaena leucocephala*, tropical pasture legumes, linseed meal, molasses, etc.

The feeding of ruminant meat and bone meal to other ruminants has been legally banned in all Australian States and Territories since 1997 and has since been expanded to cover all animal derived meals (Restricted Animal Material –RAM). In comparing the various meat sectors there is evidence that the beef feed lot industry is less informed about grain availability and possibly less strategic in their approach to grain buying and least cost ration formulation. This is in contrast to the chicken meat industry where there is considerable effort put into the finer details of multi mixing scenarios when looking at feed formulations and grain purchasing strategies.

The major concern of all the meat sectors is the increasing utilisation of grains for ethanol production and the use of oil seed crops for biodiesel production. There are concerns that

* Feed Conversion Efficiency (FCE) or Fed Conversion Ratio (FCR) – Efficiency of converting feed into body weight.

current subsidies being offered in countries like the US and the mandated use of ethanol at 10% levels will increase competition for finite grain supplies and continue to inflate grain prices internationally.

There are concerns that the net environmental benefits of using ethanol produced from grain may be more than neutralised by the need for increased use of fossil fuels in production, transport and processing of the grain itself.

This does not include the potential socioeconomic disadvantages and perhaps even the

moral aspects of using grain for fuel production and not as a primary source of food. There is a need to consider the balance between food requirements and fuel. There are uniform requests from the Australian intensive animal sectors for the Australian government not to provide assistance to the grain based ethanol industry and to not consider mandated ethanol content. All livestock intensive industries are also competing in the grain market against the milling requirements for domestic and international markets. Grain standards are often categorised around milling specifications and the intensive livestock industries tend to get “what’s left”. There is a strong need to develop growth in feed grain plantings such as sorghum, triticale, red wheat’s and other varieties like pearl millet. For this to work there needs to be economic incentives for growers which may come from a combination of price, reliable markets, improved land utilisation and enhanced crop yields. This could however have a negative impact for some sectors if there were for example, farmers moving away from lamb production, to increases feed crop production. Mixed farming would be a preferable sustainable outcome. Finally it is noted that while corn is the dominant fed grain traded in the international markets, accounting for an average of 79% compared to barley at 15% and sorghum at 4%, Australia produces only small quantities.

Water should not be excluded from the discussions on feed as it is by fact the most important “nutrient” that intensive livestock require. While poultry reared under intensive conditions are the most efficient users of water in regard to meat yield for water consumed the quality of the water required is more demanding than that required for ruminants. This restricts the distribution of poultry facilities to where quality and biosecure water can be obtained. Water usage at processing plants is a competitive cost for all meat sectors.

Production Efficiencies

With the increasing cost of feed the FCE’s of the various livestock becomes increasingly more important. Gains in chicken meat FCE have been substantial with some operators achieving values around 1.6. This is a distinct competitive advantage for those livestock on grain formulated based rations. FEC’s (or Herd Feed Conversion (HFC)) for pigs in Australia is around 4.0 which is not only significantly higher than for chickens but is also a higher figure than for pigs from competing importing countries from Europe and the USA. In these countries the FCE is around 3.6.

For ruminants FCE’s are around 6 to 8 and while significantly higher there is flexibility in the type of fed ingredients that can be used. Poultry and pigs can only be successfully farmed on high quality complete rations.

Nutritionally the pig industry does not appear to be as precise in its approach to nutrition as in the chicken industry. While all poultry rations are essentially similar in specifications as all broiler producers are attempting to optimise the available genetics, the pig industry appears to have much more variation between producers. There is scope for feed optimisation within the pig industry based on the foundation of more consistent industry based advice.

For the intensively housed meat livestock, pigs and meat chickens, the type and sophistication of chicken housing is generally advanced compared to that of pigs. Modern broiler housing now consists of solid sided, environmentally controlled

tunnel ventilation sheds. This allows for optimal performance under all ambient weather conditions. While there has been some movement this way with grower pig shedding the down turn in the industry has reduced investment. Lower cost shedding has been developed, such as Eco Shelters. While these have lower capital costs there can be ongoing higher operating costs associated with slower growth rates and FCE. The genetics of Australian chicken meat is comparable to the rest of the world with imports of great great grandparent stock entering Australia regularly as hatching eggs through post arrival quarantine facilities. This ensures more rapid genetic gain than the other meat sectors.

FCE's of our pigs indicate there are genetic gains to be made here. The beef industry is considered to have diverse but good genetics and thus not disadvantaged to other international competitors. The exception here is Wagyu beef.

While the EU pig industry has no advantage over the Australian industry in regard to feed and overhead costs they do have technical advantages particularly in terms of reproductive performance where pigs sold/sow/year have an almost 20% advantage.

For the various meat sectors there are substantial differences in the time needed and capacity to respond to production demands and declines. The poultry industry is more favoured here with relative short grow out times and thus the ability to respond relatively quickly to market fluctuations or input cost changes. The longer generational times in the other meat sectors limits response times to increased (or decreased) demands and thus potential favourable market opportunities. Equally the potential for over supply which can substantially affect domestic pricing. Unlike white goods livestock are biological entities which have to be maintained at a cost to the producer and with reducing margins of profitability.

Export / Import Markets

The **chicken meat** industry is essentially domestically based with minimal exports (3%) and no imports of fresh chicken meat. While cooked product is allowed the specific requirements make it unattractive to importers. An Import Risk Assessment for this industry has been going on in some form or another for several decades and culminated in the release last year of a 4 volume document outlining the possible conditions under which fresh chicken meat could be allowed into Australia. Other activities including the live sheep export controversy, Avian Influenza ("Bird Flu") and more recently Equine Influenza have all contributed to making the decisions in this area less convenient or palatable for the policy makers. This has been good news to the chicken meat industry but has resulted in less than complimentary comments from potential importing countries who see Biosecurity Australia / AQIS as artificial trading barriers. The interesting concept here is the aspect of the other meat sectors seeking new international markets using arguments to gain entry not inconsistent with the arguments used by those countries wishing to import chicken meat into Australia. The salient difference though is in the animal health areas where generally Australia's status is more favourable than that of the countries it trades with.

Pig meat imports are allowed despite the strong opposition of the pig industry, who are concerned about Australia's relative disadvantages in areas like feed cost, subsidies and volume efficiencies. They are also concerned about the risk of disease introduction.

While there is some export of pig meat around 90% is consumed domestically, with 40% being fresh and 60% being processed. Of this processed pork around 50% is imported. Countries such as Denmark have Export Enhancement Programs improving their competitiveness as an exporter. No such program exists in Australia although there have been adjustment packages for the dairy industry and assistance to the sugar industry. As the Australia pig meat industry experiences increasing production costs as a result of grain prices importers from the EU are being buffered from these impacts. There are no tariffs imposed on pig meat imports to Australia.

With the local market proving uncompetitive with the imported processed pig meat, there has been a retraction in the industry which is causing further loss of competitiveness due to lowering volumes and loss of efficiencies at farms and processing plants. This volume is particularly affected by carcass weight and is expected to continue to decline with further imports. Reinforcing again for the pig industry that more emphasis needs to be put on improving reproductive capacity. Inefficiencies in the pig industry will also continue as a result of the lack of confidence to invest in the industry.

Pig export markets to Singapore are not price competitive but are protected by AVA Singapore who regulate Australia as the only major fresh importer of pig meat. This does not apply to frozen product. Other than offal this is the most significant[^] fresh meat export market the Australia pig industry has and the loss of this export market would further damage this meat sector.

The domestic **beef** market is protected from imports. The beef industry has a strong export market but has the disadvantage against most of its competitors in grain costs. Countries like Brazil have production advantages while in the USA subsidies are in place for grain growers. This lack of competitiveness is compounded by the inability to bring grains into Australia at world parity prices. Australia beef has an international image of being safe and processed in a hygienic manner. It has one of the best traceability systems with no comparable ID system in any other country. This is coupled with on farm livestock assurance programs.

[^] Also exports to New Zealand and small quantities to Japan

Australia currently though does not tailor its beef for the export market. Australia has a particular disadvantage against the larger export markets in not providing specific high demand cuts to importing countries. Examples include low quality forequarter to Korea and briskets to Japan. The USA which does not rely on exports for its beef market can provide specific single cuts that don't have a USA market.

Global demand for Australia beef is expected to increase as a consequence of the rising relative costs for competing meats due to high grain process, continued economic growth in the main markets, delays in USA herd rebuilding and a rise in South American (Brazilian) beef prices. This rise in South American beef prices has been due to the appreciation of the Brazilian currency, increased domestic demand and increased exports to the EU and Russia. Brazil is expected in the medium term though to be a significant competitor becoming one of the largest beef producers and being able to produce specific cuts for the export market as the US does.

Australian **lamb** while potentially facing competition from other meats locally, internationally faces little competition as the global demand is high and currently cannot be met. Lamb production in the US and New Zealand is in decline and while the production in China is increasing this is all consumed domestically. Australia

remains the main lamb producer capable of responding to increased global demand. Rising global grain costs are not expected to negatively impact on lamb's competitive position in the environment of increasing price trends for all competing meats. In fact the grass based production systems for lamb will favour lamb, particularly against grass fed beef.

It is an observation that Middle Eastern countries do prefer lamb produced locally or from other regional counties compared to the "fattier" Australian lamb.

Australian Currency, A\$

The movements in the A\$ has a significant impact on the meat sectors exporting. A higher A\$ makes beef, lamb and pork less competitive on the export market. Chicken on the other hand being predominantly domestically consumed is not affected. In fact a high A\$ is favourable to the chicken meat industry as it reduces the cost of domestic grains where pricing is fixed on world futures markets in US\$, reduces costs of imported vegetable protein such as soyabean meal, reduces costs of meat meal where export demand is influenced by the value of the A\$ and finally reduces the cost of poultry shed and processing equipment which is mainly imported. In the pig sector the high dollar impacts negatively on exports but favourably on imports not a good scenario for this already struggling industry.

Regulation and Compliance

Through out the world there are significant differences between compliance requirements for the production of meat. Various regulatory requirements may be applied right from the local government planning stage for feed lots and poultry shedding down to specific conditions imposed by importing counties.

Regulations can be competitively favourable to meat sectors such as the Australian chicken meat sector where imports are currently not allowed. For Australia pork it is not the case.

Another area is the use of feed additives and medications.

Australia historically has moved down the path of the EU in this area and thus trending towards a more restrictive control on farming practices and meat production when compared to its US and South American competitors. While this is considered in general more favourable from an environmental sustainability, food safety and product integrity point of view these added regulatory and compliance requirements can limit production efficiencies and increase costs.

The real concern here when competing in export and import markets is not the comparative desk top regulations but the actual level of implementation of these requirements and the auditing process to ensure compliance. For those familiar with the overseas meat sectors they will also be familiar with the gap between what may be legislatively required and what is actually implemented.

Both the chicken and pig meat sectors in Australia are required to meet very strict guidelines in regard to establishing and operating facilities. This influences the cost of production for the domestic market and for pig meat competitive pricing for imports and exports.

The Korea-US Free Trade Agreement on beef, which is expected to be ratified in 2008, will lower tariffs on US beef from 40% to zero over 15 years. Australia will be at a competitive disadvantage to the US in this market if it is not granted similar access.

Disease and Livestock Health Status

Australia overall has a competitive advantage to most other countries regarding its livestock health status with the only exception being New Zealand.

This health status can provide competitive advantages either by allowing access to countries other markets are restricted from or excluding imports. The pig sector would argue that this argument is not consistent for them as imports are allowed based on a debatable Import Risk Assessment.

The Australian chicken meat industry is free from a number of significant recognised avian pathogens. The salient ones amongst these are Virulent Infectious Bursal Disease (vIBD), Avian Influenza (H5N1, Bird Flu) and Notifiable Avian influenza (NAI) and Salmonella Enteritidis (SE). Despite any considered objective risk assessment the current activity related to “Bird Flu” in South East Asia, the Subcontinent, the Middle East and Europe would make a decision approving chicken meat imports politically unlikely in the near term. The concept of compartmentalisation being considered by the World Organisation of Animal Health (OIE) could though establish criteria whereby regional areas of countries, that are free from specific poultry diseases, could argue for importation into Australia. With countries like Brazil producing chicken meat for less than 50% of the Australian cost of production the introduction of imports would have a very serious impact on the Australian chicken meat sector.

On the domestic market the ongoing public awareness of Bird Flu, especially when highlighted by the media, does from time to time result in a trend of displacement buying away from chicken meat to other meat sectors. This was particularly so in the early episodes of Bird Flu but over recent times the public appears less concerned probably as a result of media “fatigue” regarding Bird Flu. The potential for food poisoning associated with Salmonella and the perceived concern about “hormones” in chickens while reasonably prominent in public awareness does not appear to affect chicken meat consumption. It is though impacting on competition within the chicken industry with more consumers looking for products they perceive as more natural, e.g. free range, organic, chemically free and grain fed. As a consumable product chicken overall does have a healthy image as a white meat.

The overall endemic health status of Australia chicken meat production has improved over the last decade but the industry is always potentially vulnerable by nature of its intensification to disease outbreaks. Following recurrent outbreaks of virulent Newcastle Diseases (vNDV) the Commonwealth mandated industry based biosecurity programs before admittance to the cost sharing agreement under the Emergency Animal Diseases Response Plan (EADRP). Chicken meat farms operate as single age sites assisting endemic health.

The chicken meat sector does have one cost advantage over the other sectors both domestically and in many cases internationally in that it does not have a mandatory government based meat inspection requirement, it instead being left to in house quality insurance programs through the local food safety bodies, e.g. PrimeSafe Victoria.

The Australian beef industry as an exporter has two major advantages in that it is recognised and certified free from Bovine Spongiform Encephalopathy (BSE) and Foot and Mouth Disease (FMD). Australia’s substantial penetration into the Japanese

and Korean markets has been a consequence of this with the USA being excluded because of BSE. This position has changed with the re-entry of US beef in Japan although the US exporters find the current Japanese protocols restrictive. As these protocols are eased to allow any age beef competition from the US will increase. It is predicted that some of this will be offset by the increasing South East Asian market demand.

Brazil is restricted as a competitor into the USA market because of its positive FMD status; this may not be so for Argentina.

On the domestic market it is interesting to note that beef does not attract any consumer concerns about hormones unlike the perceived concerns with chicken meat.

Australian lamb has no significant adverse disease status of concern to either the domestic or international market. Australian authorities have determined a Blue Tongue Virus (BTV) free zone based on surveillance information, knowledge of the epidemiology of BTV and its vectors in Australia, and relevant international guidelines. The BTV situation in Australia appears relatively stable.

The pig sector despite having an advantage in health status is still subject to imports from the EU, US and Canada. The disease of most concern is Post Weaning Multisystemic Wasting Syndrome (PMWS). This was despite Australian Pork Limited noting that the “CSIRO review of the import risk assessment showed a 95 percent chance of incursion of the exotic disease, PMWS”. Federal court action by the APL did not result in any change. With over 50% of processed pig meat being imported at below the cost of production in Australia this decision has clearly had a negative impact on the pig meat sector.

Domestically the pig industry has a moderate endemic health status, compared to the poultry sector, and still relies in part on prophylactic treatments throughout the grow out period. There is a need for a degree of change in the culture in this Australian meat sector to look at improved husbandry practices and facilitation to enable a more competitive cost of production. The current status of the industry though is not providing incentive for such upgrades. The operation of multi age grow outs is one factor that needs assessment.

Australia also does not have available a number of medications approved for use in intensive animals that are allowed overseas. Reasons for this include the cost of registration in the smaller Australia market is not worthwhile investment for the supplier and the stricter compliance conditions of the regulatory authorities in Australia.

In summary while the Australian meat sectors have a competitive advantage in health status the gradual easing of our quarantine in the times of globalisation and World Trade Agreements pressures may alter that situation. Ireland is an example of this where since it has been part of the EU and allowed poultry imports there has been the incursion of more than a dozen new avian pathogens.

Welfare

Welfare requirements can impact on the cost of production and thus any disparity between the sectors either domestically or internationally can have a significantly impact on competitiveness. Australia for its intensive industries trends towards the

more stringent welfare requirements of the EU thus putting our export markets at a competitive disadvantage to those other countries where welfare codes are more relaxed.

An example of this is the more relaxed sow crate requirements in the US compared to Australia which does not impede the importation of US pig meat into Australia to be used by fast food chains.

Domestically both the pig and chicken meat sectors are under more scrutiny regarding welfare than the red meat sector. The welfare codes in these sectors by for example reducing stocking densities, etc. can if taken beyond the actual animal welfare requirements increase the cost of production and reduce competitiveness.

Climate Change / Environnement / Carbon Foot Print

Consumers of future intensive animal products will be more concerned with environmental issues than in the past. Ruminants are a significant contributor to climate change gases in the form of methane. Global Warming Potential (GWP) from ruminants is about 50% higher than for pigs and poultry. The recognition of this in the form of GWP taxes could seriously impact on the cost of production. Poultry meat production is the most environmentally efficient followed by pig meat and sheep meat production (primarily lamb) with beef least efficient. This results from several factors, including low overheads of poultry breeding stock (multiple progeny per hen compared to one calf per cow per year), good FCE and the high daily weight gain of poultry.

While currently alternative production systems for poultry (and for that matter pigs) are providing the producer with a more competitive price against more classically reared chicken meat there may in the future be a change (or at least a re evaluation) by the consumers when they become aware that intensively housed poultry have reduced impact by around 30% on global warming when compared to organic or free range production. Most of the difference here is related to reduced bird performance in alternate systems. The competitive winner in the GWP stakes is grass fed lamb. Further details clarifying the reasons for the GWP ranking of the various meat sectors and production systems can be found in the reference material

The climate change affecting Australia is predicted to regionally affect where cropping and therefore intensive animal production will occur in the future. Areas like Western Victoria are becoming more unreliable for cropping while it is expected that in Northern Australia there will be the production of more summer crops such as sorghum, corn, pearl millet and even new pulse varieties. To remain competitive in the global market the production of meat in Australia will need to structurally change in regard to the production localities. The success of this will be critical for Australia otherwise there will be the need for major policy shifts in sourcing and allowing imported grains.

Research and Development

Competiveness between the intensive livestock industries is very much dependent on:

- efficient cost of production
- low cost processing

- efficient packaging and distribution
- marketing to drive a high consumer demand.

To achieve all this it is necessary to have the backing of a strong industry based R & D program, this in turn requires a funding program.

The chicken meat sector through the Rural Industries Research and Development Corporation (RIRDC), Chicken Meat Program and the Poultry CRC has good funding and has maintained Australia as one of the leading countries in poultry research which is reflected in the industry operating at world best practice. In the marketing area however it has been less successful with internal domestic competition between a small number of vertically integrated producers failing to allow an industry based approach to promoting sales. This is in contrast to beef, lamb and pork where strong advertising campaigns have maintained strong demand especially for the red meat. Pork consumption appears to be more price sensitive.

The pig sector is faced with the negative spiral that as the industry contracts the proportion of income from levies reduces and there is less money for R & D. This can subsequently result in productivity falling further behind international competitors. Investment in R & D for the red meat sectors is surprisingly low when compared to the grain industry. In the grain industry levies are value based and as the Gross Domestic Product (GDP) increases so does the investment in R & D. For red meat the levy has moved from per head to per transaction to increase the monies available for investment in R & D. There though is still the concern that the real level of funds available is declining and is consistently less than 0.5% of GDP. It would be preferable that there were ad valorem levies to keep pace with GDP.

The competitiveness of the Australian intensive meat sectors may also be negatively impacted against its international competitors as a consequence of state governments to reduce support both in R & D and diagnostic and extension services. In Victoria for example both pigs and poultry are no longer considered core livestock industries and thus formal support for these industries is reduced.

Summary

The competitiveness of the various meat sectors of the Australian intensive livestock industry has been considered both domestically and internationally. On the domestic market each sector is a competitor to the other with the exception of pork where imports are allowed.

Chicken meat has seen dramatic growth on the domestic market being considered an economic and quality product by the consumer with the industry being able to relatively quickly respond to consumer demands. With minimal exports and no imports the cost of production of the chicken meat sector is predominantly influenced by raw feed ingredient costs, \$A and increasing compliance and regulatory costs including welfare. The genetics and technical inputs make chicken meat the most competitive on FCE and production efficiency. Intensive poultry production also has the most favoured environmental footprint in regards to GWP of all the meat sectors. On a global comparison the industry has a favoured health status and this not only assists production efficiencies but also protects against highly competitive imports. R & D is well supported for the chicken meat industry.

Pork while sharing many similarities with chicken meat and exposure to the same cost of production pressures it differs in two major areas. Firstly overall production efficiencies are not world standard, particularly in the areas of FCE and reproductive efficiency. Also the pork industry is subject to low cost imports from countries that are considered not to operate under the same conditions in regard to direct or indirect subsidies and disease status. The Australian industry is undergoing retraction and is essentially dependent on its marketing success of fresh pork to the Australian consumer. A difficult task as its product is considered very price sensitive against the other meats. The pork industry is further being impacted by the inefficiencies of decreased volumes and reduced R & D.

Beef while being overtaken by chicken as the number one consumed meat has still maintained a high demand on the domestic market because of improvements in quality, presentation and marketing. Like chicken and pig meat increasing grain costs have increased its domestic price. It does have the advantage though being a ruminant of taking advantage of improved pasture conditions. The increasing value of the A\$ is reducing the competitiveness of Australian international beef. Australia's negative status for BSE and FMD has given it an advantage over the US and Brazilian markets, particularly into Japan and Korea. This is expected to change with the re entry of the US under less stringent import conditions into these markets. The size of the Australian market also means that its ability to compete against the US and Brazil on the specific portion market is also limited. For the green consumer beef production has the highest GWP. There are concerns that relatively low investment of R&D into beef may in the future impact on comparative world best practice performance.

Lamb, the traditional meat of colonial Australia when it rode on the sheep's back, has declined to around 50% consumption per capita. Recent improvements in quality, presentation and marketing have seen this stabilise with some move back to lamb. Being primarily produced by grazing and not as severely impacted by rising grain prices lamb has the potential to strike back competitively on the domestic market. On the export market its potential could be considered unlimited with a high demand and no major competitor. The limiting factor though is Australia's ability to produce enough lamb.

Producers, particularly those in mixed farming, should consider investment in this meat sector market based on today's observations.

Acknowledgements

- ABARE
- Alltech
- Australian Lot Feeders Association
- Australian Pork Ltd
- Meat & Livestock Australia Ltd
- QAF Meats
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- Scolexia Pty Ltd
- Sheep Meat Council

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