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PARLIAMENT OF NEW SOUTH WALES
LEGISLATIVE COUNCIL

STANDING COMMITTEE ON
STATE DEVELOPMENT

Discussion Paper

On the

International Competitiveness of Agriculture in New South Wales

Discussion Paper No. 6 May 1998

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INQUIRY'S TERMS OF REFERENCE

International Competitiveness of Agriculture in New South Wales

(Reference received 20 July 1995)

That the Standing Committee on State Development inquire into and report on the role of government in facilitating the international competitiveness of agriculture in New South Wales, including:

- innovation and diversification of the industry, including the development of new products and the application of new technology;
- business enhancement services (for example, marketing and market intelligence, industry links /network and leadership);
- regulatory impediments and inter and intra government coordination; and
- cost structure on the industry (for example, transport costs, packaging costs, state taxes and charges, and utility charges).

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COMMITTEE MEMBERSHIP

The Hon Tony Kelly, MLC Australian Labor Party	Chair
The Hon Brian Pezzutti, RFD MLC *Liberal Party*	Deputy Chair
The Hon Ian Cohen, MLC *The Greens*	Member
The Hon Jenny Gardiner, MLC National Party	Member
The Hon John Johnson, MLC *Australian Labor Party*	Member
The Hon Ian Macdonald, MLC *Australian Labor Party*	Member
The Hon Edward Obeid, OAM MLC *Australian Labor Party*	Member

SECRETARIAT TO COMMITTEE

Ms Anna McNicol	Director
Ms Anna George	Senior Project Officer
Mr Steven Carr	Senior Project Officer
Ms Nicole Hertogs	Research Assistant
Mr Matthew Scott	Committee Officer

ESTABLISHMENT AND FUNCTIONS OF THE STATE DEVELOPMENT COMMITTEE

In June 1988, the Legislative Council of the New South Wales Parliament resolved to establish two Standing Committees, the Standing Committee on Social Issues and the Standing Committee on State Development.

After the 1995 elections, a third Committee, the Standing Committee on Law and Justice, was established. The Standing Committee on Privilege and Ethics (which does not have a dedicated Secretariat) was also reconstituted by resolution.

The functions of the State Development Committee, as set out in the Resolutions of the Legislative Council, are to inquire into, consider and report to the Council on:

- options for the future policy directions and the emerging issues to ensure that opportunities for sound growth and wise development for the benefit of the people in all areas of New South Wales are pursued;

- any proposal, matter or thing concerned with economics and finances, resources and energy, transportation, tourism, public administration, local government, the Olympics, primary industry, industrial and technological developments and environmental issues in New South Wales;

- employment practices, issues and conditions; and

- any proposal, matter or thing concerned with the problems or disadvantages uniquely or predominantly experienced in country areas, including the viability of cities and towns in those areas.

OPERATION OF THE COMMITTEE

Matters for inquiry may be referred to the Committee:

- by resolution of the Legislative Council;
- by a Minister of the Crown; and
- by way of relevant annual reports and petitions.

The Committee reports to the Legislative Council. The Committee's reports may include draft Bills designed to give effect to a report's recommendations. The Committee may publish papers and evidence taken in public, as it considers appropriate. In that connection the Committee may prepare and distribute discussion papers as aids to its inquiries.

Committee reports must be laid before the Legislative Council within ten days of their being adopted by the Committee. The reports are given precedence for debate during General Business.

The Leader of the government in the Legislative Council is required to respond within six months to any recommendations for government action that have been set out in a Standing Committee report.

In terms of the Legislative Council resolution establishing the Committee, the Committee may:

- summons witnesses;
- make inspections;
- call upon the services of government organisations and their staff with the consent of the appropriate Minister;
- accept written submissions concerning inquiries from any person or organisation;
- conduct public hearings; and/or
- meet and make joint reports with other Committees of the legislatures of the Commonwealth and the State.

PREVIOUS PUBLICATIONS

Discussion Paper 1 May 1989

Public Sector Tendering & Contracting in New South Wales: A Survey

Report 1 August 1989

Public Sector Tendering & Contracting in New South Wales: Supply of Goods and Services

Report 2 October 1989

Public Sector Tendering & Contracting in New South Wales: Local Government Tendering & Contracting

Discussion Paper 2 November 1989

Coastal Development in New South Wales: Public Concerns & Government Processes

Discussion Paper 3 June 1990

Public Sector Tendering & Contracting in New South Wales: Capital Works Tendering & Contracting: Management Options

Report 3 April 1991

Public Sector Tendering & Contracting in New South Wales: Capital Works Tendering & Contracting. Volume A

Report 4 September 1991

Coastal Planning & Management in New South Wales: A Framework for the Future. Volume I
Supplement to 4 September 1991

An Alternative Dispute Resolution Primer

Report 5 December 1991

December 1991 Public Sector Tendering & Contracting in New South Wales: Capital Works Tendering & Contracting. Volume B

Report 6 December 1991

Payroll Tax Concessions for Country Industries. Volume I

Report 7 June 1992

Public Sector Tendering & Contracting in New South Wales: Supply of Goods and Services: Follow Up Report

Report 8 October 1992

Coastal Planning & Management in New South Wales: The Process for the Future. Volume II

Report 9 April 1993

Public Sector Tendering & Contracting in New South Wales: Local Government Tendering & Contracting: Follow Up Report

Discussion Paper 4 August 1993

Regional Business Development in New South Wales: Trends, Policies and Issues.

Report 10 May 1994

Regional Business Development in New South Wales: Achieving Sustainable Growth: Principles for Setting Policy. Volume I

Report 11 November 1994

Regional Business Development in New South Wales: Achieving Sustainable Growth: Initiatives for Setting Policy. Volume II

Report 12 August 1996

Rationales for Closing the Veterinary Laboratories At Armidale and Wagga Wagga and the Rydalmere Biological and Chemical Research Institute

Report 13 October 1996

Factors Influencing the Relocation of Regional Headquarters of Australian and Overseas Corporations to New South Wales

Report 14 April 1997

Interim Report on the Fisheries Management Amendment (Advisory Bodies) Act 1996

Report 15 April 1997

Waste Minimisation and Management

Report 16 July 1997

The Fisheries Management Amendment (Advisory Bodies) Act 1996

Discussion Paper 5 October 1997

Future Employment and Business Opportunities in the Hunter Region

Report 17 November 1997

Fisheries Management and Resource Allocation in New South Wales

Report 18 March 1998

Operations of the Sydney Market Authority (Dissolution) Bill from Commencement until 31 December 1997

ABBREVIATIONS

ABARE	Australian Bureau of Agricultural and Research Economics
ABS	Australian Bureau of Statistics
APEC	Asia Pacific Economic Cooperation
ASEAN	Association of South-East Nations
COAG	Council of Australian Governments
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DPIE	Federal Department of Primary Industries and Energy
FFRS	Farm Family Restart Scheme
FHS	Farm Household Support
GATT	General Agreement on Tariffs and Trade
MAI	Multilateral Agreement on Investment
OECD	Organisation for Economic Cooperation and Development
WTO	World Trade Organisation

1 INTRODUCTION

Following the 1995 New South Wales state election, the government re-established the Legislative Council Standing Committee on State Development. Subsequently the government provided the Committee with terms of reference to inquire into the international competitiveness of agriculture in New South Wales, set out at the front of this report.

1.1 The inquiry process

The inquiry process consists of three main components: calling for public submissions, taking oral evidence and writing and tabling the final report in the House. This discussion paper is designed to initiate and focus the written submissions received by the Committee.

In conducting its inquiries, the State Development Committee relies heavily on written submissions received from private individuals, experts in the field, representatives of groups and organisations, lobbyists and government departments. Submissions may contain facts, opinions, arguments or recommendations for action. Written submissions made to the Committee are used in three ways:

- to supplement the research undertaken by the Committee Secretariat;
- as the basis for inviting people to give oral evidence at Committee hearings; and
- in preparing the final report.

The Committee will call for public submissions in May 1998 and will commence public hearings in June 1998. These hearings will provide the Committee with an opportunity to examine issues in greater detail, clarify arguments or points raised in written submissions and receive additional information.

While the Committee has no set reporting date for this inquiry, it intends to table a report towards the end of 1998. The Leader of the government in the Upper House is required to respond within six months to any recommendations for government action that have been made in the report.

1.2 The definition of agriculture

The Australian Concise Oxford Dictionary defines the term agriculture as:

> The science or practice of cultivating the soil and rearing animals.[1]

For the purposes of this inquiry, the Committee has chosen to use a fairly broad definition of the term agriculture. Table 1.1 provides examples of those activities the Committee does, and does not, consider to fall under the definition.

[1] Hughes, J.M., Mitchell, P.A. and Ramson, W.S. (Ed.s), 1992, *The Australian Concise Oxford Dictionary*, Oxford University Press, Melbourne, p.22.

Table 1.1 Primary industries of an agricultural and non-agricultural nature

AGRICULTURAL ACTIVITIES	NON-AGRICULTURAL ACTIVITIES
Aquaculture[2] Dairying Forestry (plantation harvesting) Horticulture Livestock Irrigated cropping Dryland cropping Viticulture	Fishing Forestry (old growth harvesting) Mining

1.3 The scope of the inquiry

International competitiveness refers to the ability to be competitive in both domestic and international markets. The terms of reference for the inquiry provide the Committee with an opportunity to look at a wide range of issues that affect the international competitiveness of agriculture in New South Wales.

The Committee intends to investigate matters effecting a broad range of agricultural industries in the state, including the production of major commodities such as meat, wool and wheat and the production of emerging commodities such as Asian vegetables and native flowers. The Committee will consider the impact of government on the agricultural industry, including consideration of support programs and relevant regulations, taxes and charges.

The Committee further intends to investigate ecologically sustainable modes of agriculture production, including research initiatives and the education of producers about ecologically sustainable options. The Committee will also consider the development of new technologies such as genetic engineering and food irradiation. In addition, the terms of reference call for the Committee to give consideration to matters beyond the farm-gate such as marketing of commodities.

It is important to note that the Committee is a State Parliamentary Committee and, as such, its power to make recommendations extends only to the New South Wales government, not to the federal government. The Committee is likely, therefore, to concentrate mostly on issues that fall within the jurisdiction of the state government.

[2] As related to the rearing of animals in the aquatic environment.

2 MAJOR AGRICULTURAL COMMODITIES

Food and fibre staples, including meat, wool, wheat, milk, sugar and cotton, are the mainstay of Australia's agricultural industry. Annual output of these agricultural commodities varies from year to year depending upon climatic influences, including timing of rainfall and incidences of pests and diseases. In addition, prices fluctuate from year to year in response to movements in supply and demand in both domestic and international markets.

The information presented in this chapter provides an overview of the dominant agricultural commodities produced in Australia and New South Wales as well as information about export levels. In general, data concerning the value of agricultural commodities produced and exported has been averaged over a ten year time period spanning 1987/88 to 1996/97, in an attempt to minimise the impact of variances in the annual value of the commodities.

2.1 Australian production and exports

The gross value of farm production in Australia during 1996/97 was $28 billion.[3] In the same year, around three quarters (or $20.6 billion) of the value of farm production was attributable to just nine commodities: meat, wool, wheat, milk, sugar cane, cotton, barley, wine grapes and rice. Other agricultural commodities with a relatively high value at the farm gate include potatoes, apples, bananas, lupins, eggs and citrus fruit.

In 1996/97 Australian rural exports totalled around $24 billion or approximately one fifth of Australia's total exports.[4] Over the last ten years, the average export value of the nine commodities listed above totalled $15 billion (see Table 2.1). Other significant rural exports included fruit and vegetables, fisheries products and forestry products.

Comparison of domestic production (or farm gate) values with export product values highlights the fact that post-farm activities associated with processing of raw commodities increases substantially the value of some products. For example, the average annual value of Australia's sugar exports exceeds the value of Australia's sugar production (see Table 2.1).

3 Australian Bureau of Agricultural and Resource Economics,1998, *Australian Commodities Forecasts and Issues*, ABARE, Canberra, vol. 5, no. 1, March 1998, p. 91.

4 Calculated on a balance of payments basis and including all farm, forest and fisheries products (both agricultural and non-agricultural). Australian Bureau of Agricultural and Resource Economics, 1998, *Australian Commodities Forecasts and Issues*, ABARE, Canberra, vol. 5, no. 1, March 1998, p. 93.

Table 2.1 - Major Australian agricultural commodities (domestic production and export), 1987/88 - 1996/97 [a]

AGRICULTURAL COMMODITY (DOMESTIC PRODUCTION)	AVERAGE ANNUAL VALUE OF PRODUCTION [b] ($m)	EXPORT PRODUCT	AVERAGE ANNUAL VALUE OF EXPORTS ($m)
Meat (total)	$7,003.4 [h]	Meat (total)	$3,743.8 [h]
Beef & veal	*$4,516.4*	*Beef & veal*	*$3,048.4*
Poultry	*$950.5*	*Poultry*	*$9.4*
Mutton & lamb	*$790.4*	*Mutton & lamb*	*$613.1*
Pigs	*$734.1*	*Pigs*	*$30.1*
Other	*$11.9*	*Other*	*$42.8*
Wool [c]	$4,418.1 [i]	Wool	$4,594.9 [j]
Wheat	$3,219.9 [i]	Wheat	$2,629.5 [i]
Milk [d]	$2,422.2 [i]	Dairy products	$1,173.7 [k]
Sugar cane [e]	$1,006.9 [l]	Sugar [f]	$1,288.4 [j]
Cotton	$924.9 [i]	Cotton	$789.6 [i]
Barley	$777.7 [m]	Barley	$398.3 [n]
Wine Grapes	$330.4 [k]	Wine	$311.8 [i]
Rice	$216.8 [l]	Rice [g]	$273.9 [l]

Notes: a: All figures are expressed in 1996/97 dollars. Figures have been adjusted using the yearly CPI, all groups, weighted average eight capital cities (information supplied by New South Wales Treasury).
b: Gross value at farm gate or equivalent.
c : Shorn wool (greasy).
d: Market milk and milk for manufacture.
e: Cut for crushing.
f: Includes bulk raw sugar, sugar in bags and refined sugar.
g: The export price includes costs for milling.
h: Various averages between 1987/88 and 1996/97 (data not available for all commodities for all years).
i: Averaged over 10 years (1987/88 to 1996/97).
j: Averaged over 8 years (1989/90 to 1996/97).
k: Averaged over 7 years (1990/91 to 1996/97).
l: Averaged over 9 years (1988/89 to 1996/97).
m: Averaged over 8 years (1988/89 to 1995/96).
n: Averaged over 5 years (1988/89 to 1992/93). ABS advise that commercial confidentiality has limited availability of data from 1993/94 onwards.

Sources: Australian Bureau of Agriculture and Research Economics, 1997, *Australian Commodity Forecasts and Issues*, ABARE, Canberra, vol. 4, no. 3, September 1997; Australian Bureau of Agriculture and Research Economics, 1998, *Australian Commodity Statistics*, ABARE, Canberra; Australian Bureau of Statistics, various publications and data requests; Information supplied by the Australian Dairy Corporation.

2.2 New South Wales production and exports

The total gross value of agricultural commodities produced in New South Wales for 1995/96 was around $7.1 billion.[5] In the same year, the gross value of production of New South Wales' eight major commodities of meat, wool, wheat, cotton, plantation timber, milk, rice and barley totalled nearly $5.9 billion (over 80 per cent of the state's agricultural production).[6]

Other agricultural commodities in New South Wales that have historically had significant gross values for production are eggs, wine grapes, oranges, oats, bananas and apples. In 1995/96 these commodities had a combined total value of around $491 million, or 7 per cent, of the total gross value of New South Wales' agricultural production.[7] A significant proportion of the remaining value of New South Wales' agricultural production is comprised of the generic category of vegetables, including potatoes, carrots and broccoli.

Table 2.2 shows the average gross production and export values for major agricultural commodities produced in New South Wales over the last ten years. It can be seen that the average annual value of exports for the nine commodities listed was around $3.3 billion.

A brief commentary about the nine agricultural commodities listed in Table 2.2 is provided in sections 2.2.1 to 2.2.9 below. All dollar value figures are expressed in 1996/97 dollars, unless otherwise indicated.[8]

5 Figure expressed in 1995/96 dollars. Australian Bureau of Statistics, 1998, *New South Wales Year Book 1998*, ABS, Canberra, cat 1300.1.

6 Figure expressed in 1995/96 dollars. Australian Bureau of Statistics, *Agriculture New South Wales*, ABS, Canberra, cat 7113.1; *New South Wales Year Book 1994*, ABS, Canberra, cat 1300.1; *New South Wales Year Book 1998*, ABS, Canberra, cat 1300.1; information supplied by New South Wales State Forests and ABS data requests.

7 Figure expressed in 1995/96 dollars. Australian Bureau of Statistics, various years, *Agriculture New South Wales*, ABS, Canberra, cat 7113.1; *Australian Wine and Grape Industry*, ABS, Canberra, cat 1329.0.

8 Figures have been adjusted using the yearly CPI, all groups, weighted average eight capital cities (information supplied by New South Wales Treasury).

Table 2.2 – Major New South Wales agricultural commodities (domestic production and export), 1987/88 - 1996/97 [a]

AGRICULTURAL COMMODITY (DOMESTIC PRODUCTION)	AVERAGE ANNUAL VALUE OF PRODUCTION [b] ($m)	EXPORT PRODUCT	AVERAGE ANNUAL VALUE OF EXPORTS ($m)
Meat (total)	$1,990.6	Meat (total)	$808.2
Beef & veal	*$1,130.5* [i]	*Beef & veal*	*$664.9* [k]
Poultry	*$427.7* [i]	*Poultry*	*$4.9* [k]
Mutton & lamb	*$199.5* [i]	*Mutton & lamb*	*$123.1* [k]
Pigs	*$228.3* [i]	*Pigs*	*$9.4* [k]
Other	*$4.6* [j]	*Other*	*$5.9* [k]
Wool [c]	$1,532.3 [l]	Wool	$1,160.2 [k]
Wheat	$886.1 [l]	Wheat	$420.0 [k]
Cotton	$669.7 [l]	Cotton	$550.3 [k]
Plantation timber [d]	$439.9 [m]	Plantation timber [e]	$3.8 (minimum) [m]
Milk [f]	$416.3 [l]	Dairy (total)	$25.2
		Milk	*$15.5* [k]
		Butter	*$2.2* [k]
		Cheese	*$7.5* [k]
Rice	$214.5 [k]	Rice [g]	$226.9 [k]
Barley [h]	$139.2 [j]	Barley	$26.6 [o]
Wine grapes	$71.9 [n]	Wine	$57.4 [l]

Notes: a: All figures are expressed in 1996/97 dollars. Figures have been adjusted using the yearly CPI, all groups, weighted average eight capital cities (information supplied by New South Wales Treasury).
b: Gross value at farm gate or equivalent.
c: Shorn wool (greasy).
d: Hardwood plantation timber included for three years 1994/95 to 1996/97 representing less than 0.5 per cent of the total value of plantation timber production and exports.
e: Value of plantation timber directly exported is shown. New South Wales Forests sells an overwhelming majority of plantation timber to timber merchants for additional processing. Quantifying the value of secondary and tertiary treated plantation timber was not possible.
f: Market milk and milk for manufacture.
g: The export price includes costs for milling.
h: Value estimated using return to growers for feedgrain.
i: Averaged over 9 years (1987/88 to 1995/96).
j: Averaged over 8 years (1988/89 to 1995/96).
k: Averaged over 9 years (1988/89 to 1996/97).
l: Averaged over 10 years (1987/88 to 1996/97).
m: Averaged over 6 years (1991/92 to 1996/97).
n: Averaged over 7 years (1990/91 to 1996/97).
o: Averaged over 5 years (1988/89 to 1992/93). ABS advise that commercial confidentiality has limited availability of data from 1993/94 onwards.

Sources: Australian Bureau of Agriculture and Research Economics, 1997, *Australian Commodity Statistics*, ABARE, Canberra; Australian Bureau of Agriculture and Research Economics, *Australian Commodities and Issues*, vol. 2, no. 2, June 1995, ABARE, Canberra; vol. 4, no. 3, September 1997, ABARE, Canberra; vol. 5, no.1, March 1998, ABARE, Canberra; Australian Bureau of Statistics, various publications and data requests; Information supplied by Australian Dairy Corporation; Information supplied by New South Wales State Forests.

2.2.1 Meat

The generic category 'meat' had the highest average value of all agricultural commodities produced in both Australia and New South Wales over the ten-year period from 1987/88 to 1996/97.

The annual average value of meat produced in New South Wales was $2.0 billion, representing 28 per cent of Australia's annual average total (see Figure 2.1). Queensland was the only state that produced meat of greater overall value (at $2.2 billion or 31 per cent of Australia's annual total).

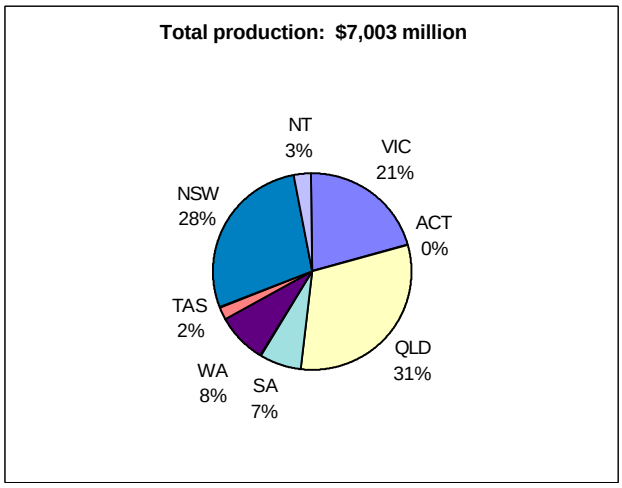
Cattle and poultry account for the largest value of New South Wales' meat products with an estimated average annual value of $1.1 billion and $428 million respectively.[9] New South Wales is the second largest beef and veal meat producer in Australia (behind Queensland) and the largest producer of poultry meat.

Over the ten-year period the average annual value of pig meat produced in New South Wales was $228 million, with the corresponding value for sheep meat being $200 million.[10] New South Wales was the largest producer of pig meat in Australia and the second largest producer of sheep meat (behind Victoria) over the period.

In recent years, the most significant purchasers of Australian beef and veal exports have been the United States and Japan. A substantial proportion of sheep meat produced domestically is exported, with Australian exports of sheep meat averaging around 42 per cent of production levels in the last decade. Major purchasers of Australian sheep meat exports have been Japan, Saudi Arabia and South Africa.

While New South Wales produced on average 43 per cent of the total value of Australian poultry meat, there has been a relatively small export market for this commodity.[11]

Figure 2.1 - Average annual value of Australian meat production by State and Territory, 1987/88 - 1996/97



Sources: Australian Bureau of Statistics, *Agriculture New South Wales*, ABS, Canberra, cat 7113.1; *New South Wales Year Book 1994*, ABS cat1300.1; *New South Wales Year Book 1998*, ABS cat 1300.1; *Northern Territory in focus 1996*, ABS cat 1306; *South Australian Year Book 1997*, ABS cat 1301.4; *Queensland Year Book 1997*, ABS cat 1301.3; *Tasmanian Year Book 1998*, ABS cat 1301.6; *Victorian Year Book 1998*, ABS cat 1301.2; *Western Australian Year Book 1997*, ABS cat 1300.5.

9 Australian Bureau of Statistics, *Agriculture New South Wales*, ABS, Canberra, cat 7113.1.

10 *Ibid.*

11 Australian poultry meat exports averaged approximately 5.6 kilotonnes per annum for the period 1989/90 to 1996/97. This represents only 1.2 per cent of Australian poultry production. Australian Bureau of Agriculture and Research Economics, 1997, *Australian Commodity Statistics*, ABARE, Canberra, p.155.

2.2.2 Wool

In terms of the annual value of Australian agricultural commodities, wool on average was ranked second to the generic category of meats for the period from 1987/88 to 1996/97.

The average annual production of Australian wool for the period 1987/88 to 1996/97 was approximately 814,000 tonnes, with an average annual value of around $4.4 billion. Average annual national exports over a similar period for Australia were some 832,000 tonnes valued at $4.6 billion.[12]. The higher export figure reflects Australia's previous accumulation of wool stocks.

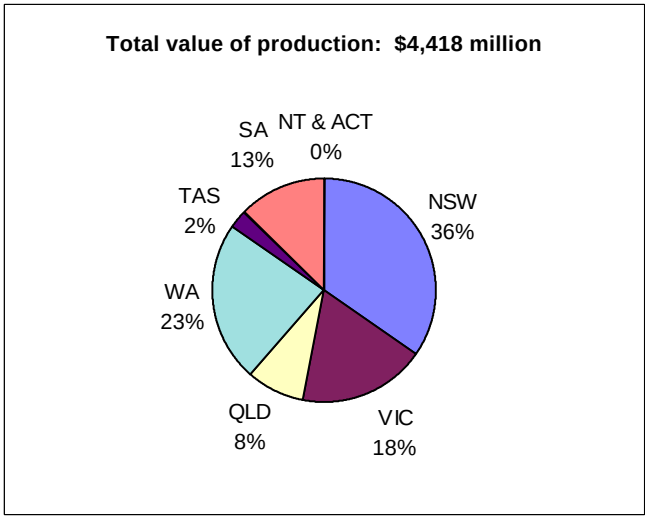
New South Wales production for the period from 1987/88 to 1996/97 was the highest of any state or territory in Australia, with an average annual value of $1.5 billion (representing 281,000 tonnes), or 36 per cent of the value of all Australian wool (see Figure 2.2).

Average annual exports of New South Wales wool were around $1.2 billion or 25 per cent of the Australian total. An overwhelming proportion of the total wool produced was exported as a raw commodity for the purposes of processing and value adding by overseas manufacturers. For New South Wales, wool achieved the highest dollar value return of any export agricultural commodity.

Asia and Europe are the primary export destinations for Australian wool, with most wool being exported to the clothing manufacturing countries of China, Japan, Italy and France.

With the exception of China and some smaller nations, demand for Australian wool by major trading partners has been relatively stable or in slight decline during the period 1989/90 to 1996/97.

Figure 2.2 - Average annual value of Australian wool production by State and Territory, 1987/88 - 1996/97



Source: Australian Bureau of Agriculture and Research Economics, 1997, *Australian Commodity Statistics*, ABARE, Canberra, pp. 218-219.

12 Nine year period 1988/89 to 1996/97. Australian Bureau of Agriculture and Research Economics, 1996, *Australian Commodity Statistics*, ABARE, Canberra, p. 238; and 1997, *Australian Commodity Statistics*; ABARE, Canberra, p. 224.

2.2.3 Wheat

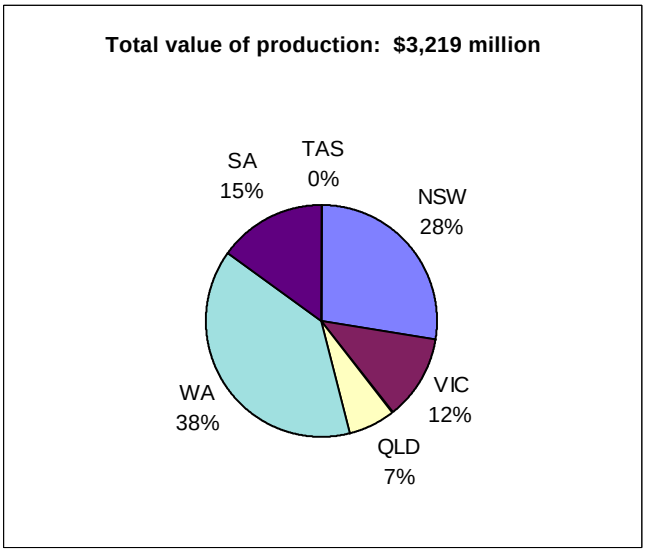
The average annual value of Australian wheat production from 1987/88 to 1996/97 was $3.2 billion.[13] Wheat is ranked third in terms of aggregate value of all Australian agricultural commodities, with the annual value of wheat production being over four times greater than that of any other grain.

During the period 1987/88 to 1996/97 Australia produced an average of 14.8 million tonnes of wheat per annum, on 8.9 million hectares. New South Wales produced wheat with an average value of $886 million per annum, with only Western Australia producing a higher value of output (see Figure 2.3).

Wheat is Australia's third highest agricultural commodity export in terms of value. In New South Wales wheat is the fourth highest agricultural commodity in terms of export value, behind meat, wool and cotton.

Middle East countries such as Iran and Iraq, Egypt in Africa and Asian countries including Indonesia, Japan and China account for a high proportion of Australian wheat exports. Since 1993/94 there has been a steady increase in the demand for wheat to Indonesia. Historically, significant fluctuations have occurred in the annual demand for Australian wheat by countries such as Iran, Iraq, South Korea and Pakistan.

Figure 2.3 - Average annual value of Australian wheat production by State, 1987/88 - 1996/97.



Source: Australian Bureau of Agriculture and Research Economics, 1997, *Australian Commodity Statistics*, ABARE, Canberra, pp. 206-207.

13 Australian Bureau of Agriculture and Research Economics, 1997, *Australian Commodity Statistics*, ABARE, Canberra, pp. 206-207.

2.2.4 Cotton

Australian cotton production has been dominated by activities in New South Wales and, to a lesser extent, Queensland. In New South Wales cotton is sourced largely from the north west of the state.

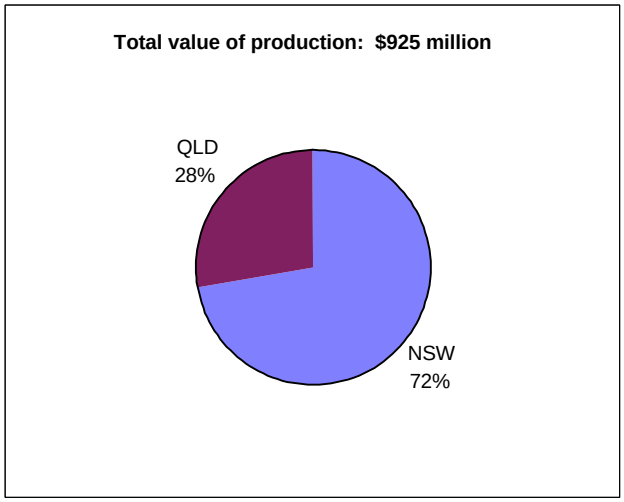
Australian production from 1987/88 to 1996/97 averaged 831,000 tonnes per annum, with an average annual value of $925 million.[14]

New South Wales' cotton (lint) production represented 72 per cent of total Australian production, with an average value of $670 million per annum (see Figure 2.4).

Once cotton proceeds through the ginning process, an overwhelming majority of the commodity is exported overseas. For the period from 1987/88 to 1996/97, an average annual 388 kilotonnes of cotton lint was produced with 344 kilotonnes or 89 per cent of cotton lint being exported.[15]

The six largest export destinations for Australian cotton from 1989/90 to 1996/97 were located in the Asian region and included the clothing and fabric manufacturing nations of Japan, Indonesia, South Korea and China. Italy was the seventh largest destination for cotton exports with an average of 3.1 per cent of total Australian annual exports.

Figure 2.4 - Average annual value of Australian cotton (lint) production by State, 1987/88 - 1996/97



Source: Australian Bureau of Agriculture and Research Economics, 1997, *Australian Commodity Statistics*, ABARE, Canberra, pp. 63-64.

[14] Australian Bureau of Agriculture and Research Economics, 1997, *Australian Commodity Statistics*, ABARE, Canberra p. 65.

[15] *Ibid;* p. 64.

2.2.5 Plantation timber

The term 'forestry products' is used as a generic classification that includes wood products from native forests, woodlands and plantations. Forestry products include wood products at various stages of production such as rough sawn timber, particle board, printing and writing paper, packaging and woodchips. Plantation timber is distinguished from other wood sources by virtue of the fact it is grown and harvested as an agricultural commodity.

As at 1995, the total area of Australian land used to grow plantation timber was estimated at 1 million hectares which was 0.66 per cent of total forest vegetation cover or 0.001 per cent of Australia's land area.[16]

In New South Wales softwood timber remains the predominant type of plantation timber, representing around 99.9 per cent of plantation timber harvested.[17] Plantation hardwood timber has been harvested in negligible amounts although as more hardwood plantation stands mature, New South Wales supply of this timber type will expand.

The average annual value of New South Wales plantation timber for the period from 1991/92 to 1996/97 was around $440 million, making it the state's fifth highest value agricultural commodity produced.

In the past plantation timber has been produced by the New South Wales government agency, New South Wales State Forests, or by private landholders with assistance from New South Wales State Forests. Once harvested, plantation timber is sold to large timber merchants who further process the timber for domestic use or export.

Australia is a net importer of forestry products. Average exports of Australian forestry products (including plantation timber) during the period 1990/91 to 1996/97 were some $917 million per annum. Average annual imports to Australia of forestry products were around three times the value of exports at $2.7 billion.[18]

The average annual value of New South Wales' plantation timber exported directly (rough sawn) is $3.8 million.[19] Information about the value of plantation timber further processed and exported from New South Wales is not readily available. New South Wales exported an average annual value of $63 million in wood product exports over the period 1988/89 to 1996/97, for which an unknown proportion is attributable to plantation timber.[20]

Depending on the species, plantation timber may not be available for harvesting for up to thirty years after planting, imposing a significant delay on investment returns.

16 Australian Bureau of Agriculture and Research Economics, 1997, *Australian Commodity Statistics*, ABARE, Canberra, p. 117.

17 Information supplied by New South Wales State Forests.

18 Australian Bureau of Agriculture and Research Economics, 1997, *Australian Commodity Statistics*, ABARE, Canberra, pp. 122-123.

19 Information supplied by New South Wales State Forests.

20 ABS data request.

2.2.6 Dairy

The average annual value of Australian milk for the period 1987/88 to 1996/97 was $2.4 billion.[21] Milk was the fourth highest value agricultural commodity produced in Australia.

The majority of Australian milk is produced in Victoria (see Figure 2.5). Milk production was relatively less predominant in New South Wales, with New South Wales producing 17 per cent of the Australian total.

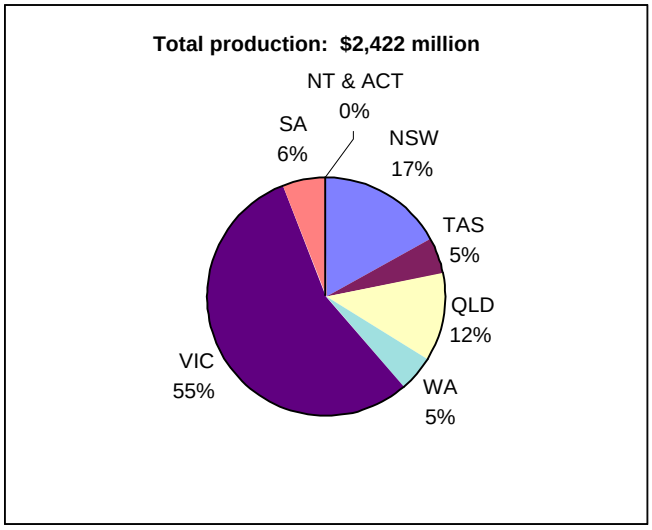
The average total volume of milk produced in Australia was 7,317 megalitres per annum, with New South Wales producing around 996 megalitres per annum. Victoria's average annual milk production was some 4,491 megalitres.[22]

Australian exports of dairy products during the period from 1990/91 to 1996/97 consisted of an average annual value of $1.2 billion.[23] Major Australian dairy commodity products with their respective average annual export values and major export destinations are detailed below:

- skim milk powder - $369 million - Philippines, Malaysia and Japan;
- cheese - $306 million - Japan, Saudi Arabia and United States;
- whole milk powder - $181 million - Taiwan, Malaysia and Singapore; and
- butter - $137 million - Singapore, Thailand and Egypt.[24]

New South Wales exports of dairy products represent a relatively small proportion of the Australian total with an average annual value of $25 million or around 2 per cent of the Australian total.[25]

Figure 2.5 - Average annual value of Australian milk production by State and Territory, 1987/88 - 1996/97



Source: Information supplied by Australian Dairy Corporation.

21 Information supplied by Australian Dairy Corporation.

22 Australian Bureau of Agriculture and Research Economics, 1997, *Australian Commodity Statistics*, ABARE, Canberra, p. 72.

23 *Ibid*, p. 76.

24 *Ibid.*

25 Some distortions occur when dairy products produced in New South Wales have been exported through Victorian ports, thus statistically considered Victorian rather than New South Wales exports.

2.2.7 Rice

Average annual Australian rice production for the period from 1988/89 to 1996/97 was just over one million tonnes, valued at around $217 million. New South Wales produced 99 per cent of total Australian production (see Figure 2.6).[26] In terms of the average annual value of agricultural commodities produced, rice was ranked seventh highest in New South Wales.

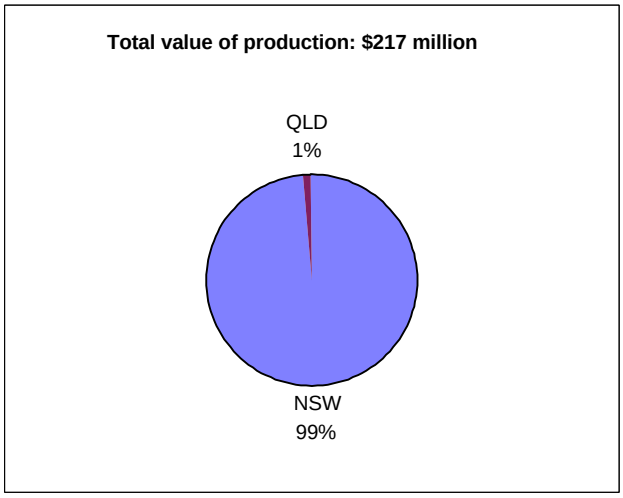
For the four years 1993/94 to 1996/97, New South Wales was the sole state producing rice in Australia although rice was grown in the Burdekin area of Queensland prior to 1993/94. New South Wales rice production is located in the Murrumbidgee and Murray regions.

The estimated annual value of New South Wales' exports of rice for the period 1988/89 to 1996/97 was $227 million. However, New South Wales rice exports have been increasing over recent years, with the annual value of rice exports over the period 1993/94 to 1996/97 averaging $328 million.[27]

Value adding of rice occurs through operations of milling, packaging and transportation of rice by the Rice-growers Co-operative Limited.

The Rice-Growers Cooperative Limited exports New South Wales' rice to approximately 43 different countries, with Papua New Guinea being the largest export destination. Other significant export markets are located in the Asia-Pacific region and include Japan, Hong Kong, New Zealand, the Solomon Islands and Fiji.[28]

Figure 2.6 - Average annual value of Australian rice production by State, 1989/90 - 1996/97.



Source: Australian Bureau of Agriculture and Research Economics, 1997, *Australian Commodity Statistics*, ABARE, Canberra, pp. 190-191.

26 Australian Bureau of Agriculture and Research Economics, 1997, *Australian Commodity Statistics*, ABARE, Canberra, pp. 190-191.

27 ABS data request.

28 Information supplied by the Ricegrowers Cooperative.

2.2.8 Barley

Australian production of barley had an average annual value of around $778 million over the period from 1988/89 to 1995/96. The value of New South Wales' barley production was around $139 million or 18 per cent of the Australian total. [29]

New South Wales was the fourth highest producer of barley during the period from 1989/90 to 1996/97 behind South Australia, Western Australia and Victoria (see Figure 2.7).

The average value of Australian barley exports was around $398 million per year during the period from 1988/89 to 1992/93.[30] South Australia has been predominant in the export of barley in Australia with an average annual value of $219 million.[31]

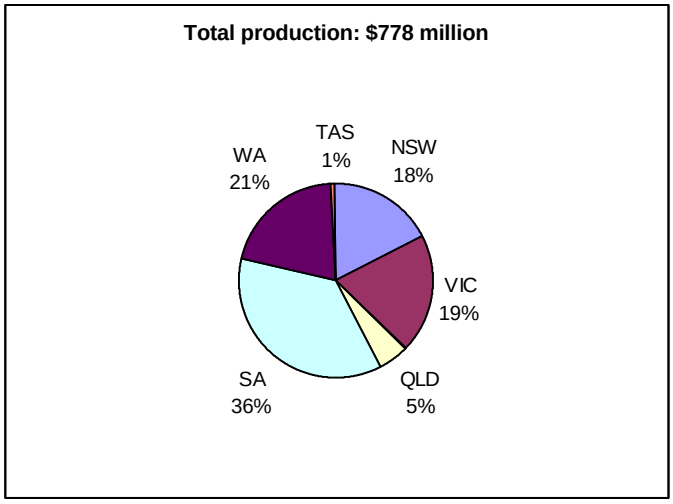
Average annual barley exports from New South Wales were $27 million or 7 per cent of Australian exports. During the period from 1988/89 to 1992/93, New South Wales' exports of barley have fluctuated significantly with annual export values between $4 million and $60 million.[32]

Australian barley-related commodities along with historical export destinations are detailed below:

- feed barley - Japan and Saudi Arabia;
- malting barley - China, South Korea and Peru; and
- malt - Japan and Philippines.

Figure 2.7 - Average annual value of Australian barley production by State, 1989/90 - 1996/97.

Source: Australian Bureau of Statistics data request using feedgrain prices to estimate value of production.



29 ABS data request.

30 ABS data request. ABS advise that commercial confidentiality has limited availability of data from 1993/94 onwards.

31 *Ibid.*

32 *Ibid.*

2.2.9 Wine grapes

The estimated average annual production value of Australian wine grapes during the period from 1990/91 to 1996/97 was some $330 million, or around 609 kilotonnes.[33]

The value of New South Wales wine grape production was 22 per cent of the Australian total or approximately $72 million. South Australia was the largest producer, followed by Victoria (see Figure 2.9).

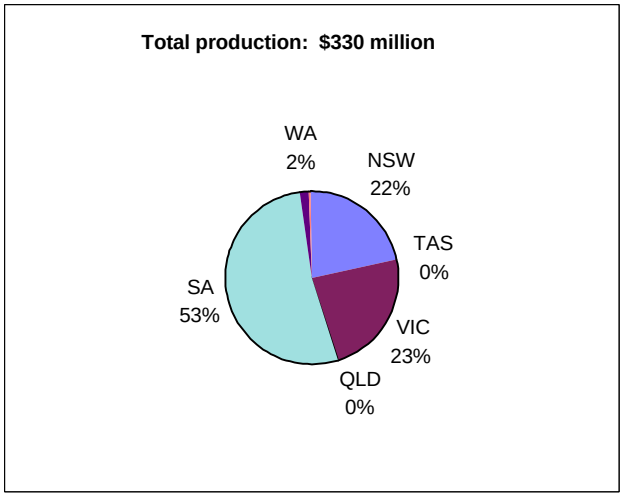
Average annual wine exports for Australia were approximately $312 million for the period from 1987/88 to 1996/97.[34] However, averaging exports over this period masks a steady increase in the quantity and value of Australian wine exports. In 1987/88 Australia exported 39 million litres, with a 1996/97 value of $131 million, while in 1996/97 the quantity exported was some 154 million litres valued at $603 million.[35]

Major export destinations for Australian wine during 1996/97 were the United Kingdom, Untied States and New Zealand.

During the period 1990/91 to 1996/97, New South Wales wine exports accounted for 18 per cent of the average annual value of Australian exports, second only to South Australia which exported 71 per cent of the Australian total. The quantity and value of New South Wales exports has been progressively increasing over the ten year period from 1987/88 to 1996/97. During this time the average annual value of New South Wales wine exports was approximately $57 million, although 1995/96 and 1996/97 exports were well above this average at $83 million and $108 million respectively.[36]

Wine grapes in New South Wales are predominantly grown in the Hunter valley and the Murrumbidgee and Murray regions. Wine grapes produce a relatively high return to producers on a per hectare basis.

Figure 2.8 - Average annual value of wine grape production by State, 1990/91 - 1996/97.



Sources: Australian Bureau of Statistics, various years, *Australian Wine and Grape Industry*, ABS, Canberra, cat 1329.0; Australian Bureau of Agriculture and Resource Economics, *Australian Commodities Forecasts and Issues*, ABARE, Canberra, June 1995, September 1997.

33 Australian Bureau of Statistics, various years, *Australian Wine and Grape Industry*, ABS, Canberra, cat.1329.0; and Australian Bureau of Agriculture and Research Economics, 1997, *Australian Commodities Forecasts and Issues*, September 1997, ABARE, Canberra, p. 399.

34 Australian Bureau of Statistics, various years, *Australian Wine and Grape Industry*, ABS, Canberra, cat.1329.0.

35 *Ibid*.

36 *Ibid*, pp. 39 & 41.

2.3 Issues for consideration

In New South Wales, as in the rest of Australia, the gross value of both raw agricultural products and agricultural exports is mostly accounted for by only a small number of commodities. Relative to other states and territories, New South Wales has particular strengths in wool, cotton and rice. Meat, wheat, plantation timber, dairy products, barley and wine grapes also make significant contributions.

It is essential that New South Wales' producers are competitive on an international basis. Increases in production, resulting from, for example, improvements in farming techniques or improvements in quality of product, have the potential to increase exports and decrease imports. Government policy initiatives, such as deregulation of various major commodities, may also have an impact on domestic and export markets.

Given also that New South Wales is the foremost producer of both wool and cotton in Australia, there are likely to be significant gains for the state from improved processing mechanisms.

3 COMMODITY DIVERSIFICATION AND AGRICULTURAL INNOVATION

In the highly competitive international market place and in view of international trends towards trade liberalisation, Australian agricultural producers are seeking to identify products and techniques that will give them an edge over their competitors.

There are opportunities for agricultural producers in New South Wales to exploit both niche and seasonal markets. Products that possess desirable attributes such as high quality, colour, flavour, durability and resistance to pests have the potential to create niche markets. In addition, there is increasing consumer demand for "green" agricultural products. New South Wales producers are also in a position to exploit international markets in countries that are unable to meet local demand at certain times of the year due to unfavourable climatic conditions.

3.1 Emerging commodities

There are numerous emerging commodities that are starting to be produced on a commercial basis in New South Wales. The four examples presented below demonstrate the diversity of emerging commodities being produced in the state. Other emerging commodities include macadamias, bush foods, organically grown foods, herbs and medicinal plants.

3.1.1 Soybeans

Soybeans, native to East Asia, are an important food staple for that region. Soybeans were introduced to the West during the twentieth century and are now produced in western countries for consumption by humans and livestock. Western demand for soybeans is rapidly increasing with soy products being used in the manufacture of various foodstuffs such as bakery products, soy milk and infant formula. In addition, soybean meal is used as a high protein component in animal feeds.

Soybeans in Australia have been predominantly produced on the North Coast of New South Wales. Soybean producers are currently seeking to double current production levels (an increase to 200,000 tonnes) in order to satisfy demand from the livestock industry. In addition, potential exists to develop an Australian product for human consumption that would be competitive with Japanese imports.[37]

Edamame (or vegetable green soybean) also has potential as a cash crop for export from Australia to Japan, with a possible production area identified on the coast of New South Wales.[38] Total imports into Japan of green soybean averaged $147 million per year for the period from 1993 to 1995. However, at present Japan only allows the import of Tasmanian green soybean due to quarantine restrictions.

37 Elsley, K., 1998, '*Soybeans' bitter sweet dilemma'*, The Land, Rural Press Ltd, Sydney, 2 April 1998, p. 29.

38 Rural Industries Research and Development Corporation, 1998, *The New Rural Industries, A Handbook for Farmers and Investors*, Hyde,K.W. (Ed.), Goanna Press Pty Ltd, Canberra, p. 197.

3.1.2 Asian vegetables

Varieties of Asian vegetables suited to the climate of New South Wales include burdock, Chinese broccoli, Chinese cabbage, Chinese chard (also known as bok choy and pak choi), Chinese flowering cabbage (choy sum) and long white radish (daikon). Market opportunities exist in New South Wales to deliver Asian vegetables to South East Asian markets such as Japan, Taiwan, Hong Kong, and Singapore during their warmer months when local supply cannot satisfy demand due to adverse climatic conditions.

Australian exports of Chinese cabbage have increased by 275 per cent over the last seven years. They were valued at approximately $6.5 million in 1995/96 of which the New South Wales component comprised $149,000 or 2.3 per cent of the total (Western Australia and Queensland were the major producers).[39]

3.1.3 Native flowers and foliage

Current and potential export markets exist for sale of Australia's unique flora including acacias, banksias, blandfordia (Christmas bells), boronias, eucalypts, flannel flowers, kangaroo paws, New South Wales Christmas bush and waratahs.[40] All of these native flowers are currently being commercially produced in New South Wales, with both large and small scale operations. Many species are also being commercially produced in other countries, including Israel, South Africa, France and the United States.

In 1995 the value of Australian native flower exports exceeded $15 million.[41] Predominant export markets for cut native flowers and foliage have in the past been to economically developed countries including the United States, Japan and Europe. Australia's share in the fresh flower and foliage market in Japan is around 8 per cent.[42]

3.1.4 Aquaculture

Aquaculture refers to the farming of marine or freshwater biota, and includes farming of fish, oysters, crayfish and plants such as seaweed and algae.[43] New South Wales aquaculture production had an estimated value of around $36 million in 1995/96 which ranked sixth when compared to other Australian states.[44] In 1995/96 three quarters of the value of the state's aquaculture production came from oysters, with the remaining one quarter dominated by prawns (15 per cent) and trout (6 per cent).[45]

39 *Ibid*, p. 168.

40 *Ibid*, pp. 475–567.

41 *Ibid*, p. 482.

42 *Ibid*, p. 482.

43 Standing Committee on State Development, 1997, *Report on Fisheries Management and Resource Allocation in New South Wales*, Report No. 17, Parliament of New South Wales, Sydney, p. 237.

44 *Ibid*, pp. 239–240.

45 *Ibid*, p.239.

With Australia producing only a small fraction (around 0.1 per cent) of world aquaculture, production opportunities appear to exist for development of export and import industries[46]. One possible direction is the consideration of polyculture (on-farm integration of agriculture and aquaculture) which enables water used for aquaculture to be reused for crops.

3.2 Sustainable agriculture

Sustainable agriculture refers to practices aimed at meeting present needs without compromising the ability of future generations to meet future needs. Sustainable agriculture integrates three elements: the need to ensure environmental health, the need to ensure economic profitability and the need to ensure social and economic equity.

3.2.1 Ecologically sustainable agriculture

Ecologically sustainable development (which encompasses agricultural activities) has been defined by the *National Strategy for Ecologically Sustainable Development* as:

> *…using, conserving and enhancing our natural resources so that ecological processes, on which life depends, are maintained, and the total quality of life, now and in the future, is improved.*[47]

Ecologically sustainable agriculture is a framework for conducting agricultural activities. This framework is premised on principles drawn from a number of international conventions to which Australia is a signatory.[48]

The *Intergovernmental Agreement on the Environment*[49], signed by the Commonwealth, States and Territories in May 1992, outlines the responsibilities and interests of these parties to the environment.[50] The Agreement states that parties should be guided by ecologically sustainable development principles such as the precautionary principle, intergenerational equity and incorporation of environmental pricing mechanisms such as polluter pays and valuing the environment as an asset.[51]

Principles of ecologically sustainable development have been adopted in the mission statement of New South Wales Agriculture[52], as a key result target for the Department of

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46 *Ibid*, p.239.

47 Council of Australian Governments, 1992, *National Strategy for Ecologically Sustainable Development*, AGPS, Canberra as reported in New South Wales Environment Protection Authority, 1997, *New South Wales State of the Environment 1997*, New South Wales EPA, p. 11.

48 These conventions include the United Nations' *Rio Declaration on Environment and Development, Statement of Principles for a Global Consensus on the Management, Conservation and Sustainable Development of all Types of Forests (Forest Principles) Convention on Biological Diversity* and the *Convention of Desertification*.

49 Heads of Government of the Commonwealth, States and Territories, 1992, Intergovernmental agreement on the environment Australia, Department of the Prime Minister and Cabinet, Canberra.

50 *Ibid*, pp. 6-7.

51 *Ibid*, pp. 13-14.

52 New South Wales Agriculture, *Annual Report, 1996/97*.

Land and Water Conservation[53] and have been defined as a statutory objective of the Environment Protection Authority.

Heightened producer and consumer awareness of the negative impact of certain agricultural practices on the environment is iresulting in increased efforts by some producers to adopt ecologically sustainable agricultural techniques.

3.3 Organic farming

Organic farming is conducted without the use of synthetic additives such as herbicides, pesticides or fertilisers.

Studies in the United States and Australia indicate that the benefits of organic farming as compared to traditional techniques include:

- reduced rates of soil erosion, and consequently higher levels of top soil;
- higher levels of pH, organic carbon, phosphorus and nitrogen in the soil; and
- increased moisture content in soil. [54]

Markets exist for fresh organic fruits and vegetables in both domestic and overseas markets. In addition, potential exists for the use of organic fruits and vegetables such as carrots, apples and oranges in the production of organic fruit juice drinks.

3.4 Other innovative techniques

A number of innovative techniques are being trialed or implemented to improve the overall international competitiveness of agriculture in New South Wales. Techniques that impact on productivity, food safety and environmental sustainability have been targeted. Four examples of innovative technology are outlined below.

53 Department of Land and Water Conservation, *Annual Report 1996/97*.

54 Cameron, J.I. and Elix, J., 1991, *Recovering Ground: a case study approach to ecologically sustainable rural land management*, Australian Conservation Foundation, Melbourne, pp 66-67.

3.4.1 Hydroponics

In recent years, hydroponic industries for tomatoes and lettuce have been established in New South Wales. Using greenhouses, hydroponic production can regulate temperature and nutrient and moisture conditions to provide a consistent product that may be grown year round.

Hydroponic operations have also been used to produce grass, barley and lucerne hay for cattle fodder.[55] Fodder growing operations have the advantage of serving to supplement pasture diet or act as a staple food source during drought periods.[56]

While hydroponic commodities have historically been more expensive for the consumer than traditionally produced commodities, the increasing scarcity of water and land resources available for irrigation purposes may lead to a greater reliance on this method of production.

Other hydroponically grown commodities with potential to expand include cut flowers, strawberries, vegetables and herbs.

3.4.2 Genetically manipulated organisms

The process of genetic engineering involves manipulating genes to alter the characteristics of an organism. Of the 6,300 field trials of genetically manipulated organisms in OECD countries, 72 per cent have been undertaken in the United States, with 1 per cent or 69 trials being undertaken in Australia.[57]

The potential benefits of genetically manipulated agricultural commodities include increases in yield, resistance to pests and drought tolerance. Commercial plantings of pest resistant cotton have been undertaken in New South Wales. In addition, the CSIRO has undertaken trials to minimise the browning effect on potatoes when bruised.[58]

3.4.3 Food irradiation

Food irradiation is the controlled exposure of food or food ingredients to gamma irradiation. Irradiation of food kills micro organisms that may be:

- human pathogens – with the potential to cause human disease and death;
- animal or plant pathogens – with the potential to cause disease or death in animals and plants; or

55 Fox, R., 1997, *The Fodder Factory: Practical Hydroponics and Greenhouses*, Issue 35, July/August, Casper Pty Ltd, Sydney, pp. 38-46.

56 *Ibid*.

57 Foster, M., 1998, 'Transgenic crops - economic issues and implications' in *Proceedings of the National Agricultural and Resource Outlook Conference*, ABARE, Canberra, Volume 2, pp. 95-97.

58 *Ibid*; pp. 98-99.

- spoilage organisms – which causes food to be unsuitable for human or animal consumption or adversely impact on the shelf life of fresh, chilled or frozen foods.[59]

Proponents of food irradiation include the United Nations' World Health Organisation and Food and Agricultural Organisation. The international food standards setting body, the Codex Alimentarius Commission, accepted food irradiation as a safe and effective technology for the treatment of food in 1983, with a report commissioned by the Australian government in 1992 coming to the same conclusion.[60]

However, some consumers and organisations are concerned that there is not yet enough knowledge about food irradiation as long term studies have not been conducted. In addition, food irradiation can only be used on a limited range of foods, is relatively expensive and can affect some important constituents of food.[61]

3.4.4 Biosolid application

In 1994/95, Sydney Water estimated the New South Wales industry sector demand for reuse of biosolids was agriculture (40%), landscaping (23%), forestry (9%) and land rehabilitation (11%).[62]

Sydney Water in conjunction with New South Wales Agriculture are conducting trials to determine the impact of biosolids as a fertiliser for pasture and crop production. Reported test results have found that the application of biosolids can alter the physical properties of soil including improved water infiltration rates and moisture content.[63] Trials of biosolid applications on wheat and triticale have lead to instances of greater plant growth and yield increases of between 18 and 25 per cent.[64] Tests have not as yet revealed any health related risks to livestock grazing on biosolid fertilised pasture.[65]

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59 Information supplied by New South Wales Agriculture

60 Consumers International, internet site at www.consumersinternational.org.

61 *Ibid.*

62 Hope, P., 1995, 'Beneficial use strategies for biosolids' in *Biosolids Research in New South Wales, Proceedings of the Biosolids Summit*, Osborne, G.J., Parkin, R.L., Michalk, D.L. and Grieve, A.M. (Ed.s) , New South Wales Agriculture, Sydney, p. 6.

63 Joshua, W.D., Osborne G. J., and Salt, M., 1995, 'Changes in soil physical properties due to biosolids applicationto agricultural lands' in *Biosolids Research in New South Walws, Proceedings of the Biosolids Summit*, Osborne, G.J., Parkin, R.L., Michalk, D.L. and Grieve, A.M. (Ed.s), New South Wales Agriculture, Sydney.

64 Cooper, J.L., 1995; 'The agronomic value of biosolids in cropping systems on acid soils in central New South Wales' in *Biosolids Research in New South Wales, Proceedings of the Biosolids Summit*, Osborne, G.J., Parkin, R.L., Michalk, D.L. and Grieve, A.M. (Ed.s), New South Wales Agriculture, Sydney, p. 87.

65 Michalk, D.L., Curlis, I.M., Seaman, J.T., Langford, C.M., Simpson, P.C. and Osborne, G.J., 1995; 'Benefits and risks associated with the application of biosolids to pastures grazed by sheep' in *Biosolids Research in New South Wales, Proceedings of the Biosolids Summit*, Osborne, G.J., Parkin, R.L., Michalk, D.L. and Grieve, A.M. (Ed.s), New South Wales Agriculture, Sydney, p. 62.

Applications of biosolids in higher quantities than grazing pasture have already been tested in plantation forestry resulting in productivity improvements of up to 50 per cent for radiata pine.[66]

3.5 Issues for consideration

The risks associated with entering a less certain emerging commodity market, or adopting innovative techniques, can be minimised if potential producers have access to accurate information about appropriate growing conditions, market opportunities and current and future supply levels. New South Wales Agriculture provides assistance in this regard, with information also available from the Commonwealth Department of Primary Industries and Energy, the Rural Industries Research and Development Corporation and various industry and farming associations.

While both the state and federal governments are committed to developing opportunities for the agricultural industry, there are times when governments also create impediments that block opportunities for innovative changes. Identification of these impediments may assist in improving conditions for producers. In addition, it may be useful to identify possible future target areas for government attention.

66 Hope, P., 1995, 'Beneficial use strategies for biosolids' in *Biosolids Research in New South Wales, Proceedings of the Biosolids Summit*, Osborne, G.J., Parkin, R.L., Michalk, D.L. and Grieve, A.M.(Ed.s), New South Wales Agriculture, Sydney, p. 6.

4 AGRICULTURAL INPUTS

Like all industries, agricultural industries require a range of inputs to produce a final product. These include natural resources such as land and water, labour, chemicals and fertilisers, plant and equipment and seed and broodstock. While this chapter only provides information about a few agricultural inputs, the Committee recognises the significance of many other inputs.

4.1 Land resources

The total land area of New South Wales is 80 million hectares (800,000 square kilometres), representing 10 per cent of Australia's total land mass.[67] There were approximately 41,500 establishments in New South Wales involved primarily in agriculture in 1994, with estimated total land holdings of 62 million hectares (around 75 per cent of the state's total land area).[68] Other land uses in New South Wales include National Parks (6 per cent), state forests (5 per cent) and urban areas (4 per cent).[69]

A significant proportion of the land used for primary production is dedicated for grazing livestock on native pasture. Only around 13 per cent of land resources in New South Wales are considered to be arable (suitable for crop production).[70]

4.1.1 Land degradation

There are a number of major land degradation issues facing New South Wales including vegetation clearing, woody weeds, soil acidification, soil erosion and soil salinity.

Vegetation clearing

Vegetation clearing is a major contributor to soil erosion and continues in New South Wales at a minimum rate of 150,000 hectares per year. Regions with the most severe instances of vegetation being cleared or thinned include the South West slopes, Cobar and the Darling plains. The South West slopes area has been recorded as having around 88 per cent of land cleared and 6 per cent of land thinned of vegetation.[71]

67 Australian Bureau of Statistics, 1998, *Year Book Australia 1998*, AGPS, Sydney, p. 3.

68 *Ibid*; p. 447.

69 Australian Bureau of Statistics, 1998, *New South Wales Year Book 1998*, AGPS, Sydney, p. 9.

70 Environment Protection Authority New South Wales, 1997, *New South Wales State of the Environment 1997*, New South Wales EPA, Sydney, p. 127.

71 *Ibid*, p. 172.

Woody weeds

Woody weeds are native vegetation that have developed but are unsuitable food for stock. Encroachment of woody weeds can negatively impact on carrying capacities, reproductive performance of livestock and costs of managing livestock. New South Wales Agriculture has estimated that around 20 million hectares or 25 per cent of New South Wales is affected or susceptible to be affected by woody weeds.[72] Woody weeds occur primarily in the Western and Murray regions of New South Wales.

Soil acidification

The over-application of fertilisers and cultivation of legumes can lead to soil acidification, which in turn tends to reduce the diversity of vegetation species of an area by eliminating or stunting the growth of vegetation intolerant to acid soils.[73] Land areas that incur a loss of vegetation due to soil acidification are susceptible to increased rates of soil erosion. Approximately 1.7 per cent of land in New South Wales is effected by high soil acidification.[74]

Soil erosion

In 1987/88 water erosion affected 35 per cent of New South Wales and wind erosion affected 25 per cent of the state.[75] Wind erosion and water erosion are particularly detrimental to the level of topsoil and humus content in soil. Land affected by soil erosion is less likely to absorb and hold moisture and experiences relatively high rates of runoff. Crops grown on such land may develop a shallow and less extensive root structure, be susceptible to drying out and experience lower growth rates and yield than what would otherwise be the case.

Soil salinity

Soil salinity can cause die back of native vegetation and reduce crop yield and carrying capacity of land. It is estimated that approximately 15 per cent of irrigated land, or 0.3 per cent of all land in New South Wales, has irrigation-induced soil salinity problems. Dryland salinity, which is caused by rising ground water levels, is presently affecting 0.03 per cent of New South Wales with the potential to impact upon 6 per cent of New South Wales land.[76]

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[72] *Ibid*, p. 165.

[73] *Ibid*, p. 150.

[74] *Ibid*, p. 148.

[75] Different forms of erosion may occur concurrently. There does not appear to have been a more recent assessment of soil erosion since the 1987/88 study. *Ibid*, p. 153.

[76] *Ibid*, p. 137.

4.1.2 Management of land resources

While land management responsibilities are divided between federal, state and local governments, the state government has primary carriage of land management issues.

Environmental planning instruments

Land use activities in New South Wales are determined by environmental planning instruments developed under the *Environmental Planning and Assessment Act 1979*. The Act provides for three types of environmental planning instruments:

- state environmental planning policies (SEPP) – prepared by the Department of Urban Affairs and Planning for matters of state significance;
- regional environmental plans (REP); – prepared by the Department of Urban Affairs and Planning for particular regions of New South Wales; and
- local environmental plans (LEP) – prepared by local councils for part or all of their local government areas.

Under section 90 of the *Environment Planning and Assessment Act 1979*, development approval must take into consideration various matters including the impact of the development on critical habitat, the effect on protected flora and fauna, the prospect of soil erosion, and economic and social impacts.

Soil conservation

The Department of Land and Water Conservation may issue a Soil Conservation notice to restrict land use or require works to be undertaken in instances where land is deemed to be affected by erosion or susceptible to erosion.[77]

Western Lands Act 1901

The *Western Lands Act 1901* controls Crown land in the Western Division of New South Wales. The Act gives the Minister the power to direct the lessee to, among other things:

- restrict land areas from being used for certain agricultural purposes such as for grazing stock;
- restrict stocking rates; and
- undertake measures to protect land and preserve vegetation.[78]

[77] *Soil Conservation Act 1938*, New South Wales, Section 15A.

[78] *Western Lands Act 1901*, New South Wales, Section 18D(1)(iv).

Vegetation conservation

The *Native Vegetation Conservation Act 1997*, which repealed provisions of *State Environmental Planning Policy No. 46 – Protection and Management of Native Vegetation* (SEPP 46), came into force in December 1997. The Act requires development consent to be obtained in certain instances for the clearing of native vegetation. Land clearing must be undertaken in accordance with regional vegetation management plans.[79] This Act also allows land to be designated as state protected land.[80] State protected land includes areas that have a slope greater than 20 degrees, are situated within 20 metres of a prescribed watercourse or are deemed environmentally sensitive.[81]

4.2 Water resources

Approximately three quarters of water consumed in New South Wales is for irrigation purposes.[82] In rural New South Wales this figure is around 90 per cent. The Department of Land and Water Conservation is the government agency responsible for the management of water courses (surface water) and ground water resources in New South Wales. The department controls the flow of water on the larger water courses in New South Wales through water storage infrastructure such as dams and weirs. The department also has responsibility for licensing and regulating water users, collecting water use charges and determining annual water allocation levels for each valley catchment or region of New South Wales.

4.2.1 Water quality

Human activities including agricultural, mining, industrial and recreational activities, as well as sewerage treatment processes have an impact on water quality.

Agricultural activities that can result in the deterioration of water quality are:

- the use of pesticides and fertilisers – chemicals can enter and contaminate water courses after rainfall and irrigation;
- the grazing of livestock – livestock can contribute to erosion and subsidence of river banks and animal waste can enter and contaminate water courses after rainfall and irrigation;
- vegetation clearing – clearing can result in soil erosion;
- excessive water extraction;
- overspray of farm chemicals from aerial sources; and

79 The Minister for Land and Water Conservation is the consent authority where the regional vegetation management plan requires clearing be undertaken only with consent.

80 *Native Vegetation Conservation Act 1997*, New South Wales, Section 7.

81 Replaces *Protected Land* conditions under the *Soil Conservation Act 1938*.

82 Australian Bureau of Statistics, 1994, *Year Book Australia 1994*, AGPS, Sydney, p.521.

- the operation of weirs and dams – can slow water flow.

The Department of Land and Water Conservation uses a number of indicators to determine water quality including levels of blue green algae, phosphorous, salinity, turbidity, faecal coliforms and macroinvertebrates.[83]

4.2.2 Water availability

Approximately 70 per cent of New South Wales lies within the Murray Darling Basin.[84] The Murray Darling Basin Ministerial Council has capped water extractions at 1993/94 levels in order to maintain interstate water flows and improve the riverine environment. The New South Wales government has an obligation to provide specific monthly flow volumes to South Australia.

The New South Wales government is in the process of implementing various water management strategies as part of the New South Wales water reform package to determine river flow objectives such as water quality in valley catchments and environmental flow management rules on regulated streams. Environmental flow management rules are proposed not to exceed an average 10 per cent change in the 1993/94 level of water extractions.[85] The quality and availability of ground water resources is also coming under closer scrutiny.

4.2.3 Council of Australian Governments

In 1995 federal, state and territory governments entered into a number of agreements that broadened the scope of competition policy and extended it to previously exempt sectors. The federal government has undertaken to make a series of payments totalling $4.2 billion to the states and territories over the period from 1997 to 2006. These payments are conditional on reforms to a number of industries, including the water industry.[86]

Major COAG principles that relate to water resources are:

- consumption based pricing to achieve full cost recovery and a positive return on net assets by 2000/01, wherever practical;

- sufficient funds to be set aside for asset refurbishment; and

- full and transparent disclosures of actual costs with separate community service obligation funding of any shortfall between costs and water revenue.[87]

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83 Department of Land and Water Conservation, 1997, *Window on Water, The State of Water in New South Wales 1995/96*, DLWC, Sydney.

84 Murray Darling Basin Ministerial Council, 1997, *New South Wales Water Reform Fact Sheet No. 11*, Department of Land and Water Conservation, August 1997.

85 *Ibid.*

86 National Competition Council, 1997, *Compendium of National Competition Policy Agreements*, AGPS, Canberra, p.1.

87 *Ibid.*

4.2.4 Water pricing

In 1996/97 the Independent Pricing and Regulatory Tribunal commenced regulating bulk water prices for agricultural water users.

Water charges are determined by various factors including: the reliability of water supply (security); the purpose for which the water is used (for example, industry, stock or domestic); and operating costs within a valley catchment or region, including infrastructure and delivery charges per megalitre.[88]

The 1997/98 Independent Pricing and Regulatory Tribunal pricing determination foreshadows the application of a fixed component and a water usage component for these larger ground water users.[89]

Water pricing has a particular impact on agricultural commodities with relatively high water usage such as rice and cotton. Significant increases in water prices can also have a major impact on the profitability of investments in long-term commodities, such as fruit trees. Producers who have calculated profit margins on the basis of inflation-based increases in water prices may find it difficult to remain viable.

4.3 Labour

4.3.1 Employment levels

In 1996/97 the Australian farm sector employed 380,000 people. This represented only 4.5 per cent of the total Australian workforce, a steady decline from 9.5 per cent in 1963/64. The rural sector as a whole (including farming, forestry, fishing and hunting) employed 427,000 people, representing 5.1 per cent of the Australian workforce (down from 11.0 per cent in 1963/64).[90] Despite the fall in relative employment levels the gross product of the rural sector (in real terms) has nearly doubled over the last twenty years.[91]

Australia's level of employment in the rural sector is comparable with that of many developed countries. In 1994, agricultural employment levels in the United Kingdom, the United States, Germany, Canada and Japan ranged from 2.1 per cent to 5.8 per cent of total civilian employment.[92] Long-term rural employment levels in these countries also showed a relative decline.

88. Independent Pricing and Regulatory Tribunal of New South Wales, 1997, *Bulk Water Prices from 1 July 1997*, IPART, Sydney, p. 23.

89 *Ibid*, p.76

90 Australian Bureau of Agricultural and Resource Economics, 1997, *Australian Commodity Statistics 1997*, ABARE, Canberra, pp. 4–5.

91 *Ibid.*

92 Organisation for Economic Co-operation and Development, 1997, *Economic Accounts for Agriculture*, OECD, Paris, p. 23.

4.3.2 Labour costs

In 1996/97, the total cost of farm labour in Australia was $2.8 million dollars, accounting for around 14 per cent of the total cash costs for farmers.[93]

As at August 1997, the mean weekly earnings of full-time workers in the Australian rural industry were $488.[94] This was around 70 per cent of the mean weekly earnings of all full-time workers ($702) and significantly less than the mean weekly earnings of individuals working full-time in the generic occupational category of labourers ($521).[95]

4.3.3 WorkCover

WorkCover premiums are higher for employees who are employed in occupations that have a greater likelihood of making a workers compensation claim.

Employees working on farming and grazing properties attract a higher premium rate than those employed in dairying or fruit and vegetable growing (see Table 4.1 below).

Table 4.1 WorkCover rates for various farming employees, New South Wales, 1997/98

INDUSTRY CLASSIFICATION	NO. OF POLICIES	RATE (%)
Farming and Grazing	24,498	10.36
Fruit and Vegetable Growing	2,859	6.4
Dairying	474	4.84

Source: Information supplied by WorkCover.

93 Australian Bureau of Agricultural and Resource Economics, 1998, *Australian Commodities Forecast and Issues*, vol. 5, no. 1, March, ABARE, Canberra, p. 91.

94 Australian Bureau of Statistics, 1997, *Weekly Earnings of Employees (Distribution)*, August 1997, ABS, Canberra, Catalogue No. 6310.0, p. 15.

95 *Ibid*, p. 15.

4.4 Issues for consideration

The cost and quality of inputs have a significant impact on the profitability and competitiveness of agricultural industries. In addition, the availability of some inputs, such as water, can have a dramatic impact on production levels.

Reductions in input costs and an improvement in the quality of inputs have the potential to increase the international competitiveness of the New South Wales agricultural industry.

The agricultural industry also needs to be mindful of preserving environmental inputs, such as land and water, to ensure the long term viability of the industry. There is some urgency for producers to put in place further measures to protect land and water resources.

5 PHYSICAL INFRASTRUCTURE

Infrastructure services—including road, rail, ports, airports, telecommunications, energy and storage—impact on the day-to-day operations of agricultural activity. The reliability and timeliness of these services are very important; for example, perishable agricultural goods need to be delivered to the market without delay.

Physical infrastructure costs are significant. For every $100 of output produced, the Australian agricultural industry spends on average $3.04 on electricity and water, $2.99 on transport and $0.93 on communications. Hence, to produce $100 of agricultural produce, the industry spends nearly $7 on infrastructure services[96].

5.1 Transport infrastructure

Agricultural producers need to transport inputs to their property and to transport their produce to the market. The population of New South Wales is concentrated around the coast, a considerable distance from most agriculture production centres. Additionally, Sydney, Newcastle and Port Kembla are the major ports for exporting produce. Efficient transport of freight from farms to coastal population centres and ports is, therefore, essential.

The National Transport Planning Taskforce outlined the importance of transport in its 1994 report:

> A reliable and cost effective transport system for freight in Australia is essential. One that delivers goods efficiently to supermarket shelves, contributes to national competitiveness, contributes to national development, does not waste valuable resources, adds to our international competitiveness, and helps contain prices—but does so in a way that recognises the social and environmental impacts of transport[97].

The agricultural industry uses a variety of modes of transport for its freight task, including road, rail, sea and air. The transport task often utilises more than one mode; for example grain is transported by road to the silo before being delivered by train to the port and shipped to the country of destination.

96 Bureau of Industry Economics, 1995, *International Benchmarking: Overview 1995*, Report 95/20, AGPS, Canberra.

97 National Transport Planning Taskforce, 1994, *Building for the Job: A Strategy for Australia's Transport Network*, AGPS, Canberra.

5.1.1 Rail

There are over 8,500 kilometres of rail track in New South Wales. This rail system carries passengers and freight. The freight component comprises bulk commodities (including grains), containerised cargo (including meat and wool) and general cargo.

There have been substantial rail reforms in the 1990s, influenced by the competition policy initiatives of the Council of Australian Governments. In New South Wales the State Rail Authority has restructured the rail industry, forming four independent businesses:

- *Rail Access Corporation* is 'owner' of the rail infrastructure with responsibility for negotiating use of the track by rail operators and funding track maintenance;

- *Rail Services Authority* is 'maintainer' of the track under contract to the Rail Access Corporation and responsible for construction services, and rolling stock overhaul and repair;

- *FreightCorp* provides freight services throughout New South Wales, and owns and maintains its own rolling stock and locomotives; and

- *State Rail Authority* provides city and country passenger rail services throughout New South Wales and is responsible for train control under contract to the Rail Access Corporation.

As outlined above, FreightCorp is the state-owned rail operator. Of the 72.6 million tonnes that FreightCorp hauled in 1996/97, 81 per cent was coal and 11 per cent was grain.[98] FreightCorp contracts with the Australian Wheat Board to haul the state's wheat crop. In its 1996/97 annual report, FreightCorp outlined the tasks and challenges of transporting wheat:

> The task at harvest time is to rapidly clear country silos as they fill with growers' deliveries. FreightCorp trains shuttle grain into major sub-terminals at Werris Creek, Moree, Narrabri, Parkes, Temora and Junee to keep the silo system operating ...
>
> Grains from the northern area bounded by Nyngan, Walgett and Boggabilla were exported through the GrainCorp Newcastle Terminal. South western grains from the Condobolin, Wyalong, Cowra and Riverina area were shipped through the Port Kembla facility.
>
> The scale and complexity of the grain task varies tremendously from year to year, reflecting the climatic conditions in the grain belt. A major challenge for the Corporation and the grain industry is how to minimise the cost associated with what becomes excess capacity during periods of poor or average harvest.
>
> In addition to the grain export task, wheat, barley and canola are hauled for the domestic market, supplying flour and stockfeed mills in Sydney, Newcastle and country centres.[99]

98 FreightCorp, *Annual Report, 1996/97*

99 FreightCorp, *Annual Report, 1996/97*

According to the National Transport Planning Taskforce, rail is perceived to be the least reliable mode of transport with the lowest quality of service. The Taskforce identified the following concerns about rail:

- the adequacy of rail infrastructure and how future infrastructure expenditure requirements would be funded; and
- regulation, intermodal coordination and taxes and charges.[100]

Other concerns in regional areas relate to the impact of track closures.

5.1.2 Road

Some agricultural produce is transported all the way from the farm to the market by road, while other agricultural produce uses multiple modes of transport. However, almost all produce is transported by road at some time in its journey.

New South Wales has an extensive road network. Responsibility for the 178,000 kilometres (see Table 5.1) of road in New South Wales is divided between federal, state and local authorities.

Table 5.1 Length of the road network, New South Wales, 1995

ROAD TYPE	KILOMETRES
National Highways	2,900
Rural Arterials	30,162
Urban Arterials	4,237
Rural roads	121,400
Urban Roads	20,100
All Road Types	178,799

Source: Australian Bureau of Statistics, 1997, *Transport and the Environment*, ABS, Canberra, cat. 4605.0

Although Australia is perceived to have an efficient road transport industry by world standards,[101] the National Transport Planning Taskforce identified a number of concerns, including:

100 National Transport Planning Taskforce, 1994, *Building for the Job: A Strategy for Australia's Transport Network*, AGPS, Canberra.

101 Bureau of Industry Economics, 1992, *International Performance Indicators, Road Freight*, Research Report 46, AGPS, Canberra

- the effect of regulations—inconsistency of regulations between the states and territories, inflexible and unnecessary regulations and perceived lack of commitment by some governments to implement agreed measures to achieve consistency in regulation;

- the impact of local council regulations and activities—restrictions of vehicle access (particularly B-doubles), operational restrictions (eg restrictions on night loading) and the impact of traffic calming measures;

- the level of taxes and charges imposed on the industry and the impact of different taxation and charging policies in competition between the modes;

- the impact of urban congestion;

- intermodal coordination—the incompatibility between working arrangements and working hours for each mode leading to delays and other inefficiencies at cargo transfer points; and

- adequacy of road infrastructure, road funding levels and priorities—it was generally suggested that the levels of expenditure on roads were such that the road asset was deteriorating, and what funds were being spent were not going to priority areas such as urban arterial and ring roads[102].

5.1.3 Sea

As an island continent, Australia relies heavily on sea transport—in 1993/94 Australia exported 376 million tonnes of international cargo by sea[103]. As well as being important for international trade, shipping is a significant mode of domestic transport. The freight bill for coastal cargo is around $600 million per annum.

Agricultural produce, including grain, wool, meat, horticultural produce and livestock, is predominantly exported by sea due to the mode's relatively low transportation costs. Transportation of wheat to international markets provides a good example of the agricultural industry's use of sea transport (see Box 1).

102 National Transport Planning Taskforce, 1994, *Building for the Job: A Strategy for Australia's Transport Network*, AGPS, Canberra

103 Bureau of Industry Economics, 1995, *International Benchmarking Waterfront 1995*, AGPS, Canberra

Box 1 - Exporting wheat by sea

Depending on climatic influences, Australia exports around 14 million tonnes of wheat a year. Australia's major markets for wheat exports are China, the Commonwealth of Independent States, Japan, India, South Korea, Taiwan, Indonesia, Malaysia, Singapore, Iraq, Iran, Egypt and Yemen[104].

The volume and relatively low price of wheat makes sea transport the most cost-effective mode of transport. There is a high degree of competition in export markets and producers generally operate on low margins. It is, therefore, important for the bulk commodity terminals and ports to operate efficiently in order for Australian wheat to remain competitive and producers to remain viable.

There are two wheat terminals in New South Wales—one in Newcastle and one in Port Kembla. In 1995 the Bureau of Industry Economics compared the Port Kembla facilities to a number of Australian and international wheat terminals and found that Port Kembla's terminal, although small by international standards, performed well in terms of ship turn-around times, capital productivity and labour productivity. In terms of cost, Port Kembla lagged behind international best practice[105].

5.1.4 Air

Although air transport is not used for the bulk of the state's agricultural produce, it is used for some high-value cargo, including livestock and horticultural produce.

The Inland Marketing Corporation, a joint venture between Cabonne, Forbes, Lachlan and Parkes Councils and the Central West Economic Development Group, have proposed developing an international freight centre at Parkes airport

The use of air transport may also be affected by the proposed deregulation of the air industry in regional areas.

5.2 Storage

5.2.1 Water storage

Despite receiving only 25 per cent of the state's total rainfall, inland areas use 80 per cent of all water used in New South Wales[106]. There are presently 21 major water storage facilities

104 Douglas, F. 1995, *Australian Agriculture: The complete reference on Rural Industry*, Morescope Publishing, Camberwell, Victoria.

105 Bureau of Industry Economics, 1995, *International Benchmarking Waterfront 1995*, AGPS, Canberra

106 New South Wales Department of Land and Water Conservation, 1997, *Water Reform - the Need for Change: A Guide for Water Users*, New South Wales Department of Land and Water Conservation, Sydney.

in New South Wales or on its borders. Many of these are located in areas with naturally high winter flows and low summer flows.

5.2.2 Grain storage

Australian grain growers have storage facilities on their properties. Additionally, in New South Wales, GrainCorp owns a network of 254 country storage sites and export terminals at Newcastle and Port Kembla. Its entire network has a storage capacity of about 12 million tonnes of grain[107]. GrainCorp undertook a review of storage capacity, which identified 62 sites—23 per cent of country silos—surplus to requirements.

5.3 Electricity

Agricultural production can use large amounts of electricity. For example, the cut flower industry uses artificial light to grow flowers quickly and out of season.

The state's electricity industry has undergone significant reforms in the lead up to the creation of the national electricity grid, which facilitated interstate competition in electricity generation and distribution. During 1995/96 the New South Wales electricity supply industry was disaggregated and corporatised into eight energy service corporations (six distributors and two generators), a high voltage transmission authority and Pacific Power, which manages some generation, coal and other service activities.

As the National Electricity market progresses, there will be more competition in electricity generation and distribution. Agricultural producers will be able to chose which distributor they purchase their power from. It is expected that the increased competition will lead to a reduction in the price of electricity.

However, electricity reform has raised questions about responsibility for the cost of maintaining infrastructure and whether or not electricity price decreases will filter down to smaller producers.

107 GrainCorp Limited, *Annual Report for the 18 month period ended 30 September 1996.*

5.4 Issues for consideration

In the past, infrastructure services in New South Wales have lagged international best practice in terms of price, quality and productivity.[108] However, the state's infrastructure industries have recently undergone considerable reforms, some of which are not yet complete. The aim of these reforms is to improve the international competitiveness of domestic production.

While recognising the transition periods associated with these reforms, the Standing Committee will explore the success or otherwise of the reform processes. Additionally, the Committee is seeking to identify any remaining impediments to the efficient production and transport of agricultural goods related to infrastructure services.

[108] Bureau of Industry Economics, 1995, *International Benchmarking—Overview 1995*, AGPS, Canberra

6 NON-PHYSICAL INFRASTRUCTURE

There is a wide array of organisations and activities that impact on and support the agricultural production process. Many government organisations have links to agricultural producers, with responsibility for both regulating and supporting agricultural activities. Assistance is also available from some non-government organisations.

The Committee notes that the agricultural industry is not only dependent on agricultural-specific infrastrucutre. While this discussion paper does not provide any detail about the wide range of social and commercial infrastructure needed to support the agricultural industry, the Committee acknowledges that many other industries play a vital role in ensuring the viability of the agricultural sector. The health, education, transport, financial, retail and leisure sectors are important contributors to the overall success of agricultural operations.

6.1 Government Organisations

A number of government organisations are closely linked to agricultural industries. These organisations perform a variety of roles that range from providing support and information to enforcing regulations.

6.1.1 New South Wales Agriculture

New South Wales Agriculture, a state government department providing services at over 100 locations, is responsible for supporting the state's food and fibre industries, ensuring consumer confidence in these products and providing policy advice to government on rural issues. The department also acts as a means by which rural communities can provide input to the government.

The department has a number of programs that target various agricultural products including: cereal products; fibres, oils and speciality plant products; meat, dairy and intensive livestock products; pastures and rangelands; wool and sheep products; and horticulture products. Additional industry support programs focus on issues such as agricultural resource management; improving competitiveness in export and domestic markets[109]; animal welfare; education and training; and quality assurance.

The New South Wales Agriculture Corporate Plan 1997-2000 indicates that over the period from 1997 to 2000 the department will focus on assisting New South Wales food and fibre industries to capitalise on both domestic and export markets by:

- improving the international competitiveness, long term economic viability and responsible resource management of New South Wales food and fibre industries;
- improving the sustainability of agriculture and minimising any adverse impacts of agriculture on the environment;

109 The department provides assistance through its Agsell program, outlined in more detail in section 6.3.2 below.

- increasing the adoption of quality assurance systems by the food and fibre industries;

- minimising the impact of pests, weeds, diseases and natural disasters;

- increasing the proportion of farmers successfully adopting business and risk management practices; and

- ensuring the legislative, information and policy needs of government are met.[110]

In recent years, New South Wales Agriculture has undergone some dramatic changes, including decentralisation of the department's head office from Sydney to Orange, a significant reduction in staffing levels and major restructuring of the department. The Committee is interested in exploring the impact of these changes on the ability of the department to assist in enhancing the international competitiveness of the state's agricultural industry.

6.1.2 Department of Land and Water Conservation

The Department of Land and Water Conservation has responsibility for the management of land, water and vegetation resources in New South Wales. The Department involves the community in the management of natural resources and has strong links to the rural sector.

In its 1996/97 Annual Report, the Department identified four key result areas:

- improving the health of the state's ecosystems and the productivity of the state's natural resources. Activities undertaken to meet this goal included: implementation of water reform strategies; community based soil conservation projects; rural water supply and sewerage works; and the requirement for consent authority for vegetation clearing*;*

- ensuring security of access to natural resources for all resource users. Activities undertaken to meet this goal included: clarification of access and use rights to water; maintenance of water supply infrastructure such as weirs and dams; and assessment of native title claims under the *Commonwealth Native Title Act 1993*;

110New South Wales Agriculture, *New South Wales Agriculture Corporate Plan 1997-2000*, New South Wales Agriculture.

- ensuring community awareness and responsibility for natural resources. Activities undertaken to meet this goal included: promoting community involvement in the sustainable management of natural resources; and conducting education programs including Farming for the future, River care 2000 and Streamwatch; and

- providing information to stakeholders and maintaining a knowledge base. Activities undertaken to meet this goal included: provision of land and water information through geographic information systems; mapping information concerning vegetation and soil characteristics, degrees of land use, erosion and salinity; and maintain information on land ownership through operation of the Land Titles Office.[111]

6.1.3 Landcare

The National Landcare Program consists of a network of community-based landcare groups that are actively involved in preserving and regenerating their local natural environments. Landcare plays a key role in educating rural communities about sustainable management of land, water, vegetation and biological diversity. Landcare receives funding from the federal and state governments as well as from sponsorship arrangements with the private industry and fundraising activities.

6.1.4 Rural Lands Protection Boards

Rural Lands Protection Boards are established under the state *Rural Lands Protection Act 1989*. Each of the 48 Boards in New South Wales is an autonomous entity comprised of elected local representatives responsible for working for the benefit of its local rural landholders. Boards have responsibility in their local area for the provision of services relating to:

- animal health;
- noxious and pest animals;
- travelling stock routes and reserves;
- weed control;
- natural disaster relief;
- noxious insects;
- water supply; and
- collection of meat industry authority levies.

Rural Lands Protection Boards raise operating funds by way of general and animal health rates imposed on occupiers of rateable land. Boards use these funds to employ district

[111] New South Wales Department of Land and Water Conservation, *Annual Report 1996/97*.

veterinarians, rangers, noxious animal inspectors and administrative staff. Elected members are not paid sitting fees for their board activities.

6.1.5 National Parks and Wildlife Service

The New South Wales National Parks and Wildlife Service has responsibility for the conservation of the state's flora and fauna, Aboriginal heritage and historic heritage. As at 30 June 1997, almost 6 per cent of New South Wales (approximately 4.5 million hectares) was reserved under the *National Parks and Wildlife Act 1974*. Of this, approximately 83 per cent (around 3.8 million hectares) was designated national parks.[112]

Roles and functions of the National Parks and Wildlife Service include:

- investigation and acquisition of land for inclusion in a system of national parks and nature reserves to conserve a complete range of the natural environments of the state;
- protection and management of Aboriginal sites, objects and places of special significance to the Aboriginal people;
- management of ares of cultural and historic significance in New South Wales; and
- conservation of protected native animals and plants throughout the state.[113]

The National Parks and Wildlife Service is also charged with advising consent authorities under the *Environmental Planning and Assessment Act 1979* of the impact of development on conservation agreements, wilderness areas, protected flora and fauna and threatened species.[114]

Other activities managed by the National Parks and Wildlife Service include: fire management; pest management (including rabbit, fox and cat control); and weed control of such species as blackberry and serrated tussock.

The National Parks and Wildlife Service continues to direct annual harvesting of kangaroos where population numbers have increased to levels which may adversely impact upon other native species, and pastoral and cropping activities. Similar wildlife management activities are conducted to mitigate damage by ducks to rice fields, while measures to mitigate the impact of flying foxes on stone fruit production have also been undertaken.[115]

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112 As required to fulfil Object 3(a) of the *Threatened Species Conservation Act 1995(New South Wales).*

113 New South Wales National Parks and Wildlife Service, 1997, *Annual Report 1996/97,* p. 8.

114 *Environmental Planning and Assessment Act 1979,* New South Wales, Section 90 (as amended by the *Threatened Species Conservation Act 1995*).

115 New South Wales National Parks and Wildlife Service, 1997, *Annual Report 1996/97,* p. 40 and p.42.

6.1.6 Environment Protection Authority

The New South Wales Environment Protection Authority is a state government agency with responsibility for monitoring the state's environment, examining the impacts of human activities on the environment and regulating or prohibiting activities if necessary.

The Environment Protection Authority's corporate plan for 1995 to 1998 sets out intended outcomes for the agency's key programs. Intended outcomes for the Primary Production program include:

- a reduction in the impact on water quality from land degradation, erosion and clearing;
- a reduction in the pollutant load on waterways of salinity, nutrients and chemicals from irrigated and dryland agriculture;
- an improvement in the sustainability of water use, in particular, an improvement in the allocation of water for environmental flows and more efficient use of water for irrigation and agriculture;
- a reduction in the risk to public and environmental health from agricultural chemicals and prevention of future land contamination; and
- a reduction in water quality impacts from forestry activities.[116]

The Environment Protection Authority applies agriculture-based pollution control licenses to various activities and businesses to control pollution. For example, pollution control licences may be applied to farmers and aerial spray operators designating acceptable levels, if any, of farm chemical residues entering watercourses. Similarly pollution control licences may be implemented on piggeries or abattoirs outlining acceptable requirements relating to odour and the disposal of effluent.

As at 1996/97, 16 per cent of pollution control licenses were issued for primary production, of which agricultural activities constituted one part along with forestry, fishing and mining activities.[117]

6.1.7 Independent Pricing and Regulatory Tribunal

The Independent Pricing and Regulatory Tribunal, established in July 1992, has responsibility for determining maximum prices for monopoly services operated by state-owned agencies and to facilitate access to public infrastructure.

The corporate objectives outlined in the Independent Pricing and Regulatory Tribunal 1996/97 Annual Report were to:

116 Environment Protection Authority New South Wales, *Corporate Plan 1995 - 1998*

117 *Ibid*, p. 47.

- achieve the best feasible pricing outcomes that balance the competing claims within the community;

- provide high quality advice to government on industry issues; and

- achieve effective access to key public utility infrastructure services. [118]

Three of the Independent Pricing and Regulatory Tribunal's particular focus areas of electricity, water and gas all have the potential to impact on input prices for agriculture-related producers and industries. During 1996/97 the Independent Pricing and Regulatory Tribunal:

- set down the 1997/98 bulk water price determination for rural water supply;

- made provision for third party access to AGL's gas distribution network in New South Wales. Third party access was made available from the 1 August 1997;

- determined the AGL tariff structure for 1997/98;

- reviewed the pricing structure for the rural train service Countrylink; and

- issued pricing determinations for electricity transmission by TransGrid as well as electricity prices for New South Wales electricity distributors up until 1999.

6.2 Non-Government Organisations

There are many non-government organisations that provide support to the agricultural industry; for example there are numerous organisations that represent the interests of producers of specific commodities. While the focus of the current inquiry is the role of government in facilitating the international competitiveness of agriculture, brief details about two of the major farming lobby groups is provided below for information.

6.2.1 New South Wales Farmers' Association

The New South Wales Farmers' Association is a representative organisation for all aspects of agricultural production in New South Wales. The Association represents over 15,000 farming enterprises, the majority of which are family farms. Members of the Association have agricultural interests that range from horticultural and oyster production, to the production of grains, wool and livestock. In addition, the Association is involved in issues of relevance to the agricultural industry such as conservation and resource management, economics and rural affairs, industrial relations and the impact of native title.

The New South Wales Farmers' Association receives the bulk of its operating income from member subscriptions, various investments and the provision of member services. The Association receives no government funding.

118 Independent Pricing and Regulatory Tribunal of New South Wales, *Annual Report 1996/97*, p. 4.

6.2.2 National Farmers' Federation

The National Farmers' Federation is the peak farm lobby group in Australia. Membership consists of state farm organisations, national commodity councils and several associate and affiliate organisations[119]. The National Farmers' Federation does not have individual farmer members, but does receive funds indirectly from farmers through the state farm organisations and national commodity councils.

In its 1996 Annual Report the National Farmers' Federation stated that its objectives were:

> … to highlight the importance of agriculture to the national economy, and help to create an internationally competitive economic environment that will maximise returns for our members, and underpin our endeavours to achieve environmental sustainability.[120]

Under the National Farmers' Federation structure, state farm organisations and national commodity councils take responsibility for issues that specifically relate to their members. Where an issue affects more than one state or more than one commodity the National Farmers' Federation takes on responsibility as the peak representative body. The National Farmers' Federation devotes resources to issues such as the economy, the environment, farm business management, industrial arrangements, farm chemicals, trade, native title and quarantine and animal health.

119 Including, for example the Australian Alpaca Association, the Pork Council of Australia, the Australian Farm and Country Tourism and the Australian Veterinary Association.

120 National Farmers' Federation, *1996 Annual Report.*

6.3 Export Assistance

6.3.1 Single Desk Selling

Single desk selling refers to an arrangement by which a single marketing body, established by legislation, acts as the sole seller of a product. Introduction of national competition policy principles has put an end to single desk selling for domestic sales but has not restricted single desk selling as a method for accessing export markets.

The Australian Wheat Board uses a single desk selling approach for all Australian wheat exports and has indicated an intention to continue to do so once privatisation arrangements are in place in 1999.[121] The Australian Dairy Corporation also uses a single desk selling approach but only for a small range of products into specific markets in Japan and Europe.

6.3.2 Agsell – New South Wales Agriculture

Agsell is a program run by New South Wales Agriculture. It provides assistance to domestic food and fibre producers, manufactures and exporters with the objective of increasing New South Wales exports and replacing imports with domestically produced products. Agsell seeks to identify and secure new markets for New South Wales food and fibre products and has identified the Asian food market as a prime target for New South Wales agricultural industries. In addition, Agsell participates in major trade promotions and facilitates buying and investments missions to New South Wales.

6.3.3 Austrade - Department of Foreign Affairs and Trade

The Australian Trade Commission (Austrade) is a Commonwealth statutory authority that helps Australian businesses take advantage of export opportunities. It caters for both first-time exporters and well-established exporters with advice about selecting, understanding and entering export markets as well as expanding existing export markets.

Austrade also provides information about overseas markets, trade fairs, exhibitions and export opportunities. Fees apply for some services. In addition, Austrade administers Australia's Export Market Development Grants scheme, designed to encourage Australian exporters to seek out and develop overseas markets. The scheme provides part-reimbursement for eligible Australian exporters. Austrade also has an internet site that contains details of nearly 4,000 Australian companies, including many food exporters, and their products and services. Australian businesses can be listed on the site free of charge.

121 Australian Wheat Board, *Annual Report 1996/97*.

6.4 Quality Assurance

New South Wales Agriculture spent over $20 million on quality assurance activities in the 1996/97 financial year. The Department seeks to involve the industry in its quality assurance operations with a view to:

- minimising the impact of disease and chemical residues in food and fibre products;
- ensuring New South Wales food and fibre products meet market safety requirements;
- improving the health status of the state's livestock and their products;
- providing accurate information on disease and residue status as an aid to clients; and
- protecting New South Wales from the threat of exotic pests and diseases.[122]

Producers selling to export markets are often required to meet different standards than those set for domestic markets. In addition, many agricultural industries have quality certification programs that have more stringent requirements than the standards upheld by New South Wales Agriculture. Industry certification programs are often used as a marketing device by producers.

6.5 Education and Training

In the past, most agricultural producers received little or no formal industry-based education or training and instead acquired their skills and knowledge through practical experience. In recent years there has been recognition of the need for industry-based education and training programs, with a range of options now available for people currently working in, or hoping to enter, the agricultural industry. A variety of formal and informal qualifications can be obtained from universities, Technical and Further Education colleges and specific industry organisations. In addition, various government departments also provide education and training for agricultural producers.

Many agricultural producers have embraced the move towards greater education and training, but much of the focus has been on technical expertise. While farmers have been able to achieve substantial productivity gains and competitive advantages by adopting new processes or technical products, it is increasingly becoming necessary for farmers to extend their skills further to maintain productivity growth.[123] One of the greatest challenges for Australia's rural industries is to rapidly develop its human resources to meet emerging requirements for knowledge, skills and attitudes. The 1996 Rural Finance Summit

122 New South Wales Agriculture, *Annual Report 1996/97*.

123 Federal Department of Primary Industries and Energy, 1996, *Some Farm Adjustment and Social Welfare Issues*, Workshop Discussion Paper, Rural Finance Summit.

identified the following emerging educational needs and noted that they could "not [be] easily acquired through working on the farm":

- information management skills;
- skills in working with people;
- communications skills;
- risk management skills;
- tactical and strategic planning skills; and
- knowledge of the total agri-industry system and the role of a particular farm in that industry. [124]

New South Wales Agriculture, through the Office of Rural Communities, oversees a range of educational initiatives. In this regard, the aim of the Office of Rural Communities is to assist farm families and service providers to adopt sustainable business management practices and principles with an emphasis on the physical, financial and personal elements of farm business planning.[125]

As the need and demand for farmer education escalates, access to facilities and innovative programs will be essential to maintain the competitiveness of Australian agriculture.

6.6 Research and Development

The amount of rural research performed by New South Wales Agriculture in 1993/94 was $118 million[126]. In New South Wales the meat, dairy and intensive livestock industries are the beneficiaries of nearly one fifth of total expenditure, closely followed by agricultural resource management and horticulture.[127]

The *Primary Industries and Energy Research and Development Act 1989* established eight industry based research and development corporations (cotton, dairy, fisheries, forest and wood products, grains, grape and wine, pig and sugar) and five industry based research and development councils (chicken meat, dried fruits, egg industry, honeybee and tobacco). Three more rural research development organisations—meat, horticulture and wool—were established under their own legislation.

Funding for most of the commodity based research and development corporations and councils is through a statutory levy on farm-gate output, matched dollar-for-dollar by the Commonwealth up to 0.5 per cent of the gross value of production. The corporations and

124 Federal Department of Primary Industries and Energy, 1996, *Future Farm Business Structures*, Workshop Discussion Paper, Rural Finance Summit.

125 New South Wales Agriculture, *Annual Report 95-96*, AGPS, 1996.

126 Industry Commission, 1995, *Research and Development*, Report 44, AGPS, Canberra.

127 *Ibid.*

councils do not perform research and development themselves but allocate funds to various research providers, including CSIRO, universities and Cooperative Research Centres.

6.7 Industry Structural Adjustment

Farm adjustment refers to the variety of ways in which farmers respond to change in the economic, technical and institutional environment. Rural adjustment is a broader term that includes farm adjustment, but refers to adjustment in entire rural communities, not just in farming enterprises. [128]

The process of adjustment facilitates the transfer of scarce resources, such as land, between businesses or individuals.[129] In the agricultural sector this transfer can effect changes in outputs, processes, management practices and markets, but generally results in some farmers exiting the industry.

In the past, Australian farmers have shown a great capacity to undertake autonomous adjustment in response to market signals. Despite this capacity, the impact of adjustment on some rural producers and communities can cause social and economic hardship. When hardship occurs, the federal government has traditionally assisted in mitigating the effects of the adjustment process.

6.7.1 Pressures for Adjustment

Declining terms of trade resulting in low profits, or losses, continues to be the dominant pressure for adjustment, with terms of trade in turn being linked to the uncertainty regarding international agreements on agricultural trade barriers. Other factors that act as pressures to adjust include climatic changes, land and water degradation, and the impact of weeds, diseases and pests.[130]

In addition, the two major droughts experienced between 1981 and 1983, and 1992 and 1995 have had a heavy impact on farm incomes, leading to increased debt in parts of Australia and thus intensifying adjustment pressures.

According to the federal Department of Primary Industries and Energy

> The traditional rate of adjustment in agriculture has translated into a reduction in the number of commercial farms of around 1 per cent each year.[131]

This rate of adjustment is strongly linked to farmers' expectations for the future returns from their enterprise which is in turn linked to commodity markets and international trade policies.

6.7.2 Government Assisted Adjustment Processes

The focus of Australian rural policies in the 1990s is enhancement of farm profitability, international competitiveness and sustainable agricultural practices by facilitating market responsiveness, risk management and self-reliance. There has been a concerted move away from the interventionist and protectionist policies of earlier decades and toward policies which do not distort market signals to producers. This push for competitiveness and profitability creates a demand for adjustment assistance. with various forms of assistance being available . They cover several adjustment needs including assistance to leave the industry, assistance to change farm output or output mix, assistance in intergenerational farm transfer and educational and agribusiness issues.

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128 Federal Department of Primary Industry and Energy, 1996, 'Some Farm Adjustment and Social Welfare Issues' in *Rural Finance Summit Workshop Discussion Paper*.

129 *Ibid*.

130 *Ibid*

131 *Ibid*.

The Rural Adjustment Scheme is currently being phased out and replaced by the federal government's "Agriculture - Advancing Australia" package. This package introduces significant changes to the adjustment and welfare assistance available to farmers with some elements outlined below.

- The old Farm Household Support (FHS) scheme - which provided income support in the form of loans or grants - has been discontinued. The new Farm Family Restart Scheme (FFRS) will take up some of the FHS functions and will be available for a maximum of 12 months.

- The re-establishment grants system is being overhauled. The maximum re-establishment grant is being capped at $45,000 and FFRS payments deducted from this maximum entitlement. The grants will only be available for a two year period and are designed to encourage early decisions to exit farming.

- The Income Equalisation Deposits and Farm Management Bonds are being replacing with Farm Management Deposits. Farm Management Deposits will attract the commercial interest rate rather than the government Bond rate and will be held by private financial institutions.

- Current exceptional circumstances payments, such as the Drought Relief Payment, will no longer continue during the "recovery phase" from an exceptional circumstance. Exceptional circumstances interest subsidies will also be phased out. An Exceptional Circumstances Relief Payment will take the place of Drought Relief Payments but will only apply while the exceptional circumstances declaration is in place.

- There will be a temporary three year moratorium on gifting to help the intergenerational transfer of farms. This provision has strict conditions and is currently a contentious subject among farmers and rural counsellors.

- The new scheme will provide funds for a range of community development initiatives, climate research activities and consultation measures.

6.8 Issues for consideration

The agricultural industry in New South Wales does not operate in isolation. The organisations and activities highlighted in this chapter have a direct impact on agricultural production in New South Wales and, as a result, effect the international competitiveness of the agricultural industry.

The Committee is seeking to identify ways in which these organisations and activities can assist the agricultural industry to improve its competitiveness.

7 TAXES

Like all other business activities in Australia, agricultural production activities attract a range of taxes. However, the federal and state governments recognise the unique nature of agricultural production activities and this is reflected in a variety of special tax arrangements for many agricultural production activities.

7.1 Federal taxes

Although federal taxes fall outside the Committee's jurisdiction, the Committee recognises the impact they have on the international competitiveness of the agricultural industry. A number of federal taxes may impact on individual agricultural producers, including sales tax, provisional tax, capital gains tax and company tax. The application of taxes on a particular agricultural business can be quite technical and will depend on a number of factors including the legal structure and nature of the agricultural operations. Brief information about sales tax, provisional tax and diesel fuel rebates is provided below.

7.1.1 Sales tax

Agricultural products such as crops and livestock are exempt from sales tax. In addition, many goods purchased by agricultural producers for business use are also exempt from sales tax.

Agricultural producers claiming a sales tax exemption must provide a written statement (in a format approved by the Australian Tax Office) to their supplier at the time of purchase detailing the purpose for which goods are to be used.

7.1.2 Provisional tax

Provisional tax is paid on non-salary income and is generally determined by referral to an individual's income for the previous year. Primary producers, however, have the option of evening out their income over a maximum of five years in recognition of their income inconsistency.

Primary producers are eligible for a number of tax deductions relating to their business activities including:

- depreciation of certain structural improvements;
- capital expenditure related to preventing land degradation;
- capital expenditure incurred on water storage and farm reticulation systems used principally for conserving or conveying water;
- certain other capital expenditure such as installation of electricity and telephone lines;

- expenditure on drought mitigation property such as fodder and water storage facilities; and

- establishment costs of grape vines and horticultural plants.

7.1.3 Diesel fuel rebate

The Australian Customs Service collects duty on diesel fuel on behalf of the federal government. Rebate is paid for diesel fuel that is used in certain activities including some relating to agricultural production. Claimants are required to lodge claim forms with the Australian Customs Service and receive payment via electronic funds transfer. Claimants must keep records of their purchases for five years.

7.2 State taxes

Agricultural related activities are eligible for exemptions and concessional rates for various New South Wales government taxes. Details of some state taxes and applicable exemptions available to the agricultural sector are presented below.

7.2.1 Family farm transfers

Stamp duty is a state tax that is payable on written legal documents and certain oral transactions.[132] Transactions that attract stamp duty include land and business transfers and transfers of lease agreements.

Certain rural property transfers involving direct family members are exempt from stamp duty. This exemption has been designed to encourage younger family members to remain in primary production.

7.2.2 Financial institutions duty

Credits to financial institutions are levied at 0.06 per cent in New South Wales. Exemptions are available for a clearing or settlement account operated by wool traders or livestock agents.

7.2.3 Insurance duty

In general a levy of 11.5 per cent of the premium paid on insurance is applicable in New South Wales. For insurance of motor vehicles, disability income, aviation, occupational indemnity and third party, a levy of 5 per cent is applied.

Agricultural producers are eligible for a concessional insurance duty rate of 2.5 per cent for insurance premiums on crop and livestock insurance.

[132] Stamp duty is currently payable under the *Stamp Duties Act 1920 (New South Wales)*. A new Duties Act was passed in State Parliament in December 1997 and will take effect in the latter half of 1998.

7.2.4 Land tax

Land with an unimproved capital value in excess of $160,000 is *prime facie* liable for land tax at the rate of $100 plus 1.85 per cent for the amount in excess of $160,000. A general exemption occurs for owner occupied land with an unimproved capital value less than $1 million.

A land tax exemption is available on land used for primary production or land owned by any primary products marketing board or pasture protection board.

7.2.5 Payroll tax

Payroll tax is charged on all businesses with an annual payroll exceeding $600,000 and is calculated at a single flat rate of 6.85 per cent of wages above $600,000.[133] The term wages includes a wide range of payments made to employees including salaries, commissions, bonuses, allowances, directors' fees and fringe benefits.

7.3 Issues for consideration

The issue of broad-ranging tax reform is presently high on the national agenda. Fundamental changes to federal and state taxes will impact on all sectors of the economy including the agricultural sector.

Current tax exemptions and concessional tax arrangements for agricultural producers have evolved over time in a piecemeal fashion. There is likely to be an opportunity in the anticipated reform process to give more strategic consideration to arrangements for agricultural producers.

[133] This amount is the threshold level for 1997/98 and is subject to change in future years.

8 INTERNATIONAL TRADE BARRIERS

Australia has been moving down the path of international trade liberalisation for almost a decade. More recently, Australia has led the push for multilateral[134] liberalisation of trade barriers, strongly supporting the negotiations of the General Agreement on Tariffs and Trade (GATT), the World Trade Organisation (WTO) and Asia Pacific Economic Cooperation (APEC).

Australia is a country with generally efficient agriculture which receives little government support. Accounting for a mere one per cent of world exports, Australia is a minor player with limited international leverage. While Australia has a successful bilateral arrangement with New Zealand through the Closer Economic Relations agreement[135], it lacks the power to negotiate bilateral agreements with major trading partners. A program of unilateral liberalisation has been pursued by the federal government, however it is generally accepted that the benefits of removing protection are limited if barriers are maintained by other countries.

In short Australia has much to gain from the multilateral reduction of trade impediments and the correction of market distortions. Unfortunately to date there has been little success in achieving these outcomes through multilateral trade negotiations[136] and Australia has limited scope for influencing future negotiations.

Trade liberalisation allows goods to move more freely in the global market, increasing the gains from trade and thereby enhancing overall national economic welfare. While the overall effect of trade liberalisation is an improvement in economic welfare, this change in trade policy benefits majority interests at the expense of others. Withdrawal of protection for agricultural commodities concentrates economic and social costs in rural and regional communities. This localised hardship is intensified when liberalisation is unreciprocated. For these reasons the issues of compensation and/or adjustment packages warrant serious attention in the debate over international agreement obligations.[137]

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134 Multilateral trade negotiations and agreements occur when three or more nations are involved in the process. The intention is the simultaneous reduction of trade barriers and the increase of market access to maximise long term benefits to all parties involved. Bilateral agreements take place between two nations. They usually have the objectives of normalising trade, developing markets and retaining markets for farm products by specifying minimum quantities to be purchased and maximum quantities to be supplied between the nations. Unilateral reforms occur when a country reforms its trade-related policies in a manner that is not reliant on reciprocal action by its trading partners.

135 The Closer Economic Relations agreement is not discussed in this paper as it primarily concerned with manufactures trade and investment. See Bureau of Industry Economics, 1995, *Impact of the CER Trade Agreement*, AGPS, Canberra.

136 Australian Bureau of Agricultural and Resource Economics, 1997, *Australia and the Next Multilateral Trade Negotiations for Agriculture*, Research Report 97.6, ABARE, Canberra. This report discusses the limited achievements of the GATT Uruguay Round negotiations, describing the Round as successful only to a relatively minor degree in reducing actual barriers to trade.

137 Robertson, D., 1997, 'Reciprocity and Protectionism in Australia's Trade Policy', *Agenda*, vol.4 no.2.

8.1 Trade Barriers

8.1.1 Tariff Barriers

There are a number of tariff measures that have been historically favoured, including import tariffs and countervailing duties. Import tariffs are a tax on commodities entering a country. Countervailing duties are tariffs which offset export subsidies in other countries. A tariff may either be a fixed charge per unit of import (specific) or a percentage of the value of the imported product (*ad valorem*).

GATT negotiations have reduced tariff levels in many countries. Australia's agricultural sector has particularly low levels of tariff protection. In keeping with the WTO recommendation, agricultural tariffs are to be reduced by 20 per cent. Australia has the potential to move beyond this recommendation toward zero tariffs.

Whether removal of tariff protection will produce a level playing field for agricultural trade is yet to be determined. While tariff barriers are particularly visible, they can be less effective in reducing imports than other trade barriers as they do not impose an absolute limit on the quantity of a product able to imported. Many economists regard tariffs as less distorting to markets than non-tariff barriers because access to markets is still possible for efficient producers.

8.1.2 Non-Tariff Barriers

The decline in tariff levels has seen a real increase in the application of non-tariff barriers to trade, including import quotas, variable levies, minimum access volumes, anti-dumping provisions and a wide range of devices such as health/quarantine restrictions, packaging and labelling regulations. These barriers can be an effective block to foreign competition.

Import quotas limit the quantity of a specific commodity that can be imported. The general aim is to protect domestic producers from foreign competition. The United States still make use of import quotas on some agricultural products such as beef, cheese, sugar and related products. The European Union uses levies to reduce imports of cereal and beef, while import quotas are used for beef and sheepmeat. These quotas have been the subject of negotiation and agreement under GATT.

Internationally, health and quarantine restrictions are increasingly popular, sometimes with genuine justification, but sometimes as protectionist measures. Australia is currently revising several of its quarantine standards with the aim of increasing international access to domestic markets and improving the competitiveness of domestic producers. For example, the federal government has recently sought to reduce its quarantine barriers to allow the import of cooked chicken and pork products from Thailand and Denmark.

With regard to the use of anti-dumping provisions, many nations use the unfair trade provisions of the GATT to restrict competition. While the United States, Canada, the European Union and Australia have traditionally used anti-dumping in this way, other middle-income countries are now increasing their use in order to compensate for reduced tariff protection. Contrary to this move, the Australian Anti-Dumping Authority is currently

under review and the effects of reduced reliance on anti-dumping is already being experienced by some producers, particularly citrus growers.

Non-tariff trade barriers are generally more restrictive than tariffs because they can constitute absolute barriers to trade. Taken in combination with the domestic support/protection policies of our trading partners, the proliferation of non-tariff barriers have limited access to international markets. Following the Uruguay Round it was agreed that information on all non-tariff measures are to be expressed as their tariff equivalents with a view to reduction of total protection levels. Calculation of these equivalents and their reduction targets tend to suffer from the same methodological problems as tariff targets.

The new agenda of the WTO has the potential to negotiate reduction of such impediments by extending trade agreements into domestic policy areas. Domestic support systems for Australian agriculture are covered earlier in this discussion paper.

8.1.3 General Levels of Assistance to Australian Agriculture

As outlined above government support for agriculture incorporates a variety of trade and domestic policies. The effective rate of assistance for Australian commodities outlined in the table below takes into account government support for all inputs as well as outputs. The Organisation for Economic Cooperation and Development publishes only the net producer subsidy equivalents in which the support for agricultural inputs has been deducted. Even without inclusion of the input subsidies, the net producer subsidy figures for most trading partners still exceed the effective rate of assistance for Australian farmers.

Table 8.1 Effective rates of assistance to Australian agricultural industries, 1995

AGRICULTURAL INDUSTRY	RATE OF ASSISTANCE (%)
Wheat	5
Sugar	14
Wool	6
Beef	4
Manufacturing milk	21
Fresh milk	>200
Dried vine fruit	11
Winegrapes	20
Average for agricultural industries	**11**

Source: Industry Commission, *Annual Report 1995/96*, AGPS, Canberra

8.2 Multilateral Trade Agreements

The two key interrelated agreement mechanisms affecting the competitiveness of Australian agriculture are the GATT Uruguay Round and, more importantly, the subsequent WTO Agreement on Agriculture. APEC could also provide future opportunities for agricultural trade liberalisation but obstacles exist, as outlined in section 8.3.2 below. The proposed Multilateral Agreement on Investment also has the potential to impact on agricultural competitiveness if negotiations are conclusive.

8.2.1 General Agreement on Tariffs and Trade

The General Agreement on Tariffs and Trade is a multilateral United Nations treaty among 102 governments. GATT contains a code of principles and provides a forum for consultation and dispute settlement regarding trade. The basic aim is to increase international trade among nations through negotiated reductions in tariffs and other trade barriers. Progress toward this objective is accomplished in rounds of negotiations. The most recent round was the Uruguay Round which ran from 1986 to 1994 and focussed on multilateral reduction of trade-distorting agricultural policies. To this end a series of reduction targets were set for each country to achieve over a six year period (10 years for developing countries) commencing in 1995. These commitments on tariffs are contained in schedules of the Marrakesh Protocol to the General Agreement on Tariffs and Trade 1994.

The results of the Uruguay Round were not as far reaching as originally hoped. According to ABARE, the actual reductions in barriers to market access and in domestic and export subsidies were far less than appeared to be the case.[138] This is largely due to several exemptions and the methodology used to set individual country targets for protection reduction. The base period adopted for many countries was a period of abnormally high protection, as a result of the methodology some countries were even allowed to increase support for certain commodities.[139] As a country with relatively low protection, Australia was placed at a significant disadvantage.

Even if the Uruguay Round of the GATT is fully implemented Australian production would increase by only $1.1 billion (or 4 per cent of production) and Australian exports would increase by only $950 million (or 4 per cent).[140]

The next round of negotiations for agriculture are scheduled for 1999 and will be under the WTO which subsumes the GATT.

138 Australian Bureau of Agricultural and Resource Economics, 1997, *Australia and the Next Multilateral Trade Negotiations for Agriculture*, Research Report 97.6, ABARE, Canberra.

139 Felton-Taylor, L., Podbury, T. and Roberts, I., 1996, 'EU Agriculture - Changing Policy in the European Union', in *Australian Commodities Forecasts and Issues*, ABARE, Canberra, vol.3 no.2, June, ABARE, Canberra.

140 Andrews, N., Roberts, I. and Hester, S., 1994, 'The Uruguay Round outcome: Implications for agricultural and resource commodities', *Outlook 94*,.vol.1, ABARE, Canberra.

8.2.2 World Trade Organisation

The World Trade Organisation was established to replace the GATT in 1995. The Uruguay Round gave rise to an overhaul of the GATT and resulted in the creation of the WTO. The WTO extends the power and reach of the original GATT. The GATT agreement has been amended and incorporated into the new WTO Agreements. The GATT Uruguay Round culminated in the Agriculture Agreement which is now referred to as the 1994 WTO Agreement on Agriculture.

The main advances from the WTO Agreement on Agriculture are: setting minimum levels of access to previously restricted/closed markets; expanding access through tariff quotas; and reducing export subsidies. It aims to close the loopholes in the GATT which had allowed some countries to use non-tariff measures, particularly import quotas and export subsidies. The Agriculture Agreement will also seek to reduce domestic price support and subsidy policies which have a direct effect on production and trade.

In all sectors, the next round of the WTO will see a further expansion of the scope of trade policy and the inclusion of new disciplines. The new agenda will affect investment, industrial subsidies and standards, trade in services, quarantine standards, intellectual property, and will try to restrict governments freedom to assist their national industries. Thus, international agreements will limit a broad range of interventionist policies in a way that expands the traditional reach of trade policy.

8.2.3 Asia Pacific Economic Cooperation

The Asia Pacific Economic Cooperation provides opportunities for reducing protection and expanding markets by pursuing a policy of open regionalism. The APEC Bogor Declaration of 1994 contains an undertaking by industrialised members to remove all trade barriers by 2010. Developing members have a similar commitment to be achieved by 2020. The undertakings are on a 'best endeavour' basis.

The reductions of tariff and non-tariff barriers in APEC economies to imports of primary commodities such as beef, dairy, wheat and sugar could significantly benefit Australian producers given their comparative advantage in these areas. However, it is currently unlikely that the Declaration will comprehensively cover agricultural markets. Many APEC nations have self-sufficiency objectives for agriculture and provide high levels of assistance in order to pursue these objectives. As a result, a significant number of APEC members are seeking exemptions of food and agriculture from the agreement. This matter has been referred to an APEC task force.

8.2.4 Multilateral Agreement on Investment

Another key agreement with the potential to impact on agricultural industries is the Multilateral Agreement on Investment (MAI) currently being negotiated at the OECD. The intention of the MAI is to make it easier for individual investors and corporations to move their assets across international borders. This may have negative implications for the production and processing of agricultural commodities in Australia.

The MAI is designed to achieve the following aims:

- open up all economic sectors, including real estate, natural resources and broadcasting to foreign ownership;
- treat foreign investors no less favourably than domestic firms;
- remove performance requirements, which are laws that require investors to behave in a certain way in exchange for market access;
- remove restrictions on the movement of capital;
- compensate investors in full when their assets are expropriated, either through seizure or unreasonable regulation;
- accept a dispute resolution process allowing investors to sue governments for damages before international panels when they believe a country's laws are in violation of MAI rules; and
- ensure that states and localities comply with the MAI.[141]

Despite signs of early commitment, the federal government has not yet signed the treaty and negotiations are expected to last a further ten months.

8.3 Australia and its Trading Partners

8.3.1 Reciprocity

While unilateral removal of protection usually increases incomes in competitively structured economies, protection elsewhere can limit gains from trade and harm the Australian economy. However, if other countries reduce protection simultaneously, additional benefits arise for all. Given the current international inequities in agricultural protection, this issue of reciprocity is both economically and politically controversial.

The principle of reciprocity requires that one country's tariff liberalisation should be balanced by equivalent reductions by other countries, with the aim of eventually providing a level playing field of free trade. Reciprocity is embodied in the GATT and subsequent WTO processes and it is generally accepted that the gains of liberalisation are greater if all countries liberalise at the same time.

8.3.2 Asia

Australia's largest regional export market has long been Northeast Asia, now closely followed by Southeast Asia. While Asia has become important for Australia, Australia remains relatively unimportant to Asia as a source of imports.

141 Multilateral Agreement on Investment Information Centre, internet site at www.islandnet.com/~ncfs/maisite/ , site hosted by the National Centre for Sustainability, Victoria BC, Canada.

For ASEAN countries in particular, one of the most common objectives of government agricultural policies is the achievement of self-sufficiency for food and agricultural products. For example, low interest loans in Thailand, subsidised credit in Indonesia, public expenditure on irrigation infrastructure, import surcharges, import quotas and special duties. These combine with low overheads and labour costs and very high bound (around 40 per cent) and actual (15-60 per cent) tariff rates to give developing producers an advantage.

As previously discussed, many APEC members want food and agriculture be exempted from APEC liberalisation agreements. Given that 60 per cent of Australia's potential gains from APEC liberalisation would stem only from agricultural liberalisation, this issue may be particularly important to the future of Australian agriculture.[142]

8.3.3 European Union

One of the central pillars of the European Union is market unity and is manifested in agricultural industries through the Common Agricultural Policy. The policies developed under the Common Agricultural Policy have sheltered European Union producers from world market prices, variations in international demand and internal market fluctuations. Support for most commodities has involved a combination of non-tariff border measures, price support and export subsidies. As a result, European Union farmers receive prices substantially higher than those of the world market.

As previously noted, the European Union base period for the Uruguay Round was a period of abnormally high protection (around 40 per cent in some markets). This increases the ease with which the European Union can meet its GATT commitments. In addition, European Union commitment to the central tenets of the Common Agricultural Policy - market unity within the European Union, community preference and financial solidarity - create resistance to external pressure for liberalisation.

8.3.4 United States

North American farmers traditionally received significant levels of government support in the form of direct payments to producers, import restrictions, input subsidies and export subsidies. In particular, the United States use of import quotas has substantially contributed to the breakdown of the effectiveness of the GATT with respect to agricultural trade.[143]

In 1996 the United States government passed the *Federal Agricultural Improvement and Reform Act*. This Act represents a change in the nature of farm support and has the potential to slightly reduce the level of assistance in some commodities. The measures contained in the Act will be phased in over a seven year adjustment period.

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142 Roberts, I., 1997, *Advantages of Trade Reform for Australia*, Australian Bureau of Agricultural and Resource Economics, Current Issues Series, no.5, July ABARE, Canberra

143 Australian Bureau of Agricultural and Resource Economics, 1993, *International Commodity Markets*, ABARE, Canberra, p 280.

While there will be a big change in the form of support, key interventions will be retained, including loan rates, marketing loans, cotton competitiveness subsidies and export subsidies.[144]

8.4 Issues for consideration

While international trade barriers fall under the jurisdiction of the federal government, they obviously have a significant impact on the competitiveness of New South Wales' agriculture. The Committee is not in a position to make recommendations directly to the federal government but may be in a position to make a recommendation to the state government that these matters be raised in inter-government forums.

144 Roberts, I. and Doyle, S., 1996, 'US Farm Legislation' in *Australian Commodities Forecasts and Issues*, vol.3, no.2. June 1996, ABARE, Canberra, pp. 210-224.

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