MACKAY-ISAAC-WHITSUNDAY

Agricultural Overview

Regional Development Australia
MACKAY-ISAAC-WHITSUNDAY QLD

Introduction from Chair

The agricultural industry in Mackay-Isaac-Whitsunday has always been close to my heart. As the son of a canefarmer, I have always had a link to the land and grew up in the time where Mackay was known as the "sugar capital" of Australia and agriculture was the region's key driver. The region has undergone much change over recent years with the discovery of coal in the Bowen Basin, however we are now faced with another significant change as we move from a mining related construction boom to a period of efficiency focussed coal production.

As we look for opportunities to diversify our local economy we need to focus on opportunities where we have a natural advantage. Agriculture is one of these opportunities. With the Australian Government's two white papers on "Developing Northern Australia" and "Agricultural Competitiveness" and the State Government's consultation paper on "Queensland Biofutures – 10-Year Roadmap", we have the chance to build on our strong agricultural base and grow our agricultural industry both vertically and horizontally.

This overview is part one of a two-stage project. Regional Development Australia Mackay-Isaac-Whitsunday Inc. (RDAMIW) have completed this overview of the region's agricultural industry with a view to highlighting the important role that agriculture plays in the region. Whilst this overview provides information about what we grow, where we grow it and what it is worth, the second phase of this project will focus on future opportunity and the infrastructure and regulatory framework required to foster agricultural opportunity in Mackay-Isaac-Whitsunday.

I would personally like to thank the Department of Agriculture and Fisheries who have assisted our RDAMIW team in putting together this overview.

Graham Smith

Chair – Regional Development Australia
Mackay-Isaac-Whitsunday Inc.

History

Three months after the arrival of the first fleet in January 1788, the livestock in the colony consisted of

(Australian Government 2015)

Fast forward to the early 1860s and the area that we know as Mackay-Isaac-Whitsunday was about to undergo considerable change. In 1860 John Mackay was selected to lead an expedition from Armidale in NSW to seek pastoral opportunities. The party came across the coastal ranges which is now known as the Pioneer Valley. John Mackay returned in 1862 and settled at Greenmount after driving 1200 cattle and 50 horses from Armidale NSW. (Mackay Historical Society and Museum Inc. 2009).

"Within a few years however, sugar became the dominant industry in the region from the enterprising efforts of pioneers John Spiller, T. Henry Fitzgerald and John Ewen Davidson". (Mackay Regional Council n.d.). The first commercial mill in the region was constructed in Mackay in 1868. "It was the first steam driven mill in north Queensland and the largest in the colony at the time". (Mackay Historical Society and Museum Inc. 2009).

Sarina saw a similar tale of pastoral discovery and conversion to sugar. In 1864, pastoralists John and Edmund Atherton and Henry Bell settled in the Sarina region. By 1880 sugar became an important crop and in 1894 (including Edmund Atherton and Henry Bell) the Plane Creek Central Mill Company was formed and a sugar mill was constructed. In 1926, a distillery for industrial alcohol began production in Sarina. (Queensland Government 2015).

In April 1861 George Dalrymple and Captain Henry Sinclair came together with a number of prospective squatters to proclaim the township of Bowen on the Port Denison Harbour. In the early days the Bowen agricultural landscape was dominated by sugar and cotton, however insufficient rainfall and market conditions caused a failure in these two industries. Cattle and sheep were also prevalent, before its equable climate was found to be ideal for growing mangoes and vegetables. (Centre for the Government of Queensland 2015).

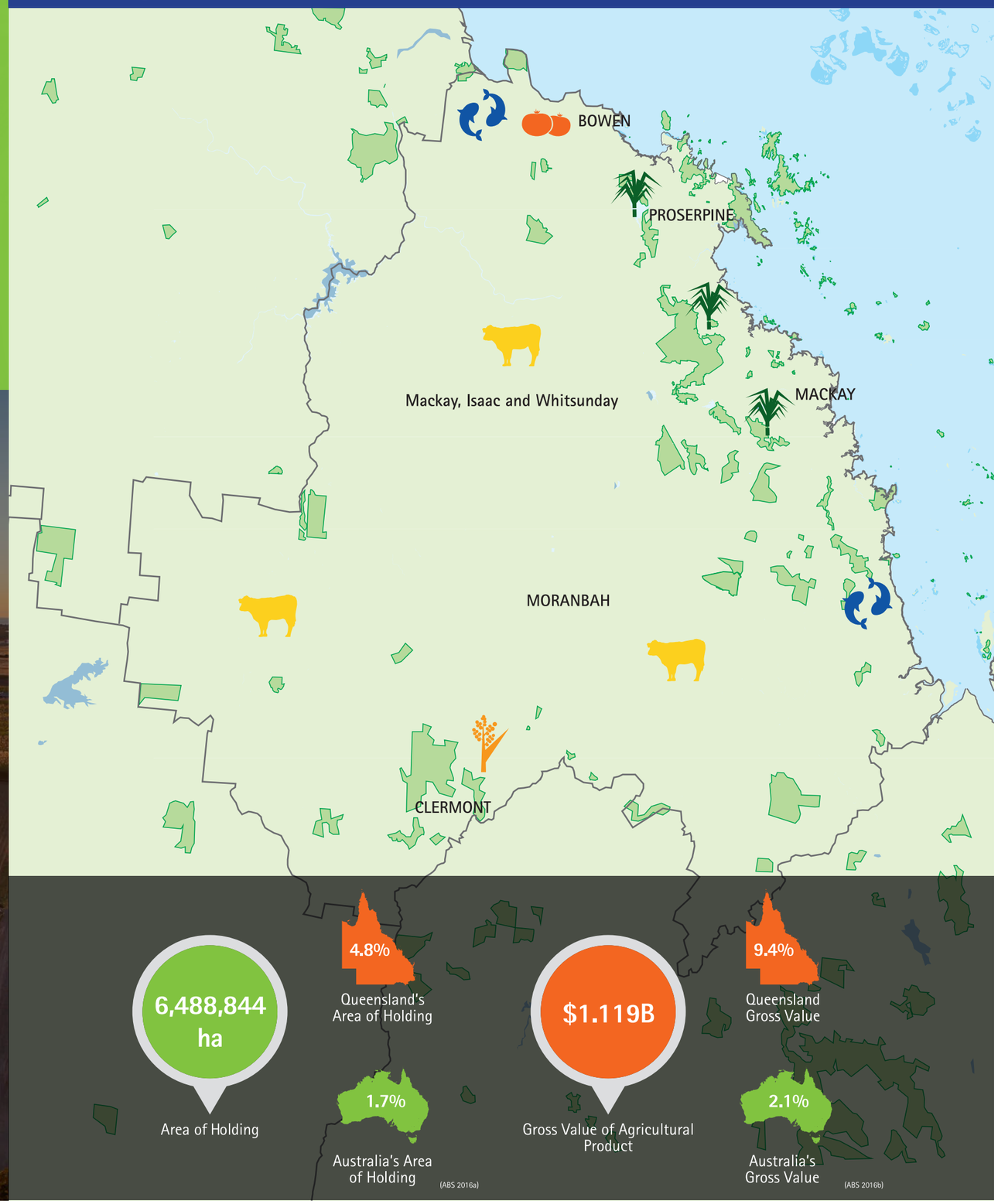
At the same time (1861) the discovery of gold brought people and development to the Clermont area. Before this discovery (1850), the Rolfe family bought cattle to the region with the settlement of Pioneer Station and John Muirhead introduced sheep to Banchory Station in 1860. Whilst there are virtually no sheep in the region today, the cattle industry has flourished with in excess of 500,000 head of cattle in the Clermont region today.

The grain industry didn't start on a large scale until after WWII, however rapid improvements to mechanisation which allowed large scale tree management (clearing) enabled this to become a key component of the region's agricultural industry. (Isaac Regional Council 2011).

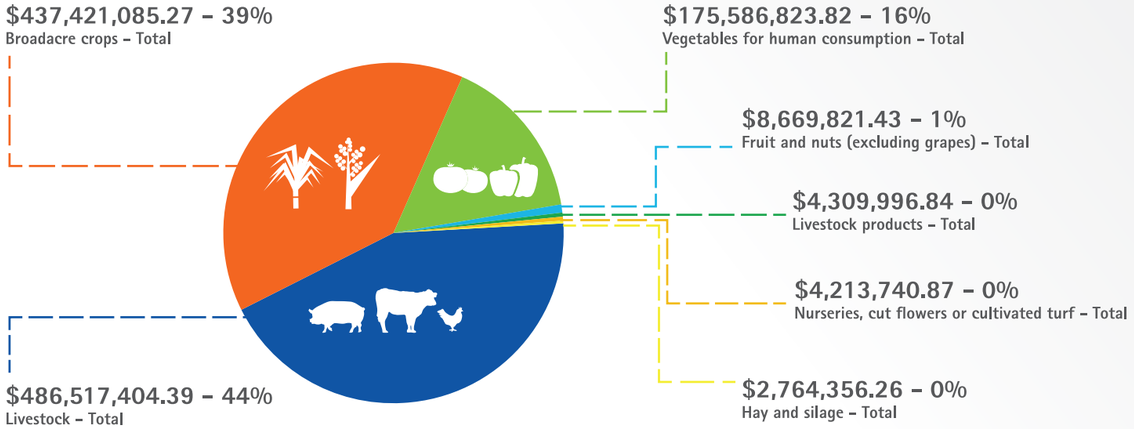
Whilst this history gives an insight into the region's agricultural roots, the majority of this report deals with the present. It will focus on what we produce, where we produce it, how we produce it, what it is worth and where it is processed. With a number of different sources of information available for this overview, ABS data was used where available, to maintain a consistent methodology and have longevity of a base data source moving forward. All dollar figures represent AUD.

Alongside this data, the Queensland Department of Agriculture and Fisheries have produced a web mapping tool called WALI (Web-based Agricultural Land Information) which allows for visualisation of information from the Queensland Agricultural Land Audit. A number of these maps have been included to display where various agricultural production occurs in MIW.

MIW Agriculture – At a Glance



MIW Agriculture – Gross Value



Beef Cattle & Calves – $485m

4.2%

of Australia's beef cattle and calves

Sugar Cane – $354m

27.2%

of Australia's sugar cane

Sorghum – $64m

9.7%

of Australia's sorghum

Tomatoes – $59m

20.5%

of Australia's fresh market tomatoes

Capsicum – $37m

32.6%

of Australia's capsicum

Beans – $26m

20.6%

of Australia's beans

Mangoes – $8m

9.9%

of Australia's mangoes

(ABS 2016b)

Demographics

The Agriculture, Forestry and Fishing industry employs 3645 workers across the MIW region or 4.66% of the region's workforce.

(Mackay Regional Council 2016)

A large portion of farming business in the MIW region are family based businesses with only 24.23% of MIW farm businesses employing permanent or ongoing staff. This increases slightly to 33.16% when we talk about MIW farm businesses that employ short-term or seasonal staff.

(ABS 2015)

The farming population across MIW is an ageing one with the average age of farmers being 56 years (slightly below national average) and with this ageing population comes experience highlighted by the fact that the average MIW farmer has been involved in farming for 32 years.

(ABS 2016a)

MIW farmers source 77% of their income via agricultural production on their holding, with 18% from off-farm employment or business activities. The on-farm income percentage is higher in MIW than the national rate of 74% and the state rate of 71%.

(ABS 2016a)

Top 10 Production Commodities by Gross Value $

Commodity description	Gross value ($)
Beef cattle and calves	485,281,750.49
Sugar cane - Cut for crushing	354,443,472.72
Sorghum for grain	64,386,626.68
Tomatoes - Fresh Market (outdoor and undercover)	58,640,881.89
Capsicum - (excluding chillies)	37,469,442.64
Beans (including french and runner)	25,650,321.66
Mangoes	7,889,320.36
Wheat for grain	6,204,926.11
Other pulses	6,130,344.14
Melons	5,572,716.14

(ABS 2016b)

Top 10 Production Commodities – Australia

Commodity description	Estimate	% Aust
Capsicums (excluding chillies) - Outdoor - Production (kg)	16,694,236	45.3%
Tomatoes - Fresh market - Outdoor - Production (t)	29,503	28.0%
Sugar cane - Cut for crushing - Production (t)	8,775,525	27.1%
Beans (including french and runner) - Production (kg)	5,407,849	15.9%
Mangoes - Production (kg)	3,986,381	10.2%
Sorghum for grain - Production (t)	214,511	9.7%
Meat cattle - Total (no.)	1,084,733	4.4%
Melons - Production (t)	6,955	2.6%
Cotton (non-irrigated) - Lint production (kg)	460,129	2.0%
Oilseeds - Other oilseeds - Production (t) (c)	1,326	1.8%

(ABS 2016a)

Top 10 Production Commodities – Queensland

Commodity description	Estimate	% Qld
Tomatoes - Processing - Production (t)	779	89.6%
Capsicums (excluding chillies) - Outdoor - Production (kg)	16,694,236	52.6%
Tomatoes - Fresh market - Outdoor - Production (t)	29,503	49.5%
Beans (including french and runner) - Production (kg)	5,407,849	29.1%
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(ABS 2016a)

Top 10 Production Commodities Gross Value – Australia %

Commodity description	Gross value ($)	% Aust
Capsicum - (excluding chillies)	37,469,443	32.6%
Sugar cane - Cut for crushing	354,443,473	27.2%
Beans (including french and runner)	25,650,322	20.6%
Tomatoes - Fresh Market (outdoor and undercover)	58,640,882	20.5%
Mangoes	7,889,320	9.9%
Sorghum for grain	64,386,627	9.7%
Beef cattle and calves	485,281,750	4.2%
Melons	5,572,716	2.6%
Tomatoes - Processing	600,576	2.3%
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(ABS 2016b)

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(ABS 2016b)

Agricultural Commodities

Broad Acre Cropping

There are approximately 1088 operations in the MIW region growing a range of broad acre crops. From cereals and oilseeds in the western part of the region to the large sugar cane crops which fill the coastal region and into the Pioneer Valley. Sorghum is the dominant cereal crop in MIW and is widely grown in summer.

With sugar cane being a perennial crop, the crop size is relatively consistent however climatic conditions, grain prices and availability of water will all impact upon cereal crop rotation in the west.

The grain supply chain comprises a range of businesses including grain growers/producers, mills, feedlot operators, bulk handlers and marketing and trading companies. (Queensland Transport and Logistics Council 2013). The grain grown in MIW and broader Central Queensland is either exported (259,000 tonnes of grain exported through the Port of Mackay in 2013-2014) or consumed locally by a range of industries and businesses. (Department of Main Roads and Transport 2015).

Whilst cereal and oilseed crops are the dominant broadacre crops in the west of the region, sugar cane is the dominant broadacre crop across the wider MIW region with around 1000 growers and 119,000 hectares of production area. Sugar cane is generally harvested between July and December and transported via rail and road to the various mills dotted across the region. Over 1.1 million tonnes of sugar were exported through the Port of Mackay in 2013-2014. (Department of Main Roads and Transport 2015).

The region is home to two sugar milling companies being Mackay Sugar and Wilmar, which have both been at the forefront of renewable energy production.

Mackay Sugar

Mackay Sugar is a restricted public company and is Australia's second largest sugar milling company with over 140 years' experience and an annual turnover in excess of $300M. Mackay Sugar have three operating mill sites in the MIW region at Farleigh, Marian and Racecourse.

Together these mills crush 5.5-6 million tonnes of cane annually.

Note: Mackay Sugar also operates Mossman Mill, crushing an additional 1.2m tonnes of cane.

Mackay Sugar create raw and refined sugar, molasses and renewable energy. Raw sugar totals 800-950,000 tonnes annually for both the domestic market and export distribution. The co-generation plant at Racecourse Mill is sized for 38MWh of electricity, which equates to around 30% of Mackay's electricity needs.

The majority of cane is transported to the mills via the rail network. The Mackay Rail Network (850km) stretches from Wagoora (70km north of Mackay) to Munburra (23km south of Mackay) and Finch Hatton (76km west of Mackay). These rail lines are 610mm gauge wide.

Mackay Sugar are also a 25% shareholder in Sugar Australia which markets the CSR Sugar brand from refineries in Mackay and Melbourne.

Refined sugar is transported via road from the Racecourse refinery to the Port of Mackay where it is stored in bulk in the large port silo. This sugar is then bulk loaded by belt into the BIBO ship's holds. It can then be discharged at a rate of 500 tonnes per hour at the port of discharge.

Wilmar

Wilmar International Limited is Asia's leading agribusiness group who expanded into the sugar business in 2010 through the acquisition of Sucrogen Limited in Australia. This purchase included the Plane Creek Mill in Sarina and in 2011, Wilmar Sugar added the Proserpine Mill to its sugar business.

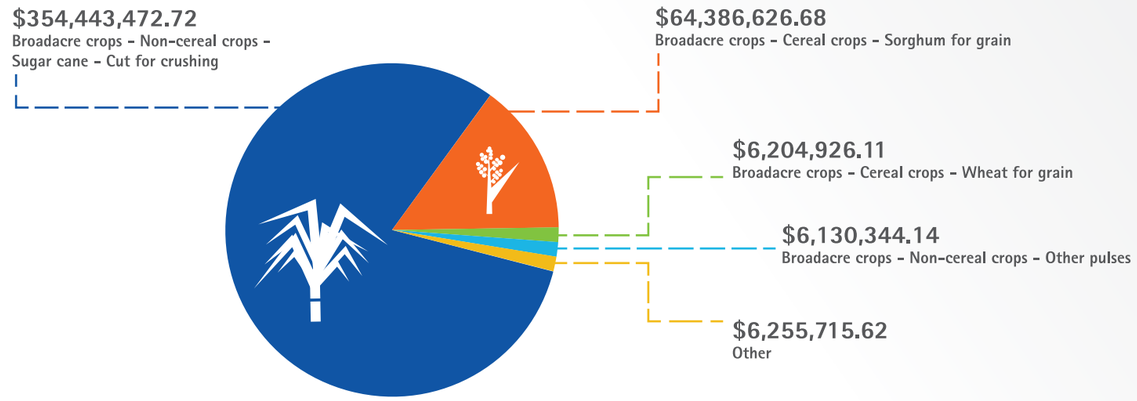
These two Wilmar mills crush almost 3 million tonnes of cane annually, and produce approximately 443,000 tonnes of raw sugar and 60 million litres of bio-ethanol and 300 million litres of fertiliser/stock feed product.

Wilmar is a 75% shareholder in Sugar Australia which markets the CSR sugar brand.

The majority of cane crushed by Wilmar is transported to the mills via the rail network. The raw sugar is then transported via road and rail to Port of Mackay for export.

Wilmar also import molasses from other Queensland cane growing districts into the region for use in the ethanol making process.

Broadacre Cropping - Gross Value

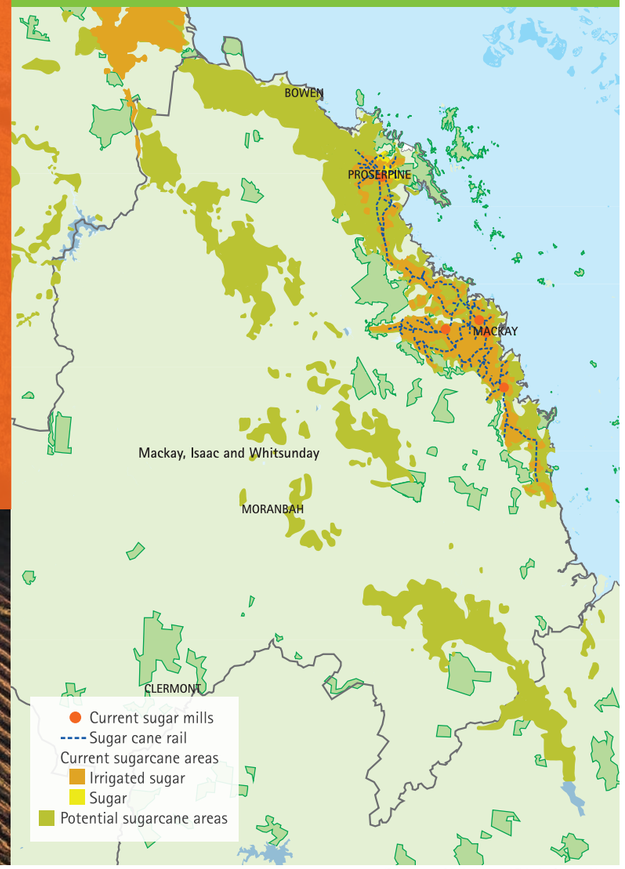


	% Aust	% Qld
Broadacre crops - Non-cereal crops - Sugar cane - Cut for crushing	27.2	28.6
Broadacre crops - Cereal crops - Sorghum for grain	9.7	13.3

	% Aust	% Qld
Broadacre crops - Cereal crops - Wheat for grain	0.1	1.9
Broadacre crops - Non-cereal crops - Other pulses	0.7	3.9

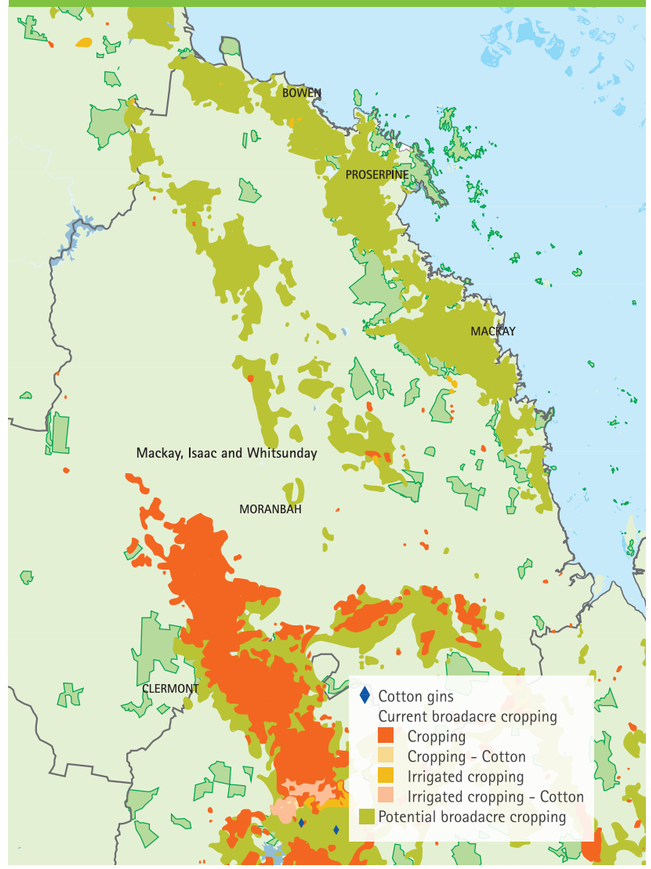
(ABS 2016b)

Sugar Cane



(Department of Agriculture and Fisheries Qld 2015b)

Broadacre Cropping



(Department of Agriculture and Fisheries Qld 2015b)

Livestock

There are approximately 1181 beef cattle operations in MIW running predominantly Brahman and Brahman cross breeds. Beef cattle operations stretch from the coast to the west of the region with a number of the larger graziers situated over the range. The majority of regional beef production (90%) takes place in the Isaac and Whitsunday local government areas.

There is also a significant number of peri-urban producers in the region with the majority of peri-urban production taking place in the Mackay local government area.

A number of feedlots can be found within the region and the beef cattle industry is currently the largest agricultural income producer in the MIW region.

The beef cattle industry generates $486M of gross value for the MIW region which represents 9.6% of Queensland's beef industry.

Livestock are generally trucked by road to saleyards and abattoirs with beef used in domestic and export markets.

The region is home to one large meat processing facility (Thomas Borthwick and Sons) with plans afoot for a number of smaller niche operations in the region.

Thomas Borthwick & Sons

Thomas Borthwick & Sons has been an integral part of the Australian meat processing industry for 110 years since its inception in 1905. As one of the first production facilities to be certified for organic beef production in Australia, the facility processes organic and non-organic products, specialising in high quality, chilled, and frozen grass fed and grain fed beef.

Situated at Baker's Creek, Mackay, the facility has key access to prime Central Queensland beef cattle.

Cattle are primarily transported to the site via road however with rail access improvements the abattoir can now bring cattle direct via the western and north western lines. The majority of product leaving the facility does so via rail and road for transport via Brisbane for sea and air for export and domestic markets. Other smaller livestock industries such as sheep, poultry, eggs and milk can be found within MIW, however these industries are dwarfed by the beef cattle numbers.

Horticulture

There are approximately 150 fruit and vegetable producers in the MIW region with a large portion of this industry situated around the Bowen region. Mangoes form the bulk of the fruit product grown in the region with capsicums, tomatoes, beans and melons forming the bulk of the vegetable crop. The region is notably the largest winter growing vegetable region in Australia with production from February to November with picking occurring from May to November. The majority of the mango harvest is concentrated around the November/December period. The horticulture industry generates almost $185M in gross value with product generally packed on site and transported to larger capital city markets for on-sale into domestic fresh markets.

Opportunities exist within the industry for value-adding and one local grower group is currently exploring the opportunities for a processing plant situated within the Bowen region.

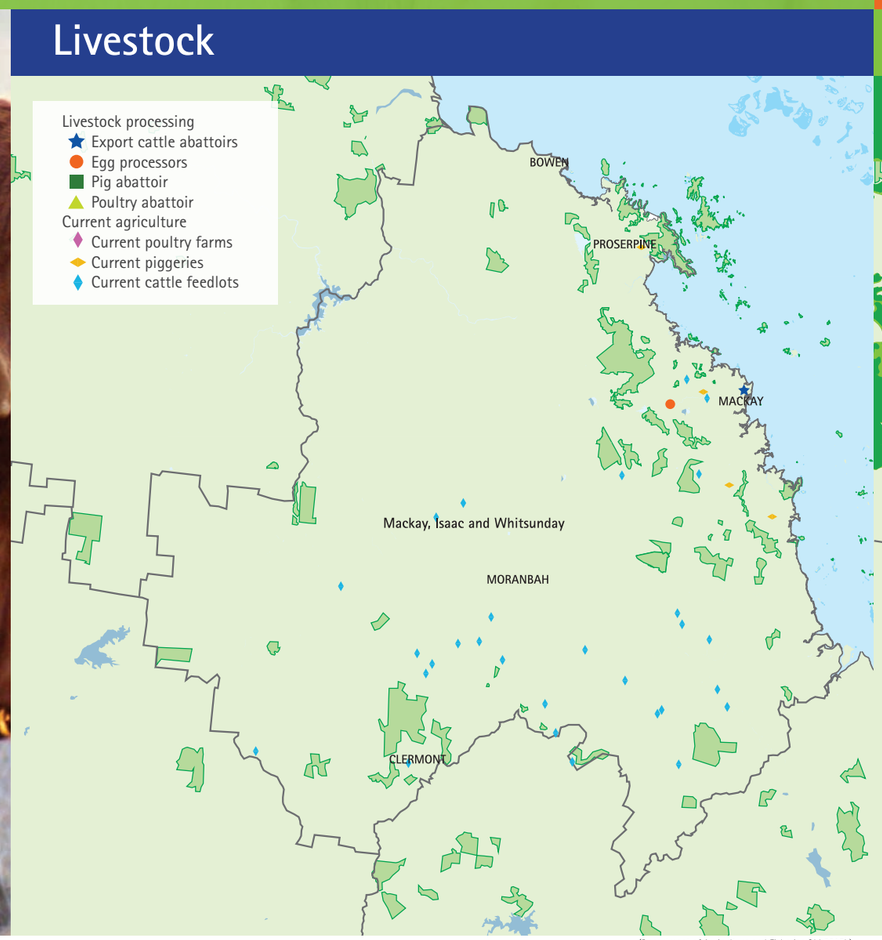
Note: Horticulture is an industry where there is much conjecture over production data. With diverse supply chain networks the produce is difficult to track and therefore data collection has its challenges. For this overview, we have used ABS data, however unpublished local Department of Agriculture (DAF) data would suggest that the ABS severely understates the horticultural product from our region. The local DAF data suggests that the Whitsunday Regional Council (includes Bowen and Gumlu regions) produces over 260,000 tonnes of horticultural product on approximately 9,600ha with a gross value of $445 million. This is almost 2.5 times the gross value estimated by ABS data and shows the huge disparity between different data sources. This is an issue that we will seek to explain in more detail and look to rectify as part of the next stage of this project.

Horticulture - Key Commodities

Commodity Description	Gross value ($)	% Aust	% Qld
Tomatoes - Fresh Market (outdoor and undercover)	58,640,881.89	20.5%	48.1%
Capsicum - (excluding chillies)	37,469,442.64	32.6%	52.5%
Beans (including french and runner)	25,650,321.66	20.6%	29.1%
Mangoes	7,889,320.36	9.9%	13.5%
Melons	5,572,716.14	2.6%	7.1%

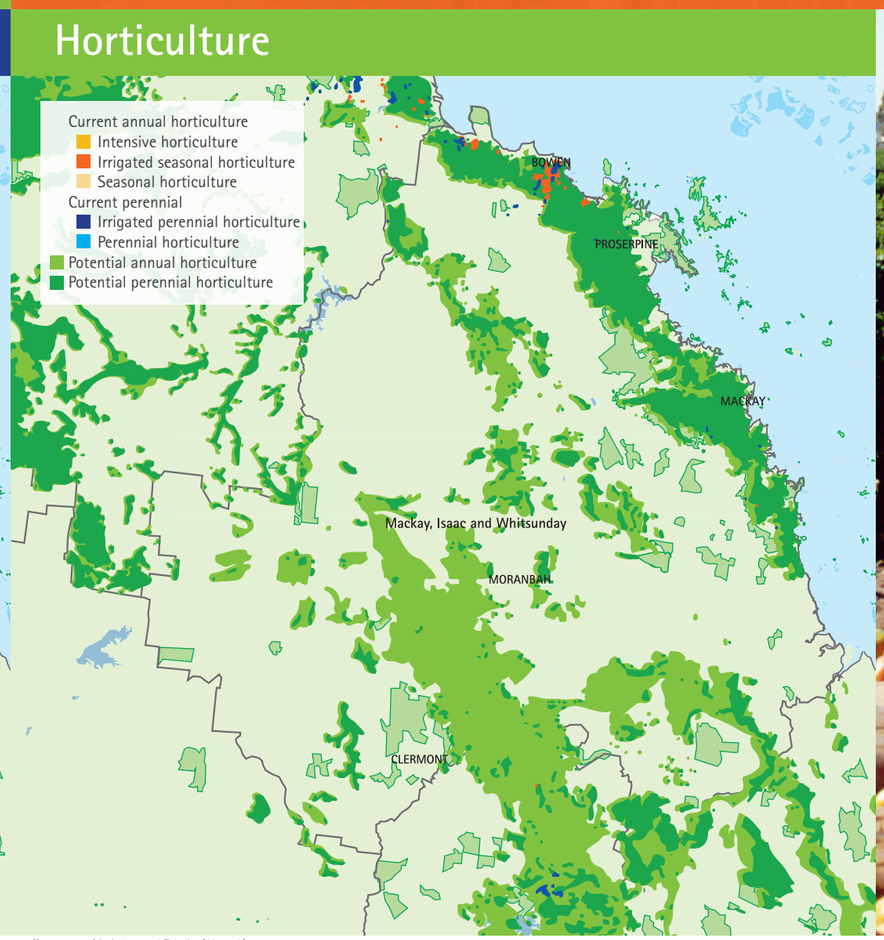
(ABS 2016b)

Livestock



(Department of Agriculture and Fisheries Qld 2015b)

Horticulture



(Department of Agriculture and Fisheries Qld 2015b)

Aquaculture

The MIW region is also well suited to aquaculture with a large area of undeveloped coastal land and significant coastal transport infrastructure. The MIW region currently produces 1254 tonnes of aquaculture product on 62.5 hectares of ponded area which gives a yield of 20.07 tonnes per hectare. This is the second highest yield in the state and is over two times the state average. The predominant aquacultural product in MIW are prawns and barramundi and 85.5 FTE are employed in aquaculture in the MIW region.

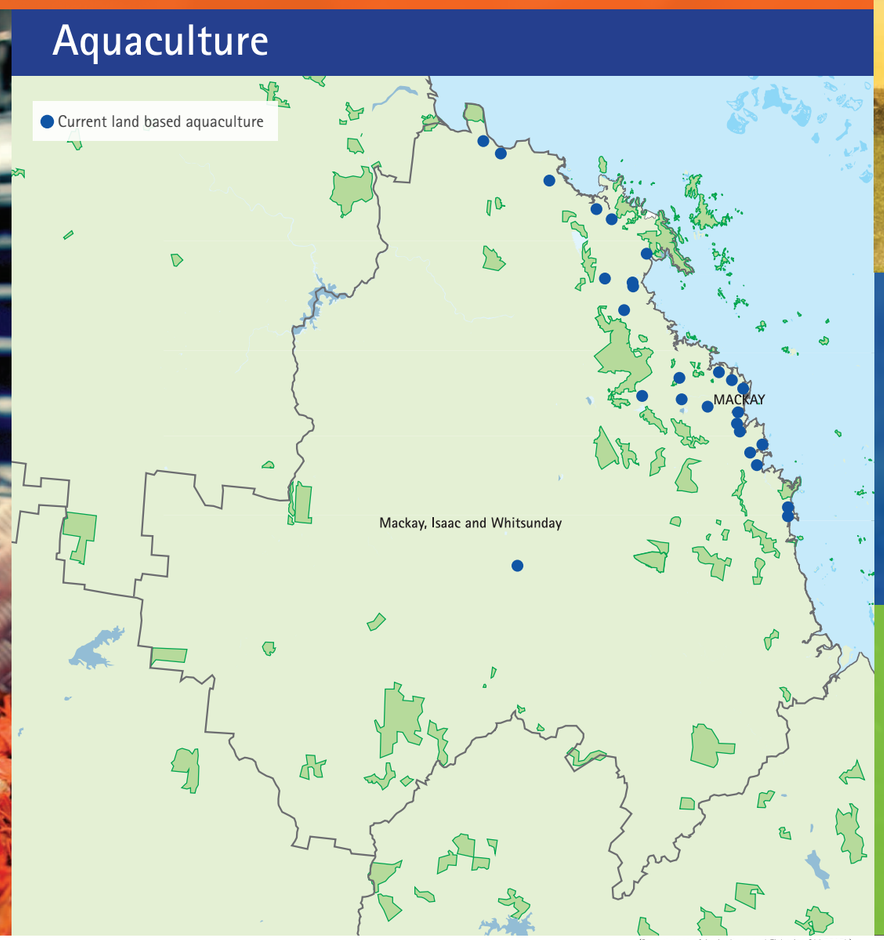
Qld Aquaculture Industry (2014/15) – Production, ponded area & employment

Statistical Division	Production (tonnes)	Ponded Area (ha)	Employment (FTE)	Yield (tonnes per ha)
MIW	1254.3	62.5	85.5	20.07
Total Qld	8187.3	869.7	449.65	9.41
Ranking (out of 17 regions)	4	5	2	2
% Qld	15.32%	7.19%	19.01%	213.18%

(Department of Agriculture and Fisheries Qld 2015)

The MIW region is home to a number of aquaculture facilities including Australian Prawn Farms, who operate a 33 hectare prawn farm at Ilbilbie. The business supplies 350 tonnes of prawns to the Australian market annually.

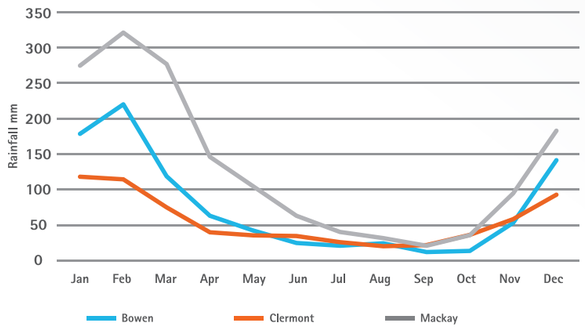
A new 259 hectare aquaculture facility is also proposed for Guthalungara. Pacific Reef Fisheries are in the planning and approval process for the facility which is expected to generate revenue of approximately $60M per annum and employ approximately 100 full-time and 100 seasonal employees. This facility will produce approximately 3000 tonnes of prawns and cobia at full production.

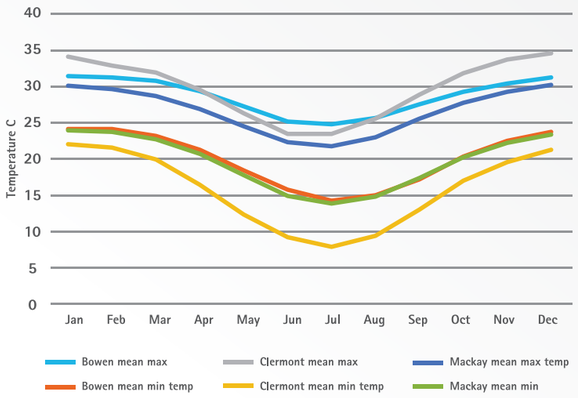


(Department of Agriculture and Fisheries Qld 2015b)

Climate

The MIW region has a diversity of rainfall and temperature which influences the agricultural product in different parts of the region. The wetter, more equable coastal regions around Mackay are ideal for cane growing with Bowen's slightly drier, equable climate well suited to winter vegetable production. The less equable, drier west of the region is ideally suited to cropping and cattle production. The diversity of the region's climate is highlighted by the graphs below:





(Bureau of Meteorology 2016)

Water Use

Water usage varies across the MIW region. Approximately 51% of agricultural businesses in the region irrigate from a variety of sources including the Sunwater controlled irrigation schemes (Pioneer River Water Supply Scheme, Eton Water Supply Scheme and Proserpine River Water Supply Scheme), groundwater supplies and on farm dams and tanks.

The 51% of MIW farm businesses that irrigate is well above the state and national average of 30%, however the total volume of water used per business is significantly below state and national averages. In MIW, 143ML of water (or 1.9ML/ha) was used per business irrigating compared to 245ML (or 4.2ML/ha) on a national basis and 293ML (or 4.3ML/ha) on a state basis. This highlights the supplementary nature of the irrigation in the MIW region and the need to develop a MIW water supply plan that will deliver sufficient water resources to meet any future agricultural expansion (either vertical or horizontal).

(ABS 2016c)

The Future of MIW

Whilst this report provides a snapshot of current agricultural production in MIW, it does not identify key constraints and opportunities for the region. With our proximity to the burgeoning Asian market, equable climate, fertile soils and current agricultural supply chain infrastructure we are well positioned to grow agricultural production in the region and increase our ability to value-add.

During the next stage of this project RDAMIW would like to form a working group of agricultural producers, processors, industry groups etc. with a view to forming a MIW Agricultural Infrastructure and Policy Plan that will provide the framework for our agricultural industry to reach its potential in the coming years. If you are interested in joining this working group please contact RDAMIW.

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Photographs have been provided by the Department of Environment, Mackay Regional Council, Whitsunday Regional Council, Isaac Regional Council, Mackay Sugar Limited and Whitsunday Economic Development Ltd.

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Regional Development Australia
Mackay-Isaac-Whitsunday Inc.

PO Box 1877, Mackay Qld 4740
T: 07 4957 6160
E: projects@rdamiw.org.au

www.rdamiw.org.au

Regional Development Australia
MACKAY-ISAAC-WHITSUNDAY QLD