

# Etheridge Shire



## Potential Cropping Production & Value of Irrigated Agriculture for the Gilbert River

INTERPRETATION & ANALYSIS REPORT



## Interpretation of the Analysis Assumptions

- The assumptions and modelled scenarios are not provided as support for advocating any change to existing government policy and are intended to be in support of the existing positions.
- The analysis takes the position that there are no physical resources or policy barriers in developing irrigation developments. The analysis also assumes there are areas which have been cleared and/or have clearing permits which are suitable for irrigated cropping developments.
  - Approx. 3,000 ha of existing land cleared prior to the current vegetation legislation (Peter Gilbey 2012)
  - Strathmore Station                      58,731 ha - permit to clear
  - Forest Home Station                      8,200 ha - permit to clear
  - Blanncourt Station                      320 ha - permit to clear
  - Riverview & Rockyview Stations      805 ha - permit to clear  
(Approx Total 71,000 ha)
- The analysis is centred around three cropping systems;
  1. A based cropping system built around cotton and rice. Either of these crops are seen as industry drivers, which can be big enough to create processing in the region and offer value adding opportunities back into the beef industry. These industry drivers provide the backbone for other cropping activities to occur and for agribusiness services, processing, transport, etc.
  2. Rotational cropping allows the larger players to diversify some risk and also maximise the investment by improving the efficiency of their cropping system. This cropping system allows small producers the opportunities to either feed-back into a base industry or develop rotational crops in their own right whilst having the agribusiness infrastructure to support cropping opportunities.
  3. Dryland cropping plays a very important role in the irrigation developments; they provide starting point and cash flow for irrigation development, greater capital utilisation and creates opportunist cropping opportunities. Dryland cropping also offers opportunities within grazing sectors to create diversification options and drought proofing strategies.
- The analysis does not take into account any type or preferred storage system or facility, rather it concentrates on irrigation water that can be used for cropping.
- The analysis does not take into account water loss through evaporation, seepage or distribution losses. It is assuming that all water can be used for cropping.

- The analysis has been centred on water utilisation of the proposed potential water release of 467,000 Ml (general reserve) Water Resource (Gulf) Plan 2007:current as at August 2015 within the Gilbert catchment, however, noting there has been no proposed date for a tender release.
- The analysis does not take into account any possible terms and conditions imposed on a water allocation.
- The analysis assumes that cropping will occur through the wet season limiting the use of captured water through that period and capturing enough surplus water for a double crop. However, the analysis has offset some of this risk by introducing a crop rotation percentage.
- The analysis assumes that all water captured is utilised in that year and no water is carried over from one year to the next.
- Utilisation of the water allocation percentage provides a timeframe for irrigation development to occur. i.e. A small amount of water is used in the early years as cropping areas are being developed.
- Water reliability takes into account climate variability over time. i.e. 75% water reliability suggests that water will be available 7.5 times in every 10 years for that cropping area.
- Crop rotation percentages imitate the capacity of a producer to successfully double crop in any one year. The analysis is assuming in the early years of cropping development a producer might not be able to double crop due to variable climate conditions, management practices, crop types, etc. but will improve over time.
- Dry land cropping will be variable on a yearly basis due to variable climate conditions, however, the analysis is mimicking management which would bring new country in from a starting position of dryland cropping configuration to an irrigation management plan.
- Horticultural opportunities were not evaluated within the analysis due to the high market volatility and sensitivity around supply and demand issues.

# Potential Cropping Production and Value of Irrigated Agriculture for the Lower and Upper Gilbert

## 5 to 7 Years

### Assumptions

Potential total water allocation (ML)	467,000.00	Analysis assumes	50%	of potential allocation to be utilised within 7 years to create a industry critical mass
Potential available irrigation Area (ha)	-			which equates to 233,500.00 MI
ML/Ha	10.00	Analysis assumes	75%	water reliability which is available for irrigation
		which equates to	175,125.00	MI
Allocation used (MI/annum)	17,512.50	Analysis assumes at 10MI/ha equates to	17,512.50	ha available for irrigation
Irrigation cropping area (ha)	17,512.50			
Assume crop rotation %/yr	50%			1 Cropping occurs through the wet season
Approx. growing costs %	35%			2 Cropping based on irrigation including rotational crops
Water reliability %	75%			3 Rotational cropping on irrigation land but not based on crops of cotton & rice
Dryland cropping (ha)	21,000.00			4 Dryland cropping

### Base cropping based on irrigation including other rotational crops

#### Base cropping area (ha)

Cotton	10,000.00
Rice	2,000.00

Rotational cropping	Gross value	Gross volume (t)
Cotton bales	\$ 35,625,000	95,000
Cotton seed (Tonnes)	\$ 2,671,875	10,688
Rice (tonnes)	\$ 6,650,000	19,000
Rotational cropping (Pulses)	\$ 3,750,000	7,500.00
<b>Totals =&gt;</b>	<b>\$ 48,696,875</b>	<b>132,188</b>

### Rotational cropping on irrigation land but not based on crops of cotton & rice

Cropping Area =>	Base (ha)	Crop Rotation (ha)	Gross value	Gross volume (t)
Mung beans (Tonnes)	1,000.00	500.00	\$ 900,000.00	1,800.00
Soybeans (Tonnes)	1,000.00	500.00	\$ 1,500,000.00	3,000.00
Sorghum (Tonnes)	1,000.00	500.00	\$ 2,940,000.00	10,500.00
Fodder (bales)	1,000.00	500.00	\$ 4,500,000.00	57,375.00
Chickpeas (Tonnes)	1,000.00	500.00	\$ 810,000.00	1,800.00
Maize (Tonnes)	1,000.00	500.00	\$ 2,625,000.00	10,500.00
Navy beans	-	-	\$ -	-
Wheat	-	-	\$ -	-
Guar	-	-	\$ -	-
sub total under irrigation production	6,000.00	3,000.00		
<b>Total irrigation cropping</b>	<b>18,000.00</b>		<b>13,275,000.00</b>	<b>84,975.00</b>
<b>Total from Irrigation production =&gt;</b>			<b>\$ 61,971,875.00</b>	<b>217,163</b>

### Dryland cropping

	Cropping area (ha)	Gross value	Gross volume (t)
Cotton	-	\$ -	-
Rice	-	\$ -	-
Mung beans	5,000	\$ 2,250,000	4,500.00
Soybeans	1,000	\$ 500,000	1,000.00
Sorghum	10,000	\$ 3,360,000	12,000.00
Chickpeas	5,000	\$ 2,025,000	4,500.00
Maize	-	\$ -	-
Other	-	\$ -	-
Other	-	\$ -	-
<b>Total from Dryland production =&gt;</b>	<b>21,000</b>	<b>\$ 8,135,000</b>	<b>22,000</b>

**Total land under production (ha) => 39,000.00**

**Total Value of production (\$) => \$ 70,106,875.00**

**Total volume (t) => 239,163**

# Potential Cropping Production and Value of Irrigated Agriculture for the Lower and Upper Gilbert 7 to 15 Years

## Assumptions

Total water allocation (ML)	467,000.00	Analysis assumes	100%	of potential allocation to be utilised within 15 years to create a sustainable cropping industry
available irrigation Area (ha)	-			
ML/Ha	10.00	Analysis assumes	75%	which equates to 467,000.00 MI water reliability which is available for irrigation
		which equates to	326,900.00	MI
Allocation used (MI/annum)	326,900.00	Analysis assumes at 10MI/ha equates to	32,690.00	ha available for irrigation
Irrigation cropping area (ha)	32,690.00			
Assume crop rotation %/yr	70%			1 Cropping occurs through the wet season
Approx. growing costs %	35%			2 Cropping based on irrigation including rotational crops
Water reliability %	75%			3 Rotational cropping on irrigation land but not based on crops of cotton & rice
Dryland cropping (ha)	29,000			4 Dryland cropping

## Base cropping based on irrigation including other rotational crops

### Base cropping area (ha)

Cotton	20,000.00
Rice	3,000.00

Rotational cropping	Gross value	Gross volume (t)
Cotton bales	\$ 71,250,000	190,000
Cotton seed (Tonnes)	\$ 5,343,750	21,375
Rice (tonnes)	\$ 9,975,000	28,500
Rotational cropping (Pulses)	\$ 9,975,000	19,950.00
<b>Totals =&gt;</b>	<b>\$ 96,543,750</b>	<b>259,825.00</b>

## Rotational cropping on irrigation land but not based on crops of cotton & rice

Cropping Area =>	Base (ha)	Crop Rotation (ha)	Gross value	Gross volume (t)
Mung beans (Tonnes)	2,000.00	1,400.00	\$ 2,040,000.00	4,080.00
Soybeans (Tonnes)	2,000.00	1,400.00	\$ 3,400,000.00	6,800.00
Sorghum (Tonnes)	1,000.00	700.00	\$ 3,332,000.00	11,900.00
Fodder (bales)	2,000.00	1,400.00	\$ 10,200,000.00	130,050.00
Chickpeas (Tonnes)	2,000.00	1,400.00	\$ 1,836,000.00	4,080.00
Maize (Tonnes)	1,000.00	700.00	\$ 2,975,000.00	11,900.00
Navy beans	-	-	\$ -	-
Wheat	-	-	\$ -	-
Guar	-	-	\$ -	-
<b>Sub total under irrigation production</b>	<b>10,000.00</b>	<b>7,000.00</b>	<b>\$ 23,783,000.00</b>	<b>168,810.00</b>
<b>Total from Irrigation cropping =&gt;</b>	<b>33,000.00</b>		<b>\$ 120,326,750.00</b>	<b>428,635</b>

## Dryland cropping

Cropping (ha)	Gross value	Gross volume (t)
Cotton	\$ -	-
Rice	\$ -	-
Mung beans	\$ 3,150,000	6,300.00
Soybeans	\$ 2,500,000	5,000.00
Sorghum	\$ 3,360,000	12,000.00
Chickpeas	\$ 2,835,000	6,300.00
Maize	\$ -	-
Other	\$ -	-
Other	\$ -	-
<b>Total from Dryland production =&gt;</b>	<b>\$ 11,845,000</b>	<b>29,600</b>

## Total land under production =>

62,000.00

Total Value of production => \$ 132,171,750.0

Total volume (t) => 458,235.0

The information provided has been prepared based on discussions and information supplied by industries and agribusiness sectors. These information provided is not an exhaustive list or listed in any order of priority. The State of Queensland does not accept liability for any decision, action taken, or loss suffered in reliance upon or based upon this analysis and for application to specific circumstances, further independent advice should be sought on making any future decisions.