DEVELOPING PREMIUM VALUE-ADDED GRAIN PRODUCTS IN WA

Potential opportunities for the WA grower group network

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GOVERNMENT OF WESTERN AUSTRALIA
Department of Primary Industries and Regional Development

GROWER GROUP ALLIANCE

BACKGROUND

To help grower groups and grower group members investigate and realise premium grain and cereal product opportunities in Western Australia, the Department of Primary Industries and Regional Development (DPIRD) Food Industry Innovation (FII) team has partnered with the Grower Group Alliance (GGA).

The FII team focuses resources on the growth of WA premium and value-added food and beverage businesses while the GGA, hosted by the Grain Industry Association of WA (GIWA) and a farmer-driven network, builds the capacity of and connects grower groups to research organisations and agribusinesses.

The FII and GGA partnership objective is to encourage grower groups and their grower members to investigate opportunities in the processing and value-added space and aims to support groups where members have expressed a desire to explore new value-added products or processing ideas to expand the value of WA gains. Its focus is to identify the key, tertiary value-add opportunities to develop consumer facing products in areas where WA has comparative advantage within the grains industry and build on its high quality, yet commodity focused, base.

Some of the opportunities in this summary have been identified from the Premium Agrifood Market Opportunities (PMO) report, which was commissioned by the FII project and completed by Coriolis. The PMO report identifies 20 key food and beverage product opportunities to target high value, high growth export markets for WA's premium food industry, narrowed down from more than 500. It highlights the export market value across each of these 20 opportunities and analyses the capacity for WA businesses to capture the potential value, which is estimated to be in the vicinity of $4 billion across them.

These opportunities, where possible, were then aligned with GIWA's WA Grains Industry Strategy 2025+ report, and cross referenced with the key learnings from the 2017 GGA-hosted Grower Group Grains Value-Added Study Tour to ascertain whether the opportunities aligned with grower interest in progressing investment ready projects and developing premium food and beverage products.

Grower groups have extremely strong local and regional connections and are agile and responsive to the needs of their members. The network is connected with industry and value chain partners and in a mature, commodity focused grains market, many groups and their members are beginning to explore opportunities to add value to their businesses and potentially local economies. The network is also in a prime position to provide aggregated supply opportunities of quality grains in WA. This partnership aims to build the capabilities within the WA grower group network to harness agri-food innovation and value-added opportunities in the grains sector.

PURPOSE OF PARTNERSHIP

The partnership between FII and GGA seeks to identify key value-added opportunities for development of consumer facing products in areas where WA has a comparative advantage within the grains industry. The partnership is important as the Western Australian grains market is currently oriented to producing and exporting commodities that have undergone little or no value-adding domestically. The business opportunities identified through this process will also be linked to the suite of FII's support services designed to support high growth businesses to create a paradigm shift in the way WA businesses view growth and expansion. Their support services include visiting both inbound and outbound experts and industry leaders, exposure to competitive 'world's best practice', business training and coaching and access to tools and support to consider growth and investment strategies.

Its aim is to engage with the WA grower group network to assess interest, capability and development potential for the key opportunity areas that have been identified or one identified as important by the network. In addition it provides support to grower groups to review supply and value chain opportunities to investigate the feasibility for creating grains value-added products and develop investment ready opportunities.

By utilising seed funding through FII, the GGA will coordinate an initiative to assist in the pre-feasibility investigations or business case development for the most prospective opportunities. The initiative will invest in prefeasibility studies and business case development efforts where grower groups are an active member of a proposed value chain partnership. This initiative will seek expressions of interest (EOIs) from grower groups looking to explore opportunities in the value-added space. The total investment in this initiative is $100,000 with individual EOI funding up to a value of $30,000.

In addition, the GGA aims to build the capability of the grower group network to:

- Create collaborative business groups for the grains sector to develop premium food and beverage products
- Build capacity for grower groups to harness agri-food innovation and value-added opportunities in the grains sector
- Develop an extension framework that enables growers and groups to develop value-adding activities

CONTEXT FOR WESTERN AUSTRALIAN AGRICULTURE

The continuing shift of economic growth from the developed world to the developing world is driving an enormous opportunity for agriculture in Australia. In the five years to 2010, the developing world accounted for almost three quarters of global growth. The result has been a surge in demand for the basic materials necessary to support industrialisation and urbanisation in Asia. At the same time, the new-found wealth of the developing world and rising incomes are leading to increased calorie consumption and higher protein diets. Demand for agri-food products could more than double in the period to 2050[1].

The increasing size of the global middle-class population in close proximity to Western Australia creates opportunities for agriculture to build premium products and capture price premiums. If Australia doubled real value of agriculture exports by 2050 it would result in an additional A$710 billion of revenue for Australia. However, a shift to higher value products could increase this to A$1.7 trillion of revenue[2].

WA has a strong reputation for producing large amounts of high quality grains and it is this offering that can be leveraged as a comparative advantage in some of the high growth and food demand areas for the growing middle class in Asia.

However, very little value-adding occurs in WA. It has an emerging value-added food sector, but it is small, fragmented and lacks scale and capability. Figure 2 highlights WA's underdeveloped exporting profile for finished goods and products, compared to major agri-food competitors like Canada and America[3].

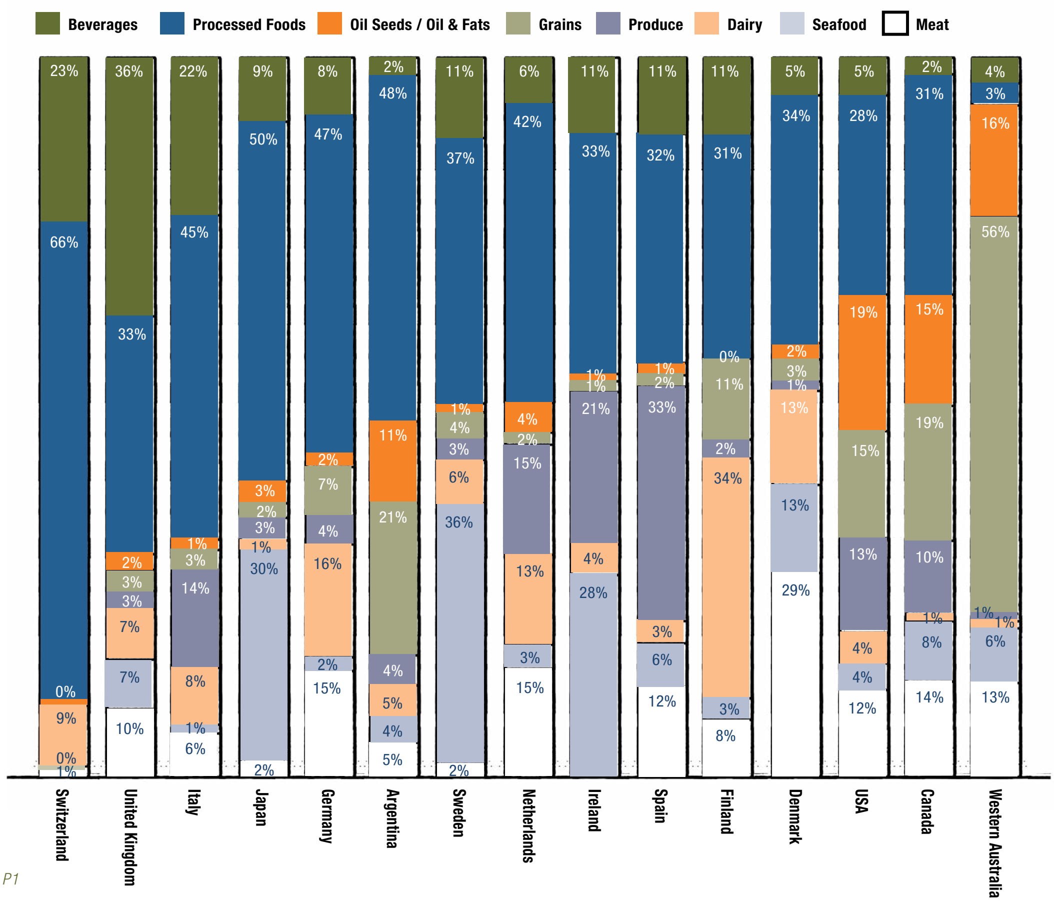
The WA grain sector is facing strong pressures from other emerging grain growing regions. There are significant market factors impacting the global competitiveness of WA grain products. The quality of the wheat from the Black Sea region is improving rapidly and can be sent to traditional WA export markets (Middle East and South East Asia at lower prices that WA grain. WA has a mature export grain supply chain by global standards, with a high cost of labour reflected at each point along the chain. There is no major source of cost savings outside of incremental efficiency gains for growers, which is in direct contrast to growing regions such as Ukraine, which have potential gains to be made in terms of reduction in transport, storage and handling costs.

These drivers for change mean that participants in the WA grains industry will need to focus on innovation to maintain their comparative advantage in key markets. Efficiency gains and productivity improvements alone will not enable the industry to compete in the future. However, WA's agriculture industry has comparative advantages it can capitalise on to build relevance for high potential markets by balancing the following two strategies:

1. Driving strong volume growth through serving large, high growth opportunities, such as the rapidly growing Asian market for products like dairy, beef, oilseeds and wheat.
2. Capturing price premium opportunities for differentiated products that serve the expanding global middle class[4].

The GGA and FII partnership is investigating the second strategy which is an opportunity to successfully facilitate movement to an environment that supports investment and/or involvement in value-adding by and with growers through the grower group network.

FIGURE 2: Agrifood Exports Value Share by Segment: Western Australia vs other developed countries



1. *Greener Pastures Report, ANZ Insight, October 2012, P1*
2. *Greener Pastures Report, ANZ Insight, October 2012, P 2*
3. *Pathways to Competitiveness: WA Agriculture (July 2016) Department of Primary Industries and Regional Development p64*
4. *Strategies sourced from Green Pastures Report, ANZ Insight, 2012.*

REVIEW OF GRAIN VALUE-ADDED ACTIVITIES

Review of the PMO report and the Western Australian Grains Industry Strategy 2025+ identified value-add opportunities by grain and product that were cross referenced with knowledge from industry discussions. The PMO report outlined 20 opportunities of which five were grains based. Two of those opportunities, oat milk and premium grains were included as part of this summary of opportunities or activities for value-adding across grain type and product.

The remaining grains related opportunities identified in the PMO report were specialty breads, breakfast muesli/cereals, and chilled pasta and were not considered mainly because there wasn't a strong match between these products and the quality specifications of the grain that Western Australia produces. This could change based upon the varieties and grain production characteristics that growers may choose into the future, and there may be niche opportunities that some businesses and grower groups may wish to pursue.

Each product was broadly assessed on their processing requirements, existing investment and effort, links to markets and alignment to emerging trends and WA's existing capacity in this product and raw material comparative advantage. These have been summarised as value-added opportunities by grain and related product (Table 1). This list includes grain related food or beverage product opportunities. It is not an exhaustive list and should only be used to guide further discussions and consultation with industry where there is interest in a particular product or sector.

The majority of the opportunities identified in this review are 'upgrades', in that they represent an opportunity for growers to move up the value chain to share in higher value activities, which should bring benefits to those within the chain, and capture more value in areas where Western Australia has comparative advantage. Not all possible areas that expand the value of the WA grains industry are immediately aimed at value-adding through processing and consumer facing opportunities. There are important primary or secondary processing opportunities that will support change within the grain growing communities and allow new entrepreneurial activity to flourish. Tertiary value-adding business development can then be built upon this foundation.

The predominant commodity focus has developed over many years and has been an advantage for grain growing enterprises in WA with an emphasis on improved productivity, increased output and managing risk in the enterprise, rather than on capturing value from the further value-adding chain. There have been attempts to value-add grain in Western Australia in the past with issues from lack of scale, capital and capacity to access markets, however it has been perceived as risky and complex given benefits are 'far away' and uncertain and this makes adoption of major changes to farming systems or building new business models and investments challenging.

Table 1: Examples of Premium Value-added Grain Opportunities in WA

GRAIN TYPE	Product	Premium Mainstream Economy	Degree of Processing	Current investment	Link to global premium model, growing consumer demand in destination market and/or aligned with emerging or new macro food trends/market opportunity	Other industry opportunities	WA's capacity in this product	WA comparative advantage in ingredients
Wheat	Beverage - alcohol	Premium	High	A number of boutique breweries and distilleries in Perth metro and regional WA are using single source or WA grains.	Possible premium position for WA craft beer with provenance and/or health benefits. Growing trend in domestic market for craft beers and boutique distilleries. Opportunity to build provenance story/associated tourism products for regions.	Waste product	Low but growing interest	High
	Noodle wheat products	Higher value uses for lower grade noodle wheat	Medium	Not known	Potential link to growing demand in south east Asia and India	Possible waste product but not yet well understood	Not known	High
	Freekeh	Premium food product	Low	Not known - SA company in production	Low GI, high in fibre, other health benefits from eating grains green but requires further investigation	If harvested green, possible opportunity to summer graze stubbles	Not known	Not known
Barley	Beverage - alcohol	Premium production for craft beers, mainstream for malt production	High	A number of boutique breweries and distilleries in Perth metro and regional WA are using single source or WA grains.	Possible premium position for WA craft beer with provenance and/or health benefits. Growing trend in domestic market for craft beers and boutique distilleries. Opportunity to build provenance story/ associated tourism product for regions	Waste product - ridlets that can be used in animal feeding systems and biochar (potential soil amendment)	Growing	High
	Baking market	Malt for yeast growth	High	Not known	Craft bread market domestic only, export potential unclear. Associated health benefits may align with food trends	Waste product not known but likely to be useable in animal feeding systems	Not known	High

Source: This table has been compiled by WA Grassroots Consulting on behalf of the GGA, 2018.

REVIEW OF GRAIN VALUE-ADDED ACTIVITIES

Table 1: Examples of Premium Value-added Grain Opportunities in WA continued.

GRAIN TYPE	Product	Premium Mainstream Economy	Degree of Processing	Current investment	Link to global premium model, growing consumer demand in destination market and/or aligned with emerging or new macro food trends/market opportunity	Other industry opportunities	WA's capacity in this product	WA comparative advantage in ingredients
Oats	Food health product	Premium	Medium	Interest in oats as a health food product is continuing to grow. Signifiant investment has been made by a number of local and national food and export companies into sourcing oats from WA	Strong interest from Asia for oats as a trusted, healthy food product.Oats have competitive health features (high content of dietary fibres, phytochemicals, resistant starch and antioxidants).	Oat hulls/dust used in ruminant feeds/pellets, and oat bran comes from oat flour processing	Medium and growing	Very high
	Oat milk or rice	Premium	High	AEGIC has a strong focus on investigating oat functionality requirements in China, which has become one of the largest markets for Australian oats.	Strong growth in alternative dairy products. Alternative dairy milks key health trend.	Not known	Needs Development	Very high
Canola	High aeolic canola (marketed as Monola)	Premium	Low/ medium	High aeolic canola oil is a healthy alternative to other cooking oils with high levels of saturated and trans fats and alternative to palm oil. Growers are offered a premium to grow, however must be delivered to the GrainCorp Pinjarra site	Strong demand and strong drivers for health	Processing, waste product can be used for animal feed	Possible capacity to grow	Very high
	Canola Oil	Premium (non GM)	Low/ medium	Companies such as Ausoils, GrainCorp are active	Strong demand and strong drivers for health	Processing, waste product can be used for animal feed	Possible capacity to grow	Very high
	Omega 3 canola	Premium	Low/ medium	Nuseed/GRDC/CSIRO joint venture to develop canola with long chain Omega 3 as alternative to fish oil.	Strong demand and strong drivers for health	Processing, waste product can be used for animal feed	Possible capacity to grow	Very high
Lupins	Lupins	Mainstream	Low to high	Local investment by Lupin Foods Australia, Golden West Foods	Developing production and developing various products, potential growing market	Good animal feed	Good production capacity, processing and market capacity growing and an area of focus	Very high
Other Legumes	Beans	Mainstream	Low to high	Pulse Australia, UWA Centre for Legumes in Mediterranean Agriculture (CLIMA), Ord Co and Pulse Association of South East (PASE) are active. There is a preference by customers to process at destination markets.	Developing production and developing various products, potential growing market	To be developed	Current capacity to grow in WA moxed, more work required	Not currently
	Chickpeas	Mainstream	Low to high					
	Peas	Mainstream	Low to high					
	Lentils	Mainstream	Low to high					

Source: This table has been compiled by WA Grassroots Consulting on behalf of the GGA, 2018.

REVIEW OF GRAIN VALUE-ADD ACTIVITIES – GGA GROWER GROUP STUDY TOUR 2017

Parallel to the desktop review of existing processing and grains value-adding activities in WA, the GGA led a grower group study tour and focused on areas highlighted in the PMO report.

The tour was a key learning and engagement step to investigate and test appetite for key value-adding opportunities with grower groups.

The tour concentrated on how growers and agri-food businesses in New South Wales and Victoria are creating value through research, high value commodities, local food production and innovative paths to market. There was a strong focus on products and businesses that could potentially be adopted by WA agri-food businesses and in particular those areas that WA has some unique trade, geographic or other comparative advantage.

The key businesses for the grains sector that were visited are summarised below. It is noted that not all opportunities are tertiary value-added and market facing but they are opportunities that could be considered to build on WA's strong commodity focus.

1. Food service sector canola oil refinery

The GGA study tour visited Riverina Oils and BioEnergy (ROBE), a food service canola oil refinery.

The ROBE Refinery crushes 200,000T of canola seed per annum and produces 80,000 to 100,000T of oil with a food service division in Sydney and Melbourne. Main markets being the US, India, Taiwan and domestic markets in the food service sector. Outputs from the production/refining process are sold as protein meal or feed' for livestock industries.

Key opportunity considerations:

- Aggregated supply models for canola processing could be an opportunity for grower groups.
- Potential to explore building on existing investments/infrastructure with refineries in WA at Kojonup and Pinjarra.

2. Voyager Craft Malt

This business is the first craft maltster in Australia providing single source malt to craft breweries and distilleries.

Malt barley is sourced locally from the southern Riverina by contract growers who provide their information on the grain including GPS coordinates and seasonal conditions, which can be accessed via a QR code for brewers/distillers. The produce is sold in 25kg bags or one tonne consignments. Waste from the malt (known as ridlets) is sold to a pork production enterprise as feed. To produce heat for the malting process, a kiln is used burn waste product from nut processing and produces a bio product, biochar, which is sold to local government as a soil amendment.

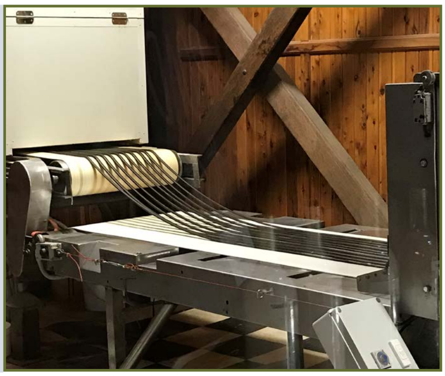
Key opportunity considerations:

- The craft malt industry is burgeoning, five years ago in the United State there were five craft maltsters, there is now 90+. With a strong trend towards provenance, traceability and 'single source' in food, this could be an opportunity for groups.
- WA is a major exporter of barley, but there is also an increasing domestic market for craft beer.
- Due to its health benefits and tasting profile, other opportunities for malted grain include snacks and malt powder (a mix of malt barley and milk powder).

3. Junee Liquorice and Chocolate Factory

The Factory is located at the restored Junee Flour Mill and is operated by Green Grove Organics, a family farming business that have been practicing organic farming since 1962.

The factory produces a range of certified organic confectionaries which are distributed nationally and overseas. Approximately 3-5% of product manufactured is sold in their local shop, approximately 70% of product is sold into South East Asia and Japan. Liquorice is made from spelt or wheat flour, sugar, water, molasses, powdered liquorice root and aniseed. This business successfully integrates local produce, food production and tourism. It is one of the largest employers in the region, with 50 employees involved in the manufacturing and sales of a wide range of premium products. The family have subsequently purchased the historic mill at Corowa where they operate a distillery.



Key opportunity considerations:

- The factory is an example of value-adding a commodity, both in its production characteristics (organic certification) and supply chain development (product development).

4. The Healthy Grain

The Healthy Grain is a joint venture between CSIRO and Australian Capital Ventures Limited, which specialises in seed development in the start-up phase. It was established to take two CSIRO developments, BARLEYmax and Kebari through to commercialisation.

BARLEYmax is a wholegrain with additional health benefits including twice the fibre of regular grain, four times the level of resistant starch and 70% more beta glucans than oats which helps to regulate blood cholesterol. Kebari is an ultra-low gluten barley. Kebari will become commercially available over the next three years. A recent new partner of the Healthy Grain is Teijin, a Japanese firm specialising in fibre and plastics with a growing interest in functional foods.

Key opportunity considerations:

- Nutrient dense grains represent a large growth market in South East Asia. WA is well placed to take advantage of this.
- While BARLEYmax and Kebari are excellent opportunities however issues around breeding, segregation in the supply chain and access to seed will restrict growth in the short-term in Australia.
- WA's growing conditions, links to export markets, streamlined supply chain and excellent segregation track record could make WA an ideal location for Kebari production
- Legumes (such as lentils) have similar health properties and grow well in WA. They may require varietal work but address most health criteria without modification. This could be an opportunity for WA growers and grower groups to value-add a commodity grain for the domestic and international markets.

5. Flavour Makers

Flavour Makers is a food manufacturer working with a wide range of brands and supermarkets to develop food products including ready to eat soups, baby products, ambient recipes bases and stocks. As a spin-off to Flavour Makers, the group CEO is investing into a new company to develop ready to eat organic foods using organic fruit and vegetables from Australia.

Key opportunity considerations:

- The company also conducts significant market research to identify dominant macro cultural trends that are driving food and beverage trends to predict consumers' food behaviours.
- Flavour Makers have expressed difficulty in sourcing Australian grown organic legumes. This could present an opportunity for WA growers to consider growing organic legumes for the domestic market if there is interest.

OPPORTUNITIES FOR THE WA GROWER GROUP NETWORK

To progress the exploration and development of value-added opportunities in the grain industry amongst the grower group network, the GGA will coordinate an initiative to assist in the pre-feasibility investigations or business case development for the most prospective opportunities for value-adding and processing of grain.

The GGA will invite expressions of interest from GGA grower group members, entrepreneurs and supply chain participants to put forward applications for funding prefeasibility studies and/or business cases aimed at pursuing ideas for value-adding and processing opportunities.

The GGA has up to $100,000 to invest into prefeasibility studies and business case development efforts where grower groups are an active member of the proposed value chain partnership driving the activity or product concept. This initiative will seek expressions of interest (EOIs) from grower groups looking to explore opportunities in the value-add space and provide prefeasibility reports by 31 May 2019. Individual EOIs can be up to a value of $30,000.

An independent selection panel will be appointed to evaluate the EOI's received to select the most prospective proposals. As a condition of the initiative, any feasibility study or business case submitted will remain confidential for up to two (2) years. Reports can then be made publically available however with a provision to extend the embargo if the proponent is still actively developing the business opportunity.

Industry references

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ABOUT THE PARTNERS

Department of Primary Industries and Regional Development (DPIRD) is the Western Australian government department that represents the interest of the state's primary industries and the regions. **Food Industry Innovation (FII)** is DPIRD's project to investigate food opportunities and trying to encourage farmers to get more involved in the development of food products in WA. The **Grower Group Alliance (GGA)** operates to support grower groups, farmer driven organisations to build their capacity and connections to research organisations and agribusiness networks across WA. **The Grain Industry Association of Western Australia (GIWA)** was formed in 2008 and aims to represent the interests of those in the grain supply chain. GIWA's purpose is to facilitate an effective and efficient Western Australian grain industry.

Together, these partners undertake important roles in supporting growers to participate and build capability in improving the profitability of farming in WA across the entirety of the supply and value chains.

Department of
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GIWA Grain Industry Association of Western Australia

For more information on this initiative, visit:

FII: www.agric.wa.gov.au/r4r/food-industry-innovation

GIWA: www.giwa.org.au

GGA: www.gga .org.au

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