SCORECARD REPORT 2002/03

EXECUTIVE SUMMARY

South Australia's food ScoreCard report indicates the state's food industry has performed well compared to the national average, despite being severely hit by drought, the SARS epidemic, global unrest and the impact of a strong Australian dollar.

Food commodity production fell dramatically in most sectors as a result of the drought, however strong consumer demand and the sustained performance of processed exports have helped cushion the fall in gross food revenue from $9.4 billion to $8.9 billion, a five percent decrease.

Processed exports, fell just 4 percent compared with the national average of 12 percent, substantiating the need for a continued focus on value adding rather than being dependent on the volatile commodities sector. This suggests that South Australia's growing competitiveness has helped compensate for the ongoing challenges of trading in a continually changing global market.

The measuring of processed exports is a particularly important part of the scorecard analysis, as the State Food Plan has focussed industry effort toward higher value adding as a way of insuring against seasonal volatility associated with commodity focussed production.

The gross food revenue 2002/2003 has dipped slightly below the $9.4 billion mark required to achieve the target of $15 billion by 2010. Despite the disappointing year, South Australia is still $600 million in front of where we would have been without the direction set by Industry and Government in the State Food Plan.

Despite this year's negative trends, the results show positive signs of "structural" changes taking place in the food industry. A 30 percent increase in new capital expenditure in food processing and retail is an example of confidence that investors have in the future of the food industry.

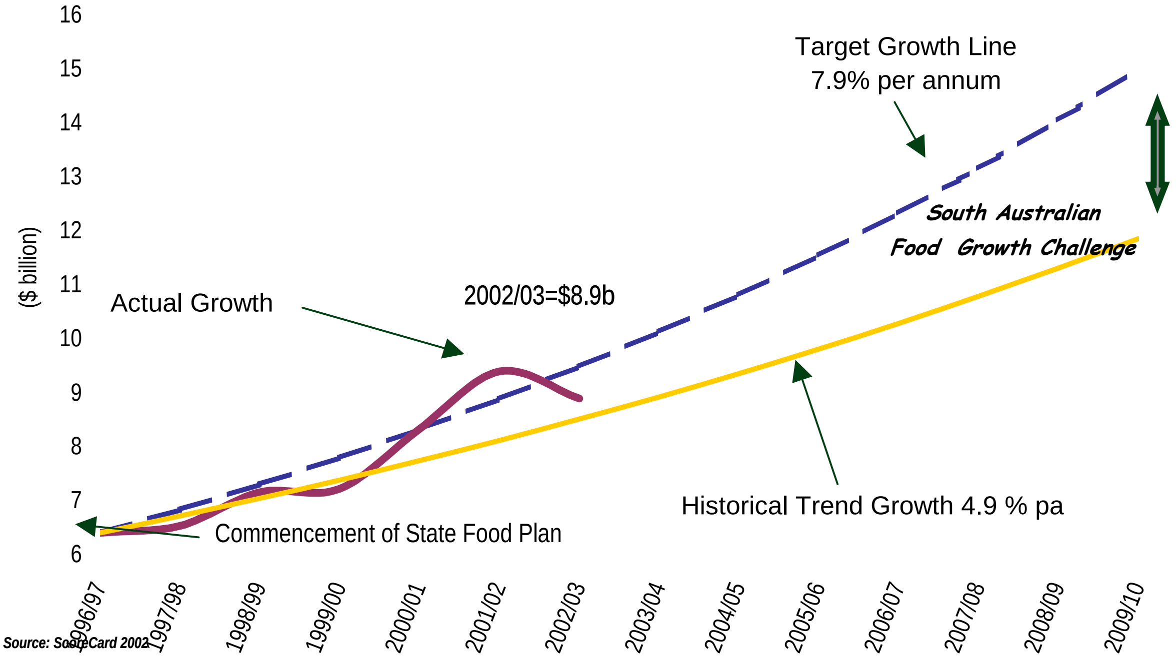
Significantly, trends in value-added processing since the start of the Food Plan show an average annual growth close to 5%, while total food exports have grown by an average 9.2% every year. Processed exports have outpaced the average over the past 6 years, doubling in value at an average growth of 12.2% per annum.

With the influence of seasonal conditions, it is important to compare annual changes against the longer-term underlying trend movement. The graphic shows the extent of Food South Australia's challenge as the difference between the underlying or historical trend growth in gross food revenue and the target growth line. Even with the coincidence of negative influences over 2002/03, Figure 1 demonstrates that since the development of the Food Plan and target in 1996/97, the State's food revenue growth has lifted to an average of 5.6% per annum. This latest growth remains above the growth of the food industry in the decade prior to the development of the food target of 4.9% per annum.

In previous ScoreCard assessments where exceptional positive seasonal influences have pushed the food industry beyond the target growth required to reach the 2010 target, we have cautioned against any 'over' interpretation of food industry progress. In 2002/03 we have seen a clear case of the cascading influence of poor seasonal production along the food industry value chains.

Figure 1: Food Remains On Target To Reach $15 billion By 2010

Gross State Food Revenue, Target, Underlying Trends and Performance to Date, 1996/97 to 2002/03



In addition to reporting on economic outcomes of the food industry, the ScoreCard team have recently taken on the task of developing a system of measuring environmental and social issues relating to the South Australian food industry. This report includes additional papers on the importance of developing sets of environmental and social indicators.

The environment indicator paper focuses on selected environment indicators and gives a summary of these indicators at a Global, National and State level. The main categories that have been identified as being important environmental issues to report on include water, land, energy, air and waste.

Social indicators that the ScoreCard team have identified as important, include level of employment, skills, education, cultural change, product integrety and community involvement. The third paper in this report highlights the importance of both understanding and then measuring these social and community issues.

The papers in the report all highlight the importance of the establishment of a Triple Bottom Line (TBL) reporting system for the food industry. Without such a system it would be difficult to measure and therefore monitor the true sustainable growth of the industry into the future.

THE 2002/03 FOOD SOUTH AUSTRALIA *SCORECARD*

- Dry conditions restrict South Australian Food Revenue to $8.9 billion

1. Overview

South Australian gross state food revenue for 2002/03 is $8.9 billion, a 5% or $501 million fall over the previous year. This consists of all food including commodity and other food products sold either overseas, interstate, or for local consumption (shaded area of Table 2). The net food revenue for 2002/03 is $7.5 billion or 10% lower than last year's figure. The higher fall in net food revenue is a result of strong growth in net interstate and overseas imports from $1.19 billion to $1.42 billion (a rise of 19%).

Table 2: SA Food *ScoreCard* by Industry 2002/03, $ million.

Industry	Farm Gate Value[1]	Processed Food Value	Overseas & Interstate Exports[2]	Retail & Food Service[3]	Net Food Revenue	Gross Food Revenue
Field Crops	733	586	1,228	1,403	2,040	2,631
Livestock	842	1,166	800	1,398	2,099	2,198
Dairy	219	305	122	458	520	580
Horticulture	489	866	372	1,305	1,473	1,677
Seafood	460	649	629	197	620	826
Other	-	187	47	933	726	980
Total	**2,743**	**3,760**	**3,198**	**5,694**	**7,477**	**8,892**

The relative contributions to gross food revenue by the major food industries are shown in Figure 2 below. The severity of the influence of dry seasonal growing conditions and SARS is shown on field crops (down $747m, 22%); livestock (down $80m, 4%) dairy (down $9m, 2%) and seafood (down $30m, 4%) In contrast horticulture (up $109m, 7%) experienced modest gains[4].

[1] Farm Gate Value measured as the value of commodities produced for human consumption, valued at the farm gate or wharf. In addition to the $2.74 billion under this category, there was $1.63 billion worth of other non-food agricultural commodities produced in South Australia during 2002/03. This included feed grains ($323m), wool and skins ($563m), wine grapes ($458m) and seafood ($23m). Food and non-food farm gate value totals $4.37 billion.

[2] Interstate exports include commodities and products that have been produced or manufactured in the given period, but have not been sold locally or overseas.

[3] Substantial revisions to the ABS 2002/03 Retail survey have resulted in revisions to food consumption and the headline gross state food revenue for 2001/02. All changes defined in this paper are based on these revised estimates.

[4] Food not attributed to each of the major areas is defined as Other/Not Elsewhere Allocated.

Figure 2: - Poor Growing Season Impacts on Grain and Meat Products

Industry Contributions to the Change in 2002/03 Food Revenue, $million

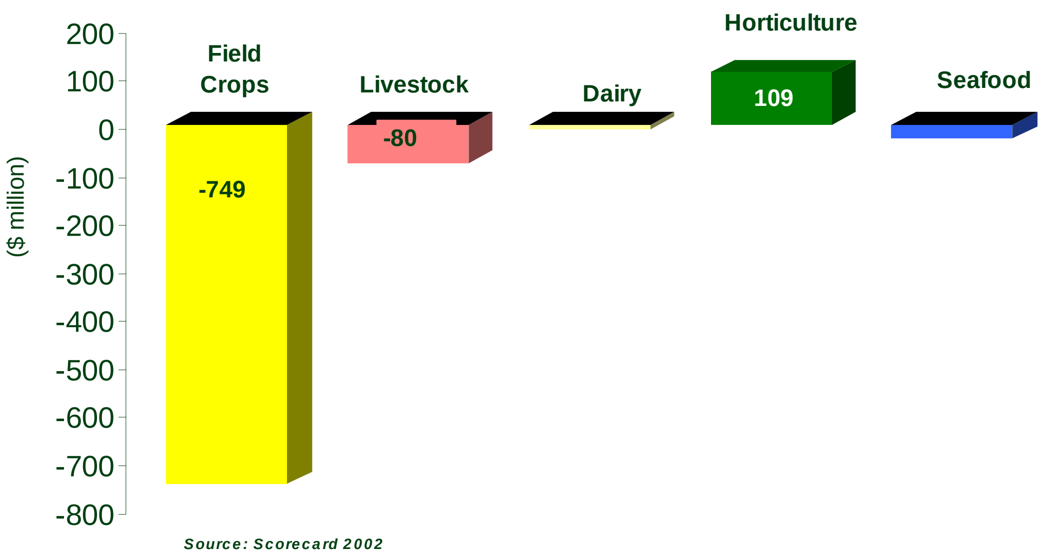


Table 3 shows how each of the two components of gross food revenue, exports and consumption, contributed to the 2002/03 food industry revenue.

Table 3: *ScoreCard* Comparisons, 1996/97 and 2002/03, $ million.

	1996/97 ($m)	2002/03 ($m)	Ave. Annual % change since: 96/97	over year	Annual Movement
Exports					
Overseas	1,369	2,324	9.2%	-22.1%	↓
Interstate	806	875	1.4%	-23.5%	↓
Total Exports	*2,175*	*3,198*	*6.6%*	*-22.5%*	↓
Consumption					
Retail Sales	3,094	4,375	5.9%	7.1%	↑
Service Sales	1,136	1,318	2.5%	12.5%	↑
Total Consumption	*4,229*	*5,694*	*5.1%*	*8.3%*	↑
Net Food Revenue	5,736	7,477	4.5%	-9.6%	↓
Imports	668	1,416	13.3%	18.8%	↑
Gross Food Revenue	**6,405**	**8,892**	**5.6%**	**-5.3%**	↓

The average annual changes since 1996/97 appear to counterbalance short-term seasonal commodity focussed production. Significantly, trends in value-added processing since the start of the Food Plan show an average annual growth close to 5%, while total overseas food exports have grown an average 9.2% every year.

2. Dry Seasonal Conditions Contribute to a Fall in the Value of SA Food Production

Measured at the farm gate, South Australia produced $2.74 billion of food products over the 2002/03 season. This is $641 million (or 19%) lower than the value of food produced in the previous year. As with gross food revenue, production declines were concentrated in the field crop and livestock areas. Small wharf gate value declines in seafood were offset with rises in both horticulture and dairy.

- *Field Crop production falls by $616m (46%) to $733m:*

In total 4 million tonnes of various grains, pulse seed and oilseed were produced in 2002/03[5], well below the five-year average production level of 6.4m tonnes or even the ten-year average of 5.5 million tonnes. The lower production value, coupled with the higher demand on grain for feeding livestock, contributed to a large decrease in grain available for export and therefore contribution to gross food revenue.

- *Livestock production falls by $26m (3%) to $842m:*

Falls in livestock production can be attributed to a reduction in the farm gate price for beef cattle. Price falls follow an increase in supply of cattle commensurate with poor seasonal conditions. Production in other livestock sectors remained relatively stable.

- *Seafood catch falls $20m (4%) to $460m:*

A poor seasonal catch in prawns and other marine scale fish, coupled with lower export demand and falling prices in key export markets resulted in seafood catch value falls. On top of this, the recent SARS epidemic caused a sharp fall for lobster and abalone in the dominant China and Hong Kong markets.

- *Dairy production rises by $11m (5%) to $219m:*

Small rises in Dairy production volumes and prices led to modest rises in farm gate based values.

- *Horticulture production rises by $14m (3%) to 489m:*

Horticulture values moved against the trend, with almonds, citrus, cherries, potatoes and mushrooms all expanding from a combination of better yield and higher prices over the year. The citrus and cherry industries in particular rebounded from poor growing conditions over 2001/02.

3. Overseas Exports 2002/03

South Australia exported more than $2.3 billion[6] worth of food products to almost 190 countries during 2002/03. This is $660 million (22%) less than was exported in 2001/02.

Figure 3 shows trends in food exports by commodity and processed products since 1996/97. Following poor seasonal conditions, last years fall in export value was focussed at the commodity level (down $615m, 35%) with processed exports falling slightly (by $45m, 4%).

[5] This includes both food and animal feed field crops. Food grains represent around 69% of the total crop.

[6] In addition to food exports of $2.32 billion, non-food exports include other field crops including feed grains, fodder and seed ($0.32 billion), wool & skins ($0.43 billion) and wine ($1.45 billion). Total agriculture related exports therefore total $4.53 billion - more than half (53%) of the State's merchandise export value of $8.6 billion.

Figure 3: Overseas Processed Food Exports exceed Commodities

SA's Commodity and Processed Exports 1996/97 to 2002/03, $ million

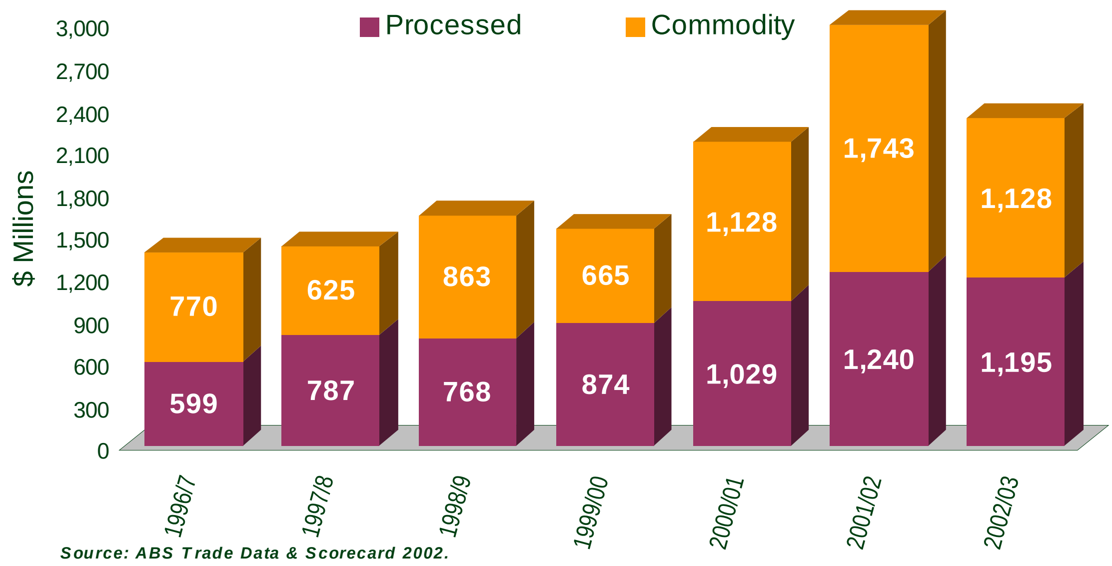


Table 4 provides a more detailed breakdown of commodity and processed exports over the year and over the life of the food plan.

Table 4: SA Food Exports (overseas), $ million

	Value 2002/03	Change average annual % from: 1996/97	01/02	Movement over Year
Commodity Exports				
Cereal Grains etc	1,027	6%	-37%	↓
Livestock	102	27%	-2%	↑
Total Commodity Exports	1,128	7%	-35%	↓
Processed Exports				
Grain Products	118	7%	19%	↑
Fruit & Vegetables	104	0%	-10%	↓
Seafood	449	15%	-6%	↓
Meat	433	15%	-3%	↓
Dairy Products	54	2%	-4%	↓
Other	37	16%	-22%	↓
Total Processed Exports	1,195	12%	-4%	↓
Total Food Exports	2,324	9%	-22%	↓

Table 4 shows that within commodity exports, cereal grains fell 37%, while livestock remained steady over the year. Processed food export growth was strongest in grain products, up 19%, with seafood, meat and dairy largely unchanged over the year.

In contrast all commodity and processed export values have risen since the start of the food plan in 1996/97, with the strongest growth in live animal, seafood and processed meat exports.

Forward estimates of South Australia's population growth suggest that only limited opportunities exist for growth in domestically derived food consumption. Therefore, for the food industry's $15 billion target is to be met by the end of this decade, substantial and continuous export growth is required.

While the export driven growth in 2000/01 and 2001/02 put the food industry beyond what was required to meet the food target, the latest performance has resulted in below average growth trends. However, as Table 4 indicates, the bulk of export growth over the past two seasons has occurred in commodity groups driven by positive cyclical price influences and seasonal effects. By way of contrast, this year the export market faced both a poor local growing season, rising Australian dollar and more recently the SARS epidemic on the Asian economy.

The poor commodity season results have however resulted in processed food exports exceeding commodity exports. Naturally, this is due to poor seasonal influences, but nevertheless highlights the extraordinary growth in processed exports since the start of the Food Plan. Figure 3 and Table 4 show conclusively that processed exports have outpaced average growth over the past 6 years, doubling in value at an average growth of 12.2 % per annum.

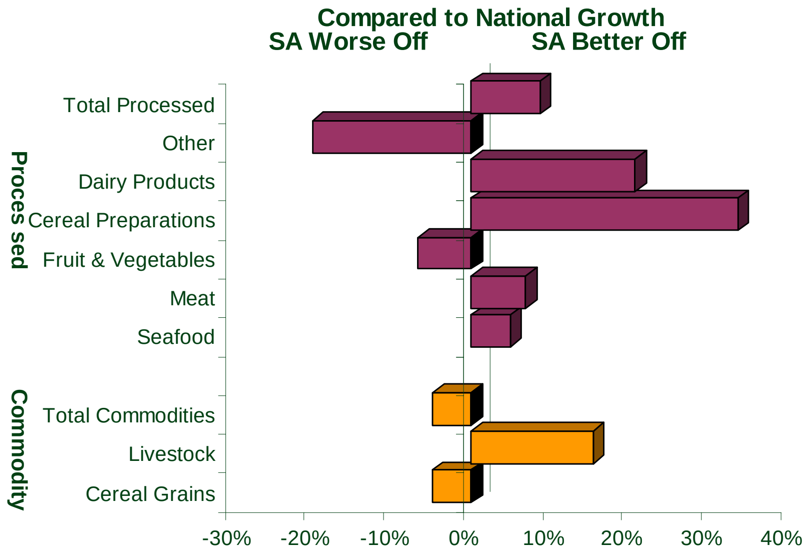
3.1. SA's Comparative Food Export (overseas) Performance Over the Year

The poor seasonal conditions experienced during 2002/03 effected food exports across all States in Australia. At the national level food commodity exports fell 30 percent, slightly lower than the 35% fall from South Australia. Processed exports fell 12% across the nation substantially higher than the 4% fall in South Australia.

Figure 4 compares SA food export changes over the year to the Australian average.

Figure 4: SA and Australian Food Exports (Overseas), SA Compared to Australia

Export changes by food group 2001/02 to 2002/03, margin (% pt) difference SA to Aust



The chart shows the difference in relative changes between SA and Australia over the year, depicting (in percentage point terms) the margin of difference. On the left of the graph, SA exports are shown to have suffered worse than the national average, with SA shown to be better off in food groups to the right of the centre line. Figure 4 shows that within commodities, cereal grains export falls in South Australia were larger than the national average. However, with the exception of fruit and vegetable exports, South Australian processed food exports faired comparatively better (and by a large margin in cereal preparations and dairy products) than the national average.

3.2. Higher Australian Dollar Creates Extra Challenge For Food Exporters

The value of the Australian dollar directly influences our relative overseas export competitiveness - where an appreciation of our currency makes Australian goods relatively more expensive or less competitive. Over the last financial year the Australian dollar rose 15 percent against the US dollar and 11 percent on the trade weighted index. Table 5, under the heading "% change in export price index", shows the direct influence that the Australian dollar appreciation had on price movements for commodities and products sold overseas[7].

When compared against the actual change in the value of SA exports over the year (shown in the middle column of Table 5) food exports performed reasonably well in most categories. For example, while the value of live animals, meat, dairy products and seafood exports fell over the year, the rate of decline was less than our change in competitiveness in these areas (as shown by the export price index). The exception to this are vegetables and fruit and cereals and cereal products, where in the latter case, SA's relative fall is more likely to be influenced by the lower supply of cereal grains following poor seasonal conditions.

[7] The price index reflects changes to the competitiveness of Australian goods from an importers perspective, where in their currency, an $A appreciation would cause a reduction (hence the negative in the index) in amounts of goods they would receive.

Table 5: Comparison Between Changes In SA Food Exports (Overseas) And Changes In Export Price Indices, 2001/02 To 2002/03.

	% Change in value of SA Food Exports	% Change in Export Price Index
Live animals	-2%	-10%
Meat	-3%	-14%
Dairy Products	-4%	-16%
Seafood	-6%	-26%
Cereals and cereal products	-34%	-2%
Vegetables and fruit	-10%	-7%

4. Adding Value to our Food

A key *ScoreCard* performance measure is the value of food industry processing. This is measured at an intermediate level, before a product is either traded or consumed. Processed foods may be minimally or highly processed, with their value expressed in wholesale prices, to derive a turnover value.

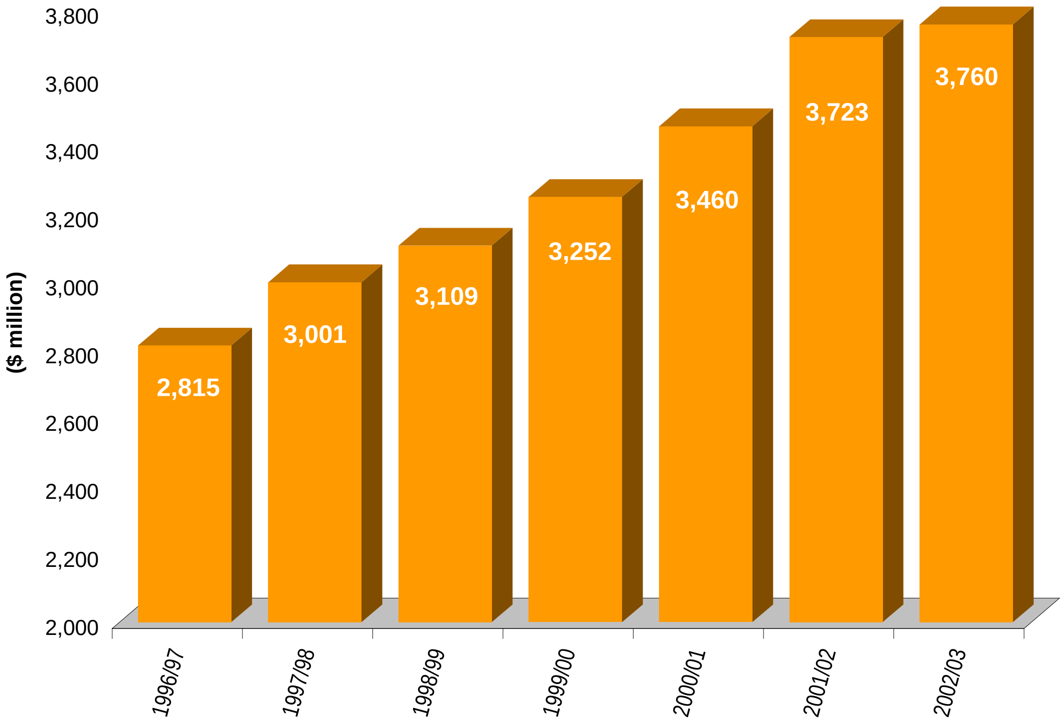
Food manufacturing turnover, as measured by the *ScoreCard* includes value-adding which occurs outside the traditional manufacturing sector, for example, on-farm or on-boat processing by both the horticulture and seafood industries.

The value of South Australian processed food increased by $37 million (1%) in 2002/03 to reach a level of $3,760 million. This compares with the longer-term average increase of 4 % per annum recorded over the past decade.

Figure 5 shows a levelling out of the value of food processing turnover in South Australia over the last year following a sizable increase in the previous year.

Figure 5: Adding Value to Food

-Growth in the Value of SA Processed Food turnover, 1996/97 to 2002/03, $ millions



Source: ABS Manufacturing & Scorecard 2003.

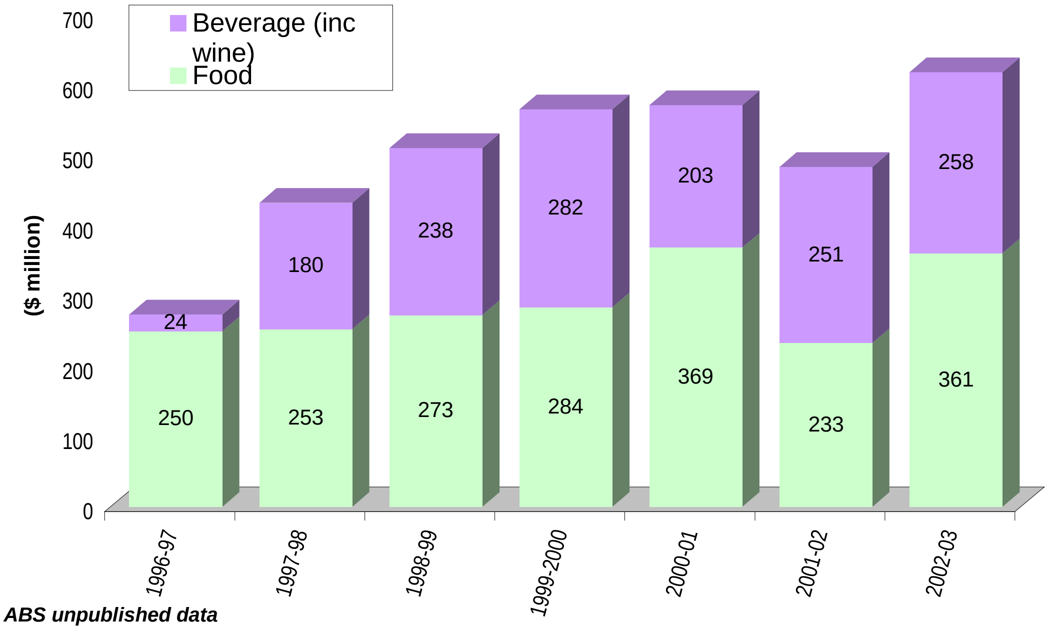
5. Increase in Private New Capital Expenditure (excluding primary production)

Over 2002/03 an additional $619 million dollars of private new capital was invested in SA's food and beverage industries. This was an increase of $135 million (up 28%) on previous year, reflecting confidence in the future of food processing, food retail and food hospitality in South Australia.

Figure 6 shows that most of the growth in new capital expenditure came from the food sector (up $128m to $361m), with the beverage[8] sector (including wine) remaining reasonably steady compared to last year (up $7m to $258m). Although most expenditure is occurring in the manufacturing or processing area, the highest growth was in food service (up 174 % to $107m) and food retail (up 47% to $144m). New capital expenditure in food manufacturing rose 6 percent to $368 million.

[8] Beverage sector includes soft drinks, beer, malt, spirits and wine

Figure 6: Food Industry Investment
Value of Private New Capital Expenditure, 1996/97 to 2002/03, $ million



Source: ABS unpublished data

6. Concluding Comments

Poor seasonal growing conditions and a sharp rise in the value of the Australian currency have highlighted the cyclical vulnerability of the South Australian food industry. The relative importance of commodity-based exports has realised similar declines in overall food exports.

Despite falls in farm gate food production and exports, food value-added processing turnover continued to rise as did new capital investment along the value chain. The value of food consumption also continued to grow; reinforcing the importance of food quality within our community.

The following issues remain relevant from the *ScoreCard*:

- There remains heavy reliance on commodity exports and there is scope for greater value adding;
- Though increasing, food processing would be further strengthened by addition of new value export chains, including better integration between production, processing and marketing;
- Employment in food manufacturing is not showing growth commensurate with increased value of exports and sales in domestic markets;

The heavy reliance of the South Australian food industry on commodity and lower level value adding (eg grains, packed meat and fresh seafood and horticulture products) indicates that there will continue to be volatility in revenues due to seasonal and price influences.

However, over the life of the Food Plan, South Australia's processed food exports have grown at a rate significantly higher than the national average. This is consistent with the Food Plan and the Food South Australia program that is seeking to encourage development of new value chains incorporating value adding for export markets.

South Australia's prosperity depends to a greater degree than the other States on the food industries, as demonstrated by our high dependence on food and agri-food exports. Relative to the national average South Australia has a predominance of commodity exports. Notwithstanding the above average growth in South Australia's processed food exports, the State continues to rely on strong primary industry exports, with a heavy emphasis on commodities.

Issues such as resource constraints, consideration of Environmental Sustainable Development (ESD), strategies for branding and marketing according to food integrity, and a 'clean green' image are not considered in this paper nor are they incorporated in the growth target ($15billion). However, over the next twelve months the *ScoreCard* will be broadening the scope of the target to incorporate further information on environmental and social outcomes within the food industry.

Projects underway in *Food South Australia,* as part of the State Food Plan are addressing the issues indicated above with work proceeding in the areas of demand chain analysis, demonstration projects, export facilitation and increased global competitiveness.

ScoreCard Team
Corporate Strategy and Policy Branch
PIRSA
September 2003

ENVIRONMENTAL INDICATORS

Introduction

Following the Issues Group meeting in April an across government workshop was held to open dialogue between the project researchers and other stakeholders in reviewing and identifying the TBL framework and indicators that would meet the specific purposes they intend.

The ScoreCard team analysed information gathered at the workshop, and has used it to assist in conducting further:

- Research and overview on the international issues of current forms of TBL reporting framework.
- Development of a framework for TBL reporting in the SA Agri-Food industry
- Identification of key environmental and social issues that are of a particular importance for the State food industry and establishment of appropriate indicators and measures across the whole of food value chain.

At this stage of the project most of the emphasis has been placed on the development of a suitable framework and on the selection of environment categories and appropriate indicators to report on. This paper focuses on the selected environment indicators and gives a summary of these indicators at a Global, National and State level.

Indicators

The main categories that have been identified as being important environmental issues to report on include water, land, energy, air and waste.

Water Consumption

Since 1940, annual global water withdrawals have increased by an average of over 3 per cent per year, while population growth has averaged between 1.5 and 2 per cent. Almost 70 per cent of all available freshwater is used for agriculture. Pumping of groundwater by the world's farmers exceeds natural replenishment by at least 160 billion cubic metres a year. On average it takes one to three cubic metres of water to yield one kilo of rice, and one cubic metre of water to produce one kilogram of grain.

By world standards Australia is a dry continent with few freshwater resources, but has a high per capita consumption of water. Water used for irrigation in Australia is higher than the global level at about 75 percent of total water used. This has increased by an alarming 76 percent (or 3.2% per annum) since 1985.

In South Australia, irrigation is also the largest consumer of water (around 80 percent) increasing by around 1.24 percent per annum in recent years. Major sources of irrigation water in South Australia are the River Murray and South East groundwater resources. Irrigation is used predominately for dairy and various types of horticulture production.

It is the objective of the ScoreCard team to make estimates of the amount of water used by the various South Australian food production and processing industries and sectors. This will enable water use efficiency or inefficiency practices to be identified and addressed where necessary.

Water Quality

Agriculture is also having an effect on the quality of our available water.
River condition assessment based on biota index showed that 23 percent of assessed sites in Australia were significantly impaired, 6 percent were severely impaired and 2 percent were extremely impaired. In South Australia, 12 percent of assessed sites were significantly impaired, 1 percent were severely impaired and 4 percent were extremely impaired.

This indicator will be needed to be dealt with at a regional level, due to the changing circumstances and effects that different industries and sectors are having on water quality.

Land

Approximately 60 percent of land in Australia is used for agriculture. Nearly 2 million hectares of agricultural land (13.9% of farms) are affected by salinity in Australia. The area effected in South Australia is about 350,000 hectares or 3 percent of land used for agriculture. Twenty two percent of farms in South Australia experience some salinity problems.

Table 1 highlights the importance of addressing the issue of salinity by giving estimates of forecast increases in Electrical Conductivity (EC)[9] in the South Australian section of the Murray-Darling Basin over the next 100 years. Although the table only refers to the River Murray, there are other substantial areas in South Australia that have salinity problems due to agriculture. The TBL project plans to collect and consolidate information on the extent and severity of salinity and other land degradation at an industry and regional level. Chemical use in agriculture, another area that has detrimental effects on our land, will also be reported on in the future.

Table 1: Estimated likely increase in salinity levels in the Murray-Darling Basin, 1998 to 2100.

	1998	**2020**	**2050**	**2100**
	EC Units			
Murray Bridge	590	730	870	980
Morgan	570	670	790	900
Berri	430	520	610	690
Renmark	400	480	550	620

9 Electrical Conductivity is proportional to the concentration of dissolved salts. World Health Organisation has declared that 800 EC is the upper limit for desirable drinking water ; reduced yields for irrigated salt sensitive crops (eg most horticulture crops)

Energy Use

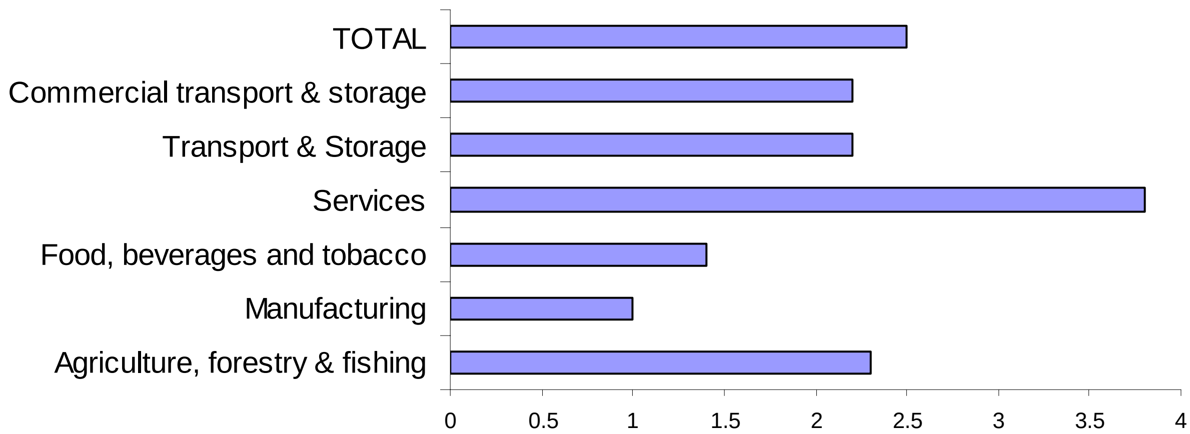
Energy production and use have environmental effects that differ greatly by energy source. Growth in energy use has led to more pollution, resource depletion, and an increase in green house gas emissions, contributing to climate change. The agri-food industry energy *consumption* and *intensity* trends and patterns do apply major pressures on the environment.

Total world energy consumption is growing and is expected to expand by 58 percent between 2001 and 2025 with historical trend growth being around 2.3 percent annually. The Australian economy is highly dependent on fossil fuels with the average annual rate of change of Australia's consumption of energy being higher than world consumption – 2.5% per annum (over 27 years to 2000/01). South Australia however consumes less energy than national average ranking fifth among the States and Territories with 1.7% average annual growth rate (over 27 years to 2000/01).

The food sector throughout the world consumes about 10-15 percent of total energy. Agricultural sectors consume 20-33 percent of the food industry energy use (or 2-5% of total energy use). In 2000/01, the Australian food and beverage manufacturing industry accounted for 3.3 percent of total energy consumption, while agriculture accounted for a further 1.4 percent. It can also be assumed that a significant amount of energy is also being used in food retail and consumption sectors. Data are still being sought at this level.

World consumption of energy by agriculture has tracked lower than total energy growth over the past two decades (0.24% growth per annum compared to 2.3% of total). Figure 1 however, shows that Australian consumption of energy by agriculture is growing faster than that of manufacturing. South Australian agricultural consumption of energy has a steady growth trend lower than the national average (2% compared to 2.3% relatively over 27 years to 2000/01).

Figure 1: Australia Average Annual growth Rate of Total Energy Consumption by Sector over 1973/74 - 2000/01(per cent)

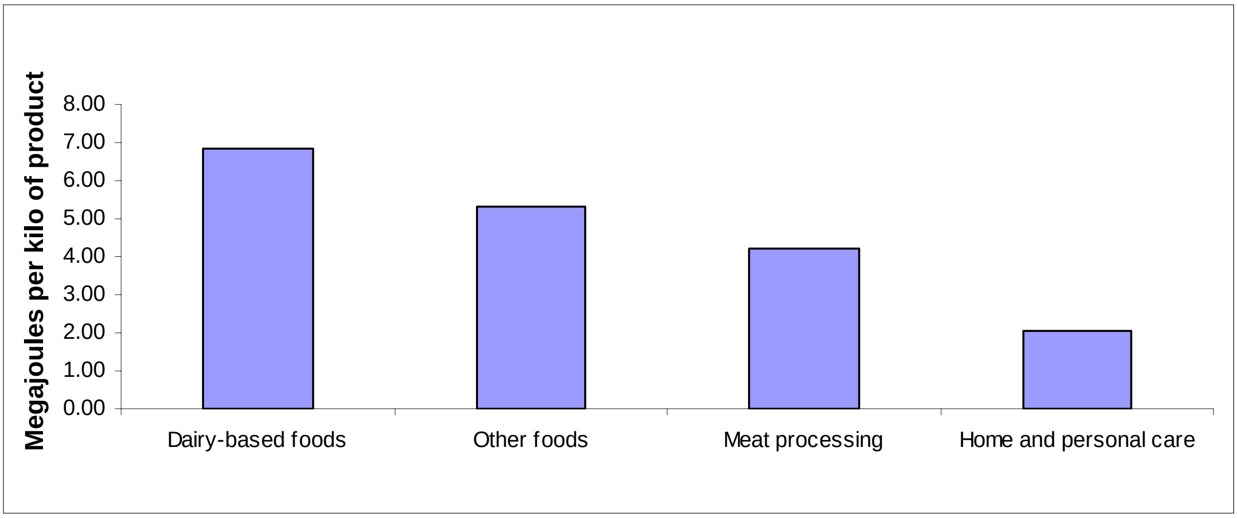


Source: ABARE e-report 03.9 Trends in Australian Rnrgy Intensity

Energy input for food production is relatively low compared to other industrial sectors. Twenty percent of total energy input to agri-food industry is consumed by meat processing with another 20 percent being used in home preparation. (Source: Agri-Food Production: Facts and figures, 2000).

While nationally, the agri-food industry is not a high-energy consumer relative to most Australian manufacturing industries, energy consumption levels are higher than relative international standards. Figure 2 gives some examples of the variation of energy consumption in the processing of selected products.

Figure 2: Energy Consumption by Australian Food Processing Sector in 2001

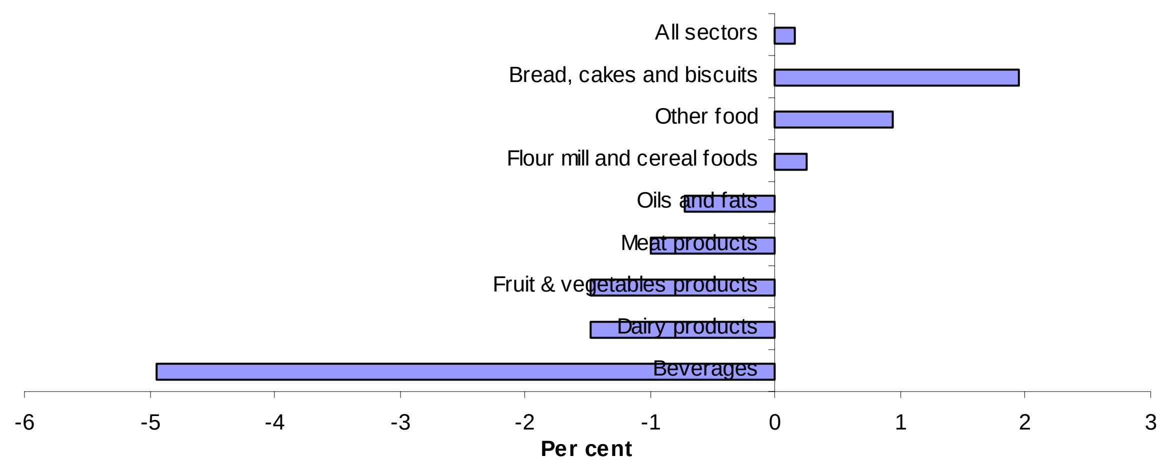


Energy Intensity

Energy intensity, which is a measure of efficiency, is measured in the amount of energy used in relation to Gross Domestic Product (GDP). Australia's overall energy intensity (per unit of GDP in GJ/US$'000) is lower than the world's average.

One way to continue the downward trend of energy intensity is to monitor the efficiency of energy use at an industry level. Figure 3 gives some broad level food industry changes in energy efficiency during the 1990's. The beverage industry appears to have made the most improvements during the last decade, with the bakery industry's energy efficiency deteriorating the most over that period.

Figure 3: Average Annual Change in MJ of Energy Consumed per $ Turnover for the Food Industry, 1989-90 - 1998-99



Source: Australian Food & Grocery Council. Environmental Report. 2001.

Air[10] - Greenhouse gas emissions/global warming[11]

The global concentration of green house gases (GHGs) in the atmosphere has increased measurably over the past 250 years reaching nearly 24 billion tonnes in 1996 – nearly four times the 1950 total and is projected to increase by one-third by 2020[12].

Australia currently contributes 1.4 percent to the world CO2 emissions from energy use and 2.59 per cent to OECD CO2 emissions with total CO2 equivalent (CO2-e) emissions increasing 18.8 per cent between 1992/93 and 1997/98[13]. In 2000-01, total carbon dioxide emissions from the production and use of energy in Australia were 338 million tonnes. This is 95 per cent higher than the level 27 years earlier. Without reductions in emissions intensity, however, it could have been as much as 136 per cent higher.

Figure 4 shows how agriculture and other industry groups contribute to increasing trends in emissions of these GHGs. These occur through fuel consumption, land use conversions, cultivation and fertilisation of soils, production of ruminant livestock, and management of livestock manure. Progressive land management activities have however helped to offset greenhouse gas emissions by the biological uptake of carbon dioxide through the incorporation of carbon into plant biomass and soils.

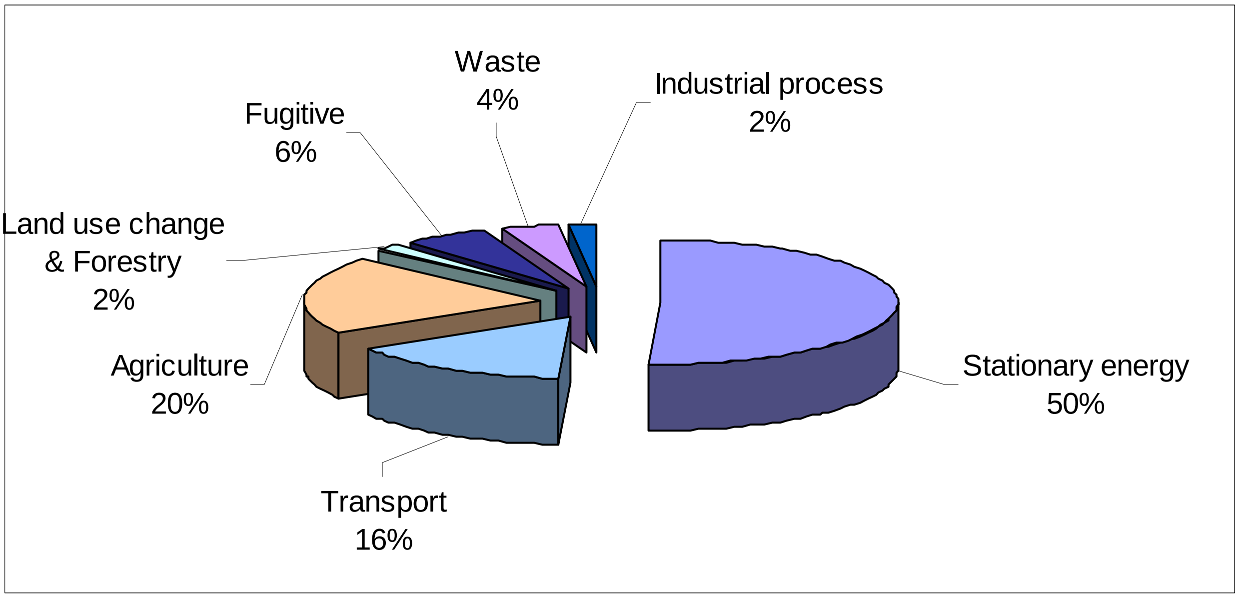
[10] *These indicators should be read in conjunction with energy consumption and energy intensity.*

[11] Main Pressures: Greenhouse gases atmospheric concentration:
CO2, Methane, Nitrous Oxide, Chlorofluorocarbons (CFCs)

[12] Carbon dioxide (CO2), methane (CH4), and nitrous oxide (N2O) emissions have increased by roughly 31%, 131%, and 17%, respectively, since 1750.

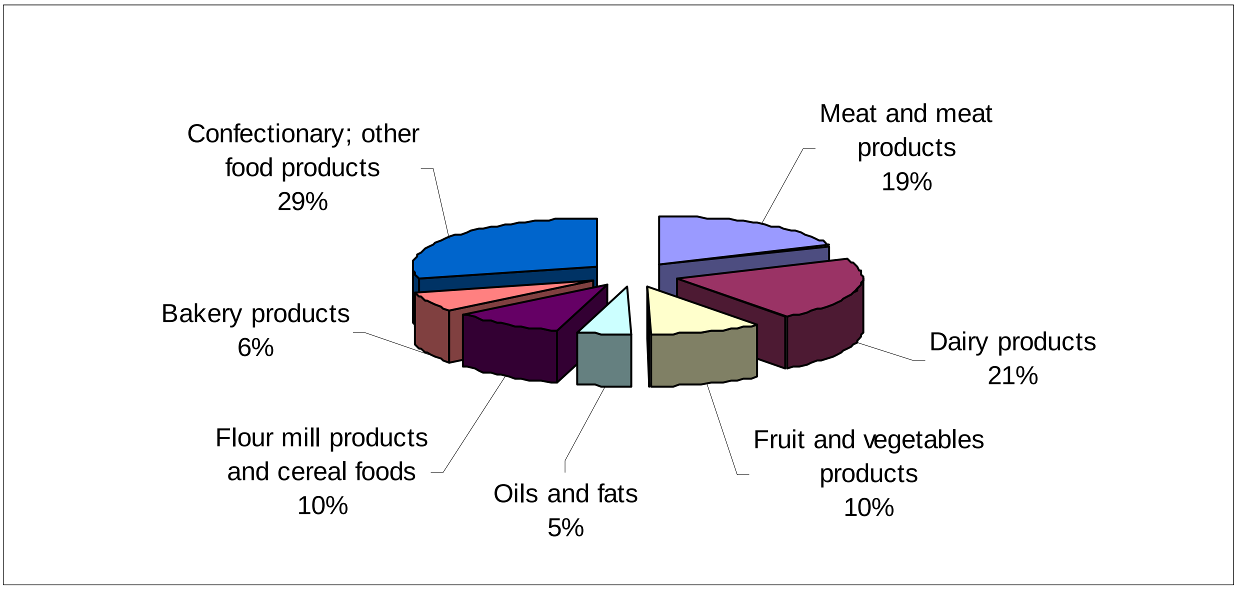
[13] This included N2O (up 50%), CH4 (by 9.5%), CO2 (by 18.5%).

Figure 4: Contribution to Australian Total CO2-e Emissions by Sector, 1995



The food industry is also responsible for GHG emissions through transport processing and waste. Manufacturing of food products contributes 6% of CO2-e emissions to the total of Australian manufacturing emissions. It can be seen in Figure 5 that the confectionary, dairy and meat industries appear to be the main contributors of CO2-e emissions in Australian food manufacturing.

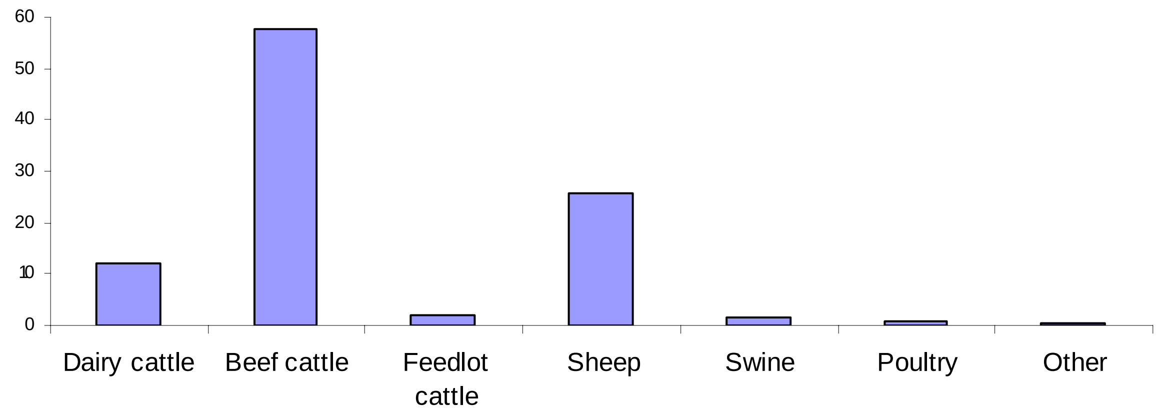
Figure 5: Supply of Greenhouse Gas Emissions by Industry (in Total for Australian Food Related Industries), 1997/98



GHG emissions in South Australia have gone against the national trend and have been slowly decreasing during the last decade or so. The two most significant greenhouse gases in terms of their contribution to total emissions in South Australia are CO2 and methane (CH4). Together these two gases contribute over 90% of total emissions.

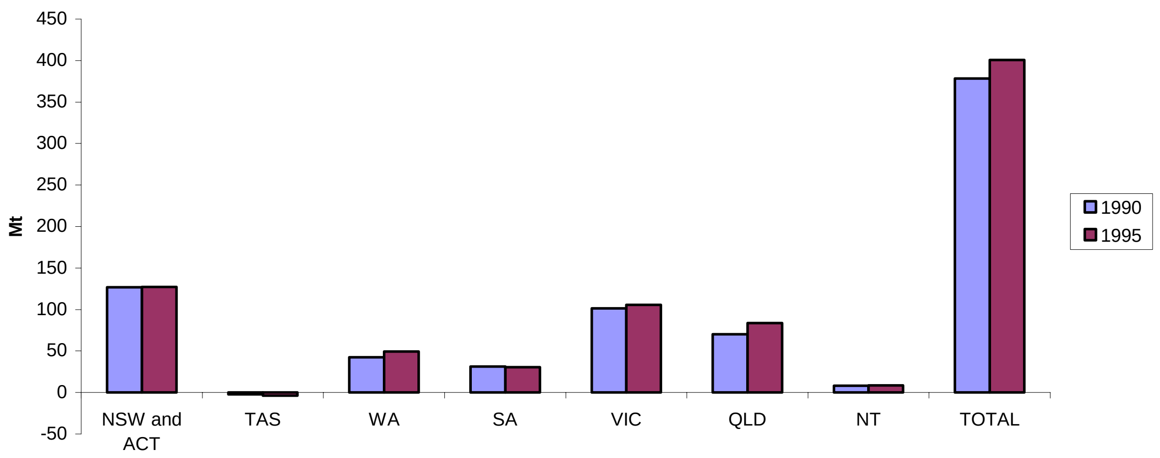
South Australian agricultural emissions have also decreased in recent years predominantly due to a decrease in emissions from enteric fermentation. Figure 6 demonstrates the extent that the different livestock classes contribute to this type of GHG emission while Figure 7 shows the contribution and changes each State and Territory has made to GHG emissions in recent years.

Figure 6: CO2-e Emissions from different Aus Livestock Classes, 1999.



Source: www.greenhousehttp://www.greenhouse.gov.au/agriculture/framework/object21.html

Figure 7: Contribution to CO2-e Emissions by State and Territory for 1990 & 1995 (excluding land clearing)



Source: Greenhouse gas inventory

Waste

Waste is another major contributor to pollution of the environment. The agri-food industry contributes to this in various forms. Each type of waste material has a different recycling potential, which can bring environmental benefits and increase efficiency of materials usage. Waste can be expensive to deal with and can have a damaging impact on the environment or even affect people's health.

On average per capita, Australia generates more municipal waste than OECD countries. This however has been decreasing slightly in recent years. The Australian Food and Grocery Council recent environmental survey indicates an increased focus on using recycled and recyclable packaging (77% of companies) and the light weighting of packaging (67%). The level of this type of activity has increased significantly since 1993.

South Australia ranks the second lowest state in solid waste generated per capita (after Tasmania). In 1999-2000, solid waste generated per capita in South Australia was less than the national average (1,300 and 1,400 Kg/capita respectively). However, South Australia has a third lowest waste diversion rate[14] – 23 percent (after Tasmania and Western Australia), which is lower than national average (36%).

The volume of commercial and industrial waste disposed of as landfill varies significantly by industry sector. A landfill audit in South Australia found that 45 percent of all commercial and industrial waste is generated by the manufacturing sector, with retail trade (17.5%) the next largest contributor.

Seventy percent of Australian packaging is used by the food and beverage sector; and paper/board is the largest single packaging material followed by plastics, metal and glass. Australian owned companies are the dominant packaging manufacturers.

Approximately 6.9 billion plastic bags are consumed annually in Australia (or just under one bag per person per day), with 6 billion of these being high density polyethylene (HDPE). Supermarkets supply consumers with 53% of the total number of plastic shopping bags used annually. Recycling levels are currently low (3%) due to inadequacy or inconvenience of current recycling systems and general consumer apathy.

It is estimated that in 2001-2002, 1 000 tonne of bags, was recycled in drop-off bins with the majority exported for reprocessing. To this point, recycling of plastic shopping bags via the kerb side recycling system is limited to only a few council areas in South Australia. In all other areas, any plastic bags placed in the kerb side recycling stream are unsorted and disposed to landfill. Annual plastic bag disposal to landfill is estimated at 6.67 36 700 tonnes per year.

Conclusion

If the South Australian agri-food industry is to continue to grow at a sustainable level into the future, it is essential that the environmental issues addressed in this report are measured, monitored and therefore managed at a State, industry and regional level.

This report highlights that these environmental issues are of international concern, and in most cases are deteriorating at a significant rate. Generally the statistics given in this report indicate that there is significant room for improvement in the way agriculture and the food industry use its natural resources or deal with pollution of the environment.

[14] Waste diversion rate is the percentage of waste recycled compared to waste generated.

The TBL reporting project's objective is to take these broad level indicators and apply them at a local industry level. In doing this it is believed industry will not only become more aware of its environmental responsibility but it will also have the opportunity to become more environmentally efficient. This in turn will hopefully improve the integrity of the industry in the eyes of our international customers.

ScoreCard Team
Corporate Strategy and Policy Branch
PIRSA
September 2003

FOOD SOUTH AUSTRALIA

SOCIAL ISSUES IN AGRI-FOOD INDUSTRY

Introduction

Sustainability is most commonly defined in economics as non-declining utility or well-being over time. Contrary to well-being itself, which has an orientation towards the presence, sustainability is therefore a 'future-oriented' concept.

To maintain the capacity to provide non-declining well-being over time, industry should be focused on maintaining the value of total capital intact, which usually comprises five capitals: natural, human, produced, social and institutional.

The first three forms of capital have been successfully covered by traditional economic theory of production. Commonly referred to as the 'triple bottom line' approach these have been a universal framework for developing strategies for sustainable growth.

There is growing empirical evidence that social and institutional capital contribute significantly to sustainable development and the traditional composition of three capitals needs to be broadened to include social and institutional capital. The 'stock of capitals' need to be understood as mutually supportive, in that failure to address any one of the capitals detracts from progress towards sustainable development

Many observers have examined the interface between economic progress and social dysfunction – for example, the implications for workers for rapidly changing technology, skills obsolescence, job insecurity and longer hours of work. This paper discusses the importance of managing the social and community capital stocks of a community or industry.

Discussion

Human and social capitals are closely related to the way in which institutions and political and social arrangements impact on society. However, the various elements need to be carefully distinguished, since:
Human capital resides in individuals.
Social capital resides in social relations.
Political, institutional and legal arrangements describe the rules and institutions in which human and social capital work.

OECD framework definition of human capital is as follows:

Human capital represents the knowledge, skills, competencies and attributes embodied in individuals that facilitate the creation of personal, social and economic well-being. ***(OECD*. The Well-being of Nations: The Role of Human and Social Capital, 2001).**

Therefore, human capital is developed in the contexts of:
Learning.
Formal education and training.
Workplace training as well as informed learning at work through specific activities such as research and innovation or participation in various professional networks.
Informal learning "on-the-job" and in daily living and civic participation.

There are four main approaches to the definition of social capital, therefore measurements depend on the definition.

<u>Social capital includes</u> networks together with shared norms, values and understandings that facilitate co-operation within or among groups.

Social capital is the glue that holds societies together and without which economic growth or human well-being are not possible. In short, social capital refers to the 'processes between people which establish networks, norms, social trust and facilitate co-ordination and co-operation for mutual benefit ((Bullen and Onyx 1995). Without social capital, society at large will collapse, and today's world presents some very sad examples of this.

Three basic forms of social capital have been identified:
Social bonds.
Bonding refers typically to relations among members of families and ethnic groups.
Bridges.
Bridging social capital refers to relations with distant friends, associates and colleagues.
Linkages.
Linking refers to relations between different social strata in a hierarchy, where power, social status and wealth are accessed by different groups.

There is a potentially strong interaction between human and social capital. However, the links between human and social capital are not automatic.

The concept of "social capital" is different from human and physical capital in a number of respects since it is:

relational rather than being the exclusive property of any one individual;
mainly a public good in that it is shared by a group;
produced by societal investments of time and effort, but in a less direct fashion than is human or physical capital.

Up until recently 'measuring' social capital for statistical purposes has been viewed as difficult. Attempts to capture key dimensions of how people interact and relate were considered to problematical since it was considered there was a general lack of suitable data sources.

In spite of this, social and human capital has received increasing interest throughout the last decade partly because government organisations are required to meet increasing demands for 'triple bottom line' accounting.

Today, there are a number of primary and secondary methods for measuring 'social capital'.

The 'social capital scale', developed by Bullen and Onyx (1998) was used for measuring social capital in five communities in New South Wales and the Social/Human Capital Rapid Appraisal Model (SCRAM) developed by Macgregor and Carey (2002) is a method of remotely assessing social and human capacity in Australian rural communities.
In line with current social enquiry, the World Bank has also developed measures of social capital "from the ground up" in the form of specially designed surveys or modules of existing surveys.

It has, up until recently, been considered easier to monitor objective indicators because the data are often easily gathered (i.e. employment, education, and migration). These measures are very useful for describing structural conditions that are important measures of a community's viability.

Objective measures, however, may not be able to capture the complexity of meanings and experiences of community residents. Subjective measures offer more insight than objective measures into issues of overall community well-being and sustainability (i.e. people's own meanings, attachments, and satisfaction levels for their communities).

Summary

Measurement of the SA Agri-Food industry performance in relation to sustainability of social and human capital is seen from three perspectives:

Intra-industry social sustainability through the business direct operations (employment; work satisfaction; income and benefits; education and training; health, safety and equity etc).

Society's responsibility, regional and rural communities well-being (cross-sector partnership with government and NGOs; donations; social investment; commercial initiative – to promote success of the business while supporting community causes, etc.)

Food integrity and consumer satisfaction through the value chain **(**health and safety of food products; eco-innovation and eco-efficiency; competition and prices etc).

Over the next twelve months the *ScoreCard* will be broadening its scope by measuring the above categories of social outcomes within the South Australian food industry.

ScoreCard Team
Corporate Strategy and Policy Branch
PIRSA
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