

Food Production Expansion – Investment Opportunities

At present, the majority of produce from Carnarvon is grown for the domestic market, however, there is potential to develop existing and emerging export markets. Western Australia's geographic position makes it well placed to export into populous neighbouring Asian countries. DAFWA has reported that it expects the volume of high value summer fruit and table grapes being exported to increase. The developing market for fresh and juicing fruit provides an opportunity to increase citrus production, including red grapefruit, table grapes and mangoes.

Opportunities for investment linked to the pastoral industry's expansion include:

- Multipurpose Food Processing Plant
- Agri-Tourism – Cattle Ranch Stays; Farm Stays; Farm gate produce; Farmers Markets and Food Festivals and Events
- Carnarvon Horticulture Expansion – availability of new land and water to develop for horticulture
- Increased aquaculture opportunities in fish, crustaceans, prawns and other seafood including offshore fish farms
- Use of Artesian Basin water on pastoral lands to support feed lots, onshore aquaculture and/or horticultural activities
- Development of Asian horticulture and niche value added exports; and
- Integrated food processing precinct.

Gascoyne Horticulture Investment Profile



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Supporting documents and resources

Department of Foreign Affairs and Trade www.dfat.gov.au
 Gascoyne Development Commission www.gdc.wa.gov.au
 Australian Bureau of Statistics www.abs.gov.au
 Gascoyne Water Cooperative gascoynewater.com.au

Western Australia's Agri-Food, Fibre and Fisheries Industries 2008. (WAAFFI) Department of Agriculture and Food www.agric.wa.gov

Carnarvon Plantation Industry Production Statistics 2009 Information Sheet No. 15/09. Compiled April 2010 Department of Agriculture and Food www.gdc.wa.gov.au



Gascoyne Development Commission Offices

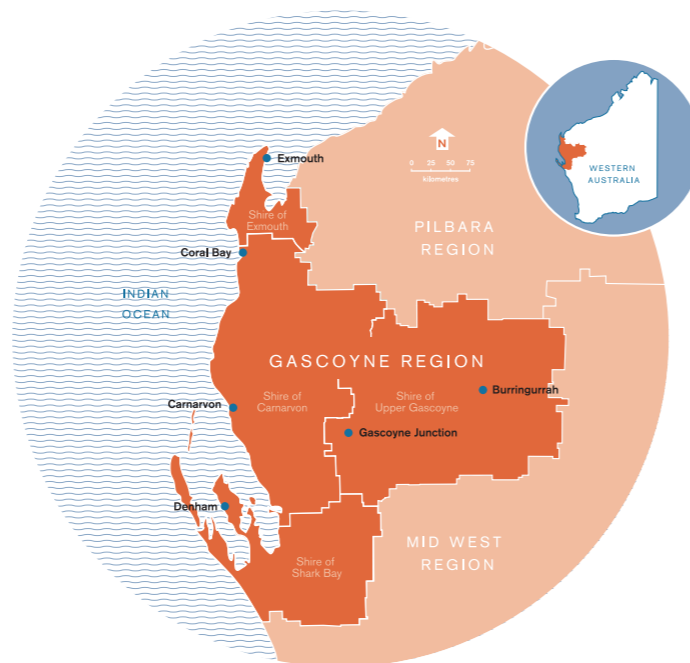
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Overview

The Gascoyne region has a well established and diverse horticulture industry. The industry benefits from good soil types, sub tropical climate, seasonal advantage, minimal pests and diseases, the use of micro-irrigation technology and industry driven development. Produce is predominantly grown in the Carnarvon Horticulture District located on the fertile soils of the Gascoyne River delta. Around 1,200 hectares of land is currently under cultivation producing a wide variety of fruit and vegetables. Major crops include bananas, table grapes, tomatoes, capsicums, cucurbits, avocados and mangoes.

Innovations such as shade cropping, fertigation techniques and open hydroponics, along with National water market reform and State Government investment in research and development have increased the volume and value of product in the Carnarvon Horticulture District. The total volume of horticultural produce in 1999 was 36,255 tonnes worth \$39.95 million and by 2012 had increased substantially to 42,507 tonnes worth \$104 million.

In 2013, \$60 million was invested in the construction of levy walls to protect the Carnarvon Horticulture District from flooding by the Gascoyne River. Additionally, work has been undertaken to better access and manage the Region's water resources. This includes investments in additional bores to provide residential and industry access to the significant supply of artesian water in the Region.

The Department of Agriculture and Food Western Australia (DAFWA) identified the potential for both increased production of many current crops and the introduction of new crops in the Carnarvon Horticulture District and have invested in a replacement irrigation pipeline for the district which was completed in 2013. In addition, through the Gascoyne Food Bowl Initiative, the State is working on the release of a further 400 hectares of land and developing new water resources. Horticulture is also being developed as an alternative industry for pastoral properties in the Region. A number of pastoral leasees have diversified and produced melon, table grape, corn and cattle feed crops on their land.

Horticulture Industry by 2035

The aspirational vision for the Carnarvon horticultural industry is to expand to \$213 million Gross Value of Agricultural Product (GVAP) from 3,600 hectares of irrigated land by 2035. A water supply of 20GL extracted from both the Gascoyne River and borefields, and efficiencies driven by infrastructure improvements and in-field technologies will deliver at least a 20% efficiency gain in water use. In the following 25 years the continued efficiency gains surrounding water use, plant genetics and remote sensing systems will continue to deliver significant improvements.

There will also be opportunities to utilise the water and suitable land further upstream around Rocky Pool and an area of 1,000 hectares could be allocated to inland fruit tree production. Examples of tree crops include dates supplied to the Middle East where production capacity is declining with reduced water supply, and some of the citrus varieties which are looking for a wider seasonal spread in production outside of the cooler southern climate.

Global management of fresh produce distribution will enable Carnarvon to be part of a year round supply chain with take-off contracts for a range of commodities with a seasonal 'window' to complete the global supply. While the consolidation of irrigated properties will continue, there will remain a high degree of local family management up and down the river. Property ownership and operation will be significantly decoupled, with skilled managers taking on greater areas of land to farm under lease, share crop and other arrangements.

It is anticipated there will be ongoing development of staged packing and processing, which may also incorporate a distribution centre to send food to differing markets. The upgraded Carnarvon Airport will be able to accommodate air freight to all parts of Australia and International markets. The four strategies of more efficient access to water, additional land availability, closer ties to the global marketplace and first rate production management skills will allow a target of \$232 million GVAP to be achieved.

Land

Current production in the Carnarvon Horticulture District is carried out intensively on small landholdings. There are 170 plantations, with plantation size ranging between 2 and 40 hectares. The majority of this land is composed of good river system soils. These soils range from a light textured red earthy sand to a medium textured red earthy loam. There is an opportunity for larger scale land releases in the future.

Water

Current water supply to the Carnarvon Horticulture District is from aquifers beneath or adjacent to the Gascoyne River. The Gascoyne River is an ephemeral river that flows when high rainfall occurs inland at the headwaters. River flow recharges the aquifers. Scheme water is available to all growers through an allocation and water trading system. The Region's horticulturists use micro-irrigation technology to produce large quantities of product efficiently. Water exploration is proving up additional water availability in order to make the industry drought proof.

Climate

The Gascoyne climate is semi-arid and subtropical making it ideal for the production of tropical and subtropical fruit as well as winter vegetables. There is an absence of frost in the winter months due to relatively high minimum temperatures. Rainfall is low and averages around 200mm per year. Rainfall events are sporadic and can occur both in the summer and winter months.

Competitive Advantage

The major vegetable growing season occurs in the southern hemisphere winter months of June to September. This allows the Carnarvon Horticultural District to supply the Perth and interstate market with counter-season produce. The Carnarvon Horticultural District also has potential to supply counter-seasonal produce to markets in Asia and Europe from September to May. A further advantage occurs at the beginning of the domestic summer fruit season when a window of opportunity exists for early ripening varieties to capture the market.

The isolation of the Carnarvon Horticulture District provides a unique opportunity to control pests and diseases and remain free from many serious pests. This assists in the growth of high quality produce with reduced crop damage and losses.

Industry Structure

The Carnarvon Growers Association is the peak body for the horticultural industry in the Gascoyne. There are also several crop specific grower cooperatives that undertake member-only packing and marketing activities, for example the Sweeter Banana Cooperative and Love Apple (tomatoes). Producer levies fund national crop-based research and development with assistance available at the local level through the DAFWA research station in Carnarvon.



Weather Statistics	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Annual
Mean maximum temperature (°C)	31.3	32.5	31.6	29.1	26.2	23.4	22.3	23.0	24.4	26.0	27.6	29.3	27.2
Mean minimum temperature (°C)	22.5	23.4	22.1	19.1	14.9	12.3	10.9	11.6	13.8	16.4	18.6	20.7	17.2
Mean rainfall (mm)	12.2	20.3	16.0	13.8	34.7	46.8	44.1	17.5	5.7	5.3	4.1	5.6	226.9
Mean number of days of rain ≥ 1 mm	1.3	1.8	1.3	1.4	3.1	5.1	4.8	2.9	1.6	1.1	0.5	0.3	25.2