



# **GREATER GERALDTON GROWTH PLAN**

## **ECONOMIC ANALYSIS UPDATE**

Briefing Note

**APRIL 2019**



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## 1 Introduction

This briefing note provides an update to the Greater Geraldton Growth Plan Economic Analysis prepared by Pracsys in October 2016. The release of the 2016 ABS census results in mid-2017 provides the opportunity to revisit the original analysis providing an up-to-date view of current employment levels and the plausibility of future targets

### Basis for Analysis

As per the original analysis, the combined Growth Plan initiatives are assumed to impact positively on the ability of Greater Geraldton to create employment and grow in population. The 2036 aspirational targets provided by the Growth Plan Partnership were:

- A population of approximately 65,000, compared to the 2016 updated population of 41,430
- A reduced unemployment rate resulting in total employment of 25,000, compared to current total employment of 15,702 (Census 2016)
- Associated Gross Regional Product of approximately \$6 billion, compared to the current \$2.9 billion

The analysis considers that population growth will occur as a result of new job opportunities or other external stimuli. A targeted level of non-population driven employment must therefore be generated in order for this future to be realised. This analysis compares the current state and plausible direct export-oriented employment generation resulting from the various initiatives to the aspirational targets laid out in the Growth Plan.

### Employment Quality Model

It is critical to have a basic understanding of employment quality within an area to influence the future economic development. The key reason for this is the inherent differences between population driven (local) and strategic (traded) employment.

### Approach

Local (general population-driven consumption) employment is defined as employment resulting from economic activity servicing the needs of a particular local population. This activity is oriented to meet the needs of that population, including retail, civic, healthcare and education, and the business-to-business supply chains that service these industries.

The overall level of employment in a locality is dependent upon factors including:

- Macro-economic conditions (e.g. GDP growth, CPI levels, interest rates)
- Local unemployment rate
- Local household income
- Constraints on local activity (e.g. availability of land, statutory planning policies, taxation structures)
- Ability of enterprises to capture expenditure

By contrast, traded or export-oriented employment results from the creation and transfer of goods and services to an external market. Employment resulting from this activity may be distinct, in industries where there is little or no local demand (e.g. iron ore/uranium mining), or in the same industries as population-driven activity but with a different focus (e.g. manufacture of food/wine, higher education). Export-oriented employment does not automatically happen, it results from an enterprise actively seeking to meet the needs of an external market and developing a competitive advantage in meeting these needs. Export-oriented employment is therefore highly variable between locations.

Significant levels of export-oriented employment within a local economy are critical to the long-term prosperity and resilience as:

- There is no 'saturation point' to export-oriented employment (whereas there is only so much population-driven activity that a particular population needs/can support)
- A diverse range of economic activity servicing external markets diversifies the risk associated with downturns in a single market
- Export oriented economic activity tends to include higher 'value-add' activities that are more likely to result in greater flow-on benefits to the local economy
- Export oriented economic activity tends to result in higher wage-productivity for employees and significant business opportunities for small to medium enterprises

To ascertain the current structure of Greater Geraldton employment, national employment by industry data was broken down into domestic consumption and exports using ABS Input Output tables<sup>1</sup>, which detail national level industry-to-industry flows, final consumption and export of goods and services by industry. This national data was then combined with local employment data to provide an estimate of the split of local and traded employment.

## 1.1 Updated 2016 Census Results

A review of 2011 and 2016 census employment data shows that the proportion of population-driven employment increased slightly from 83% to 86%, which is likely to be reflective of the broader drop-off in the resources sector in WA during this period, and is associated with higher unemployment and lower population growth projections.

Total employment is higher than originally estimated from 2011 projections, standing at 15,702 versus an estimated 14,321. Despite this, the unemployment rate now stands at 8.8% (in 2016) compared to 7.3% in 2011. Correspondingly, the labour force participation rate has increased from 41% to 45%, meaning that for a given population the total number of employed person or those seeking actively seeking employment has increased.

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<sup>1</sup> 5209.0.55.001 - Australian National Accounts: Input-Output Tables, 2013-14



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The above results indicate that the local economy is in a state of change and it is therefore not recommended that the targets of the Growth Plan be amended based on the 2016 results. Rather the original 2011 baseline targets regarding the generation of additional export-oriented employment have been maintained and are compared to updated initiative scenarios in the following sections.

## 2 Clustering for Growth

It has been broadly affirmed that clusters foster innovation through dense knowledge flows and spill-overs; strengthen entrepreneurship by boosting new enterprise formation and start-up survival; enhance productivity, income-levels and employment growth in industries; and positively influence regional economic performance<sup>2</sup>.

The initial clusters selected under the Clustering for Growth platform represent relatively small, but high potential, groups of SMEs within large and growing international markets. In the assessment of the economic impact of the combined platforms it has been considered that the appropriate support and implementation of cluster specific initiatives will result in a growth rate above baseline levels. For the purposes of this analysis a growth rate of 3.5%p.a. has been applied, compared to a baseline of 2.8%p.a. real compound economic growth rate.

### 2.1 Approach

The following steps were used to derive the economic impact of the growth of each cluster:

- Average GVA per FTE in individual Input-Output Industry Groups (IOIG) was calculated<sup>3</sup> using National Accounts Data 2012/13.
- Total Employment by IOIG was calculated using ABS Census 2011 and compared against new 2016 data. For clusters, specific ANZSIC 4 ABS industry categories were selected to form cluster employment levels<sup>4</sup>. GVA per FTE was then used to estimate the total GVA of the three clusters.
- Primary Input industries and primary output industries were identified using ABS National Accounts tables. The top 15 input and output industries were calculated for each IOIG in each cluster. Employment in each of these industries was based on ABS Census 2011 and 2016 figures.
- Employment was projected using the baseline rate (2.8%pa), as was GVA by industry. The cluster development impacts were estimated using the target additional cluster growth (+0.7%). The difference provided an estimate of the potential employment and GVA benefits.
- Primary input and output industry impact was estimated by calculating national ratios for each industry and adjusting them based on levels of local employment. These ratios were then multiplied by specific industry increase in GVA to provide an estimate of the impact of primary Input and output industries.
- Industries were adjusted based on ABS ANZSIC 1 industry employment as well as registered businesses by size. Business with under 200 employees<sup>5</sup> were classified as SME's and as such the state wide proportions of business were calculated. These proportions were used to identify the relevant

<sup>2</sup> Muro, Mark, and Bruce Katz. *The new 'cluster moment': how regional innovation clusters can foster the next economy*. September, 2010.

<sup>3</sup> ABS Catalogue 5209.0.55.001 - Australian National Accounts: Input-Output Tables

<sup>4</sup> ABS Census 2011

<sup>5</sup> <http://www.abs.gov.au/ausstats/abs@.nsf/mf/1321.0>

economic impact for Progress Mid-West. These proportions were used to adjust both cluster impacts and broad base impacts.

- Total additional employment and GVA NPV were calculated and reduced by a likelihood rating to account for the uncertainty in the resulting scale and flow-on effects of cluster growth.

## 2.2 Likelihood Assessment

Likelihood assessment is a qualitative assessment process based on the capacity and demand side factors that will influence the ability of the selected clusters to achieve the targeted growth rate (above baseline). The factors considered are:

- Market: Strength of and access to market
- Assets: Physical and technological asset requirements
- Capacity: Labour force skills and business's ability to self-direct growth
- Network: Industry and trade connections
- Investment: Likely source and the ability to leverage private investment

Two likelihood scores are then applied to each measure, which rate:

- LS1: An initial rating of the current ability of the cluster to reach target growth without the initiative
- LS2: A final rating of the ability of the cluster to reach target growth based on the objectives and potential outcomes of the initiative

A range of plausible likelihood's have been considered (from 5% to 65%) given the early planning stage of the initiative. Based on the final score, a likelihood (%) is selected and applied to downgrade the total plausible impact achieved through each cluster initiative.

## 2.3 Scenarios

Two scenarios are presented in this analysis, for each scenario a consistent rate of growth is applied however the effect of cluster expansion (the inclusion of additional directly related business/industries) is considered:

**Scenario 1** is conservative cluster scope definition based on a narrow selection of industries. No expansion of the cluster (in terms of related industries) is assumed to occur outside this initial selection. This scenario therefore represents a 'low growth' scenario.

**Scenario 2** assumes that the scope of the clusters expands (in terms of related industries) from the initial selection in Scenario 1 to capture all directly related businesses over a period of two years. This scenario therefore represents a 'high growth' scenario.

Actual cluster performance is highly dependent on the actions taken by the identified clusters and the level of public and private support that is provided. The results must therefore be viewed on the basis of the growth rate assumptions, which are viewed as a plausible additional effect of direct intervention and support of the local clusters.



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## 2.4 Assessment of Impact and Likelihood: Food

### Introduction

Although a niche market, horticultural production is well established in the Mid West. Predominantly based in Geraldton and surrounds. The industry contributes approximately \$25 million of which approximately \$19 million is derived from cucumber production alone. With disease issues recently affecting the crop there is an appetite for increase rotation and diversification of produce.

The aquaculture industry is in the early stages of development. Fisheries is currently a high output industry largely based on the Geraldton Fisherman's Co-operative (western rock lobster). A Mid West Aquaculture Development Zone has been proposed and is under development. Trials of Yellowtail Kingfish production are currently ongoing.

### Updated 2016 Cluster Statistics

- Jobs in cluster<sup>6</sup> 2016: 92 (76 in horticulture, 16 in aquaculture)
- Total GVA<sup>7</sup> 2016: \$17 million
- Estimated SME GVA 2016: \$16 million

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<sup>6</sup> ABS Census 2011

<sup>7</sup> ABS Catalogue 5209.0.55.001 - Australian National Accounts: Input-Output Tables, 2012-13

## Cluster Makeup

**Figure 1. Food Scenario 1 Cluster Definition**

Cluster	IOIG Industry Classification	ANZSIC 4 Industry Classification	2016 Employment based on 2011 census	Employment based on 2016 census
Food	Aquaculture	Aquaculture, nfd	10	16
		Offshore Caged Aquaculture		
		Offshore Longline and Rack Aquaculture		
		Onshore Aquaculture		
	Other Agriculture (Horticulture)	Apple and Pear Growing	71	76
		Berry Fruit Growing		
		Citrus Fruit Growing		
		Floriculture Production (Outdoors)		
		Floriculture Production (Under Cover)		
		Fruit and Tree Nut Growing, nfd		
		Grape Growing		
		Kiwifruit Growing		
		Mushroom Growing		
		Nursery Production (Outdoors)		
		Nursery Production (Under Cover)		
		Olive Growing		
		Other Crop Growing nec		
		Other Fruit and Tree Nut Growing		
		Stone Fruit Growing		
		Sugar Cane Growing		
Vegetable Growing (Outdoors)				
Vegetable Growing (Under Cover)				
<b>Total Initial Employment Base</b>			<b>81</b>	<b>92</b>

Source: Pracsys (2019) based on ABS Census (2016)

**Figure 2. Food Scenario 2 Definition (additional cluster scope after 2 years)**

Cluster	IOIG Industry Classification	2016 Employment based on 2011 census	Employment based on 2016 census
Food	Fishing, Hunting and Trapping	148	200
	Fruit and Vegetable Product Manufacturing	9	6
	Meat and Meat Product Manufacturing		
	Processed Seafood Manufacturing	42	45
Additional Employment Base		199	251
<b>Total Expanded Employment Base</b>		<b>280</b>	<b>343</b>

Source: Pracsys (2019) based on ABS Census (2016)

**Likelihood Assessment**

Note. horticulture dominates assessment due to current employment quantum

**Figure 3. Food Likelihood Scorecard**

Criteria	Current Conditions	Key Factors	LS1	LS2
Market	<p>General</p> <ul style="list-style-type: none"> <li>Consumers in Asia and Middle East have large and growing agrifood imports</li> </ul> <p>Horticulture</p> <ul style="list-style-type: none"> <li>The Horticulture industry is forecast to expand nationally by 3.7%pa (to 2021)<sup>8</sup></li> <li>Industry faces intense competition from cheap substitute imports</li> <li>Targeted export markets are more self-sufficient in intensive horticulture</li> </ul> <p>Aquaculture</p> <ul style="list-style-type: none"> <li>The Aquaculture industry is expected to grow nationally at 1.7%pa (to 2021)<sup>9</sup></li> <li>Increase in domestic seafood consumption</li> <li>Import pressure from Asia, particularly from China and Indonesia</li> <li>The price of seafood is a key demand determinant</li> </ul>	<ul style="list-style-type: none"> <li>Mid West has an appropriate physical growing conditions</li> <li>There is a need for establishment of export markets</li> <li>Sufficient scale to be developed to target larger markets</li> <li>Quality is the industry's main selling point.</li> </ul>	3	5
Assets	<ul style="list-style-type: none"> <li>Suitable environmental conditions for development of industries in the area</li> </ul>	<ul style="list-style-type: none"> <li>Provide access to the latest technology and</li> </ul>	3	4

<sup>8</sup> IBIS Under Cover Vegetable Growing in Australia Industry Report<sup>9</sup> IBIS Aquaculture in Australia Industry Report

Criteria	Current Conditions	Key Factors	LS1	LS2
	<ul style="list-style-type: none"> <li>Technological development is skewed towards larger players</li> </ul>	<ul style="list-style-type: none"> <li>techniques for small businesses</li> <li>Assets development required to achieve scale of production and efficiencies</li> </ul>		
Capacity	<ul style="list-style-type: none"> <li>Low supply of low wage “guest workers”</li> <li>Aquaculture industry in its infancy</li> <li>Established Aquaculture Development Zone in Mid West Region.<sup>10</sup></li> <li>Trials underway for Yellowtail Finfish</li> </ul>	<ul style="list-style-type: none"> <li>Increase workforce capacity to be achieved through skill development and specialisation</li> </ul>	2	3
Network	<ul style="list-style-type: none"> <li>Incomplete or partial value and supply chains in place</li> <li>Many potential locations for horticulture development are very remote (freight costs in and out)</li> <li>Horticulture industry is influenced by availability and price of fertiliser such as crude oil and natural gas</li> <li>Industry is also affected by the supply of seeds, irrigation water and packing material</li> </ul>	<ul style="list-style-type: none"> <li>Establish strong channels along the supply chain: wholesalers, retails, local markets, food-service providers, food processors</li> <li>Create downstream ownership links (e.g. vegetable packing or wholesale)</li> <li>Establish long-term sales contracts</li> </ul>	2	5
Investment	<ul style="list-style-type: none"> <li>Recent high levels of growth and private investment in horticulture (e.g. 4 Ways Fresh Produce)</li> <li>Aquaculture development zones provide investment-ready platforms for commercial development</li> </ul>	<ul style="list-style-type: none"> <li>Public and/or private targeted investment in R&amp;D is required (greenhouse technology and development in husbandry practices)</li> </ul>	3	4
<b>Total</b>			<b>13</b>	<b>21</b>

Source: Pracsys (2016)

Likelihood Bands:

- 1 to 5: 5%
- 6 to 10: 20%
- 11 to 15: 35%
- 16 to 20: 50%
- 21 to 25: 65%

End Likelihood Score: 19/25, apply 65%

Note. Probability must be viewed in the context of the targeted growth rate above

<sup>10</sup> [http://www.fish.wa.gov.au/Documents/Aquaculture/aquaculture\\_position\\_paper.pdf](http://www.fish.wa.gov.au/Documents/Aquaculture/aquaculture_position_paper.pdf)

### Updated Results (Scenario 1)

A 3.5%pa growth rate has been applied based on the Clustering for Growth initiative (or 0.7%pa per annum additional growth above baseline growth of 2.8%pa real compound economic growth). A 65% likelihood of reaching the targeted growth rate has also been applied to this cluster, which results in the following impact:

**Figure 4. Food Cluster Results Summary (2026)**

Metric	Base-Line Growth (2.8%pa)		Cluster Growth (3.5%pa)		Additional Impact (3.5%pa)	
	Scenario 1	Scenario 2	Scenario 1	Scenario 2	Scenario 1	Scenario 2
FTE Employment	29	342	38	372	8	30
GVA per annum	\$2.6 M	\$ 64.9M	\$3.2 M	\$70.4M	\$0.7 M	\$5.6 M
GVA PV (10 years)	\$12.3 M	\$311.4M	\$14.3 M	\$326.2M	\$2 M	\$14.8 M

Source: Pracsys (2016)

**Figure 5. Food Cluster Results Summary (2036)**

Metric	Base-Line Growth (2.8%pa)		Cluster Growth (3.5%pa)		Additional Impact (3.5%pa)	
	Scenario 1	Scenario 2	Scenario 1	Scenario 2	Scenario 1	Scenario 2
FTE Employment	68	480	90	569	23	88
GVA per annum	\$4.6 M	\$89.8 M	\$6.4 M	\$106M	\$1.8 M	\$16.3 M
GVA PV (10 years)	\$24 M	\$544.9 M	\$29.9 M	\$594 M	\$5.9 M	\$49.2 M

Source: Pracsys (2016)

## 2.5 Assessment of Impact and Likelihood: Marine Services

### Introduction

Geraldton currently has two key marine facilities:

- Geraldton Port: In addition to catering for exports of grains, minerals & livestock and imports of fertiliser, mineral sands, project/general cargo & fuels the Port welcomes cruise ships, oil rig tenders and many different exhibition craft.
- Fishing Boat Harbour: The Port also supports Geraldton's lucrative fishing industry, providing berthing facilities, maintenance, waste disposal and security services to the Fishing Boat Harbour. (source: <http://www.midwestports.com.au/>)

The Fishing Boat Harbour houses the 200 tonne heavy boat lifter funded by the State Government through the Mid West Development Commission. In 2008 it was reported that the facility would generate more than 600 direct and indirect jobs.

### Updated 2016 Cluster Statistics

- Jobs in cluster<sup>11</sup> 2016: 53
- Total GVA<sup>12</sup> 2016: \$6.7 million
- Estimated SME GVA 2016: \$6.1 million

### Cluster Makeup

Figure 6. Marine Services Scenario 1 Cluster Definition

Cluster	IOIG	ANZSIC 4	2016 Employment based on 2011 census	Employment based on 2016 census
Marine Services	Retail Trade	Marine Equipment Retailing	12	4
	Ships and Boat Manufacturing	Boatbuilding and Repair Services	38	49
		Shipbuilding and Repair Services		
<b>Total Initial Employment Base</b>			<b>50</b>	<b>53</b>

Source: Pracsys (2016) based on ABS Census (2011)

<sup>11</sup> ABS Census 2011

<sup>12</sup> ABS Catalogue 5209.0.55.001 - Australian National Accounts: Input-Output Tables, 2012-13

**Figure 7. Marine Services Scenario 2 Definition (additional cluster scope after 2 years)**

Cluster	IOIG Industry Classification	2016 Employment based on 2011 census	Employment based on 2016 census
Marine Services	Water Freight Transport	30	54
	Water Passenger Transport		
	Water Transport, NFD		
	Other Repair and Maintenance	20	34
	Construction Services		
Additional Employment Base		50	88
<b>Total Expanded Employment Base</b>		<b>100</b>	<b>141</b>

Note. a subset of employment in the selected classifications has been assumed based on marine related operations (e.g. Bhagwan Marine)

Source: Pracsys (2016) based on ABS Census (2011)

### Likelihood Assessment

**Figure 8. Marine Services Likelihood Scorecard**

Criteria	Current Conditions	Key Factors	LS1	LS2
Market	<ul style="list-style-type: none"> <li>Recent exports from port have remained consistent with an average of ~15million tones/annum<sup>13</sup></li> <li>Nationally, Shipbuilding and Repair Services (&gt;50T vessels) is expected to grow nationally at 5.1%pa (to 2021)</li> <li>Nationally, Boatbuilding and Repair Services (&lt;50T vessels) is expected to fall nationally at 1.0%pa (to 2021)</li> <li>Untapped market in Oil &amp; Gas and Defence services</li> </ul>	<ul style="list-style-type: none"> <li>Geraldton is northern most port not affected by cyclones providing a comparative advantage to Oil &amp; Gas and Defence markets</li> <li>With a number of existing heavy boat lifters over 50T Geraldton can diversify within the market</li> </ul>	5	5
Assets	<ul style="list-style-type: none"> <li>Geraldton port and associated on/offloading facilities</li> <li>Fishing Boat Harbour and associated servicing and repair facilities (including 200T boat lifter)</li> <li>The Marine industry is expected to provide cutting-edge technology</li> </ul>	<ul style="list-style-type: none"> <li>Assets are currently not well suited to new targeted markets and require investment</li> <li>New asset requirements to be identified</li> <li>Create environment for technological development (design software and ship model basins)</li> </ul>	1	2
Capacity	<ul style="list-style-type: none"> <li>Key organisations/companies include Mid West Port Authority, and range of small repair &amp; servicing businesses</li> <li>Established skills and track record in heavy vessel repair and servicing</li> </ul>	<ul style="list-style-type: none"> <li>Organisational facilitation of local small business and government agencies to target larger markets</li> </ul>	2	4

<sup>13</sup> [http://www.midwestports.com.au/comparative\\_trade\\_statistics.aspx](http://www.midwestports.com.au/comparative_trade_statistics.aspx)

Criteria	Current Conditions	Key Factors	LS1	LS2
	<ul style="list-style-type: none"> <li>Growth historically heavily influenced by government investment/policy rather than industry led</li> <li>Shortage of high quality stuff with the right skills<sup>14</sup></li> </ul>	<ul style="list-style-type: none"> <li>Skill requirements specific to target industries to be identified</li> </ul>		
Network	<ul style="list-style-type: none"> <li>Export throughput of port is heavily influenced by regional exports. Primarily Iron Ore and Wheat – likely to remain</li> <li>Shipbuilding and repair services influenced by levels of small fishing and charter vessels – growth industries</li> </ul>	<ul style="list-style-type: none"> <li>Connections with potential new markets are to be developed</li> <li>Requirements of target markets must be understood</li> </ul>	2	4
Investment	<ul style="list-style-type: none"> <li>As government owned assets investment is likely to be required from State and Federal sources</li> <li>Private investment may be sourced from Oil&amp;Gas industry partners</li> <li>Federal Government has a strong long-term commitment to support the industry</li> </ul>	<ul style="list-style-type: none"> <li>Benefits case for targeted public/private investment to be developed</li> </ul>	2	4
<b>Total</b>			<b>11</b>	<b>19</b>

Source: Pracsys (2016)

Likelihood Bands:

1 to 5: 5%

6 to 10: 20%

11 to 15: 35%

16 to 20: 50%

21 to 25: 65%

End Likelihood Score: 19/25, apply 50% likelihood

<sup>14</sup> Report on WA Marine Industry [www.australianmarinecomplex.com.au/\\_document/pdfs/publications/Marine-Industry-Study.pdf](http://www.australianmarinecomplex.com.au/_document/pdfs/publications/Marine-Industry-Study.pdf)



## Updated Results

A 3.5%pa growth rate has been applied based on the Clustering for Growth initiative (or +0.7%pa per annum additional growth above baseline growth of 2.8%pa real compound economic growth). A 50% likelihood of reaching the targeted growth rate has also been applied to this cluster, which results in the following impact:

**Figure 9. Marine Services Cluster Results Summary – Scenario 1 (2026)**

Metric	Base-Line Growth (2.8%pa)		Cluster Growth (3.5%pa)		Additional Impact (3.5%pa)	
	Scenario 1	Scenario 2	Scenario 1	Scenario 2	Scenario 1	Scenario 2
FTE Employment	17	127	20	140	3	13
GVA per annum	\$1.7 M	\$15.4 M	\$2.1 M	\$16.9 M	\$0.4 M	\$1.4M
GVA PV (10 years)	\$7.9 M	\$72.3M	\$9.1 M	\$76.3 M	\$1.2 M	\$4M

Source: Pracsys (2016)

**Figure 10. Marine Services Cluster Results Summary – Scenario 1 (2036)**

Metric	Base-Line Growth (2.8%pa)		Cluster Growth (3.5%pa)		Additional Impact (3.5%pa)	
	Scenario 1	Scenario 2	Scenario 1	Scenario 2	Scenario 1	Scenario 2
FTE Employment	39	184	48	221	9	37
GVA per annum	\$3.1 M	\$21.9 M	\$4.2 M	\$26.1 M	\$1.1 M	\$4.2 M
GVA PV (10 years)	\$15.7 M	\$124.7 M	\$19.24 M	\$137.6 M	\$3.6 M	\$12.9 M

Source: Pracsys (2016)

## 2.6 Assessment of Impact and Likelihood: Tourism

### Introduction

Tourism expenditure is an importance source of income for the Mid West with expenditure of approximately \$280 million in 2012<sup>15</sup>. The 2014 Mid West Tourism Development Strategy lays out an aspirational growth target in visitation and a number of related key assets, opportunities and constraints related to future growth targets. At the original time of writing, work was due to commence on the \$20 million Kalbarri Skywalk. Other regional assets/opportunities include (amongst others):

- Abrolhos Islands maritime history and nature based experiences
- Development of a geo tourism and geo park in the Murchison
- Aboriginal culture and nature-based activities and attractions – and the development of coastal campsites
- Development of self-drive routes, including extension and enhancement of the the Wildflower Way for year-round appeal, plus
- Centre based cultural/heritage experiences such as the WA Museum, HMAS Sydney II Memorial and St Francis Xavier Cathedral in Geraldton<sup>16</sup>

### Updated 2016 Cluster Statistics

- Jobs in cluster<sup>17</sup> 2016: 576
- Total GVA<sup>18</sup> 2016: \$68 million
- Estimated SME GVA 2016: \$65 million

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<sup>15</sup> DRD Regional Snapshot, Part 5 – Regional Economics

<sup>16</sup> <http://www.visitgeraldton.com.au/experiences/geraldton.aspx>

<sup>17</sup> ABS Census 2011

<sup>18</sup> ABS Catalogue 5209.0.55.001 - Australian National Accounts: Input-Output Tables, 2012-13

## Cluster Make-up

**Figure 11. Tourism Scenario 1 Cluster Definition**

Cluster	IOIG Industry Classification	ANZSIC 4 Industry Classification	2016 Employment based on 2011 census	Employment based on 2016 census
Tourism	Accommodation	Accommodation	632	491
		Accommodation and Food Services, nfd		
	Employment, Travel Agency and Other Administrative Services	Travel Agency and Tour Arrangement Services	36	29
	Heritage, Creative and Performing Arts	Arts and Recreation Services, nfd	32	63
		Museum Operation		
Nature Reserves and Conservation Parks Operation				
Zoological and Botanical Gardens Operation				
Water, Pipeline and Other Transport	Scenic and Sightseeing Transport	9	17	
<b>Total Initial Employment Base</b>			<b>709</b>	<b>600</b>

Source: Pracsys (2016) based on ABS Census (2011)

**Figure 12. Tourism Scenario 2 Definition (additional cluster scope after 2 years)**

Cluster	ANZSIC4 Industry Classification	2016 Employment based on 2011 census	Employment based on 2016 census
*Tourism	Ownership of dwellings	1302	1364
	Cafes, restaurants and takeaway food services		
	Clubs, pubs, taverns & bars		
	Rail transport		
	Taxi transport		
	Other road transport		
	Air, water and other transport		
	Motor vehicle hiring		
	Cultural services		
	Casinos and other gambling services		
	Other sports and recreation services		
<b>Additional Employment Base</b>		<b>1302</b>	<b>1364</b>

<b>Total Expanded Employment Base</b>	<b>2,011</b>	<b>1,964</b>
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\*Note. Industry selection based on Tourism Research Australia, Tourism Satellite Account 2013-14 'Tourism Characteristic Industries' (<https://www.tra.gov.au/>), Employment reported is attributable to Tourism and does not represent total employment under the identified industry classifications.

**Source: Pracsys (2016) based on Department of Regional Development, Regional Snapshot Part 5 (2013)**

Under Scenario 2 above the total cluster employment in tourism related ANZSIC4 industry classifications has been scaled to match total tourist expenditure for the Mid West.

## Likelihood Assessment

**Figure 13. Likelihood Scorecard**

Criteria	Current Conditions	Key Factors	LS1	LS2
Market	<ul style="list-style-type: none"> <li>Nationally, tourism is expected to grow at 2.7%pa driven by a falling Australian dollar and increases in international visitors<sup>19</sup></li> <li>For the Mid West the market consists of (visitors &amp; nights respectively):               <ul style="list-style-type: none"> <li>- 80% &amp; 68% Intrastate</li> <li>- 9% &amp; 9% Interstate</li> <li>- 11% &amp; 22% International</li> </ul> </li> <li>Market share for WA is currently 4.7%, with a below average proportion of International expenditure</li> <li>Increasing demand for ecotourism nationally</li> </ul>	<ul style="list-style-type: none"> <li>Intrastate and international markets represent key opportunities</li> <li>Total quantum of Intrastate market is limited</li> <li>International market can be further developed through a range of measures including branding and marketing</li> <li>Support the development of shore-side ecocamps and day use sites</li> </ul>	2	3
Assets	<ul style="list-style-type: none"> <li>Tourism assets are primarily nature and cultural/heritage based</li> <li>Nature based tourism assets are underutilised (e.g. Abrolhos Islands)</li> <li>International visitation is constrained by accommodation (stock and age), an unchanging range of experiences and low appeal relative to competitors<sup>20</sup></li> <li>Ability to adopt new technology enables the industry to better link to guests</li> </ul>	<ul style="list-style-type: none"> <li>Efforts to attract international and interstate visitors will be enhanced with the utilisation and development regional tourism assets</li> <li>Must be matched by improvements in private accommodation stocks</li> <li>Promote industry collaboration in establishing online facilities</li> </ul>	1	2

<sup>19</sup> IBISWorld Industry Report X0003, Tourism in Australia (2016)

<sup>20</sup> Mid West Tourism Development Strategy (2014)

Criteria	Current Conditions	Key Factors	LS1	LS2
Capacity	<ul style="list-style-type: none"> <li>Individual operators have the capability to respond specific opportunities (e.g. growing number of charter operations to the Abrolhos)</li> <li>However, due to the large number of small operators (&lt;20 employees) capacity to develop regional scale attractions is limited</li> <li>There is an expected shortage of skilled workers in the tourism industry<sup>27</sup></li> </ul>	<ul style="list-style-type: none"> <li>Branding maybe further connected between centres and peak bodies</li> <li>Skill requirements specific to target industries to be identified</li> </ul>	3	4
Network	<ul style="list-style-type: none"> <li>Parts of Mid West incorporated under the Coral Coast peak tourism body<sup>21</sup></li> <li>However, distinct and separate branding of towns and lack of regional identity in the minds of visitors<sup>27</sup></li> <li>Regional produce is not highly promoted in hospitality venues and food experiences/tourism is under-developed</li> </ul>	<ul style="list-style-type: none"> <li>More cohesive and mutually beneficial connections between tourism affected industries to be developed</li> <li>Marine based tourism will be supported by concurrent development of Marine Services cluster</li> <li>Requirements of international visitors (particularly from Asian markets) must be understood and catered to</li> </ul>	1	3
Investment	<ul style="list-style-type: none"> <li>Recent capital investment by State Government (Kalbarri Sky Walk)</li> <li>Private investment limited by visitor numbers and attractions</li> </ul>	<ul style="list-style-type: none"> <li>Benefit-cost ratios developed for top 21 development options</li> <li>Further business cases to be developed and considered</li> <li>Private investment expected to respond to regional scale projects and initiatives</li> </ul>	2	3
<b>Total</b>			<b>9</b>	<b>15</b>

Source: Pracsys analysis (2016)

Likelihood Bands:

1 to 5: 5%

6 to 10: 20%

11 to 15: 35%

16 to 20: 50%

21 to 25: 65%

End Likelihood Score: 15/25, apply 35%

<sup>21</sup> <http://www.australiascoralcoast.com/industry/about-us>

## Updated Results

A 3.5%pa growth rate has been applied based on the Clustering for Growth initiative (or +0.7%pa per annum additional growth above baseline growth of 2.8%pa real compound economic growth). A 50% likelihood of reaching the targeted growth rate has also been applied to this cluster, which results in the following impact:

**Figure 14. Tourism Cluster Results Summary (2026)**

Metric	Base-Line Growth (2.8%pa)		Cluster Growth (3.5%pa)		Additional Impact (3.5%pa)	
	Scenario 1	Scenario 2	Scenario 1	Scenario 2	Scenario 1	Scenario 2
FTE Employment	209	1,892	236	2,058	27	166
GVA per annum	\$6.6 M	\$167.6 M	\$9.6 M	\$183 M	\$ 3 M	\$15.4 M
GVA PV (10 years)	\$15.8 M	\$789 M	\$25 M	\$831 M	\$9.2 M	\$42 M

Source: Pracsys (2016)

**Figure 15. Tourism Cluster Results Summary (2036)**

Metric	Base-Line Growth (2.8%pa)		Cluster Growth (3.5%pa)		Additional Impact (3.5%pa)	
	Scenario 1	Scenario 2	Scenario 1	Scenario 2	Scenario 1	Scenario 2
FTE Employment	484	2,684	558	3,170	75	486
GVA per annum	\$17 M	\$240.4 M	\$25 M	\$284.5 M	\$8.3 M	\$44.1 M
GVA PV (10 years)	\$54 M	\$1391.5 M	\$81 M	\$1,527.4 M	\$27 M	\$135.9 M

Source: Pracsys (2016)

## **3 City Revitalisation**

### **3.1 Tourism**

This section details the methodology and results of the tourism impact analysis attributable to City Revitalisation.

### **3.2 Approach**

This analysis is based on the assumption that the percentage of Mid West tourists visiting Geraldton increases as a result of the city revitalisation efforts.

The Growth Plan for Greater Geraldton contains many tourism initiatives including cluster based initiatives and broader initiatives for greater tourism growth centred on heritage, crayfish, water sports and nature based tourism including the Abrolhos islands. Similarly, the new city revitalisation is expected to attract new visitors to the town of Geraldton that may not have otherwise visited the centre.

To determine the impact that city revitalisation efforts may have had current tourism demand and spending was calculated using a variety of sources including the Midwest Development Commission Area overnight visitor fact sheet (2014/15), the Geraldton-Greenough Tourism Strategy (2009) and Australia's Coral Coast overnight visitor fact sheet (2014/15), Perceptions of Greater Geraldton, TNS (2016). Information from these sources gave a high level estimate of total spend in Greater Geraldton. Based on these sources the current proportion of Mid West tourists visiting Geraldton is 54%. The high case assumes a 4 percentage point increase to 58%, this translates to an increase in visitors (and therefore spend) in Geraldton of approximately 7%. This is assumed to be a consistent (non-compounding) increase and is applied to an assumed growth in base employment of 2.8%pa (consistent with assumptions used for the Tourism Cluster initiative).

The potential impact was determined through the use of a sensitivity of an increase in visitors. Potential increases in visitors was translated into total tourism spend for the region. This increase in tourism spending was then applied to existing tourism related jobs (as derived from the Tourism Satellite Account) and employment grown appropriately as a result.

### **3.3 Results**

A sensitivity showing the possible effects of the city revitalisation resulting in a +2% to +4% increase in visitation rates of Mid West tourists to Geraldton is shown in

Figure 16. This range of impact is presented as a plausible target range with which to estimate results. It is noted that

**Figure 16. 2016 Tourism Impact**

Scenario	Geraldton Holiday Visitors	Visitor Nights	Average Nightly Spend	Tourism Expenditure
Baseline	127,037	409,013	\$99.6	\$ 40,754,929
2% Increase in visitors	8,596	424,162	\$99.6	\$ 42,264,371
4% Increase in visitors	136,447	439,311	\$99.6	\$ 43,773,812

Source: Pracsys (2016) based on Localise (2016), TNS (2016), Tourism WA Midwest Overnight Visitor Fact Sheet (2014/15), Tourism WA Coral Coast Overnight Visitor Fact Sheet (2014/15), Mid West Development Commission Geraldton-Greenough Tourism Strategy (2009)

As shown, spend increases approximately \$1.5m to \$3m. This increase in spend has been translated to employment in Figure 17.

**Figure 17. Greater Geraldton Tourism Employment Impact 2016**

Cluster	Base Employment	Low Growth	High Growth
Tourism	1146	1189	1231

Source: Pracsys (2016)

**Figure 18. Greater Geraldton Tourism Employment Impact 2026**

Cluster	Base Employment	Low Growth	High Growth
Tourism	1511	1566	1622

Source: Pracsys (2016)

**Figure 19. Greater Geraldton Tourism Employment Impact 2036**

Cluster	Base Employment	Low Growth	High Growth
Tourism	1991	2065	2139

Source: Pracsys (2016)

As shown, this results in an overall increase of 148 FTEs and 74 FTEs by 2026 under the high and low growth scenarios respectively.



## 4 Leakage Reduction

This section details the methodology and results of the leakage reduction initiative impact assessment.

### 4.1 Approach

Areas and scale of potential leakage reduction were identified in the Greater Geraldton Expenditure Leakage Study written by Geografia (2016). The report identified three potential areas of leakage reduction:

- Business to business expenditure
- Local consumer expenditure
- Government expenditure

Of these, the most viable area of focus was that of business to business expenditure. Approximately \$76.3 million of goods and services currently sourced outside of Greater Geraldton was identified as having potential to be sourced in Greater Geraldton. Pracsys has estimated the employment impact of having this business-to-business expenditure sourced locally.

To estimate the employment impact of an \$76.3m local expenditure, the leakage was assigned into relevant ANZSIC employment categories for classification. The value of each category could then be compared to Input-Output data. Average output per worker<sup>22</sup> was applied to these estimates of potential output. Where the leakage opportunities were amalgamated an average of the output per FTE has been used. This has given a potential employment figure based on national averages.

Consumer expenditure leakage reduction impact was deemed to be unlikely to contribute any employment given that Geografia's finding that "Overall, consumer expenditure leakage from Greater Geraldton is relatively modest and not dissimilar to rates found elsewhere in (metropolitan) WA. Reducing leakage further is likely to prove increasingly challenging."

Local government expenditure leakage reduction opportunities were valued at \$15m by Geografia. No specific details of how this was broken up between the various industries nominated has been given. To calculate the potential impact, Pracsys has assigned all possible leakage into a relevant ANZSIC category and assumed an even distribution in monetary terms between these categories. Average output per worker has then been applied to the relevant category and value to given an estimate of employment.

It should be noted that some of this employment impact will reflect a transfer of employment from elsewhere in the broader Western Australian or Australian economy, dependent on where the goods and services originate from.

### 4.2 Results

The full employment impact of a successful leakage reduction initiative is shown in Figure 20.

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<sup>22</sup> ABS Catalogue 5206 National Accounts

**Figure 20. Leakage Reduction Employment Impact**

Sector	Leakage Reduction Opportunities	Value (\$)	Output/ FTE (\$)	Jobs
Manufacturing	Other Fabricated Metal Products	3,000,000	317,253	9
	Professional, Scientific and Technical Services	2,100,000	235,407	9
	Professional Services	1,200,000	235,407	5
	Polymer Products	2,100,000	306,219	7
Construction	Polymer Products	6,200,000	306,219	20
	Finance and Insurance Services	1,000,000	562,536	2
	Heavy & Civil Engineering Construction	3,000,000	1,501,169	2
	Professional Services	1,800,000	235,407	8
	Wood Product Manufacturing	5,500,000	284,164	19
Wholesale Trade	Professional Services, Administrative Services and Auxiliary Finance and Insurance Services	10,800,000	337,536	32
Mining	Professional, Scientific and Technical Services	3,900,000	235,407	17
	Electricity Generation	3,100,000	710,360	4
Tertiary Service Sectors	Employment, Travel Agency and Other Administrative Services	10,800,000	389,289	28
	Professional, Scientific and Technical Services	9,900,000	235,407	42
	Computer Systems Design & Services	9,000,000	265,326	34
	Auxiliary Finance and Insurance Services	2,900,000	387,913	7
Not Specified	Local Government Leakage	15,000,000	495,722	30
<b>Total</b>				<b>275</b>

Source: Pracsys (2016) based on Geografia (2016), Localise (2016), Australian Bureau of Statistics Catalogue 5206

The information contained in Figure 20 shows the leakage reduction opportunities and their value as identified by Geografia. These leakages are predominantly business to business with a small amount of local government leakage. The approximately impact of business to business leakage reduction is 245 jobs. This full impact has been considered as the 'high growth' scenario. If only a 50% impact were realised, this would amount to approximately 123 jobs. Local Government leakage reduction measures could contribute up to 30 jobs, this would fall to 15 if only 50% of opportunities were realised, representing a plausible 'low growth scenario'. This results in a possible employment impact of between 275 and 138, dependent on how many opportunities are exploited.

The results represent a maximum impact of leakage reduction efforts. This initiative is viewed as a medium to long term initiative and therefore it has been assumed that the level of impact can plausibly be achieved by 2036 (i.e. for 2026 the high growth impact level is assumed to be 137 FTEs).



## 5 Shift-Share Analysis

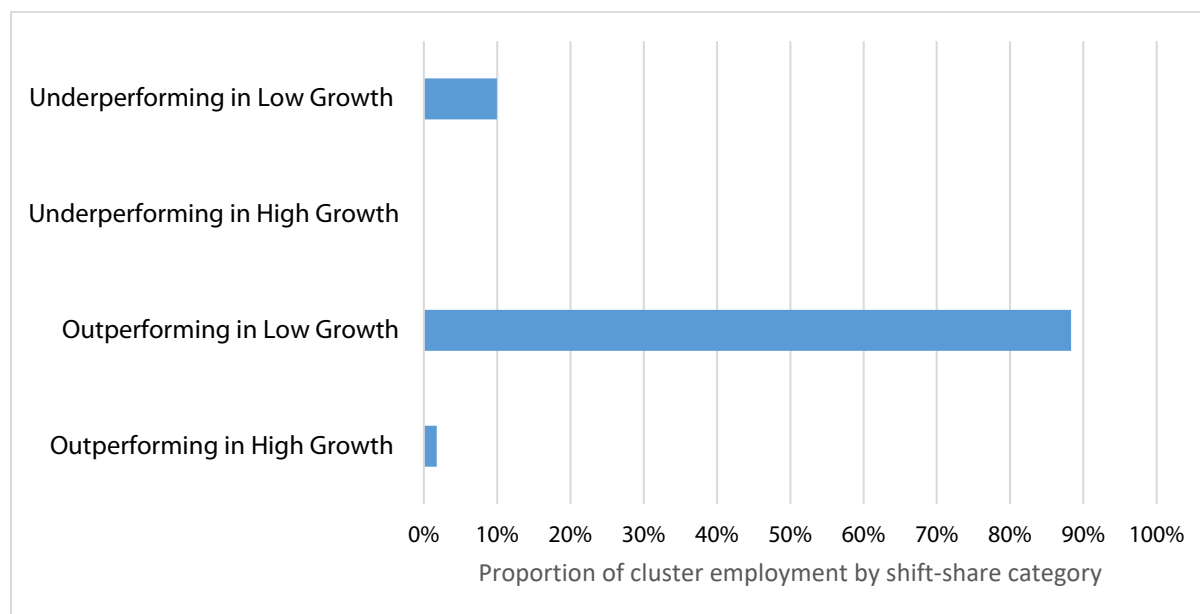
Shift-share analysis is a technique that uses employment growth, both at a national and local level, to identify industries that are most competitive within the region. Employment growth is broken down into different components to determine what share of growth is attributed to growth in the national economy and specific industry, with the remainder then assumed to result from particular competitive strengths developed in the region.

Shift-share analysis was conducted for the Food, Marine services and Tourism clusters within Greater Geraldton, and are summarised below. The results show that, predominantly, all clusters are outperforming on a relative basis, which is a very positive sign and support the initial formation of cluster development efforts the support local employment growth within Greater Geraldton.

Shift-share results are categorised as:

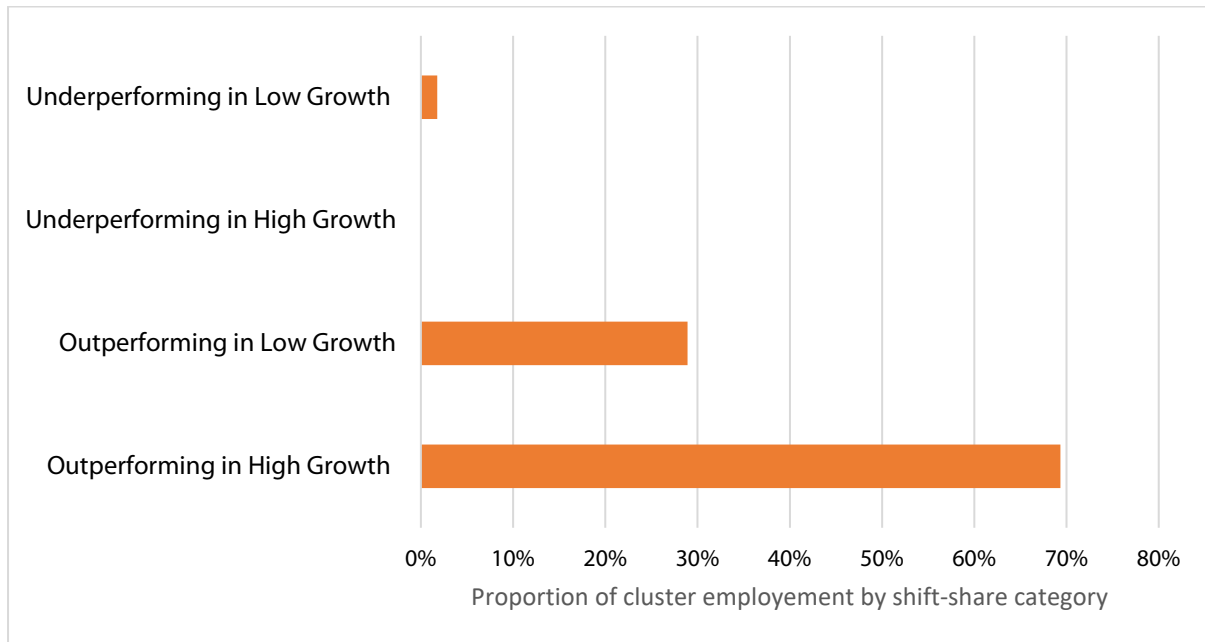
- Local employment growth is underperforming in a nationally low growth industry
- Local employment growth is underperforming in a nationally high growth industry
- Local employment growth is outperforming in a nationally low growth industry
- Local employment growth is outperforming in a nationally high growth industry

**Figure 21. Food Cluster Results**

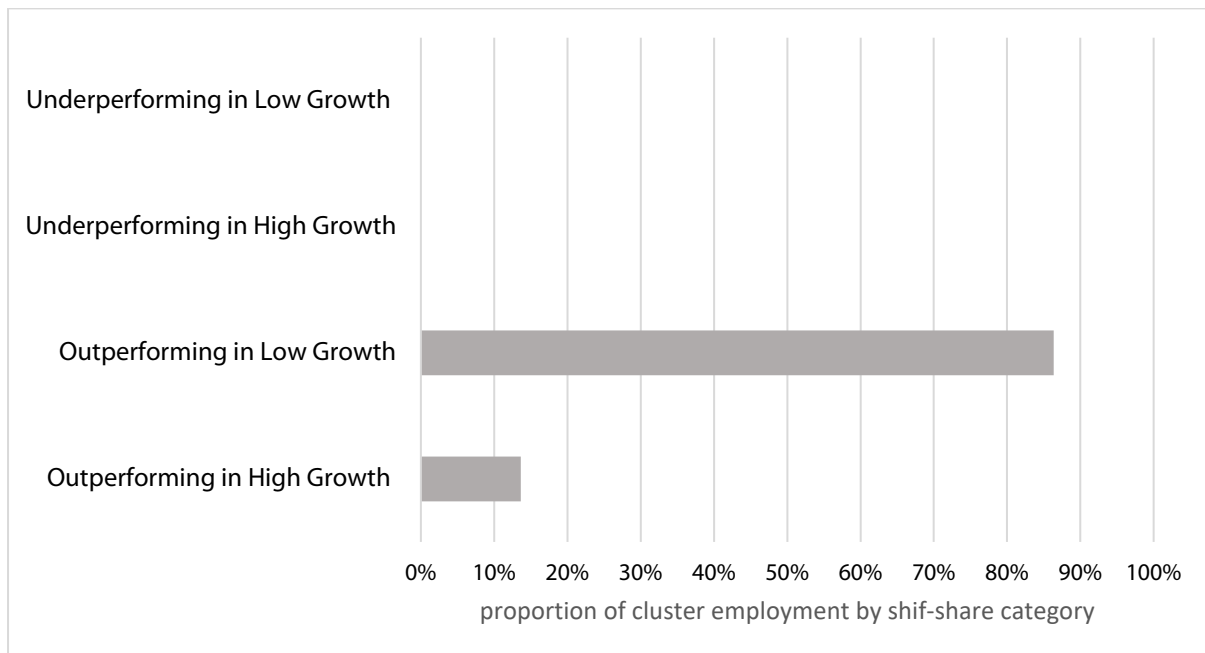




**Figure 22. Marine Services Cluster Results**



**Figure 23. Tourism Cluster Results**



## 6 Updated Results Summary

The overall range of impact from the full catalogue of initiatives is shown in Figure 24. These results represent direct employment that may be generated from the key Focus Areas only.

**Figure 24. Results Summary 2026**

	High Impact	Low Impact
Cluster for Growth Initiatives	209	38
City Revitalisation Initiatives	111	55
Leakage Reduction Initiatives	137	68
<b>Total Employment Impact</b>	<b>457</b>	<b>161</b>

Source: Pracsys (2016)

**Figure 25. Results Summary 2036**

	High Impact	Low Impact
Cluster for Growth Initiatives	611	107
City Revitalisation Initiatives	148	74
Leakage Reduction Initiatives	275	137
<b>Total Employment Impact</b>	<b>1,034</b>	<b>318</b>

Source: Pracsys (2016)

As shown, the total potential employment impact ranges from 318 to 1,034 jobs over 20 years, compared to initial range of 329 to 1,056 based on the original analysis. If these jobs are successful in driving growth in the region, further consumption based jobs are expected to be added as job growth drives population growth (and a number of measures such as city revitalisation support the retention of this growth).

The result show only a marginal shift in the overall projections and continue to support the conclusion that the Growth Plan targets are plausible given the original 1,053 target for additional export oriented employment.

Further key results from the 2016 census updates are:

- Recent economic conditions have been mixed, the seemingly contradictory results of higher than expected total employment results and an increase in unemployment rate are likely to be reflective of the sharp economic slow-down being experienced at the time.
- Given this, it is not recommended that the Growth Plan targets be adjusted based on these short-term results. Rather, population growth, employment, labourforce participation and unemployment should be continued to be monitored over time, with adjustments made to the targets if necessary.
- The results of recent cluster growth highlight variability in specific clusters. All clusters have performed well on a national relative basis, which is extremely encouraging. Marine Services in particular has outperformed in what is already a high growth industry on a national level.