wheat INVEST

A compelling business case for investment in the Western Australian wheat industry.

Department of **Agriculture** and **Food**

www.agric.wa.gov.au
www.spatial.agric.wa.gov.au/investor

Why invest in wheat production in Western Australia?

Western Australia (WA) is an ideal location for wheat production. It has competitive advantages including:

- A proven track record in wheat production accounting for approximately 50 per cent of Australia's production. Based on a five year average from 2003/04 to 2007/08*, WA produces around 7.7 million tonnes of wheat per year.
- Over the past five years, the top 25 per cent of farmers averaged 10 per cent return on capital excluding changes in land value.
- Export focussed due to WA's small population. 90 per cent of WA's wheat is exported.
- Abundant land at competitive prices and a reliable climate that is not marked by the extreme variability that is characteristic of other grain producing areas in Australia.
- Freedom from serious grain pests and diseases.
- Grain is chemical residue free.
- All the necessary infrastructure to service wheat exports, including modern shipping ports, an international airport, excellent accreditation systems, excellent road and rail transport and storage and handling facilities.
- A stable and safe business environment characterised by political stability, judicial independence and a macro economic setting that targets low inflation and budget surpluses.
- Proximity to the large markets of Asia and the Middle East resulting in rapid delivery times and reduced transport costs.

**2007/08 - Financial year in Australia 1 July - 30 June.*

Agriculture in Western Australia

The Gross Value of Agricultural Production in WA was A$6.6 billion or 15 per cent of the Total Gross Value of Australian Agricultural Production in 2007/08. Some 50 per cent of the value of WA's agricultural output was grain or crop production; 35 per cent was meat and animal products including live animals, meat, wool and dairy products. Food processing, agriculture and fisheries production make up about 9 per cent of WA's Gross State Product.

WA exports 80 per cent of its agricultural production and has an international reputation for meeting the specific food safety and quality requirements of overseas customers. Comprehensive biosecurity measures are in place to protect WA's reputation for 'clean and green' products. Major market regions are the Middle East and other Asian regions.

The Western Australian wheat industry

Wheat Production

Australian wheat production has grown steadily over the past 50 years from around 3.5 million tonnes in the 1950's to around 20 million tonnes in the 2000's. WA's production has grown from around 1 million tonnes to around 7.7 million tonnes over the same period. WA represents approximately 50 per cent of total Australian wheat production. WA has become the dominant Australian wheat producer over the past five years because of its stable climate. This has resulted in consistently better growing conditions compared to other Australian wheat producing regions.

Wheat is the most widely grown crop in WA and represents about 70 per cent of its grain production. Wheat is a profitable crop in combination with other cereal and broadleaf crops. The rotation sequence usually includes wheat or another cereal crop grown in rotation with a broadleaf (non-cereal) phase. Pastures, grain legumes and canola are common broadleaf crops used in the rotation.

Wheat is grown in winter (May to November) between the 29° - 35°S parallels. Wheat is grown on many different soil types due to its relative tolerance of a range of conditions. It grows within a rainfall ranging from 750mm to less than 325mm, incorporating all low, medium and high agro-climatic zones (Figure 1). In a higher rainfall area, such as the Great Southern region (Agzone 3) wheat yields are typically around 2.6 tonnes/ha. In the western central agricultural region (Agzone 2) they are typically around 2.3 tonnes/ ha and 1.7 tonnes/ha in the drier eastern central agricultural region. Wheat is predominantly grown in areas with less than 500mm annual rainfall (Agzone 1, 2, 4 and 5).

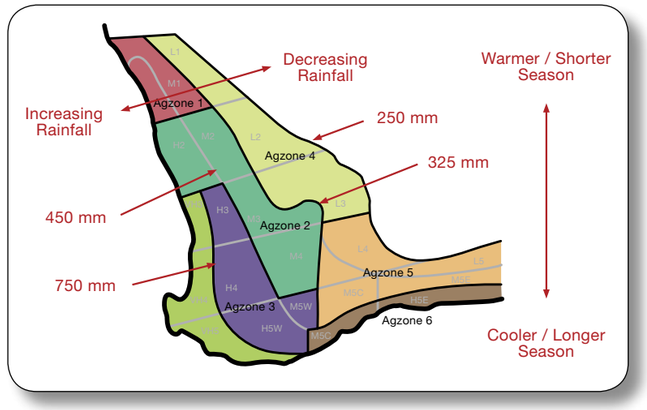


Figure 1.
Agzone map for Western Australia showing differences in annual rainfall and growing season across the 6 defined Agzones.

Source: DAFWA, 2008

WA wheat production is focused on many food types including loaf bread, cakes, sweet biscuits, pastries Asian style noodles and Italian style pasta. The different food markets are segregated according to wheat grade. There are five grades of wheat grown in WA. Each grade of wheat has different characteristics that are designed and suited to differing end uses (Table 1).

Table 1:
WA wheat grade classification, characteristics, markets and end uses

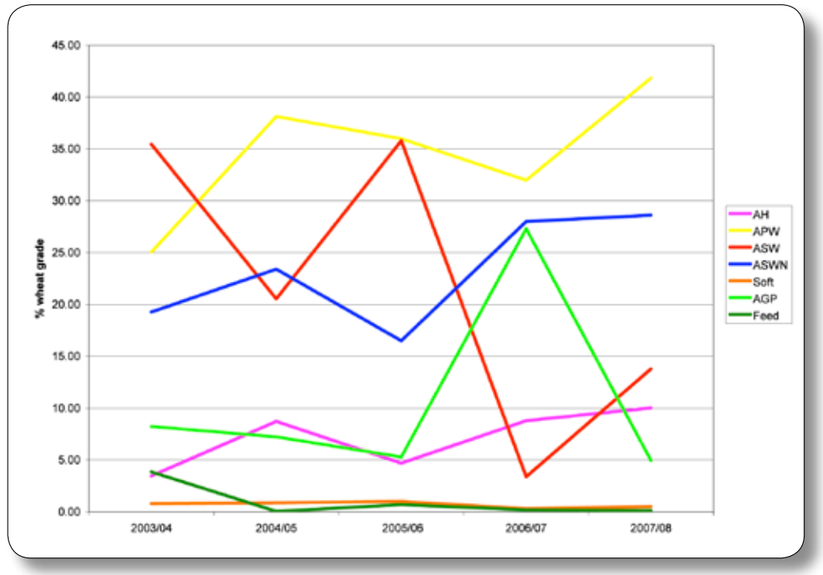
Wheat grade	Protein content	Other quality characterisitcs	Main end-uses
Australian Hard (AH)	Min. 11.5%	Hard grain, good milling quality, dough strength and extensibility	Loaf bread, flat bread, alkaline noodles, instant noodles
Australian Premium White (APW)	Min. 10.5%	Hard grain, good milling quality; medium to strong and extensible dough properties	Loaf bread, flat bread, alkaline noodles, instant noodles, steamed bread
Australian Standard White Noodle (ASWN)	9.5% – 11.5%	Soft grain, good milling quality capable of yielding low ash flour; moderate strength and good extensibility; medium yellow pigment levels; high-swelling starch.	Flat bread. White salted noodles (Japan, South Korea)
Australian Standard White (ASW)	Max. protein ASWL 10.5%. Min. protein ASWH 10.6%	Mainly hard but some soft grain. Sound, good milling, medium strength and extensibility	Steamed bread, white salted noodles (China), some alkaline noodles
Australian Soft (ASF1)	9.5% max. (base rate 8.5%)	Soft grain, good milling quality; low strength but adequate extensibility; low flour water absorption	Sweet biscuits, cakes, steamed buns

Source: DAFWA, 2008

The varying end uses for each wheat grade result in a preference by some markets to purchase specific grades of WA wheat. For example, Australian Premium White (APW) and Australian Standard White (ASW) are in demand in the Middle East due to their suitability to make flat breads.

The relative proportions of wheat grades produced in WA are variable depending upon the season (Figure 2). The most common grades of wheat in WA are APW and noodle wheat (ASWN).

Figure 2:
WA wheat receivals, 2003/04 – 2007/08 (%)



Source: AWB, 2008

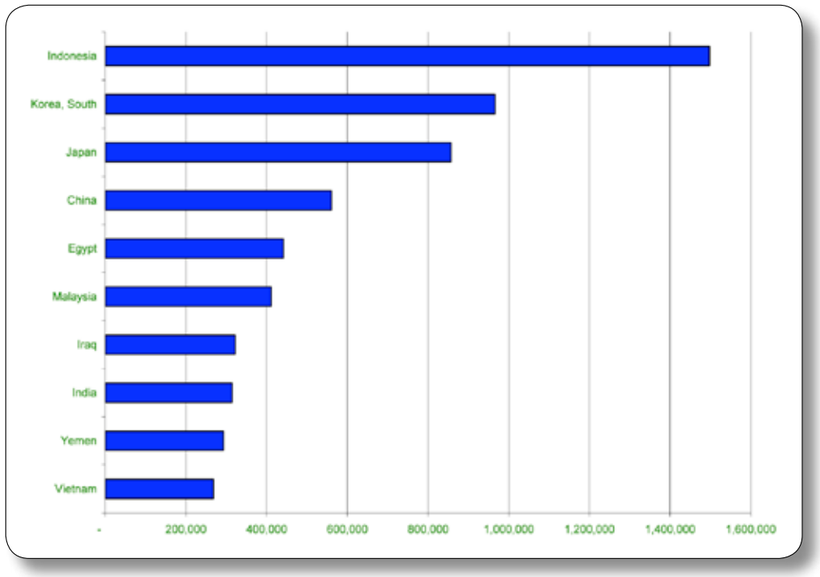
Growers' planting choice of wheat grades is strongly influenced by the price and yield differential between them. The differential of net returns to growers for wheat for the different grades has steadily increased over the past 30 years, particularly as Asia's and Middle East demand for wheat increases.

There are two major flour mills in WA. The majority of their flour is used to locally manufacture bread and baking products and flour exports are opportunistic. Lower grade wheat is used by the livestock industry in compound feed. Total domestic wheat consumption in Western Australia averages 500,000 tonnes per annum.

Wheat Exports

Around 90 per cent of wheat produced in WA is exported. The State's main markets for wheat are Indonesia, South Korea, Japan, China and Egypt (Figure 3).

Figure 3:
Five year average of top ten WA wheat export markets, 2003/04 – 2007/08 (tonnes)



Source: ABS, 2008

All exported grains from WA are serviced by Co-operative Bulk Handling Ltd (CBH). CBH has an extensive bulk handling system and is one of the world's most efficient grain storage and handling operations. It currently maintains an effective monopoly on storage and handling facilities in WA. It centrally manages 197 delivery sites across the wheatbelt and this maintains high standards and tight quality control.

CBH's grain storage and handling infrastructure is centred around major rail and road infrastructure and links to port facilities in Kwinana (Perth), Geraldton, Albany and Esperance. The State's major port of Fremantle is 20 km from Perth and is well serviced by both road and rail. All major Asian and Middle East seaports, including Jeddah, can be reached within 18 days from Fremantle.

Wheat Marketing

Recent changes to the Wheat Export Marketing Act 2008 have dramatically liberalised the exports of Australian wheat. The Australian Wheat Board (AWB) Ltd's previous export monopoly (the 'single desk') on all Australian wheat was removed on July 1, 2008 and a new accreditation system was introduced to regulate bulk wheat exports.

Bulk exporters wishing to ship from Australia now need to apply for accreditation from Wheat Export Australia (WEA), which has the power to grant, vary, suspend or cancel that accreditation. As of late September, 2008, 13 exporters had been accredited to export for the 2008 harvest. WEA can accredit applicants for a period of up to three years. For the first 18 months of operation of the Bulk Scheme, WEA will grant accreditations for varying periods between 12 and 24 months.

The accreditation system for bulk wheat exporters, will attest that an exporter is a fit and proper company to export bulk wheat from Australia. This accreditation does not indemnify accredited exporters and provides no guarantee that an exporter will remain financially viable throughout its accreditation period.

The Bulk Scheme Accreditation application fee is $13,299 (incl. GST). There are also fees for renewal of accreditation, variation of accreditation and reconsideration of an accreditation decision.

The WEA will maintain a list of accredited exporters on its website. www.wea.gov.au and further information on the accreditation system and criteria to become accredited can be found on this website.

Individual growers can export their own wheat in containers or bags. As of 1 July 2008 with the commencement of the Wheat Export Marketing Act 2008, exporters are able to export non-bulk wheat from Australia without any restrictions other than meeting existing Customs and AQIS phytosanitary requirements.

All exports are subject to a wheat export charge of 22 cents per tonne which provides funding for the control and monitoring of wheat exports from Australia performed by WEA.

Financial analysis

The following analysis shows wheat production with lupins and/or field peas included as a legume crop to provide nitrogen, and /or canola to reduce disease issues.

- **Farm land prices**

Indicative 'average' farm land prices as at June 2007 in some selected high and medium rainfall agricultural districts of WA are shown in Table 2. The scale of enterprise varies widely and land prices are related to land quality and current economic and climatic conditions. Potential investors should obtain updated appraisals at the time of making an investment decision.

For further information on land prices and other spatial information relating to the grains industry, go to http://spatial.agric.wa.gov.au/findyourfarm

Table 2:
Average farm values in wheat, canola barley and lupin growing districts

Location	Distance from port	Rainfall zone Low < 325 mm Med. 325-450 mm High > 450 mm	Av. land value 2007 ($/ha)
Narrogin	250 km	Medium-High central	$2,200
Wickepin	250 km	Medium central	$2,000
Quairading	160 km	Medium central	$2,600
Williams	220 km	High – south	$2,300
Katanning	180 km	Medium-High south	$1,800
Kojonup	150 km	High – south	$2,350

Indicative wheat, canola and lupin prices are shown in Table 3.

Table 3:
Wheat, canola and lupin prices, 2008
(Delivered Kwinana port)

Grain type	Indicative Prices (A$/tonne)
Wheat (APW)	$360
Canola	$600
Lupins	$300
Field Peas	$400

Source: DAFWA, 2008

Farm whole enterprise budgets

The following development budgets have been prepared based on purchasing and operating two farms of 4,000 ha each to provide scale economies and manage climate variability. The two farms are spread between medium rainfall and high rainfall areas. Combined, the farms produce a total of around 17,000 tonnes of grain. It is assumed that between three and four per cent of the crop is retained as grain for next year's seed.

The budgets are presented as a general guide. The analysis for each farm includes a development budget, year in-year out-budget, a sensitivity analysis and a Rate of Return on Investment. Crop choices are influenced by soil types as well as weather influenced yield risk and input prices. Potential investors should prepare their own budgets using up-to-date information for the particular circumstances under consideration. Note, it may be possible to lower machinery expenditure if harvesting programs can be staggered as a consequence of farm location and by varying proportions of early and later ripening crops.

Farm 1 - Medium Rainfall Zone

Table 4:
Development budget – medium rainfall zone (A$)

Item	A$
Farm Purchase (4000 ha @2,500/ha)	10,000,000
Plant and equipment	2,000,000
TOTAL	**12,000,000**

An indicative year-in year-out budget for the farm is presented below.

Table 5:
Year-in year-out budget for a medium rainfall zone

Item	A$
Total income (6,500 tonnes of wheat, 600 tonnes of lupins and 600 tonnes of field peas)	2,500,000
Total operating costs	2,000,000
Margin (before interest and tax)	500,000 approx.
Breakeven price per tonne: Wheat (2.23 tonne/ha) Lupins (1.4 tonne /ha) Field Peas (1.4 tonne/ha)	 **253** **322** **308**

Sensitivity analysis of margin for a farm in the medium rainfall zone producing wheat, lupins and field peas

Table 6:
Wheat

		Wheat Yield (tonnes /ha)		
		1.93	**2.23**	2.53
	240	-460,595	-238,580	-16,566
	300	-139,932	141,159	422,251
Price/tonne	**360**	180,730	**520,899**	861,068
	420	501,392	900,638	1,299,884

The rate of return on capital invested (excluding land appreciation) at the assumed prices and yields (in bold in Table 6) was 4.65 per cent. If a wheat price of $420 per tonne, lupins at $360 per tonne and field peas at $460 per tonne were secured at these yields, then the Rate of Return rises to 8.13 per cent. Wheat prices fluctuated substantially over 2008 implying that attention to grain marketing could provide opportunities to secure greater returns. The liberalisation of Australia's grain marketing framework from July 2008 affords growers the opportunity to utilise a greater range of marketing tools to do so.

Farm 2 - High Rainfall Zone

Table 7:
Development budget – high rainfall zone (A$)

Item	A$
Farm Purchase (4000 ha @ $3500/ha)	14,000,000
Plant and equipment	2,000,000
TOTAL	**16,000,000**

An indicative year-in year-out budget for the farm is presented opposite.

Table 8:
Year-in year-out budget for a high rainfall zone

Item	A$
Total income (8,500 tonnes of wheat, 850 tonnes of field peas and 775 tonnes of canola)	3,550,000
Total operating costs	2,700,000
Margin (before interest and tax)	850,000 approx.
Breakeven price per tonne: Wheat (2.9 tonne/ha) Field Peas (1.8 tonne /ha) Canola (1.5 tonne/ha)	**A$/tonne** **244** **255** **432**

Sensitivity analysis of margin for a high rainfall farm producing wheat, canola and field peas

Table 9:
Wheat

		Wheat Yield (tonnes /ha)		
		2.6	**2.9**	3.2
	200	-366,079	-140,021	86,037
	300	72,738	357,873	643,008
Price/tonne	**360**	511,554	**855,767**	1,199,979
	420	950,371	1,353,660	1,756,950

The rate of return on capital invested (excluding land appreciation) at the assumed prices (in bold in the tables opposite) was 5.35 per cent. If a wheat price of $420 per tonne, a canola price of $660 per tonne and a field pea price of $460 per tonne were secured at these yields, then the Rate of Return rises to 9.06 per cent. Wheat and canola prices fluctuated substantially over 2008 implying that attention to grain marketing could provide opportunities to secure greater returns. The liberalisation of Australia's grain marketing framework from July 2008 affords growers the opportunity to utilise a greater range of marketing tools.

In these examples in the high rainfall zone, the **rate of return is 5.35** per cent compared to **4.65** per cent for the medium rainfall zone. The difference is partly due to the inclusion of canola in the rotation in the high rainfall zone which tends to be more profitable, however it has higher input costs and hence, increase risks.

Potential investors should note the high rates of land appreciation which are not part of this calculation (for further detail, see http://spatial.agric.wa.gov.au/findyourfarm).

According to a WA farm management consulting business 'PlanFarm' and BankWest's annual financial report, 2007/08 was a very good year for Western Australian grain farming. The top 25 per cent of farmers across the State averaged 16 per cent return on capital and the average farmer received 6 per cent. Over the past five years, the top 25 per cent of farmers averaged 10 per cent return on capital.

Table 10:
Return on Captial – Top 25 per cent, 2003 – 2007

	2003	2004	2005	2006	2007
Top 25%	14.90	10.70	10.40	7.10	16.05

Source: PlanFarm and BankWest's annual financial report, 2007/08

According to the 'PlanFarm' and BankWest Benchmarks 2007/08, farm operating surplus for the top 25 per cent was A$397 per ha, more than double the average of A$180 per ha. This is a record result. The average operating costs across WA increased to A$203 per ha, reflecting some increase in the fertiliser costs, as well as increasing fuel and herbicide costs. These rises in input costs are reflected in the budgets presented above. Tight stocks to use ratios for all grains and heavy investment into fertiliser capacity world wide suggest that future returns may increase for grain farming.

Landed price in the Middle East

The cost of grain through the bulk handling system to port, Free on Board (FOB) is approximately $43 per tonne for wheat, field peas and lupins, and $47 per tonne for canola. The estimated cost of shipping to Jeddah is around A$65 per tonne.

About WA

The largest State in Australia, WA is only 11 hours by air from Dubai. It is 18 days by ship from the Port of Fremantle to the Port of Jeddah.

Farms that produce wheat are typically located within a 4 hour drive of the capital city, Perth. Perth is a vibrant, cosmopolitan city with a population of just under 2 million with many migrants attracted from overseas. In recent years the resources boom has augmented this influx. WA hosts a population with diversity in religious beliefs, which are comfortably accepted as a part of the State's culture.

Lifestyle

WA has a relaxed lifestyle with a pollution free environment. The south west of the State experiences a Mediterranean climate with mild winters and warm summers.

Recreation forms an important part of the social network in most rural communities with sport and the arts a central focus.

Education

The State is serviced by a primary and secondary public school system and there is public transport in most regions. Private primary and secondary schools are also available in the city and larger rural centres, some of which provide boarding if required. Higher qualifications are available via a network of TAFE colleges in the main population centres and universities based in Perth.

Transport Infrastructure

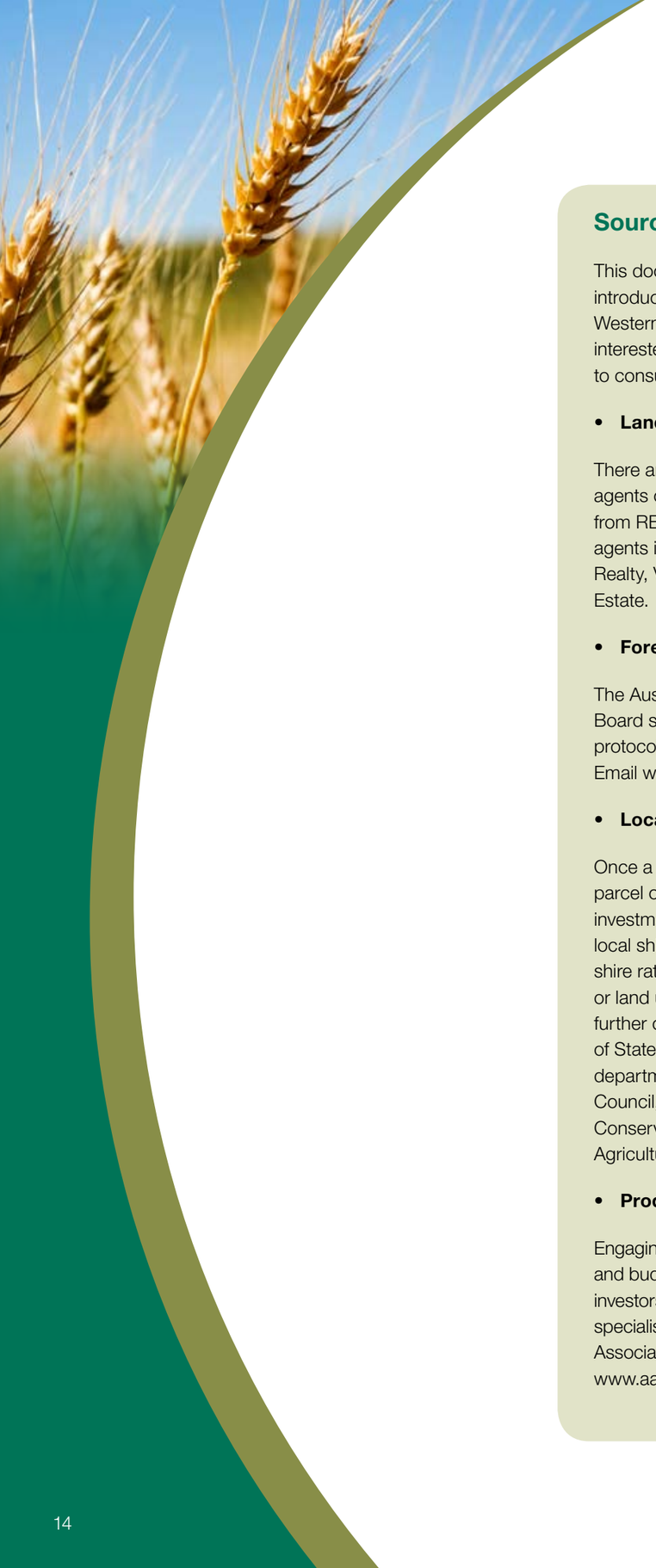
The State is well serviced by road with all large country centres serviced by air. Some regions are also by serviced by rail. The State's major port of Fremantle is 20 km from Perth and is well serviced by both road and rail. Major seaports in the Middle East can be reached within 18 days from Fremantle.

A safe, stable business environment

Economic, social and political security is essential for investment. Australia is one of the safest and most stable countries in the world. Furthermore, Australian business operates within a secure legal framework that offers protection for foreign investors.

WA's economy is consistently stronger than the national average and the annual rate of economic growth is an expected 7 per cent in 2007/08. WA is responsible for around 30 per cent of total Australian exports.

In Australia, foreign investment is regulated by the Foreign Investment Review Board (www.firb.gov.au). The foreign investment policy is framed and administered with a view to encouraging foreign investment and ensuring that such investment is consistent with the needs of Australia.



Sources of Information

This document provides only a brief introduction for potential new investors into the Western Australian wheat industry. If you are interested in investigating further, you might like to consult the following sources of information:

- **Land sales, availability, and prices**

There are a large number of rural real estate agents operating in WA. A full list is available from REIWA at (www.reiwa.com). Major rural agents include Elders Real Estate, Landmark Realty, VNW Independent, and Primaries Real Estate.

- **Foreign investment**

The Australian Foreign Investment Review Board should be consulted for the latest protocols for overseas investors.
Email www.firb.gov.au

- **Local planning**

Once a particular location and/or specific parcel of land is targeted for possible investment, it would be wise to consult with the local shire authority for the following issues – shire rates, district land planning arrangements, or land use conditions. You may need to further consult with Water Corporation, Office of State Revenue, State Government planning departments, Western Power, Heritage Council, and Department of Environment and Conservation. Officers from the Department of Agriculture and Food can assist in this regard.

- **Production**

Engaging a local private consultant to investigate and budget options is recommended if potential investors do not have access to their own specialist expertise. Contact the Australian Association of Agricultural Consultants at www.aaacwa.com.au

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