SOUTH AUSTRALIA

SOUTH AUSTRALIAN BEEF INDUSTRY DEVELOPMENT PLAN

1995 – 2000

PRIMARY INDUSTRIES
SOUTH AUSTRALIA

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SOUTH AUSTRALIAN BEEF INDUSTRY DEVELOPMENT PLAN

December 1995

This plan is a working document for consultation and negotiation between PISA/SARDI and other industry stakeholders. That consultation is crucial in assisting PISA/SARDI to progress this strategic plan into operational plans for implementation in 1996/97.

EXECUTIVE SUMMARY

INDUSTRY VISION

To increase economic growth in South Australia by expanding the value of beef and cattle sales into the quality specified markets of USA, Asia, Europe and other Australian States. In doing this, increase the value of the beef industry from the current $146m (farm gate value) to $300m in 2014.

This will mean:

- Greater returns to beef producers;
- Greater economic activity in the downstream processing/marketing sector;
- Commitment to supplying the qualities, specifications and quantities of product required by the market; and
- Operating under sustainable production systems consistent with society's environmental goals.

PURPOSE OF THE PLAN

The major purposes of the PISA/SARDI Industry Planning process are, in conjunction with Industry, to:

a examine existing industry profiles, structures and processes (such as marketing arrangements, relevant legislation and so on) and determine their strengths, weaknesses, opportunities and threats. This will enable us to determine the critical factors that enhance or impede the international competitiveness of the industry in South Australia and consider industry strategies to address those factors; and

b determine and evaluate the major opportunities for sustainable economic development in our industries, and the role of PISA/SARDI in assisting industry to capture those opportunities. By aligning our resources in PISA/SARDI to reflect the identified opportunities, we will maximise our impact as an economic development agency.

This Plan concentrates particularly on industry development over the period 1995-2000.

OUTLOOK FOR SA BEEF

There is a move away from frozen processed beef which is exported primarily to the US, to high quality chilled beef exports to Asia.

Until 1993 the United States market was South Australia's largest export market.

In 1993 Japan, for the first time, became Australia's major beef and veal market. Over the next ten years Japan is likely to become even more important as a destination for Australia's beef. This follows the growth in feedlots in Australia during the early 1990s, many of which are owned by Japanese interests.

The Korean beef market, constrained to the year 2001 by a growing minimum quota, also represents a strong and potentially important market for South Australian beef. The Korean market has a strong preference for grass fed beef which can be produced in South Australia.

However, a constraint to exports is likely to be the increased freight costs incurred by South Australia over beef shipped from the eastern states.

Australia exported 48 kt cwe of beef to Taiwan in 1993 making it Australia's fifth largest market after Japan, the US, Canada and Korea. Australia is the dominant supplier to Taiwan, with the US and New Zealand competitors for market share. Australia is losing market share to both these countries. The outcome of GATT, rising incomes in expanding Asian economies and the expected trade benefits from APEC agreements are positive incentives for the beef industry.

The trend toward grain finishing of cattle, particularly for the North Asian market, will continue but more will be chilled. SA is at a competitive disadvantage in this trade due to time and distance from the market (5 days extra travel time compared with Brisbane or Sydney) but is at an advantage in terms of cost of grain.

The economics of the wool market (apart from the downturn in recent months) and generally improved returns from sheep since 1993 indicate that sheep are competitive with beef. Cattle numbers and output in SA have varied inversely with sheep numbers but there is now far greater stability in cattle numbers and there appears to be less responsiveness to sheep industry fortunes.

FEEDLOTS

There are no Japanese owned feedlots in SA. The largest feedlot is owned by Metro Meat (10 000 head capacity). Others of around 4 000 head are at Clare, Carrieton and Tintinara. Most of the grain fed beef in South Australia originates from 'opportunistic' feedlots which are generally small scale. Overall, current feedlot capacity in South Australia is estimated at around 75 000 head.

There is a demand driven move to grain finishing of cattle. Its growth rate in South Australia will depend on its ability to compete with larger and more strategically situated operators in the Eastern States.

VALUE ADDING

With cattle needing to go through the slaughter process, value adding in the meat industry is high. In 1991-92 over 2750 people were employed in meat manufacturing establishments with wages and salaries of $70.4 million and a turnover of $397 million. In the future, with the prospects of 5% growth annually, value adding will increase in line with industry growth.

INFRASTRUCTURE

Cattle slaughtering in SA will increase in line with total industry growth but due to present unused capacity there is no need for new processing capacity; rather, rationalisation and modernisation of existing capacity will occur.

The extension of the runway at Adelaide Airport, and the Alice Springs-Darwin railway will be beneficial for the export of high value chilled beef.

The announced sale of the Samcor abattoir and adjacent sale yards signals the end of Government ownership of processing facilities in South Australia.

INDUSTRY DEVELOPMENT

Drawing on the SWOT analysis in Section 4 it is apparent that the South Australian beef industry is well placed to share in supplying the expanding global demand for beef. To achieve this the industry must continue to develop a quality assurance approach throughout all sectors of the industry.

This quality assurance approach, already occurring in the feedlot and export processing sector, must move through the entire industry including on-farm production.

Modelling of the local beef industry by PISA indicates that, based on past trends and sustained industry development, the following developments can be expected by 2014:

- Cattle numbers are predicted to increase from 1m to 1.5m;
- Farm numbers with over 50 head are predicted to increase from 3000 to 4600;
- The majority of cattle will be on farms with over 50 head. The number of cattle and the proportion of the state herd in herds with less than 50 head will decline;
- The average herd size will stabilise at around 325 cattle;
- Average slaughter weights will increase from 235 to 275 kg by 2014;
- Beef production will increase from 96,000 tonnes to 190,000 tonnes;
- The herd average animal weight will increase;
- The area required for an average weight animal will decline from 2.4 ha in 1970 to 1.0 ha;
- Herd production area will increase to the year 2000 then decline to 1994 levels in year 2014;
- Feedlot Capacity will increase from 60,000 to 80,000 head and remain steady;
- Fodder production area required to support the feedlot industry will peak at 50,000 hectares in 1994 due to drought, and stabilise at 40,000 hectares by year 2014; and
- The area required for the entire beef industry will reach 1.45m hectares in 2014, rising from the 1994 level of 1.43m hectares.

In summary, by 2014 the beef industry has the potential to double beef production from the same land resource as in 1994. This will be achieved through addressing the following critical success factors:

1 Market Development and Access

Market development requires a total commitment by producers and agribusinesses to the supply of products and services to overseas and domestic consumers to the required specification, quantity and delivery time demanded by the customers. A commitment to export is sustained by a thorough understanding of customer needs and an equally thorough understanding of the products and services provided by major international competitors.

Industry strategies to foster a greater marketing commitment include:

- facilitate greater market access for beef; support APEC trade development;
- provision of better market intelligence, information and analyses;
- further understanding of trade issues in major markets;

- further consideration of joint venture or supply contract opportunities; and
- education, both formal and informal, for participants in all sectors of the industry.
- producing exactly what is required by the market.

2 Product Development and Innovation

Product development and innovation are two major objectives of research and development. Innovation is a critical factor in developing international competitive advantage. In beef, value adding and product differentiation are two important aspects of product development and innovation.

Strategies which address the issues of product development and innovation include the following.

- encourage further differentiation of local product from that of other countries and provide exactly what the market requires;
- market research and analyses to realise market opportunities; and
- industry stakeholders can further improve their market focus through overseas travel and invitations to overseas marketers and researchers to visit Australia and provide their perspective.

3 Quality

The issue of quality in the beef industry refers to the need to continually maintain quality specifications and standards required by the consumers in the market.

This issue needs constant attention if Australian product is to become more internationally competitive. Failure to address this will not only impair Australia's future export efforts, but may also impact on existing exports.

Key strategies appropriate in this respect include:

- improving communication of the requirements of the market place from the overseas/domestic buyers to cattle producers and agribusinesses;
- discouraging any form of averaging of returns as this does not encourage any change in product quality (that is, value based marketing);
- greater promotion to make producers and all other industry sectors more aware of the importance and benefits of quality management and assist them to implement quality management systems;
- employing research, development and extension resources to improve beef quality; and
- capitalising on Australia's reputation for producing clean, (residue free) beef such as through the differentiation of local produce from that of overseas competitors.

4 Cost/Price Competitiveness

Cost/price competitiveness relates to a range of factors including the cost of production, productivity, market prices and industry structure and coordination.

In relation to cost/price competitiveness Australia and its major competitors all have different advantages and problems. The low cost producers like Australia have the obvious advantage of cheaper production costs. However, they are sometimes less cost competitive in other areas, incurring greater costs in other components of the marketing chain. Ensuring that agribusinesses operate to world's best practice is a crucial ingredient in the international competitiveness of our beef industry. Without benchmarking the whole production - transport - processing - marketing chain it cannot be determined exactly where the greatest payoffs from improving efficiency will come from.

Key industry strategies to address issues of cost/price competitiveness include:

- review regulations/policies impacting on all industry sectors;
- foster continued industry organisation for research and development, and technology and information transfer;
- industry and individual enterprises at all stages of the production, processing, transport and marketing chain undertaking and updating benchmarking studies to determine their deficiencies and introducing world's best practices to address these;
- encouraging agribusinesses to avail themselves of available State and Commonwealth Government programs to enhance their efficiency and effectiveness as processors, transporters, input suppliers and marketers;
- employing research, development and extension resources to improve cost/price competitiveness through productivity enhancement at all stages of the production and marketing chain;
- continuing support for the specialised university/educational programs operating in South Australia such as the Waite Campus;
- support micro economic reform; and
- recognising the importance of infrastructure and of investing in creating or upgrading that infrastructure.

5 Sustainability

The beef industry impacts on soil, water and other natural resources in South Australia. The health and welfare of the herd is essential for a sustainable industry.

Industry strategies are aimed at ensuring a sustainable beef production system in accord with the environmental concerns of the general community and include:

- understanding land and water management issues and how they impact on productivity and degradation of the natural resources and taking appropriate action;

- appreciating the consequences of the control of pest animals and plants and taking appropriate action; and

- maintenance of productivity and export markets by ensuring the health of the herd, and the wholesomeness of beef products.

PRIORITY ACTION AREAS FOR PISA/SARDI

By addressing key strategies, this plan has identified the following as some potential priority program areas for PISA/SARDI:

- Value based marketing. Ensuring producers and agribusinesses are aware of precise market requirements for quality specifications, and are able to identify/manage stock to achieve those specifications;

- Pest animal and plant control. The control for example of rabbits, weeds, aquatic weeds in drainage channels and the protection of the industry from exotic animal disease;

- High rainfall zone pasture research/extension. The maximisation of pasture productivity and persistence;

- Farm chemical regulation. Ensuring there are suitable effective stock medicines available to protect animal productivity and welfare, and mechanisms to protect national and international markets for beef;

- Meat hygiene. Acceptance of beef as a healthy food requires confidence by the community that it is wholesome because it is produced and processed in ways acceptable to the community; and

- On farm sustainable productivity. This will be enhanced through improved nutrition, parasite control, genetic improvement and developments in the lot feeding sector.

Actual projects that will be undertaken by PISA/SARDI within these potential program areas will be identified in the next stage of the PISA/SARDI planning process. Projects will be evaluated against criteria such as market failure and their benefit/cost ratios to assist in the prioritisation of projects for funding.

Summary of Critical Success Factors, Strategies and Potential PISA/SARDI Actions

Critical Success Factor	Industry Strategy	Potential PISA/SARDI Programs
Quality	• Improving communication of the requirements of the marketplace • Discourage averaging of returns	• Value based marketing
Cost/price Competitiveness	• Employ research, development, and extension resources to improve competitiveness through productivity enhancement	• High rainfall zone pasture research and extension • Sustainable productivity enhancement: - nutrition - parasite control - genetic improvement - lot feeding development
Sustainability	• Appreciating consequences of the control of pest animals and plants • Maintenance of productivity and export markets	• Pest animal and plant control • Farm chemicals regulation • Meat hygiene regulation

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3 INDUSTRY PROFILE

3.1 INDUSTRY DEFINITION

The beef industry in South Australia is part of a large integrated national industry including a series of stages from various on-farm cattle production systems through transport, marketing, processing to domestic consumption or export of beef and its by-products.

This report describes, in general terms, the national industry and, in detail, the local industry identifying development opportunities, in particular opportunities for PISA/SARDI to contribute to industry development. It covers cattle production for meat and therefore includes dairy calves and cull dairy cows once they are sold out of the milking industry.

Beef cattle are generally run on mixed farms sharing the management and pasture resource with cropping and sheep for wool or meat. Beef cattle utilise approximately 25% of the pasture resource in South Australia as shown in table 1.

Table 1: Livestock dry sheep equivalents for South Austalian climatic zones

	DAIRY	BEEF	MEAT SHEEP	WOOL	TOTAL
CEREAL	127,000	1,602,000	2,502,000	8,376,000	12,607,000
	1%	12%	19%	65%	100%
HIGH Rf ZONE	1,142,000	5,112,000	3,649,000	5,474,000	15,377,000
	9%	34%	24%	36%	100%
PASTORAL	-	1,953,000	324,000	2,914,000	5,191,000
	-	38%	6%	56%	100%
TOTAL DSE	1,269,000	8,667,000	6,475,000	16,764,000	33,175,000
TOTAL %	4%	26%	20%	50%	100%

3.2 PRODUCTION PROFILE

3.2.1 Cattle Numbers, Distribution and Herd Size

Beef cattle numbers in South Australia were 1,015,000 at March 1994 (see table 2) or 5 percent of the Australian total of 22 million. The State's dairy herd consists of an additional 147,000 cattle which also contribute beef from cull cows, veal from bobby calves and young calves to rear for beef production.

The statistics used in this section of the document are based on ABS annual statistics. However the numbers are probably a conservative estimate of total numbers in the state. While the tail tag registration scheme does not collect actual numbers it indicates a higher number due to it taking into account all cattle producers in the state who sell cattle.

Table 2: South Australian cattle numbers

DESCRIPTION	1993	1994 (Prel)	5 Year Av (to1993)
Meat Production			
Cows & heifers	517,603	538,000	453,093
Bulls & bull calves	26,430	27,000	26,074
Other calves	238,322	258,000	224,447
Other cattle	179,534	192,000	161,621
Total Beef cattle	961,889	1,015,000	865,236
Total Dairy cattle	142,290	147,000	139,223
TOTAL CATTLE	1,104,179	1,162,000	1,004,460

Source: ABS Statistics Cat. No. 7221.4

The beef cattle numbers are approximately two-thirds the peak number reached in the mid seventies. Following the collapse of the "beef boom" of the 1970's numbers have stabilised at approximately 25% above the pre 1970 figure (see figure 1.). Numbers are increasing and are expected to grow by 5-10 percent per year given the favourable beef outlook.

Table 3: Cattle numbers by statistical division at March 1993

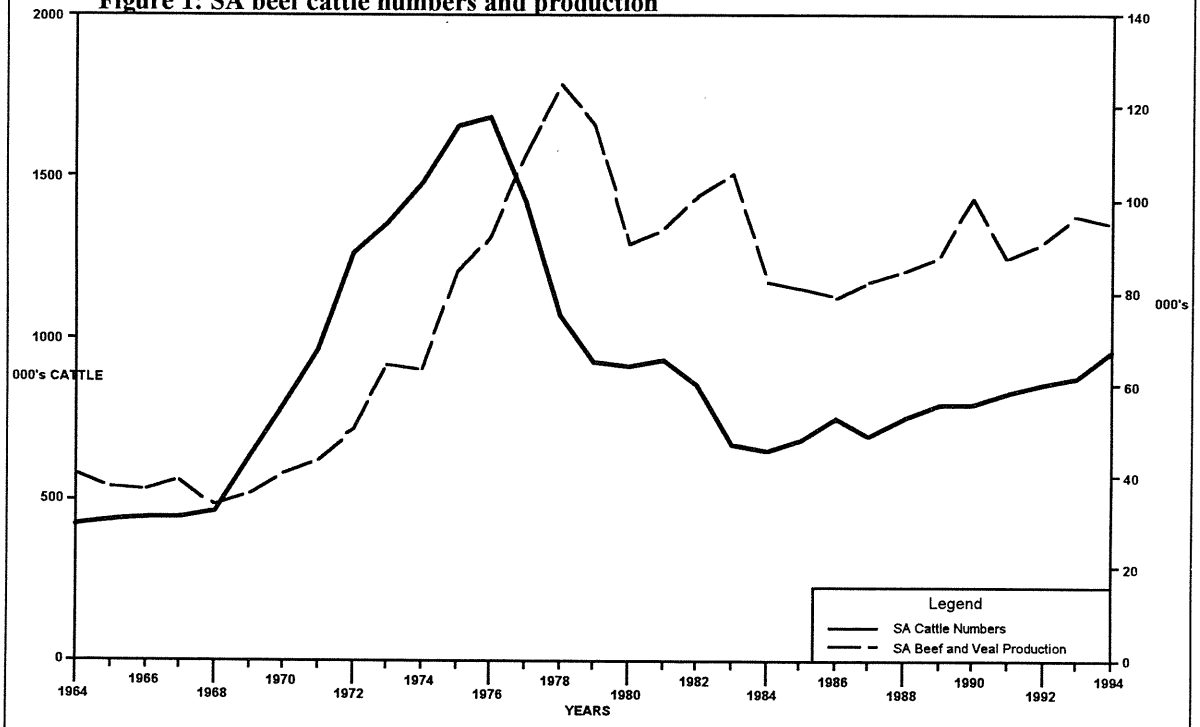
	Adelaide & Outer Adelaide	Yorke & Lower North	Murray lands	South East	Eyre	Northern	South Australia
Meat	90,966	48,342	100,894	477,217	28,665	215,805	961,889
Meat %	9%	5%	10%	50%	3%	23%	100%
Milk	65,299	4,397	43,198	27,971	332	1,093	142,290

Source: ABS Statistics Cat. No. 7221.4

In South Australia 35 percent of agricultural establishments had beef cattle at 31st March 1993. Of these 4,861 establishments with beef, nearly 30 percent had a beef herd of less than 29 animals and 15 percent (716 establishments) had over 300 animals. The average cattle herd size was 198 animals. The cattle tail tag register shows approximately 11,500 registered cattle properties.

Beef cattle are concentrated in the South East of the State but with a significant proportion also distributed through out the northern pastoral area (see Table 3).

Figure 1: SA beef cattle numbers and production



3.2.2 Production Systems

In South Australia there is a wide variation of climatic, physical and economic environments. Producers can choose from finishing stores to breeding and finishing or any combination. There is a need to choose from a range of breeds and crossbreeding systems and to determine the age and condition of animals at time of marketing to suit particular situations. As a generalisation young cattle (usually 8 months and older) in good condition are sold for the domestic market. Older animals, especially over 18 months, will usually be purchased for export markets. The age, weight and condition determines whether they suit the differing requirements of the US, EU, interstate, Korean or Japanese markets or the feedlot sector.

In 1988 ABS statistics indicated 75 percent of South Australia's beef cattle were pure bred. The main breeds being Herefords (50%), Shorthorns (24%), and Angus (8%). Since that time it is believed there has been a substantial move to crossbreeding. While most breeding cattle may still be pure bred there has been a marked increase in the proportion of the turn-off of cattle being crossbred cattle. Important terminal breeds in crossbreeding include Simmental, Charolais and Limousin.

A feedlot industry is steadily developing in South Australia with the major focus being the cereal zone which is the preferred area due to the availability of grain, slaughter facilities and being environmentally suited. There are currently over 200 feedlots of varying sizes throughout the State, ranging from 10 head to 10,000 with the total capacity exceeding 73,000.

In the arid zone pastoral areas of South Australia, particularly north of the dog fence, production was traditionally dominated by the season with little opportunity to vary production other than by stocking conservatively to survive lean times and selling fat stock when the seasons permitted. Two major changes have occurred in recent times:

- the brucellosis and tuberculosis eradication campaign has now been completed and free movement of stock into and out of the area is possible, and

- the development of yards and trucking facilities in combination with rapid transport from the properties has increased management and marketing opportunities.

Younger cattle can now be marketed, establishing regular management programs and more effective use of resources. Twenty three percent of SA's beef cattle are in this area, contributing significantly to the state's beef industry both within the region and by sending cattle south for finishing.

Beef production is essential to the areas north of the dog fence because there is no alternative production base and any land lost to production is a loss to the State's economy.

Approximately eighteen percent of the beef herd are located in the cereal zone where there are opportunities to produce beef under a range of systems for various markets. Finished stock as well as stores and stud animals are produced, and it is expected that these grain growing areas will attract more cattle feedlot capacity in future. Beef production however, does have considerable competition from grain, prime lambs and wool production in the cereal zone, and because of the specialised infrastructures necessary, is not a widespread enterprise on farms, although currently there are signs that it is increasing.

Producers in the high rainfall zone (Mount Lofty Ranges and in the South East) have a much more favourable climate for a wide range of production systems. Sixty percent of the State's beef cattle are in this region.

3.2.3 Slaughtering and Production

In 1993/94 there were 400,300 cattle and 8,800 calves slaughtered in South Australia with an average carcase weight of 236kg for cattle and 34kg for calves (see Table 4.).

Of these cattle 90% were slaughtered in export abattoirs, 7% in domestic abattoirs and 3% in slaughterhouses. 95% of calves were slaughtered in domestic abattoirs.

Table 4: Cattle and calf slaughter data

	Year to June 1994	Year to June 1994	5 Year Average	5 Year Average
	Calves	Cattle	Calves	Cattle
Av. Carcase Weights (Kg)	34	236	41	230
Beef Production (Tonnes)	302	94,395	480	94,000
Numbers Slaughtered	8,800	400,300	12,400	406,300

Source: AMLC Statistical Bulletins

The five year average beef production to June 1970 was 37,400 tonnes while the five year average to June 1994 was 94,000 tonnes. This 250% increase is set against the 25% increase in cattle numbers over the same period. During this time the adoption of new technology including new breeds, crossbreeding and genetic improvement has helped lift average carcase weights from 190kg to 235kg.

In 1994 South Australia produced 94,800 tonnes of beef out of Australia's total production of 1,826,800 tonnes. Having only 5% of the cattle means we consistently produce approximately 5% of the nation's beef. Cattle from the northern Territory are fattened and slaughtered in South Australia but some South East cattle are lost to the eastern states for slaughter. Failure to ensure continued development of a viable feedlot industry in South Australia would see more cattle lost to the eastern states.

As South Australia's beef production increases the proportion exported is increasing. Table 6 demonstrates these changes and it is anticipated this move to exports will continue as production continues to outstrip domestic consumption.

Nationally, cattle and calf slaughterings ($4,405.9 m) produce the largest agricultural commodity by gross value. In South Australia, cattle and calf slaughterings total $165.2 million and are the fifth largest commodity contributing 8% of the state's gross value of agricultural commodities. This does not take into account the processing of beef which doubles the value of the industry to the state.

3.2.4 The Meat Processing Industry in South Australia

The meat and livestock industry in South Australia forms a significant part of the State economy. In 1991/92 terms the meat processing industry (excluding poultry and smallgoods) had a sales turnover of $397 million, employment of 2,750 people (3.5% of total manufacturing employment) and wage and salary costs of $70.4 million.

Meat products processed in 1994/95 represented 19.7% of the gross value of agricultural commodities produced in South Australia, representing some $494.7 million. Cattle and calf gross value of production was $225.3 million amounting to 9% of the gross value of the State's agricultural production, 45% of livestock slaughtering production or 22% of the total state's livestock and livestock products.

The income multiplier effect of the meat processing industry is about 2.7, larger than many manufacturing industries.

Red meat has traditionally been a significant part of the Australian diet by reason of its low price, availability and variety. During the 1980's, however, meat consumption declined steadily and figures from the Australian Bureau of Statistics (ABS) suggest that this decline will continue with the national average annual per capita beef consumption of 37 kgs for 1993, compared with 41 kgs in 1989 (no separate figures are available for S.A.).

There has been considerable rationalisation of abattoir capacity in South Australia since the 1980's, with the number of export and domestic works declining.

All works in the State have had new technology equipment installed and money has been spent in upgrading smaller domestic works for interstate trading.

Some of the works are facing problems in sensitive environmental or urban areas.

Ninety percent of the cattle were slaughtered in export abattoirs, 7% in domestic abattoirs and 3% in slaughterhouses in the year to June 1993. Some 95% of calves were slaughtered in domestic abattoirs (See Table 5). In December 1994 a new Meat Hygiene Act based on quality assurance commenced.

Of those abattoirs in South Australia with beef slaughtering capacity, there are currently five abattoirs with export licences, and eight abattoirs licensed to slaughter for the domestic market.

Table 5: Abattoir throughput June 1993

Species	Export Abattoirs	%	Domestic Animals	%	Slaughter-houses	%	TOTAL
Cattle	361 180	89.90	28 380	7.06	12 224	3.04	401 784
Calves	11	0.15	7 148	94.21	428	5.64	7 587
Sheep	2 346 295	88.22	240 327	9.04	72 972	2.74	2 659 594
Lambs	1 355 760	67.80	609 486	30.48	34 356	1.72	1 999 601
Pigs	178 513	32.28	365 001	66.00	9 527	1.72	553 041
Goats	132 619	98.85	1 429	1.07	109	0.08	134 157
Deer	24	1.72	831	94.11	28	3.17	883
Horses	24 149	100.0					24 149

Source: 13th SA Meat Hygiene Authority Annual Report

There is a seasonal supply of cattle but the advent of feedlots is alleviating this to some degree. The current surplus killing capacity in the State also influences the efficiency aim of a constant throughput for abattoirs. Annual turnoff of cattle in South Australia is estimated at 300,000. Currently abattoirs in South Australia have the capacity to slaughter approximately 680,000 cattle per year on a one shift basis, however, as shown in Table 5, 1993 throughput was only 402,000 or 60% of capacity. For instance SAMCOR's 1993/94 annual report states that the level of plant utilisation is approximately 50% on a single shift basis. Until rationalisation, through the closure of an abattoir, further efficiencies will be difficult to achieve. SAMCOR operates an efficient operation by Australian standards but is limited in its opportunities, being a service works required to maintain export standard for all its slaughtering and processing.

Beef feedlots are providing the opportunity to level out the supply of cattle and to increase throughput of the abattoirs as the cattle herd increases in size.

A report by Ernst and Young into the S A Meat Processing Industry in 1991 noted that, to some degree, there is lack of competition on the export market. Metro Meat International Limited, with abattoirs at Murray Bridge and Noarlunga, dominate in the north of the State. In May 1995 Citic Australia purchased Smorgon's Naracoorte abattoir giving Metro Meat (a subsidiary of Citic) 6% of the nation's beef kill and nearly all of the beef export kill in South Australia. Until August 1992, one of the associate companies occupied the majority of the SAMCOR facility and this restricted competition in the market place. The freeing up of capacity at SAMCOR (a service works) has provided the opportunity for a new competitor but this is only occurring to a limited degree.

The number and locality of abattoirs in South Australia changed with the opening up of meat supply to metropolitan Adelaide and the development of local abattoirs in the early 1980's. It seems each company has expanded or attempted to improve efficiency on the assumption that it could win a market share. However, the limited supply of livestock means most plants do not work at even one full-shift capacity.

The Ernst and Young report cited above also highlighted a number of weaknesses in the South Australian processing industry, including cost inefficiencies and low productivity.

3.2.5 Industry Regulation

No legislative barriers exist to restrict people entering the beef industry. Provided the health/hygiene and export regulations are conformed with, new businesses can establish an operation.

The self-regulation approach adopted by AUS-MEAT has been a success in the export market. There are, in addition, AQIS (Australian Quarantine Inspection Service) compulsory regulations which must be met by products destined for export markets. These regulations are generally set by the importing country and abattoirs are required to meet the highest standard amongst all countries to which they wish to export. All export regulations are set nationally to ensure conformity in the export of produce.

On 1 December 1994 new meat hygiene regulations for domestic meat processing came into force focusing on self regulation and quality assurance.

Cattle production is regulated by three main Acts:

1 Stock Act 1990 - to prevent or control disease and residues in stock and stock products and provide for regulation of artificial breeding
2 Cattle Compensation Act 1939 - makes provision for the payment of compensation to owners of diseased cattle in certain circumstances
3 Brands Act 1933 - provides for voluntary owner identification of livestock.

A review of legislation is currently being undertaken. It has been an essential role carried out by PISA and its predecessors for the industry for over a century. While methods and cost recovery may change, legislation will be required to support some industry programs.

Specific legislation relevant to the meat processing industry in South Australia is as follows:

- Meat Hygiene Act 1994
- SAMCOR Act 1936-1984
- Environment and Public Health Act 1987
- Food Act 1985

3.2.6 Distribution and Marketing

The current free enterprise domestic marketing system works efficiently, with one exception, which is the feedback of market signals from consumer to livestock producer.

The recent installation of liveweight scales at Gepps Cross and a resultant lift in returns from stock sold over the scales has demonstrated the need for accurate description of livestock being offered for sale.

3.2.7 Transport

South Australia is at the limit of distance from which chilled meat can be shipped to Asia via Adelaide. It is important that efficient shipping systems should be maintained, and research continued, to extend holding times of meat.

The extension of the runway at Adelaide airport and the Alice Springs-Darwin railway will be beneficial for the export of high value chilled beef.

3.3 IMPORT-EXPORT PROFILE

3.3.1 Export Quantity

Since the boom and subsequent slump of the mid 1970's, the local and national beef industries have stabilised with gradual annual increases in numbers, 5% for South Australia and 2% nationally. Production has increased, consumption decreased, and average carcase weight increased resulting in a greater proportion of product being exported. South Australian exports of beef as a percentage of production were 60.7% in 1993/94, compared to 64.2% for Australia as shown in Table 6.

Table 6: Production and export to all destinations

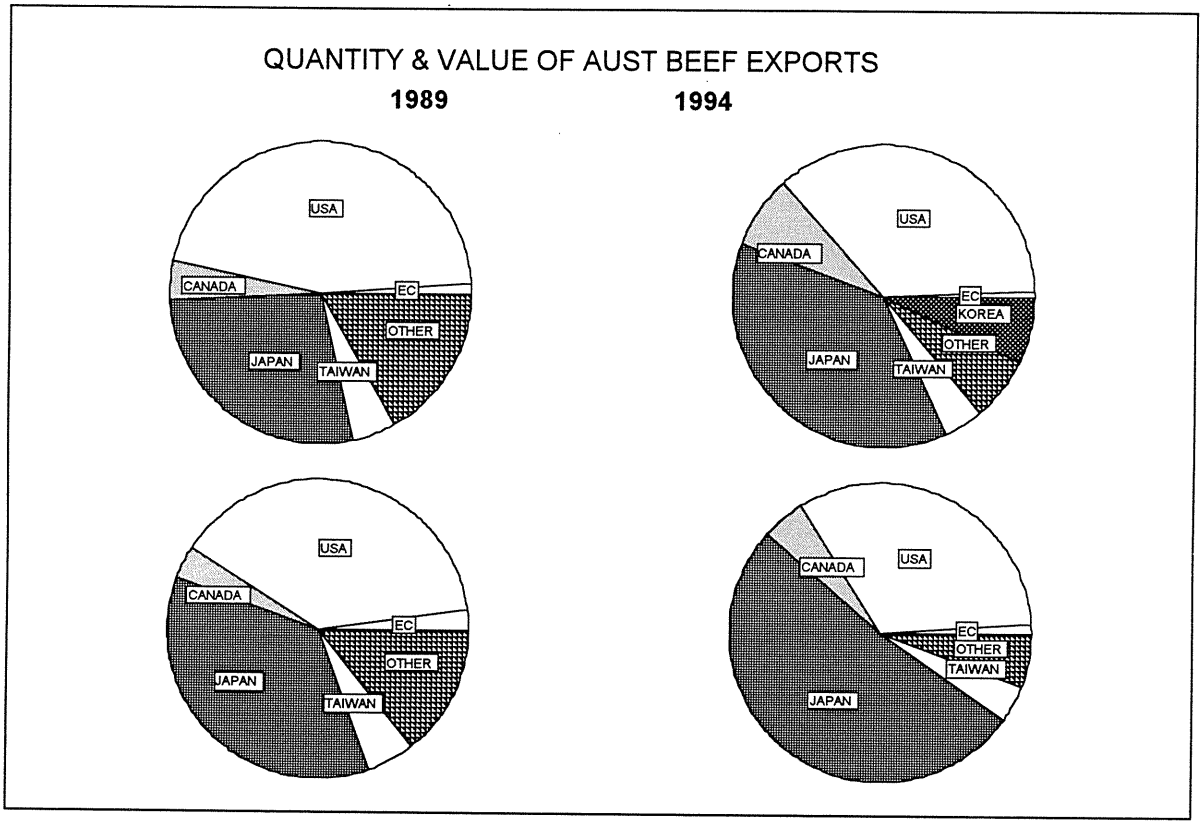
	YEAR	EXPORTS SA*	EXPORTS AUST*	SA % EXPORTED	AUST % EXPORTED
Av. 5 Yr to June	1980	31.9	669.4	42.3%	54.1%
Av 5 Yr to June	1985	32.2	495.4	48.9%	52.7%
Av 5 Yr to June	1990	32.5	569.6	54.7%	56.4%
Av 5 Yr to June	1994	40.1	793.4	60.7%	62.6%
Annual	1994	39.2	788.4	60.7%	64.2%

Source: AMLC Statistical Bulletin * 000's tonnes shipped weight

3.3.2 Export Destinations

Throughout the 1980's North America was the destination of over 50% of Australia's beef as shown in figure 2. However the expansion of the North Asia market as a destination for Australian beef is changing the export scene. The Asian markets are high value markets. Figure 2 demonstrates exports to Japan now exceed 50% of the total value of exports.

Figure 2: Quantity and value of Australian beef exports upper pies quantity; lower pies value



While national beef exports have increased in volume from 546,569 tonnes in 1989 to 809,471 tonnes in 1994, an increase of 32%, the value of exports have lifted from $1.8 billion to $3.2 billion, an increase of 45%. The future development of the beef industry hinges on maintaining and expanding access to these developing Asian markets.

Japan

In 1993-94 around 38 per cent of Australian beef exports were sent to Japan, making it the largest export destination for beef. Several factors have encouraged the export of beef to Japan.

Japan has liberalised trade under GATT and, with conditions, the tariff rate will decline from 50% to 38% by the year 2000. Exports of Australian beef are expected to grow to 345kt in the year 2000 from 301kt in 1993-94. However with beef supplies in the US rising, strong competition is expected in the Japanese market.

Korea

The demand for beef in South Korea is forecast to increase as economic conditions improve. Volumes exported to Korea from Australia are estimated at 55kt in 1994-95 and forecast to be 73kt in the year 2000. However competition from US grainfed beef and New Zealand grassfed beef is expected.

Consumption of both domestic grainfed beef and imported grainfed beef is growing. These changes have contributed to the United States now supplying over half of the beef imported through the open tender system (up from 29 per cent in 1989). With relatively more tenders called for grainfed beef, higher domestic saleyard prices and ongoing competition from New Zealand in the grass fed sector, Australian market share is expected to decline over the medium term.

Taiwan

Australia exported 48 kt cwe of beef to Taiwan in 1993, making it Australia's fifth largest market after Japan, the US, Canada and Korea. Australia is the dominant supplier to Taiwan, with the US and New Zealand competitors for market share. Australia is losing market share to both these countries.

United States

Increased beef supplies during 1994 and record beef stocks in storage, reduced prices sharply. Production is likely to remain high for a year or more. Given the low demand for imported beef in the US and expected drop in Australian cow beef supplies, exports to the US market in 1994-95 are forecast to have fallen to around 245 000 tonnes, 14 per cent less than in 1993-94.

The GATT agreement significantly increased access to the US market. However, exports to the United States over the medium term are expected to remain at levels significantly lower than the 380 000 tonnes access level negotiated under GATT. Exports to the United States are forecast to be around 345 000 tonnes in 1999-2000 and unlikely to reach the negotiated quota level until early next century (ABARE 1995).

3.3.3 Recent Developments

An expanding aspect of the national industry is the export of live cattle for feeding and slaughter. Nationally this has tripled to 241,000 head over the last five years. These exports have been predominantly from the Northern Territory to South East Asian countries.

Another export development is a move from frozen to chilled beef particularly for the Asian market. From South Australia, while frozen tonnages have remained relatively constant, chilled exports have doubled to 5245 tonnes over five years.

To meet these new markets there has been a large expansion in the export of grain fed beef. In 1989 grain fed beef exports comprised only 4% of total beef exports from Australia. By 1993 the proportion of grain fed exports to total beef exports had increased to 12%, and by 1994 was close to 18% of total beef exports.

3.3.4 Imports

Neither beef cattle nor processed beef are imported to South Australia in any significant volume. If it was to occur it would be under very specific specialist niche market situations. The beef industry is "controlled" by the world free market, and with over 60% of local product exported, imports are unlikely to be significant.

Imports of live animals are restricted by disease protocols, and while there is considerable flow of genetic material in and out of Australia it is predominantly in the form of embryos or semen.

3.3.5 Domestic Consumption

Meat consumption statistics are compiled on a national basis and there is no evidence to suggest that South Australian consumers vary significantly in their eating habits from those in other states. Australians currently consume 38 kilograms of beef per head per annum, which is 35% of the total meat consumed by Australians. Following the recovery from the 1970's beef boom, beef consumption declined gradually until 1992 when it stabilised. Consumption is influenced by the relative price of competing meats in the market place. With beef prices determined by the export price, domestic prices rise and fall depending on beef availability and export demand, resulting in small fluctuations in domestic consumption.

World consumption of beef varies from around 70kg per head in some South American countries to one or two kilograms in some Asian countries. The twelve countries of the European Union average 20.2 kilograms and the USA 44 kilograms. Our major market for beef, Japan, consumes 10.7 kilograms per head. These figures indicate an opportunity to expand consumption in Asian countries as their economies develop. Opportunities for expanded exports to Europe or USA are limited.

3.4 WORLD PRODUCTION

Australia accounts for approximately 2.5% of the world's cattle herd of 1,024 million head, and produces 4% of the beef. Of the world production of 45.41 million tonnes, 12% is exported. Australia is a major exporter of beef contributing 16% of the beef exports from the main exporting countries. Australia, at 1.154 million tonnes, is the largest exporter with other large exporters being Germany (655,000 tonnes) and United States (640,000 tonnes). New Zealand, a major competitor, exported 450,000 tonnes in 1994.

The major world producers of beef are USA, Brazil, Argentina, EU, and FSU (Russia) with the major importers USA, Japan, France, Germany, Italy, UK and Canada.

Movements of beef in and out of USA are considerable and relate to the need for processing meat in USA for grinding, and the availability of high value product for which there is a demand in Asia. Transfers in Germany are a result of the intricacies of the European Union and the recombination of East and West Germany.

Two factors which have the potential to influence the world scene for Australian beef are firstly the success of GATT and APEC, which should prove beneficial, and secondly freedom from foot and mouth disease by South American countries which could have a depressing affect on our export markets. The Andriessen-Kerin Accord signed in 1985 is an agreement whereby the European Community will not export subsidised beef to Japan, Korea, Taiwan, Singapore, Malaysia and PNG, with Australia making certain undertakings to the EC regarding GATT. This has been an important Accord in our development of trade with North Asia. Market based protocols need to be reviewed in line with changes in market opportunities.

3.5 ECONOMICS AND MARKETING PROFILE

3.5.1 Economics of Beef Production

The beef industry in South Australia, as shown in table 1, is spread across the three production zones with production varying in each zone as discussed in section 3.2.2. The economics of beef production are similar in the cereal and high rainfall zones but different in the pastoral zone. Consequently, the following economic data assumes similar figures will apply in the high rainfall and cereal areas, with different returns for the pastoral area. The specialised feedlot sector has a separate economic analysis. A variety of economic analyses for the South Australian beef industry are available but not compatible with each other. The discussion below is based on what local data is available, a Meat Research Corporation paper titled "Profitable Beef for the North Asian Market" (1992) and data from the recently completed MRC funded Beef Manager Project in which South Australia was involved (see Beef Manager, Improving the Productivity of Beef Production in Southern Australia; Agriculture Victoria).

The MRC study examined potential returns from all regions of Australia where they targeted the developing Pacific rim markets. Gross margin returns from the South Australian regions were comparable with other regions of Australia although a slight reduction due to the extra freight cost from South Australia to Asia was observed.

Information from the annual ABARE farm survey reports comparing South Australian beef production economics with Australian figures is contained in Table 7. The figures indicate a large discrepancy between South Australian beef properties and the remainder of Australia. It appears these figures represent a small proportion of the producers who are specialist beef producers to be eligible to fit the ABARE criteria. From these figures it appears specialist beef producers are in a relatively secure business position.

Table 7: ABARE Survey Beef Survey Australia v South Australia

	1991-92 Australia	1991-92 South Aus	1993-94 Australia	1993-94 South Aus
Farm Cash Income $	19183	72548	38920	92097
Farm Business Profit $	-21325	-8198	-2527	73803
Return to Op, Cap & Man. $	-2.6	-0.2	-1.3	5.1
Beef Cattle Sold No.	242	491	277	321
Beef Cattle Gross Rec. $	100471	188829	139959	188379
Fertiliser Expenditure $	2256	10264	4409	12303
Freight Costs $	3837	12140	5087	6146
Interest paid $	11099	13510	9353	6093
Total Cash Costs $	99093	131852	120105	150335
Farm Equity $	892100	1103231	1080607	1311079
Farm Equity Ratio %	92	87	92	95

Economics of High Rainfall and Cereal Zones Beef Production

Table 8 summarises local gross margin figures for production of feeder cattle and local trade cattle. They are based on occupying a similar land area with the feeder gross margin carrying an extra 12% cows. As feedlotting develops as the preferred method to finish cattle for market, management methods will change. For instance, more cows can be carried and less supplementary feed is required. These figures are comparable throughout southern Australia with annual variations resulting predominantly from changes in cattle market demand and feed availability.

Table 8: Gross margin for cattle production

Cow Herd		Feeder Trade 112 cows	Local Trade 100 cows
Income	Calves	$30,912	$35,190
	Cows	$6,299	$5,814
Total Income		$37,211	$41,004
Costs	Transport	$975	$585
	Marketing	$2,249	$2,278
	Bull Depreciation	$488	$400
	Veterinary Costs	$711	$633
	Insurance	$163	$145
	Supplementary Feed	$2,520	$8,213
Total Costs		$7,066	$12,254
Herd Gross Margin		$30,144	$28,750
Gross Margin per Cow		$269	$288
Gross Margin per DSE		$19.22	$20.54

The Beef Manager Program created groups of typical beef producers and over a four year period aimed to improve profitability of the beef enterprise. The average beef enterprise gross margin increased from $9.98 per DSE in 1990-91 to $15.46 in 1993-1994 (54.9%), as shown in Table 9. Over the same period, gross margins of beef herds in the South West Farm Monitor Herds (a comparable group) increased only $1.33 per DSE (11.8%) demonstrating a definite potential for improvement with group support.

Table 9: Beef manager gross margin comparison

Financial Year	Average Gross Margin ($/DSE)	Range in Gross Margin ($/DSE)	Gross margin Change from 1990-91 ($/DSE)	%
1990-91	$9.98	-1.50 to 21.46		
1991-92	$9.24	-9.12 to 24.07	-0.74	-7.5
1992-93	$13.06	-0.63 to 23.35	3.08	30.9
1993-94	$15.46	2.56 to 33.90	5.48	54.9

A number of indicators were measured in the program and they all indicate a large range in the financial performance of beef herds, and imply a range in productivity in those herds. While the average profitability of beef herds in the program improved 54.9% over the period, gross beef income increased 32% and beef costs declined 2.5%.

Economics of Feedlot Production

The industry is developing rapidly in South Australia with over 200 feedlots with a capacity totalling 73,000 head. Over 70% of the feedlots are sited in the cereal zone. While we do not have feedlots as large as in the eastern states, many of the feedlots are becoming significant enterprises both on mixed farms and as specialist feedlot operations. The recent drought across eastern Australia has distorted the economics of feedlot production, consequently the following figures are based on an expected "normal" situation. Establishing a feedlot incurs significant capital development costs in addition to the feed and cattle costs. These capital costs are typically around $500 per head. A gross margin of $48 per steer with three lots per year and 75% occupancy returns $30 per annum the but if only one lot are fattened per annum the return is less than $8.00.

Economics of Pastoral Zone Beef Production

No recent figures are available on profitability of properties in the pastoral area. Cattle are run on an extensive basis. As detailed in Section 3.2.2, management systems are changing and with the development of a stable feedlotting industry the pastoral area has potential to be a major supplier of store cattle for the industry. This will require a further change of management away from attempting to finish stock in the pastoral zone.

Sheep and Wool comparison with Beef

The two tables below compare sheep and wool economics at the farm level with beef at two points in time, 1993 and 1995.

Comparison of the two years shows the marked improvement in sheep and wool profitability due largely to the recovery of wool prices (prior to the down-turn of recent months).

The gross margins are taken from the PISA publication Upper South East Gross Margins, Keith, South Australia, 1993 and 1995.

Gross Margins 1993

Item	M°Ewes (1000 ewes)	M°Wethers (1000 wethers)	Beef Cows (100 cows)
Gross Income	$41 527	$21 805	$35 500
Direct Costs	19 139	14 467	10 839
Herd/Flock G.M.	22 389	7 338	24 661
G.M./DSE	$12.26	$7.34	$16.72

Gross Margins 1995

Item	M°Ewes (1000 ewes)	M°Wethers (1000 wethers)	Beef Cows (100 cows)
Gross Income	$65 929	$35 325	$38 100
Direct Costs	23 188	19 601	11 574
Herd/Flock G.M.	42 741	15 724	26 526
G.M./DSE	$21.90	$14.29	$16.60

Historically, beef cattle and sheep have been, at least to some extent, substitutes. With the decline in wool prices in 1969-1972 (and wheat quotas), beef cattle numbers increased to record levels. This proved to be an over reaction and cattle numbers declined sharply in the late 1970's. The recent wool downturn in 1991-1994 did not elicit the same degree of cattle for sheep substitution for several reasons:

- capital outlays for beef are high,
- beef production is more specialised,
- low incomes of sheep producers.

This reduced substitution and greater stability of the beef herd size is good for the beef industry as any rapid build up may lead to falling beef prices a few years hence.

3.5.2 International Competitiveness

Meat Processing Sector

The Industries Commission (IC) conducted an extensive investigation into the Meat processing Industry, publishing report number 38 in April 1994. The IC reported: "This inquiry has found that despite some recent improvements, Australia's meat processing industry operates at significantly higher cost than processing industries of most countries with which it competes. It has also found that Australian meat exports have been losing market share in almost all our major export markets". The areas of concern were labour efficiency, capacity utilisation, meat inspection and licensing.

South Australia's mean and median beef processing operating days were well below average for Australia (mean 177.6 days versus 215.8 days). However cumulative operating hours were above average.

Benchmark studies have been commissioned by the Meat Research Corporation and figure 3 shows Australia's position. While many factors contribute to this situation and vary between countries, it indicates that Australia's industry has scope for improvement against its major competitors. Similarly, a study by the IC (figure 4) compares the labour productivity of selected New Zealand and Australian beef abattoirs.

Changes in productivity will need to come in three key ways - improved equipment efficiencies, labour efficiency and plant closure. Plants are continually investing in new machinery as appropriate and South Australian abattoirs are keeping up with developments. Labour efficiency, in the medium term, depends on removing the tally system through enterprise bargaining and adoption of new arrangements that allow longer working times, slower chains and a resultant improvement in quality. Total throughput efficiencies can only be achieved in South Australia by reduction in the number of chains operating.

Figure 3: Cost of best-in-class processing facilities, selected countries, 1991-92

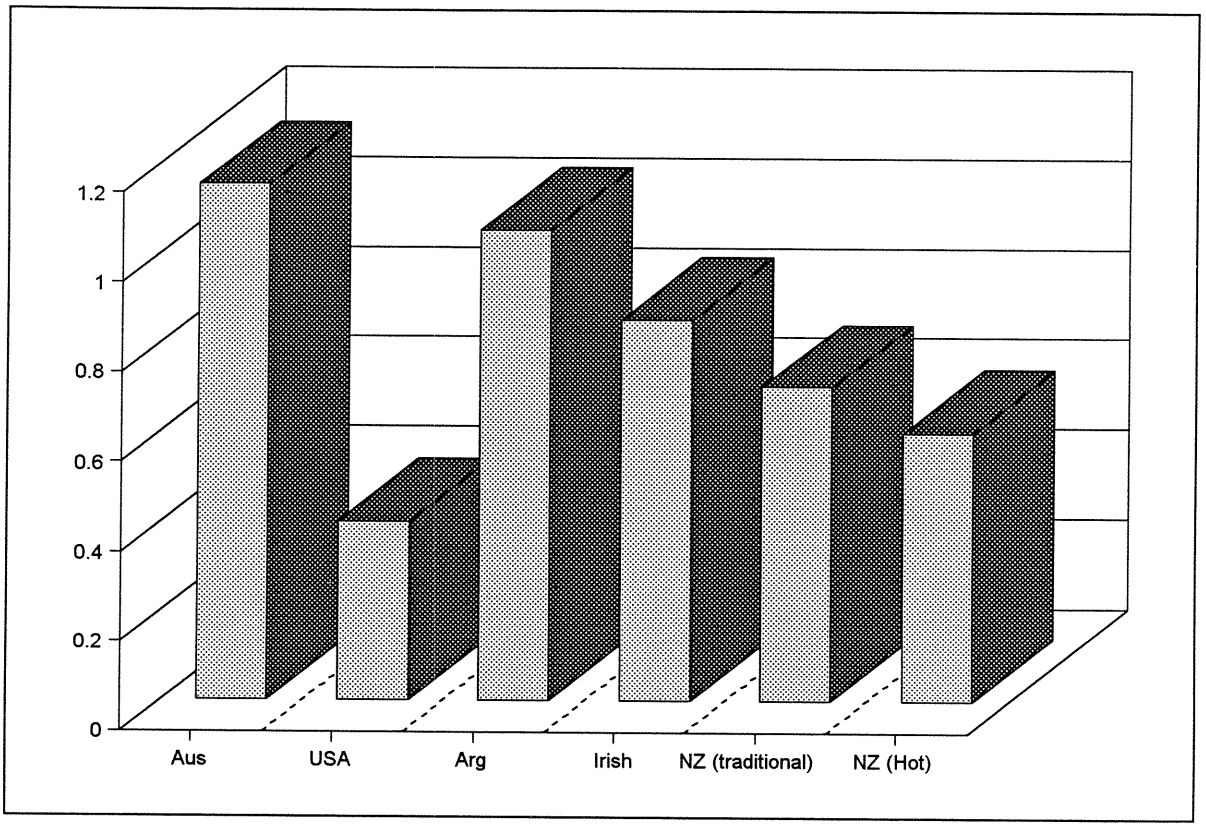
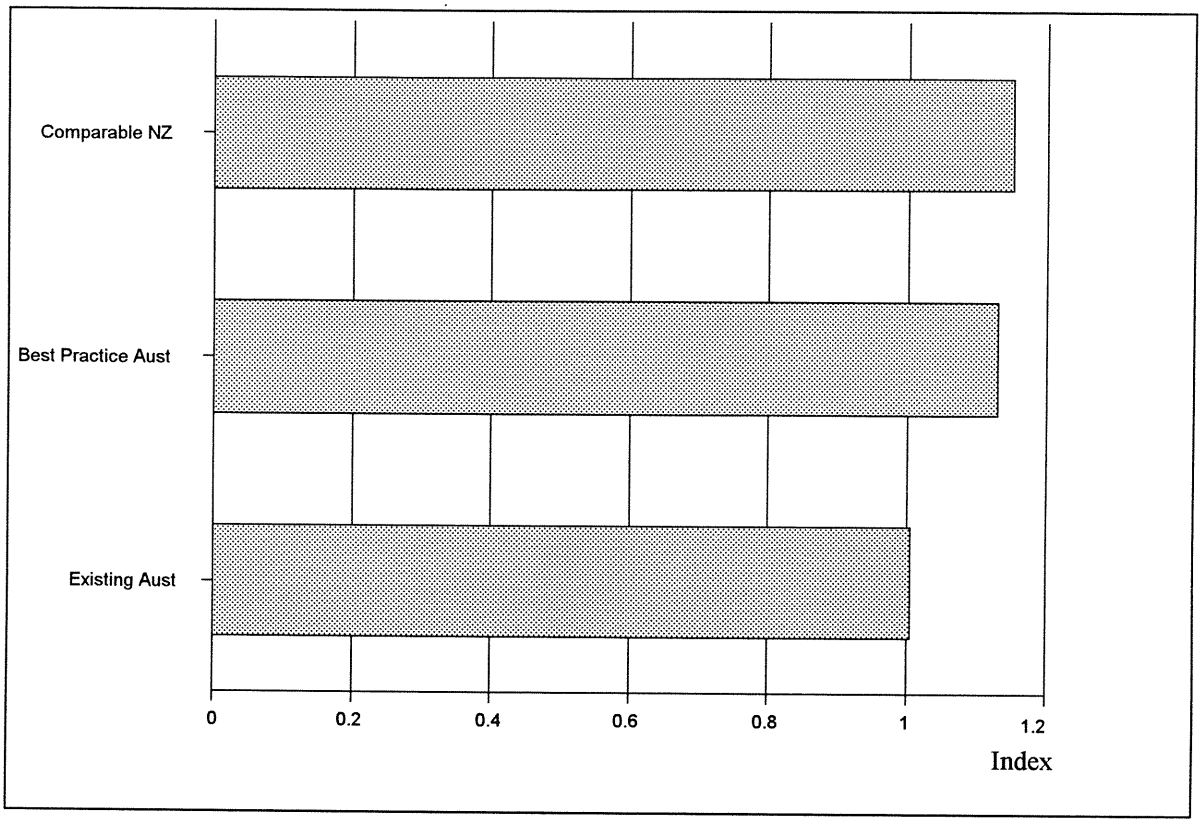


Figure 4: Labour productivity in selected Australian and NZ abattoirs 1991-92



Cattle Production Sector

The IC report stated that: "Australia produces livestock at very low cost by international standards". Australia is able to compete on the international market despite the inefficiencies of the processing industry because of the cheaper livestock prices paid to producers. This indicates that, in general, the production sector is relatively efficient internationally, especially given the lack of subsidies compared to many of our competitors.

Transport Sector

Australian road transport operators are amongst the most efficient in the world (MRC Meat Livestock Review, Sept 1994) with costs 5 to 10% below USA, Canada and UK. However, when government charges are added they are 10% above the USA. Further improvements are feasible with changed loading densities allowances.

3.5.3 Cattle Marketing

Producers market cattle by a variety of means. Methods include live auction (per head or liveweight), dollars per head direct, over the hooks, and computer aided livestock marketing (CALM). An MRC study conducted by ACIL in 1991 indicated producers were, on average, $15 per head better off by over the hooks (OTH) or CALM trading compared to saleyard selling. However marketing stock involves market intelligence and feedback as well as dollars received. The current market reporting mechanisms in the industry are disjointed and in South Australia have little objective basis. There is no coordinated reporting with radio reports separated from rural press reports and the AMLC. These all rely on individual arrangements with agents or independent observers reporting saleyard results. No published or subscription data is available on prices from local processors. Consequently there is a major industry opportunity for producers to receive market feedback on their stock.

Saleyards predominate as the means of selling cattle in South Australia although there is a gradual trend towards direct sales. Liveweight scales have arrested this trend, particularly at Gepps Cross where the scales were only installed three years ago. The increase in feedlots and the consequent increased turnoff of stores has also bolstered saleyard support.

3.5.4 Product Substitution

Over 60% of South Australia's beef production is exported with substitution in these overseas markets likely to come mainly from beef from competing countries as discussed in section 3.3.

In the domestic market substitution is mainly from other meats. Consumption of beef has declined from approximately 50 kilograms per caput in the early 1980's to 38 kilograms in the early 1990's but has stabilised at this figure while total consumption of meat has only declined slightly. During this period pigmeat consumption has increased 4 kilograms per caput and poultry 6 kilograms. This is a result of more competitive prices of the white meats, predominantly due to their improved production and marketing efficiency.

3.5.5 Ease of Entry to the Industry

Few controls apply to the production sector allowing producers to move between various forms of production. Entry is restricted only by cost, either to purchase land or the capital cost of cattle. This ability to move into or out of the industry creates the risk of new

producers not meeting or knowing how to meet market demands or quality of production. The feedlot sector is more restrictive with both higher capital costs to build a feedlot and the need to meet stringent environmental standards.

The processing sector similarly has no quota or entry barriers other than capital costs and meeting environment and health standards required. The existence of SAMCOR as an export licensed service works, and Lobethal as a domestic processor, provides the opportunity for people to enter the meat industry without needing to develop an abattoir.

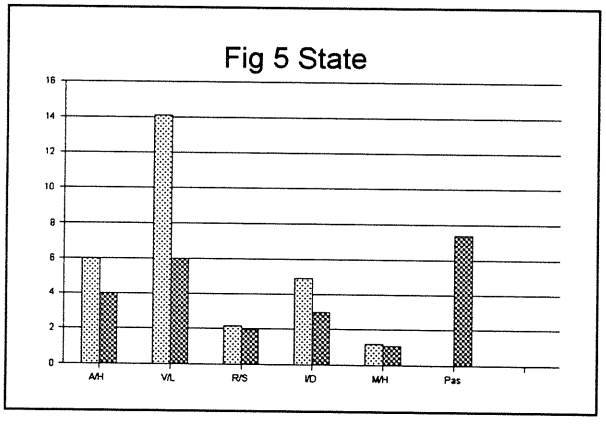
3.6 DEPARTMENTAL PROGRAMS

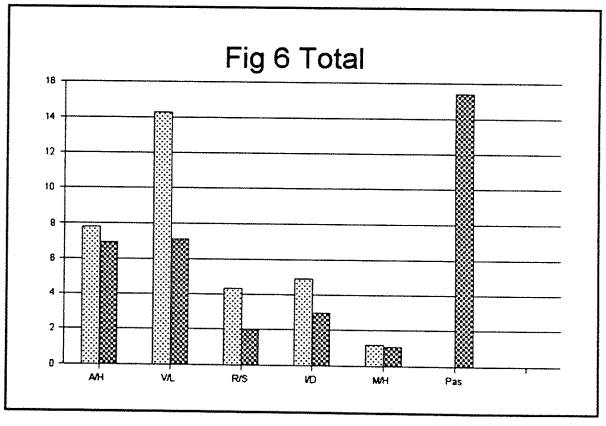
Current PISA/SARDI programs associated with the beef industry predominantly cover pastures, animal health and industry development issues. These are summarised in table 10.

Table 10: Personnel allocation

		FTE's 1992		FTE's 1995	
		State	Trust	State	Trust
1	Animal Health	6.0	1.8	4.0	2.9
2	Vetlab	14	0.3	6.0	1.1
3	Research (Struan)	2.2	2.1	2.0	0
4	Industry Development	4.9	0	3.0	0
5	Meat Hygiene	1.2	0	1.1	0
6	Pastures	3.0	4.5	7.4	8.0

Figures 5 & 6: State and total FTEs 1992 (light hatch) and 1995 (dark hatch)





4 INDUSTRY STRENGTHS, WEAKNESSES, OPPORTUNITIES & THREATS ANALYSIS

The strengths, weaknesses, opportunities and threats (SWOT) of the South Australian beef cattle industry have been identified to highlight the major factors affecting the industry's economic competitiveness and sustainability.

As a result of this SWOT analysis, a number of major opportunities have been identified to enhance the beef industry's contribution to South Australia's economy over the next five years and beyond. The major factors which can be addressed by PISA and SARDI are discussed further in Section 5, Industry Development, and in Section 6, Opportunities and Roles Analysis.

The SWOT analysis involved input from research, extension and animal health staff in PISA and SARDI who currently provide services for the beef industry in this state. In addition, industry opportunities and problems identified in recent publications of organisations such as the Meat Research Corporation and SAFF have been incorporated into the final draft of this analysis. The need for more direct consultation and involvement with industry in this planning process is recognised and will be progressed as the industry planning process continues.

Table 11 summarises the outcome of the SWOT analysis. The overriding outcome is the interrelation of all sectors of the beef industry with the result that no one sector or aspect can be considered in isolation. For example, market development relies on changing genetics and on production systems, but these changes can not be implemented if health requirements are not maintained.

Continued access to international markets is the key aim, and as identified in the SWOT analysis, the key issues to this succeeding for the South Australian beef industry are:

- protection of the production base from disease, residues etc;
- identification of and meeting market opportunities;
- progression of an ecologically and economically sustainable production system;
- continuous improvement in productivity of the feed resource;
- rationalisation of surplus slaughter capacity and efficiency in the abattoir industry;
- conservative attitudes to marketing reform on and off farm;
- restricted competition in local meat industry; and
- freight disadvantage to Asia for chilled product.

The beef industry is exposed to competition on both the domestic and export market-domestically from other meat species such as poultry and pig meat, and on the export market, from other countries producing beef and other meats. Consequently, to survive, the beef industry must aim for continuous improvement all along the production, processing, transport and marketing chain. Much of this improvement will come from a quality assurance approach by industry leading to many small but continuous gains in efficiency. This will allow confident targeting of the high quality Asian market with chilled grain fed beef.

Adoption of this QA approach and continuous improvement right across the industry will see it develop as a highly efficient, internationally competitive industry.

Summary: South Australian beef industry SWOT

Strengths	Opportunities
• Good conditions for high quality beef production - grass and grain fed	• Efficiency improvement - cost/price competitiveness on farm and agribusinesses
• Many marketing options available	• Quality - produce to specification
	• Integrated management, new reproductive technology
• Favourable trend in free trade arrangements; global consumption increasing, high value adding	• Utilise trade and market information for target markets
• Reliable inputs, abundant grain, transport improving, good quality disease free cattle	• Expanding markets for grain fed and higher quality beef, ability to meet demand and attract feedlots to value add grain and cattle
• Mature industry organisations and education facilities	• Scope for expansion, and efficiencies in production, transport and handling
	• Establish industry development forum, foster cooperating production groups (clusters) and improved use of research and education facilities

Weaknesses	Opportunities
• Lack of competitiveness in transport and processing: – high handling costs at wharf – freight disadvantage to Asia for chilled beef	• Investigation and promulgation of production strategies including feeding, breeding and pasture management. – focus production strategies on store animals
• Lack of objective marketing information: – carcass feedback not utilised:	• Regulation review
• Restricted competition in local meat industry	• Closer links with the market and improved targeting and feedback
• Low pasture utilisation	• Development of brands and grading specifications - product differentiation
• Distance from major feedlots	• Specialised production for particular end use
• Grain price variability	• Investigate alternative transport - Darwin rail link
• Seasonality in turnoff	• Attract overseas feedlotter
	• Analysis of cost of production and benchmarking to improve competitiveness
• Producer skill levels - handling - business management	• Improved continuity of supply
	• Reproductive technology research

Summary: South Australian beef industry SWOT .....cont'd

Threats	Opportunities
• Competition in domestic and export markets • Reduced on-farm competitiveness • SA industry fails to achieve proportionate share of national growth • Interstate competitiveness • Exotic disease risk • Environmental pollution • Public perception of pollution world wide threat to atmosphere of greenhouse gasses	• Improved marketing efficiency in domestic markets and processing • Restructuring, lower handling and labour cost, and integrated producer/processor systems • Industry protection through disease surveillance, diagnosis, education and provision of counter disaster operations • Form links with larger operators • Promote competitive advantages • Ensure management procedures/guidelines are in place

5 INDUSTRY DEVELOPMENT

Drawing on the SWOT analysis in Section 4 it is apparent that the South Australian beef industry is well placed to share in supplying the expanding global demand for beef. To achieve this the industry must continue to develop a quality assurance approach throughout all sectors of the industry.

This quality assurance approach, already occurring in the feedlot and export processing sector, must move through the entire industry including on farm production.

Modelling of the local beef industry by PISA indicates that, based on past trends and sustained industry development, the following progress in the future can be expected by 2014:

- Cattle numbers are predicted to increase from 1m to 1.5m;
- Farm numbers with over 50 head are predicted to increase from 3000 to 4600;
- The majority of cattle will be on farms with over 50 head. The number of cattle and the proportion of the state herd in herds with less than 50 head will decline;
- The average herd size will stabilise at around 325 cattle;
- Average slaughter weights will increase from 235 to 275 kg;
- Beef production will increase from 96,000 tonnes to 190,000 tonnes;
- The herd average animal weight will increase;
- The area required for an average weight animal will decline from 2.4 ha in 1970 to 1.0 ha;
- Herd production area will increase to the year 2000 then decline to 1994 levels in year 2014;
- Feedlot Capacity will increase from 60,000 to 80,000 head and remain steady;
- Fodder production area required to support the feedlot industry will peak at 50,000 hectares in 1994 due to drought, and stabilise at 40,000 hectares by year 2014; and
- The area required for the entire beef industry will reach 1.45m hectares in 2014, rising from the 1994 level of 1.43m hectares.

In summary, by 2014 the beef industry has the potential to double beef production from the same land resource as in 1994. This will be achieved through addressing the following critical success factors:[1]

1 Market Development and Access

Market development requires a total commitment by producers and agribusinesses to the supply of products and services to overseas and domestic customers to the required specification, quantity and delivery time demanded by the customers. A commitment to export is sustained by a thorough understanding of customer needs and an equally thorough understanding of the products and services provided by major international competitors.

Industry strategies to foster a greater marketing commitment include:

- facilitate greater market access for beef; support APEC trade development;

[1] This section follows closely on earlier analysis of international competitiveness issues by the Horticultural Policy Council, 1994.

- provision of better market intelligence, information and analyses;
- further understanding of trade issues in major markets;
- further consideration of joint venture or supply contract opportunities;
- education, both formal and informal, for participants in all sectors of the industry; and
- producing exactly what is required by the market.

2 Product Development And Innovation

Product development and innovation can be considered as two major objectives of research and development. Innovation is a critical factor in developing international competitive advantage. In beef, value adding and product differentiation are two important aspects of product development and innovation.

Strategies which address the issues of product development and innovation include the following:

- Encourage further differentiation of local product from that of other countries and provide exactly what the market requires;
- Market research and analyses to realise market opportunities; and
- Industry stakeholders can further improve their market focus through: overseas travel and invitations to overseas marketers and researchers to visit Australia and provide their perspective.

3 Quality

The issue of quality in the beef industry refers to the need to continually maintain quality specifications and standards required by the customers in the market.

This issue needs constant attention if Australian product is to become more internationally competitive. Failure to address this will not only impair Australia's future export efforts, but may also impact on existing exports.

Key industry strategies appropriate in this respect include:

- improving communication of the requirements of the market place from the overseas/domestic buyers to cattle producers and agribusinesses;
- discouraging any form of averaging of returns as this does not encourage any change in product quality (ie value based marketing);
- greater promotion to make producers and all other industry sectors more aware of the importance and benefits of quality management and assist them to implement quality management systems;
- employing research, development and extension resources to improve beef quality; and
- capitalise on Australia's reputation for producing clean, (residue free) beef such as through the differentiation of local produce from that of overseas competitors.

4 Cost/Price Competitiveness

Cost/price competitiveness relates to a range of factors including the cost of production, productivity and market prices.

In relation to cost/price competitiveness Australia and its major competitors all have different advantages and problems. The low cost producers like Australia have the obvious advantage of cheaper production costs. However, they are sometimes less cost competitive in

other areas, incurring greater costs in other components of the marketing chain. Ensuring that agribusinesses operate to world's best practice is a crucial ingredient in the international competitiveness of our beef industry. Without benchmarking the whole production - transport - processing - marketing chain it cannot be determined exactly where the greatest pay offs from improving efficiency will come from.

Key industry strategies which address issues of cost/price competitiveness include:

- review regulations/policies impacting on all industry sectors;
- industry and individual enterprises at all stages of the production, processing, transport, marketing chain undertaking and updating benchmarking studies to determine their deficiencies and introducing world best practices to address these;
- encourage agribusinesses to avail themselves of available State and Commonwealth Government programs to enhance their efficiency and effectiveness as processors, transporters, input suppliers and marketers;
- encourage producers to examine their costs of production and to develop and update benchmarking cases for industry to compare itself against its competitors;
- employing research, development and extension resources to improve cost/price competitiveness through productivity enhancement at all stages of the production and marketing chain; and
- micro economic reform.

5 Sustainability

The beef industry impacts on soil, water and other natural resources in South Australia. The health and welfare of the herd is essential for a sustainable industry.

Industry strategies are aimed at ensuring a sustainable beef production system in accord with the environmental concerns of the general community and include:

- understanding land and water management issues and how they impact on productivity and degradation of the natural resources and taking appropriate action;
- appreciating the consequences of the control of pest animals and plants and taking appropriate action; and
- maintenance of productivity and export markets by ensuring the health of the herd, and the wholesomeness of beef products.

6 OPPORTUNITIES FOR PISA/SARDI TO CONTRIBUTE TO STRATEGIES TARGETING CRITICAL SUCCESS FACTORS

By addressing key industry strategies identified above, this plan identifies major opportunities for PISA/SARDI to facilitate the economic development of the SA beef industry. In many cases, the opportunities identified are areas where PISA/SARDI have existing research, development, technology transfer or regulatory programs in place.

6.1 TARGETING MARKET DEVELOPMENT, PRODUCT DEVELOPMENT AND INNOVATION, AND QUALITY STRATEGIES

The expanding Asian markets for Australian beef create an opportunity for SA producers to participate in national growth.

The demand for premium grain fed and grass fed beef and the marketing advantage of being a supplier of a product from a clean green environment creates an opportunity for the SA beef industry.

Market development requires a commitment to quality, required specification and timeliness. The Japanese, Korean and Taiwan markets require:

- upgraded quality and image;
- clearly graded and branded products;
- clearly distinguished standard pasture fed, quality pasture fed and grain fed beef; and
- clearly defined role for both the chilled and frozen product.

The increased production of beef will require both maintenance of existing and development of new markets. This role is shared by the AMLC and private industry who market the product. Ensuring producers are aware of the market requirements and have the ability to identify suitable stock for these markets is the key to meet these opportunities. It is estimated to have an annualised benefit of $13.749m to the SA beef industry.

6.2 COST/PRICE COMPETITIVENESS

To achieve the 2014 targets listed above the beef industry must adopt technology and adapt rapidly to industry developments. Substantial productivity gains have been made in recent years with eradication of tuberculosis/brucellosis, acceptance of cross breeding and increases in average carcase weights for example. The increase in average herd size, the consequent more professional approach to production, the improved feedback of production information and tighter profit margins will see the industry increasingly receptive to adopting new technology.

Productivity groups have been shown to be effective in the national Beef Manager project (See Section 3.5) and will be one of the means to improve information dissemination. Assisting industry with the development of information transfer systems in the marketing chain will be vital in improving efficiency both on and off farm. PISA/SARDI can act as facilitators of groups and activities, be they with farmers or other partners in the industry off farm, to help achieve the targets.

Protection of the resources available to the industry will also be essential in achieving anticipated development. Pasture productivity and health of the herd must be maintained and improved without threatening the environment or creating uncertainty in consumers' minds.

The dramatic change in the beef market from producing a bulk beef product for the USA market to a high quality product for the Asian market is resulting in the need for substantial changes throughout the industry. To meet these markets all areas of production are being challenged to change. The industry has the ability to make the changes but a great deal of facilitation is needed to ensure the right technology is adopted. As with the feedlot industry PISA/SARDI are ideally placed to stimulate this change without which tradition may slow the whole process.

Drawing on the SWOT analysis the South Australian beef industry must continue to develop a quality assurance approach throughout all sectors of the industry.

This quality assurance approach, already occurring in the feedlot and export processing sector, must move through the entire industry including on-farm production.

The changes occurring in the beef industry are meaning a change in PISA/SARDI's program focus. Projects across all the disciplines affecting the beef industry will become more targeted towards producing quality products and meeting the needs of consumers. By joining with the Cattle Council "Cattlecare" Quality Assurance Program, progress will be enhanced.

To maintain the competitiveness of the beef industry continuous improvement in productivity is required in both the on- and off-farm sectors of the industry. Productivity in the on-farm sector will be achieved through avoidance of nutritional deficiencies, parasite control, feral animal control, improved nutrition, genetic improvement, maintenance of sustainability and development of a lot feeding sector. A benchmark/quality assurance approach to beef management has a perceived annualised benefit of $26.148m.

Monitoring and review of any policies or regulations that impact upon the production/processing/marketing of beef will be an important ingredient in enhancing the cost/price competitiveness of the beef industry.

6.3 IMPROVED PASTURE PRODUCTIVITY

Pastures provide the basic feed resource for the South Australian beef industry, and in addition have a significant role in many rotational systems with cereal crops. This Beef Industry Development Plan recognises the importance of the opportunity to maximise pasture productivity and persistence through a range of targeted research, extension and regulatory programs.

Opportunities to improve productivity from pastures currently focus on four broad areas:

Improved pasture management

A number of important pasture improvement programs have been developed with the objective of achieving productivity increases across the high rainfall, cereal/livestock and pastoral zones. These programs seek to capture gains by way of maximising the utilisation of the existing feedbase through improved pasture management practices.

New cultivar development

A strong focus is being directed toward the development of highly productive, better adapted cultivars to meet the exacting needs of South Australia's diverse environment. Lucerne, annual medics, subclover, balansa clover and perennial grasses feature in these development programs. These activities are ably supported by active foundation seed and seed certification programs.

Rhizobial strain development

Programs have been established to identify, select and commercialise improved strains of rhizobia which in turn have the potential to significantly improve the productivity of South Australia's pasture legume base.

Legume persistence in rotations

In the cereal-livestock zone of south Australia, the importance of pastures extends well beyond animal production. In these regions, legume based pastures are effectively used as a break between cereals, with the legume also being the principal source of nitrogen in the rotation sequence. Thus the maintenance of quality and persistence of the pasture legume component of this rotation system is a significant part of the research and extension effort.

This Plan has identified significant opportunities from furthering these programs.

The Beef Industry Development Plan ultimately seeks to promote an integrated pasture utilisation program which is based on the correct selection of pasture plants and appropriate pasture management techniques. A strong focus on sustainability issues will ensure that this objective is achievable over the long term. The opportunities can be consolidated into the high rainfall zone and cereal livestock zone. The size of these opportunities is currently being evaluated.

6.4 TARGETTING RESOURCE AND ENVIRONMENT PROTECTION STRATEGIES

Resource and environmental protection provides for the sustainability of resources which allows for the maintenance or improvement of the profitability of beef production.

Opportunities in the Sustainable Resources Group of PISA generally incorporate both:

- opportunities to sustain the natural resource base, which are usually not included in commodity development activities, and

- opportunities to achieve new opportunities for primary industries, which are often included in commodity development activities.

Consequently, the net present values of programs in the Sustainable Resources Group will not equate with the values of new development opportunities alone, which are given in other sections of this industry development plan.

The Planning and Strategic Development Program (P&SD) promotes ecologically sustainable development through a range of services to PISA/SARDI and primary industries. Services include geographic data handling, presentation and training (GIS), resource

economics, land use planning, program development, support and evaluation. The P&SD program arms PI SA program managers and primary industries with:

- the ability to access, monitor, evaluate and present complex information through the use of Geographical Information Systems group (eg grain protein distribution, sustainability indicators);
- a defensible policy framework for land use planning (eg reduction in alienation of rural land);
- Property Management Planning as a service delivery mechanism;
- a means of evaluating the non market values of rural environments and resource economics;
- administrative and project support for community based programs and peak bodies such as National Landcare Program and Soil Conservation Council; and
- effective alliances at all Government levels which will enhance ecologically sustainable development for primary industries.

Sustainable Resources opportunities include the following five areas for the beef industry:

Animal and Plant Control

Provides for the protection of resources for beef production by supporting the control of animals and plants that are, or may become, problems. The annualised benefit is $10.19 million and relates to the control of rabbits, pasture weeds, aquatic weeds in drainage channels, and to the protection of the beef industry from the effects of exotic animal disease and further pasture weeds and vertebrate pest species.

Farm Chemicals

Ensures there are suitable, effective and safe stock medicines available to growers to protect cattle from pests and diseases and thus enhance productivity, and facilitates responsible chemical use to protect national and international markets for beef.

The annualised value of these opportunities is $8.71 million and includes ensuring compliance with registration requirements and programs to monitor residues of agricultural and veterinary chemicals, including antibacterial drugs and organochlorines, and control of use of hormonal growth promotants.

Water Management

Stocking rate of some grazed land in the 400-600 mm rainfall zone is reducing due to salinisation occurring as a result of rising watertables (dryland salinity). A range of whole catchment management and agronomic strategies can be implemented to prevent further spread and to reduce existing impacts through land reclamation.

Where irrigation is used to increase pasture growth, the application of improved irrigation management strategies can increase pasture production and reduce water waste, drainage and off-site impacts. In some areas salinity impacts due to the use of high salinity groundwater may be partly managed through irrigation practise.

The management of waste water from beef feedlots is essential for industry sustainability.

These opportunities have an annualised value of $2.71 million for the beef industry.

Land Management

By protecting and enhancing the soil and land resource for the sustainable development of the beef industry annualised benefits through land management programs total $3.17 million.

Major opportunities exist in the increases that can be achieved in pasture production through improved nutrition management in the agricultural districts. Significant opportunity can also be realised in the protection of current productivity, and increases in production of pasture through the better management of soil acidity. Other opportunities include the improvement of vegetation and water management in the rangelands, reducing the impact of grazing cattle on soil structure, reducing wind erosion of soil caused by grazing animals, and improving pasture production on water repellent soils.

Revegetation

The role of PISA's Revegetation Program is to facilitate the strategic use of perennial vegetation to enhance rural industries and the environment by protecting stock, crops, soil and water, diversifying incomes and enhancing biodiversity. The Program will do this by working with a wide range of industries and landholders, the broader community and associated organisations. Opportunities have an annualised benefit of $0.53 million and consist of reduced soil loss, shelter for stock, reduced salinity and potential for timber production.

Enhancing Cattle and Beef Health Status

The Animal Health opportunities focus on the protection of the superior health status of livestock in South Australia. Programs prevent the introduction of new or dangerous diseases or limit the market effects of existing diseases. Opportunities often fit into more than one commodity program because many stock diseases affect more than one class or species of animal. In some cases a disease is important because it affects humans as well.

Acceptance of beef as a healthy, price competitive food by the community requires a confidence by the community that it is wholesome and is both produced and processed in an acceptable way. This requirement extends to both local consumers and our overseas customers.

Efforts to maintain this confidence in the health of beef focuses on two areas:

Disease Surveillance

Disease surveillance is the process of assessing all available livestock disease information to prevent production or market losses of farm animals in South Australia. It also includes assessment of zoonoses (animal diseases transmissible to humans), foreign animal diseases and product residues. This is a vital resource protection opportunity.

The state government veterinary laboratory, VETLAB, provides a focus for diagnostic information. Private farm losses are assessed mostly by owners and private veterinarians but any diagnostic information can be utilised for disease surveillance by the Department.

Opportunities included within this area are animal welfare, disease and residue prevention disease surveillance, exotic diseases and meat hygiene. The total annualised value of these opportunities are $16.904m.

Disease Control

The Department has a number of large, organised disease control programs. These are designed to meet resource protection opportunities to eradicate or minimise an existing disease or residue by an active program of intervention. This plan has identified significant opportunities from furthering these programs.

Disease control and health maintenance opportunities include parasite control, BTEC, Johnes disease, mineral and trace element balance with a total annualised benefit to the beef industry of $8.637m.

7 OPPORTUNITIES AND ROLES ANALYSIS

Table 12: Summary NPV's for potential beef industry programs

NUMBER	PROGRAM TITLE	TOTAL NPV Annualised ($M) **	BEEF NPV Annualised ($M)	TOTAL BEEF NPV ($M)
ID/1.1	Value based marketing	13.749	13.749	80.096
NR/1*	Animal & plant control		10.19	99.88
P/1	High Rf Zone Pastures	26.272	9.435	54.96
NR/2*	Farm chemicals		8.71	85.47
ID/2.4	Est. Feedlot Industry	8.417	8.417	49.033
ID/2.2	Imp. cattle nutrition	7.811	7.811	45.502
AH/12*	Meat hygiene	28.299	7.641	44.511
ID/2.3	Drought preparedness	7.333	7.333	42.721
AH/9*	Exotic disease	16.46	4.938	28.76
AH/1.1-1.4	Parasite control	4.36	4.36	25.402
AH/5*	Residues	20.416	4.083	23.786
NR/4*	Land management		3.17	31.25
AH/4*	BTEC	3.689	2.951	17.192
NR/3*	Water management		2.71	26.5
ID/2.7	Genetic improvement	2.352	2.352	13.702
AH/13	Minerals & trace ele.	1.195	1.195	6.961
P/2	Cereal L/S Zone Pas	0.704	0.704	4.101
AH/2*	Animal welfare	0.805	0.242	1.408
ID/3.1	Niche mkt. develop	0.173	0.173	1.008
AH/11	Johnes disease	1.309	0.131	0.763
NR/5*	Revegetation		0.53	5.85
ID/2.6	Calf rearing beef	0.062	0.062	0.362
AH/7	Disease surveillance	-	-	-

* Note these opportunities are industry protection benefits not productivity gains
** Total NPV includes benefits which cover more than beef, such as other animal industries

As discussed above the opportunities for the beef industry range from the need to protect market access through increased management skills of producers to improved sustainable on farm productivity. Table 11 summarises the opportunities for the South Australian beef industry.

Many pasture and animal health opportunities are interrelated with other species and while they are itemised out as a proportional benefit to the beef industry they must be considered as a whole to be meaningful.

8 APPENDICES

APPENDIX 1: SWOT ANALYSIS OF THE SOUTH AUSTRALIAN BEEF CATTLE INDUSTRY

FACTORS	STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
ON FARM FACTORS (Quality, productivity, management, products, environmental, sustainability)	Majority of State's cattle in predictable mediterranean environment. Beef production centred around pasture based systems. Availability of underground water at shallow depths in the South East. Low cost beef production in Pastoral area. Availability of local grain supplies in cereal growing areas. Crossbreeding acceptable management tool to many commercial producers. (80% in South East). Wide range of biological types Very high percentage of studs using Breedplan. Leading Australian studs in some breeds. Beef Field Days well organised overview of Studs in SA. World leadership in reproduction technology.	Low autumn-winter temperature means * Seasonal turn-off * Supplementation to maintain fertility * Pasture finished cattle - certain genotypes to meet market specs. Environmental concerns over feedlotting Waterlogged country in winter Poor product differentiation Pastoral areas * Greater distance from markets. * Drought risk is high. Cereal Area * Fencing and facilities not present for cattle. * More attuned to sheep production. * Short season and lack of summer feed for cattle. * Large supplementary feed requirements. Limited utilisation of genetic potential through cross breeding Large distance from Eastern and Western cattle herds.	Develop strategies for extended turn-off over the whole year (eg utilise irrigation, fodder crops and grain finishing) Utilise cattle to reduce land degradation and alter pasture composition. Increase producer knowledge to optimise pasture production and utilisation Greater integration between pastoral and southern properties. Improve standard of handling facilities. Develop genotypes suited to environment. Exploit new breed development., e.g. Wagyu, Tuli, Boran Improve information flow to feedlot industry Expand present knowledge of breeding systems. Promotion of Studs through * overseas reps. * Beef Field Days * Ag. Tourism Maintain leading edge advantage in new reproductive technology	Reduced competitive advantage of beef compared with horticulture, cropping and alternative livestock enterprises. Pollution of water resources and soil degradation. Public perceptions of environmental degradation. Inappropriate pesticide use. Security of land tenure in pastoral area Drought risk Inappropriate breeding programs. Increasing costs of inputs. International trade barriers Unstable markets. Overseas competition HGP use. Exotic disease risk Increase in incidence of diseases Declining pool of young skilled labour Depletion of extension officers.

FACTORS	STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
ON FARM FACTORS **(Quality, productivity, management, products, environmental, sustainability)... Cont'd**	Availability of calves from Dairy industry. Growers with expertise to rear and grow out calves. High marbling genotype in S.A. Availability of dairy cows for mating to specialised breeds. (e.g. Belgian Blue.) Entrepreneurs are willing to invest in specialised sections of industry. HGP use is limited. SA cattle free of major diseases, residues, antibiotics, radiation, genetic disorders, taint, artificial foods. Feedback sheets on slaughter results. Grids for market specifications. Ultrasound technology for live animal assessment of carcase attributes. Distances to markets and/or slaughter relatively short.	Lack of suitable infrastructure for sale and delivery of dairy calves. Current limited local feedlot capacity to satisfy all markets. Subclinical losses e.g. worms, mineral deficiencies. Still some site contamination from needles, antibiotic residues in calves etc. Inadequate funding for disease surveillance - poor balance between industry and government funds. Lack of coordinated national disease recording and surveillance. Low level of training of producers. Producers tend to be conservative and independent. Average age of producers increasing Standard of cattle handling facilities low Poor general handling skills. Lack of business management skills. Limited application of financial analysis, and setting production	Improve linkage between rearers, growers, finishers and end users. Increase disease awareness by producers. Introduce disease free assurance programs Improve livestock handling skills of producers, transport operators and abattoir workers. Encourage the use of benchmarking throughout the industry	pasture feed grown Limited understanding of Brreedplan data Full potential of carcase feedback data not realised. Distance from major feedlots. Develop strategies for extended turn-off over the whole year (eg utilise irrigation, fodder crops and grain finishing) Utilise cattle to reduce land degradation and alter pasture composition Increase producer knowledge to optimise pasture production and utilisation Greater integration between pastoral and southern properties. Improve standard of handling facilities Develop genotypes suited to environment. Exploit new breed development, e.

FACTORS	STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
ON FARM FACTORS (Quality, productivity, management, products, environmental, sustainability) Cont'd		goals relatively low utilisation of pasture feed grown Limited understanding of Breedplan data Full potential of carcase feedback data not realised. Distance from major feedlots.		Wagyu, Tuli, BoranI mprove information flow to feedlot industry Expamd present knowledge of breeding systems Promotion of Studs through * overseas reps * Beef Field Days * Ag. Tourism Maintain leading edge advantage in new reproductive technology. Improve linkage between rearers, growers, finishers and end uses.
MARKET FACTORS (Market system, signals, servicing, development)	Many marketing options available. Cooperative marketing groups beginning in small way.	Objective comparisons of different options hard to obtain. Lack of forward contracts Lack of individual independence. Reliance on leaders for success	Centralised Market Information Bureau. Encourage closer links between producer and end user of product. Specialised production for particular end use. Improve continuity of supply. Encourage exploitation of niche markets Increase objective market information. (i.e. requirements of various specialised markets)	Collusion between buyers Tarnished international image from adverse media presentations

FACTORS	STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
OFF FARM FACTORS (Production base, world trade, education, government policies)	Free trade arrangements between states Quarantine inspection service Excellent disease status -preferred export status Import levels restricted due to high standards Price competitive at farmgate & overall Low residue status "Clean green" products Global expansion in consumption (high value markets) Income multiplier effect and value adding higher than manufacturing industries	Insufficient disease surveillance Inadequate disease incidence database Limited ability to influence import policies of other countries High meat processing cost High meat inspection costs	Increase disease surveillance Maintain disease database Encourage Total Quality Management practises throughout industry, to reduce external quality control surveillance	Importing countries lowering tolerance levels for disease and chemical residues Political and non tariff trade barriers
RELATED INDUSTRIES FACTORS **(Input supplies, finance, storage, transport, processing, agribusiness)**	Grain Considerable amounts of quality feed grain produced Ideal for cattle finishing Good drought reserves Finance Stable farming industry	grain prices fluctuate widely supply variable restriction of access to direct supply Reluctance to lend for rural ventures	Ability to provide cattle meeting market specifications year-round Provide drought reserve Provide consultancies and training to Industry including bankers	Prices rise affect grain finishing profitability Legalities of marketing systems for some grains Competition with demand for human consumption Welfare considerations of feedlotting High Aust dollar inefficiency erodes margin, eventually causing closure

FACTORS	STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
RELATED INDUSTRIES FACTORS (Input supplies, finance, storage, transport, processing, agribusiness) .....Cont'd		Bank managers poorly equipped toevaluate rural investments Farmers tend to have poor business management skills High capital cost to enter beef industry Long delay between initial investment and resulting income due to lengthy gestation interval and period before subsequent income.		interstate competition feedlot industry predominantly interstate competition from slaughter houses
	Abattoirs High degree of quality control Generally well-run		Introduce new technology Quality assurance programs throughout industry Improved work practises	welfare considerations
		high labour cost high labour intensity age of slaughter chain high maintenance cost high cost of replacing chain inefficient design polluting OH&S considerations		
	Transport Integrated road transport network & companies Widespread network of rail	under-utilised capacity in SA high inspection costs industrial problems seasonal variation of quantity and quality of livestock	Improve training of livestock operators Improve transport facilities Innovative design to allow backloading of cattle trucks Darwin-Adelaide Rail-link	political pressure to further restrict road transport

FACTORS	STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
RELATED INDUSTRIES FACTORS (Input supplies, finance, storage, transport, processing, agribusiness) .....Cont'd		high handling costs at wharfs delays at wharf side lack of rail services between Darwin & Adelaide high transport costs due to distance between producers, abattoirs and markets bruising due to poorly trained operators and inadequate facilities road train restrictions transport regulations vary between states poor quality roads inefficient rail system inefficient and high cost of air freight		
INDUSTRY STRUCTURE (Organisations, structure, education needs)	Most sectors of industry well represented in SA Large diversity of marketing systems Large diversity of production systems Good standard of educational facilities including TAFE Ag. Bureau movement and Scientific/technical agencies	Under-utilised abattoir capacity low feedlot capacity Small share of export market Whole of industry comparatively small Lack of co-ordination of research effort between states and nationally Industry fragmented across regions within state Traditional industries wary of innovation. Slow adoption of technology. Lack of marketing education. Lack of recognition of market segment when designing extension programs	Scope to increase market share of exports Establish industry development forum Encourage co-operative producer groups - marketing and purchasing inputs. Improved use of scientific, technical and educational facilities.	Small number of wholesalers can form cartel to determine prices Size of industry varies with profitability of competing farm enterprises Producers prefer to act independently