

RAPAD PATHFINDER PROJECT

FINAL REPORT

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**REGIONAL
AUSTRALIA
INSTITUTE**

PATHFINDER INITIATIVE

Navigating opportunities for growth

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Executive Summary

The RAPAD region is in a time of transition – through a long period of drought it has slowed, and is now moving to growth through cluster fencing, stimulating local entrepreneurs, delivering enhanced digital connectivity and strengthening its diversified economy. This transition could deliver an economy worth \$1.5 billion in gross value added in 2031.

However, its strengths of high productivity, strong agricultural viability and world-class tourist attractions are at present constrained from future growth.

Constraints to growth in the RAPAD region are highlighted with 37.5 per cent of jobs at risk of digital disruption, ageing population and ageing infrastructure with constrained investment capacity to stimulate growth.

This report outlines the opportunities, challenges, actions and payoffs for six priorities identified by the RAPAD board, which will grow the region to 2031.



BRING BACK
THE SHEEP

Broadening sheep meat production and wool production to supply growing international markets.

- Potential regional economic growth to \$38.8 million annually through increased gross margins from sheep production, stimulating jobs for an additional 158 people in the industry.
- Actions: Support continued roll-out of cluster fencing, work with industry to ensure knowledge is available and skills are upgraded to deliver increasing profitability and implement regional brand.



TOURISM
GROWTH

Tourism growth to increase tourist numbers and expenditure, building on strengths of regional attractions.

- Potential industry growth of 262 per cent from 2016 creating \$1.67 billion expenditure in the broader Outback Tourism region.
- Actions: Promote and support the high tourism performers, capture tourism data analytics, create new investment opportunities and enhance tourism experiences through capacity development and opportunities.



INFRASTRUCTURE
CONNECTIONS

Infrastructure connections – ensure inter and intra connectivity and service delivery that enables the region to be globally competitive.

- Early sealing of roads could save \$6.8 million in road maintenance, as well as \$56 million in additional benefits and productivity gains to key tourism, livestock and freight routes, including 24 potential new jobs from increased drive tourism market.
- Actions: Seal Bedourie to Birdsville, Birdsville to Windorah Roads as well as Donohue Highway, improve access to telecommunications for all towns and rail utilisation across the RAPAD region.



ENERGY AND
WATER SECURITY

Delivering low cost and stable energy sources with secure water access.

- By meeting Queensland's renewable energy target of 50 per cent, with residential households and small business self-consuming energy produced rather than feeding it back into the grid, Community Service Obligation subsidy payments would reduce by at least \$70 million out to 2031.
- Actions: Maximise use of renewable energy generation, establish water security options, identify industry support.



HEALTHY AGED
CARE LIVING

Supporting services and infrastructure to ensure the RAPAD region is a preferred retirement destination.

- Potential job growth of 600 people by 2031 based on increase in 61 per cent of retirees in the region.
- Actions: Co-ordinate an 'aged' working committee to strategise regional approach, supplement current RDA 'aged audit' with a services review, stimulate support for aged services across RAPAD region, and identify options for 'ageing in place' infrastructure across the RAPAD region that meets whole of community demand.



IMPROVE
TELECOMMUNICATIONS

Create the environment where the RAPAD region leads remote area delivery of telecommunication and digital infrastructure for regional growth.

- Potential retail output increase of \$7.8 million, enhanced ICT jobs from 7 to 17.8 local jobs and increased overseas tourist numbers to 33,782.
- Actions: Implement the *Smart Central Western Queensland Strategy*, target investment to enable priority areas e.g. tourism, bring back the sheep, and utilise existing technology to develop a brand and presence for the RAPAD region online.

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Unlocking future growth of the RAPAD region

The RAPAD region's economy has the potential to deliver \$1.5 billion in regional output in 2031.

This builds on its strong productivity, 28 per cent higher than the Australian average, and competitive specialisation in the fast growing industries of agriculture and tourism.

To reach this potential, RAPAD must overcome its challenges and focus on key priorities and commitment to a long term sustainable economic vision.

The Central Western Queensland Remote Area Planning and Development Board (RAPAD) is a regional development organisation and regional organisation of councils which aims to foster, facilitate and promote the sustainable growth and development of the Central Western Queensland region. RAPAD has been in existence since 1992 and has proven to be a cohesive and collaborative organisation, proactively working in partnership with government and non-government stakeholders at the local, state and federal level.

Structurally, RAPAD is a not-for-profit entity owned by, and representing the seven local governments of the Central Western Queensland region. Governance is via a board of directors from and representing those member local governments, *vis-a-vis* Barcaldine Regional Council, Barcoo Shire Council, Blackall-Tambo Regional Council, Boulia Shire Council, Diamantina Shire Council, Longreach Regional Council and Winton Shire Council.

The RAPAD region boasts one of the most dispersed populations in the country, with roughly 12,000 people spread across an area of more than 320,000 square kilometres. Despite unique challenges – from remoteness to variable climate – the region has the potential to enter a period of high economic growth through to 2031. As a whole, the region is expected to grow 2.8 per cent per annum compared to the 1.9 per cent per annum achieved over the last decade, with key strengths in industries like agriculture, tourism and services which are aligned to global growth trends. Overall, the Regional Australia Institute (RAI) modelling indicates the RAPAD region has the potential to deliver an annual output of \$1.5 billion in Gross Value Added (GVA) by 2031. Focusing on key strategic priorities and commitment to a long-term vision will be vital to achieving these gains.

As outlined in the Future Factors report (first report of the Pathfinder project and companion report), the region's industry strengths of agriculture, in particular beef and sheep production, will be a major driver of this growth. Similar to other Rangeland regions, the agriculture industry dominated employment share for the region in 2011 (27.7 per cent) and its annual output is expected to be \$0.6 billion more in 2031 than it was in 2013. Increasing demand from Asian markets for clean, green meat coupled with strong brand recognition of Northern Australia's high quality produce puts the RAPAD region in a strong position. Strategies to increase sheep meat and wool production to supply international markets for example, will be an important priority. Nevertheless, agriculture alone will not deliver the region's full potential.

Collectively, industries like tourism, public services (education, health, and public administration), construction and IT will contribute the biggest share to future economic growth. Upskilling and developing greater capacity across these industries, for example in tourism, health and digital skills, will be key to these industries reaching their full potential. Enhancing the capability and capacity of the region will help to build on its already highly productive workforce. The Future Factors report highlighted the impact of all industries to regional growth.

**37.5 PER CENT OF
RAPAD JOBS
VULNERABLE TO
DIGITAL
DISRUPTION**

In both 2008 and 2013, the average productivity of the RAPAD region was more than 28 per cent higher than the Australian average. Traditionally low levels of unemployment and specialisations in agriculture, wholesale, civil engineering construction and recreation services jobs have formed the basis for a healthy labour force. The RAPAD region also has a higher share of public sector jobs compared to the rest of the state. These labour force characteristics are key competitive advantages for the region, and building on them will be vital in the face of new challenges.

The digital revolution has been a catalyst for disruption and the job market of 2031 is likely to be very different to what we see now. In particular, low skilled jobs and even some high skilled but routine jobs are likely to fade away, while new jobs requiring new skills are likely to be created. On average, RAI modelling shows that 37.5 per cent of jobs within the RAPAD region are at risk of digital disruption. The challenge for the region will be how they adapt to race ahead with technology, rather than against it, prioritising development in digital and higher order skills.

Other challenges, like a growing older population will require the region to address issues such as the location of age-specific services, while climate change will continue to have disproportionate effects on sparsely populated areas like the RAPAD region, which are dependent on industries such as agriculture. Working proactively to mitigate these challenges and building on the region's strengths will be crucial.

In order to achieve the potential growth outlined above, RAPAD will need to focus its efforts on strategic priorities aligned with regional planning and capacity building to support the economy's growth. Focusing the region's energy on investment in major and emerging growth industries and upskilling across the region will be vital.

This work has focused on six priorities for the RAPAD region – however, these are not the only priorities. They should be seen as priority investments in a suite of strategic activities undertaken in the region. Other priorities include; education, bio-futures, engineering and heavy industries as outlined in the local government strategic plans and the Bowen Basin Regional Local Investment Plan as part of the Regional Jobs and Investment Packages.ⁱ

This report identifies key actions in relation to the six priorities that will be the first step to unlocking the RAPAD regions long-term growth prospects. All six priorities are aligned with RAPAD's and the separate local government strategies, shown in Table 1, with further information found in the Future Factors report.

Table 1. Alignment of six priority payoffs with Remote Area Planning and Development area (RAPAD) and local government areas (LGA) strategic priorities

	<p>Broadening sheep meat production and wool production to supply growing international markets.</p> <ul style="list-style-type: none"> • Aligns with RAPAD priorities through Sustainable Industries. • Aligns with 6 LGA priorities through Agriculture.
	<p>Tourism growth to increase tourist numbers and expenditure, building on strengths of regional attractions.</p> <ul style="list-style-type: none"> • Aligns with RAPAD priorities through Sustainable Industries. • Aligns with 6 LGA priorities through Tourism and vibrant community.
	<p>Infrastructure connections – ensure inter and intra connectivity and service delivery that enables the region to be globally competitive.</p> <ul style="list-style-type: none"> • Aligns with RAPAD priorities through Transport. • Aligns with 4 LGA priorities through Road Infrastructure.
	<p>Low cost and stable energy source with secure water access.</p> <ul style="list-style-type: none"> • Aligns with RAPAD priorities through regional planning and capacity building. • Aligns with 4 LGA priorities through electricity and 4 LGA priorities through water supply.
	<p>Supporting services and infrastructure to ensure the RAPAD region is a preferred retirement destination.</p> <ul style="list-style-type: none"> • Aligns with RAPAD priority through service retention and expansion. • Aligns with all LGAs through vibrant communities and health.
	<p>Create the environment where the RAPAD region leads remote area delivery of telecommunication and digital infrastructure for regional growth.</p> <ul style="list-style-type: none"> • Aligns with RAPAD priorities through Technology, communications and digital economy. • Aligns with 3 LGAs through telecommunications, aligns with all LGAs as an enabling infrastructure.

Payoffs for the 6 priority areas

The payoff analysis described below has been principally constructed from extensive previous work undertaken by RAPAD and for the RAPAD region. Therefore, it cross-references initiatives that we believe in the next 5 - 10 years will make a big difference in RAPAD growing its region and delivering on its future economic potential.

These payoffs are constructed to guide future work of the RAPAD board and provide the basic economic analysis that could support targeted funding and investment. However, as context and investment environment change quickly in economic development, all actions will need to be tested with leading stakeholders at the time of funding application.



**BRING BACK
THE SHEEP**

Bring back the sheep

Broadening sheep meat production and wool production to supply growing international markets.

Actions: Support continued roll-out of cluster fencing, work with industry to ensure knowledge is available and skills are upgraded to deliver increasing profitability and implement regional brand.

Cluster fencing to increase current sheep stock to 735,966 creating \$4.3 million in wages, 88 more jobs and stimulating the regional economy with \$13.6 million more in regional gross margins. Including increased brand market access and premium, could raise gross margins by up to 10 per cent and combined, would deliver an increased \$16 million annually into the RAPAD region economy from today's base.

Current situation

Australia is the world's largest exporter of sheep meat and is the world's second largest producer of lamb and muttonⁱⁱ. In 2014-15, the Queensland sheep and wool industry was valued at \$132 million (\$66 million for sheep and lamb slaughtering and \$66 million for wool production). The state has 1,688 establishments holding 2.17 million head of sheepⁱⁱⁱ. Most of Queensland's sheep are located in the central and western region (lower North, Central and South west as well as Darling Downs and Maranoa). In 2013, the outback region contributed 60 per cent to the state total number of sheep, ensuring the region has a key share of the state's sheep industry.^{iv}

Historically, the sheep and wool industry were strong in the RAPAD region, with high on-farm production supporting local jobs in shearing teams and demand for enhanced skills at Queensland Agricultural Training College - Longreach and Queensland government extension. This changed in about 2004 with harsh environmental conditions, increased predators and pasture competition, resulting in the continual destocking of the sheep industry in the RAPAD region. The last decade has also seen an increased sheep death rate, inversely correlated with average wool cut. Figure 1 below provides some basic data for the two production regions that overlap to cover RAPAD; importantly this regional production pattern is similar to Queensland as a whole.

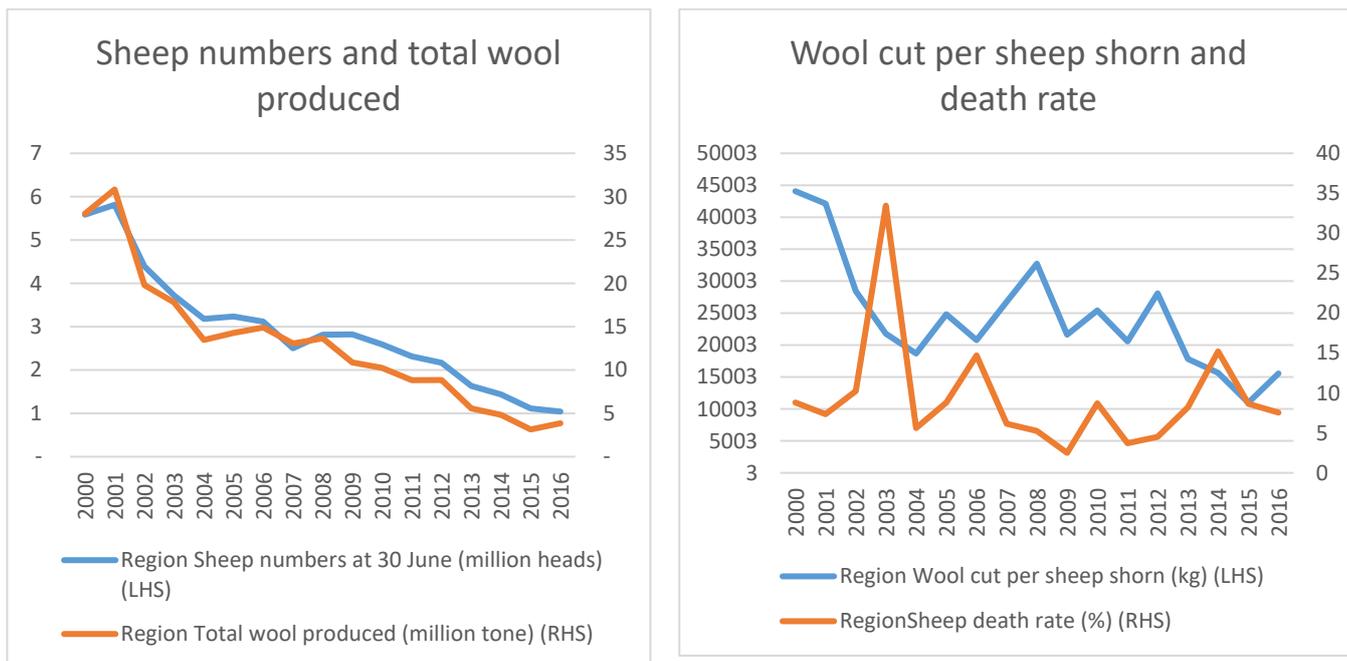


Figure 1: Sheep data for the two production regions that cover the RAPAD region: Charleville – Longreach and West – South West Queensland (Source: MLA and ABS)

The industry is driven by farmer investment but delivers wider economic benefits in the form of jobs for regional transport, labour (shearing, crutching, etc.) as well as flow on benefits of increased money in the economy. One farmer is quoted as saying “while sheep are more work, they pay back 4 to 1 compared to cattle.”

Now the sheep and wool industry has seen the strongest growth for many decades. However, with such a long period of de-stocking there is a need for strong investment by all sheep industry stakeholders to ensure its long-term viability in the RAPAD region.

The supply chain for the sheep industry in the RAPAD region is very grower focused. Sheep for the meat market are shipped live for export from Brisbane or transported to Northern NSW (Grafton or Dubbo) for slaughter. The wool market involves a mixture of local and New Zealand shearers, with the cut sent to Brisbane for storage. About 85per cent is export directly for further processing. These pathways mean that there is currently no value adding being undertaken in the sheep industry in the RAPAD region.

Challenges

The challenges in expanding the sheep and wool industry in the RAPAD region include protecting flock from predators (wild dogs), competition for grazing land (kangaroos), ensuring excellent production rates through good climatic conditions, continually improving genetics and access to vibrant markets for wool and meat products.

Protecting the flock is a critical issue for the RAPAD region. It is clear from the data available that producers in the RAPAD region (as covered by the West and South West and Charleville - Longreach production areas) are harder hit by sheep deaths than the average Queensland

producer. With higher sheep death rates in the Longreach area (50 per cent) compared to the state average of 33 per cent.^v

Extensive work has been undertaken in the erection of cluster fencing to protect sheep and safeguard grazing land. It is estimated that predators alone cost the regional sheep industry \$1.4 million in 2016 through foregone lambs, fleece and stock. This is an ongoing challenge, with new investment looking at extending the use of cluster fencing and undertaking rigorous monitoring of its implementation and improvements to its success.

The second issue is the continual improvement of genetic material to ensure current breeding patterns are delivering high production values and are suited to climatic conditions. This is an important issue for longevity of the sheep industry as it is vital on farm to have a sheep genetic improvement program optimised to the enterprise's mix of the business and target market segments (i.e. wool sheep meat and livestock trading)^{vi}. Traditionally Universities, Cooperative Research Centres and state primary industry organisations, have undertaken research and development for the sheep industry.

The final issue is access to vibrant markets for wool and meat products. Looking into the future, long-term prospects for Australian and Queensland wool and meat will hinge mainly on global economic conditions and income growth, not on the relative volume of other producers or products.^{vii} Therefore, producers must pursue productivity gains through the adoption of best management practices for their business, especially understanding customer demands and preferences. A key issue to consider is the RAPAD 'brand' for production and its relative merit in differentiating regional production output and gaining higher returns. See the box for the potential role and impact of provenance branding to deliver value. In addition, there is a need for enhanced local understanding of markets and delivery of products accordingly – e.g. wool type and cut.

This work is focused on the role of RAPAD in facilitating investment in future opportunities for growing the region. As such, it does not address individual business constraints that hinder

Branding to secure more market share and higher premiums – lessons from Namibia

Namibian beef brand, Nature's Reserve, focused on marketing and has delivered price premiums to farmers worth US\$25 million per annum. Their success included aggressive outsourcing; a multichannel, multi-product portfolio approach to branding; diversification into local, regional and export markets; public-sector support; and a foundation in existing organisations. The core value of the company lies not in their physical products but in their intellectual property — **their branding**. This provides leverage in negotiations with buyers and long-term value to the companies and the communities that depend on them. This principally geographic branding is only successful if undertaken and supported at a regional level with assured quality and quantity producers.



Source: <http://www.natures-reserve.co.uk/>

However, for every successful regional brand e.g. Champagne, there are many others that haven't worked. Currently Queensland meat is being branded (for example: Nature's Reserve Beef (<http://naturesreservebeef.com/index.html>)). The success of this brand is not currently available, and highlights the importance of working with successful brands and or starting brands that fill a market gap – not necessarily a supply gap. Of course wool products are also branded, currently the Australian Wool Network "aims is to expand the usage of wool and give provenance to the wool within the garments we produce by using imaginative and creative marketing." These examples highlight the need for regional brands to work with current market conditions to deliver real value through provenance.

expansion (where RAPAD has no role) e.g. constrained supply of sheep for re stocking resulting in high prices and limited stock, uncertain environmental conditions or degraded on-farm infrastructure.

Addressing all three challenges will deliver conditions for bringing back sheep to the RAPAD region and delivering a regional payoff. As one sheep industry stakeholder stated “happy sheep are productive sheep.”

Payoff analysis

The potential returns from ‘bringing back sheep’ to the RAPAD region are catalytic in growing jobs and achieving improvement in regional business profitability. Following on from addressing the challenges are two types of pay-offs, first related to extension of cluster fencing as already analysed by RAPAD and second related to improved gross margins from sheep farming being more profitable and extensive in the region.

Cluster fencing analysis is currently underway to monitor and improve current calculations regarding its benefits. As a starting point, the analysis builds on the test cluster fencing deployed for round 1 and 2 (including the Clifton cluster) which could be carried out on properties to increase sheep stock in the RAPAD region from 373,358 to 735,966 (97 per cent increase).

If further cluster fencing was implemented and had the same impact, similar benefits could be expected, such as 88 additional jobs or \$4.3 million of wages into the region, increase in property and regional gross margins by an additional \$13.6 million in the RAPAD economy.^{viii}

In addition regional provenance branding could also increase the profitability of agricultural outputs (e.g. wool and sheep meat), yielding a conservative estimate of 10 per cent increase in gross margins as calculated below in Table 2. In total, an additional \$38.8 million will be produced in the RAPAD economy annually from current farming practices.

Table 2. Summary of pay-off for Cluster Fencing Gen 2 and Brand analysis

	Before	Cluster	Brand + Cluster Gen 2
Sheep Numbers	373,358	735,966	735,966
Sheep Variable Labour required (hours)	4,480,296	8,831,592	8,831,592
Variable (Full Time Equivalent jobs)	80	158	158
Sheep Gross Margins	22.24	34.63	38.09
Increased Regional Gross Margin	\$21,642,982	\$35,296,098	\$38,825,707

Actions

1. Support the continued roll-out of cluster fencing in the region.
2. Identify and work with industry leaders (e.g. research, Queensland Department of Agriculture and Fisheries, Leading Sheep etc.) to ensure current research and knowledge is appropriate for growers and enables increased profitability e.g. genetics, pasture, markets etc.
3. Assess and fill skills and capacity gaps in growing producer’s market knowledge to ensure continually profitable business planning and operation.
4. Deliver *Smart Central Western Queensland: a digitally enabled community strategic plan*. Specifically recommendations in relation to branding of the region for all saleable output; tourism, agricultural commodities, including; 6, 7, 8 which also support the following five other priority areas.



Growing tourism, growing regional spend

Tourism growth – increase tourist numbers and expenditure, building on strengths of regional attractions.

Actions: Promote and support the high tourism performers, capture tourism data analytics, create new investment opportunities and enhance tourism experience through capacity development and opportunities.

Lift the value of overnight visitors in the outback economy to \$1.67 billion by 2031 showing an increase of 262 per cent from 2016 tourism expenditure with an associated job increase of 17,400 FTE.

Current situation

In 2016, the Outback Queensland region (including south, north and central west Queensland) had 780,000 domestic overnight visitors, 498,700 day-trip visitors and 25,400 international visitors^{ix}. These visitors spent \$461 million in overnight stays, which supported 4,580 jobs.

While the RAPAD region is only a component in the Outback Queensland tourism region, it contains some of the big attractions, e.g. Australian Age of Dinosaurs, Qantas Founder's Museum and Stockman's Hall of Fame^x. The RAPAD region also has direct and strong transport access via flights (Longreach), rail and roads, and holds some of the biggest events in the Outback region, for example the Birdsville Races and The Big Red Bash. Therefore, while we cannot apportion direct numbers to the RAPAD region (based on lack of data) we can provide overall Outback tourism analysis and expect similar patterns in the RAPAD region.

Tourism is a whole of community business in low-density economies like the RAPAD region. It touches on all aspects of the economy from accommodation and food services to transport, travel and tour operators, arts and recreation, retail and education and training.

However, the tourism market in the region is highly seasonal (dry season and cooler months) with the product dividing into two groups. First, is world leading products and attractions – ready for overseas tourists, and which are continually innovating and growing (e.g. Australian Age of Dinosaurs). The second is the traditional tourism product providers with a lack of investment funds, and a focus on buying a lifestyle (e.g. exemplified by accommodation providers with no website, 1980's style furnishings and lack of experiential engagement).

While councils across the region have supported diversifying their economies into tourism through enabling infrastructure (e.g. toilet blocks, street beautification) and supporting attractions (e.g. Waltzing Matilda Centre) – it is not their role to provide direct tourism product (e.g. 5 star accommodation, tours, activities and experiences). Unfortunately, the last decade has seen limited new investment in tourism product for the RAPAD region.

Challenges

There are currently four challenges facing the RAPAD regions' tourism growth.

1. Poor understanding of the tourism market (data analytics)

Currently there is no reliable or accurate data on tourism in the RAPAD region. This results in a lack of understanding for tourism stakeholders:

- Community – how big and important is this industry to us?
- Operators – what share of the market am I getting and what else is the market doing or could it be doing?
- Tourists - how many people visit, and is it worth visiting?
- Government – what further enabling infrastructure or marketing do we need to support this industry? and
- New investors - how viable is a tourism business in the RAPAD region?

The current feeling is that until we can get a better handle on the actual tourism market in the RAPAD region, investment will not flow.

2. Lack of tourism product

Overall, the RAPAD region has a few high impact tourist attractions spread throughout the region (e.g. Australian Age of Dinosaurs, Kinnon & Co tours, Stockman's Hall of Fame, Qantas Founder's Museum). These form the mainstay of the marketing content for the RAPAD region because they are the focus of the region's competitive advantage in the global tourism market. These high quality attractions are ready to meet expanding market opportunities (e.g. targeting overseas tourists, high value short-stay, shoulder season etc.). Currently few packages are organised with these high quality attractions. The gap is that there is little networking between these high performers to target current opportunities e.g. Townsville day trip cruise ship market and Chinese tourists. This network could also be used to mentor emerging local providers and stimulate new investment and opportunities across the region.

These attractions are supported by accommodation, food providers and smaller attractions, which are focused on servicing current tourism markets and are not well positioned to expand market access, such as to overseas tourists. These tourist providers need capacity development in skills (e.g. digital access, tourism experience) and an understanding of how to deliver an 'experience' for tourists, rather than just their product.

3. Connectivity hard and soft

A big challenge outlined in the Digital Strategy was the lack of soft and hard connectivity across the region and how this is hindering internal and external opportunities. Overall, efforts to instigate the Outback Telegraph (initiated in Winton) to gather data analytics and connect tourists to Wi-Fi are needed across the entire RAPAD region.

In addition to the digital connectivity, there is a need across the RAPAD region for the whole tourism industry to work together and take responsibility for their own brand, internal connections and self-promotion. As the Outback Queensland Tourism vision is 'The number one choice for an authentic Australian Outback experience and adventure for families' it is essential that the whole region feels like a community sharing experiences with families. Currently there is a lack of knowledge and understanding across the regions tourism providers about what attractions are open, available and appropriate for different tourist markets.

4. Private investment to stimulate tourism development

The final area is increasing private sector investment in the region to enhance the tourism product offer to meet emerging markets and high value tourists (e.g. families, short stay domestic and overseas tourists). To date investment has been internally driven. This is challenging for a region having undergone difficult climatic conditions and associated economic performance over the last decade. New inward investment is required to stimulate real growth. This new investment should be through the entrepreneurial opportunities being generated by the digital strategy, co-delivery of tourism product with all new infrastructure development such as the Winton geothermal plant (see Blue Lagoon example in box), and through directly targeting outside investment sources such as the Significant Investor Visa.

The Significant Investor Visa (SIV) is a stream within the Business Innovation and Investment visa, with the aim to provide a boost to the Australian economy and to attract high net worth individuals seeking investment migration. SIV holders are required to invest AUD 5 million (M) into defined significant investments for a minimum of four years before being eligible to apply for a permanent visa. To attract these investors, data on the tourism opportunities is required, as well as a strong local brand, and for RAPAD to work with State Government and Federal Government bodies on this initiative.

A geothermal lagoon - new all weather tourism by-product

The Blue Lagoon is an excellent internationally renowned example of a utility infrastructure creating a by-product that is a tourist attraction. The Lagoon provides a unique experience of floating in aqua-marine water that is heated at 40 degrees from a geothermal plant, surrounded by a moon-like landscape. It is located between the Icelandic airport and capital Reykjavik with easy access for self drive tourists. It has about 1 million visitors per year, and is the most popular tourist destination in Iceland. The complex is co-located with the geothermal plant, but has specific vistas and supporting infrastructure, including a pay per use 'lagoon', change facilities, luxury hotel, café and shop selling locally made beauty products. It is not dependent on weather for use or time of day and would complement existing energy generation infrastructure and tourism product offerings.

Source: <http://www.bluelagoon.com/>



Payoff analysis

Tourism is a Queensland Government priority industry and therefore has support for real growth. In line with the State Government's target of doubling the value of tourism by 2020, the target for the destination is to lift the value of overnight visitors in the outback economy from \$264 M in 2013 to \$585 M in 2020 (an increase of \$197 M or 12 per cent growth per annum).^{xi} Projecting this forward to 2031 we expect the industry to level off after this ambitious growth to 10 per cent annual growth. This levelling off is fuelled by swapping out of domestic visitors to overseas markets for short stay experiences with greater virtual and digitally connected opportunities. The expected tourism spend therefore in 2031 is \$1.67 billion showing an increase of 262 per cent from 2016

tourism expenditure with an associated increase in the number of direct jobs of 17,400 FTE across the broader Queensland Outback Tourism region. This increase is based on industry growth predictions from the PwC Geospatial Economic Model for the RAPAD region.

Actions

1. Deliver *Smart Central Western Queensland: a digitally enabled community strategic plan* recommendations including Outback Telegraph and analyse tourism data, as well as upskilling and capacity development such as ; 6, 8-10, 17-23, 34 working with other priority areas.
2. Develop a high performers tourism network to attract new markets and stimulate success across the region.
3. Identify tourism product gaps and opportunities, focusing on co-production and entrepreneurial activities.
4. Bridge the gap between tourism ideas needing capital investment and overseas investors seeking SIV (Significant Investor Visa) using RAPAD and state and federal government resources and promotional links (e.g. Department of State Development, Department of Tourism, Major Events, Small Business and Commonwealth Games and Australian Government Department of Immigration and Border Protection).



INFRASTRUCTURE CONNECTIONS

Infrastructure connections

Infrastructure connections – ensure inter and intra connectivity and service delivery that enables the region to be globally competitive.

Actions: Seal Bedourie to Birdsville, Birdsville to Windorah Roads as well as Donohue Highway, improve access to telecommunications for all towns and rail access across the RAPAD region.

Sealing the Eyre Development Road, Birdsville Development Road and the Donohue Highway to all weather conditions has the potential to deliver more than \$6.8 million in foregone NDRRA funding for road maintenance, as well as \$56 million in additional benefits and productivity gains to key tourism, livestock and freight routes, including 24 potential new jobs from increased drive tourism.

Current situation

The RAPAD region has a range of road, rail, air and digital connectivity infrastructure priorities. While each of these is important in its own right, adequate road access has been identified as the most pressing concern and as such is the predominant concern of this payoff analysis. Digital infrastructure connectivity analysis is addressed in the telecommunications infrastructure and capacity priority.

The issue of air access for freight and transport is important and RAPAD will work with key players in exploring this, aligned to the forthcoming release of the Queensland and Central West air freight and travel strategic insights.

Both the Eyre and Birdsville Development roads are key road network routes for the Diamantina area, connecting the remote township of Birdsville to Bedourie and Windorah and the wider RAPAD region. The Donohue Highway also forms a key section of the Outback Way route that connects central and east Queensland to the Northern Territory and Western Australia for both freight movements and the drive tourism market. For remote communities like Birdsville and the broader Diamantina, road infrastructure is a high priority (telecommunications is also a key priority, but as both skills and infrastructure are issues it is addressed in the telecommunications – infrastructure and capacity priority).

While large sections of the Eyre Development Road are sealed, significant proportions are yet to be upgraded and neither the Birdsville Development Road nor the Donohue Highway west of Boulia are sealed. When accessible, these roads form a direct route between North Queensland, through Northern Territory and South Australia, to Adelaide or Perth. With enhanced connectivity between South Australian regional centres and North Queensland, resulting in increased benefits to all the communities along the roads. They are also key routes for ensuring this particularly isolated region has means to access the already limited rail network across the RAPAD region (further addressed below). These roads are therefore vital transport routes where other modes are unsustainable.

Given the geographic conditions of the RAPAD region, these road networks are highly exposed to flooding, both the development roads in particular. For example, in the Diamantina LGA 34 per cent of the state roads and 48 per cent of local roads are within the floodplain assessment overlay.^{xii} In 2016 alone, Diamantina Shire had four separate flood events in the months of April,

July, August and September rendering key routes inaccessible for the majority of the year. Even relatively minimal flooding and wet conditions can make these roads inaccessible, requiring supplies to be flown in after prolonged periods of flooding, and restricting potential freight and drive tourism traffic opportunities.

Route 66 – attracting tourists for the highway experience and history



Spanning more than 3,800km across the US, Route 66 travels from Santa Monica on the west coast to Chicago, Illinois. It is one of the original highways in the US highway network. While other highways have displaced Route 66 as the most efficient interstate route, it still manages to lure visitors and travellers from across the US and the rest of the world.

Overall, Route 66 has realised significant economic benefits, mostly driven through heritage travel. Collectively, Route 66 delivers approximately \$USD 38 million directly from tourism, \$67 million in Main Street spending, and an extra \$27 million in heritage and museum spending per annum. For many small towns along the road, Route 66 has a sizeable impact on the local economy. For example, the home of the Route 66 museum (Clinton, Oklahoma) has a population of roughly 9,000 people and the museum attracted almost 35,000 visitors in 2009, almost a third of those from overseas.

The majority of flood damage in the region arises from unsealed, loose gravel surfaces being washed away. This requires regular periodic restoration and maintenance works funded through the Natural Disaster Relief and Recovery Arrangements (NDRRA). A previous submission to the Productivity Commission by the Outback Regional Road and Transport Group highlighted that since 2002, 23 separate disaster events in the region have activated NDRRA applications. The vast majority were due to flooding.^{xiii}

The Queensland Government's Western Roads Upgrade Program^{xiv} (WRUP) lists the Eyre Development Road as a targeted route. However, although stated to be completed by mid-2017, it is unlikely to be fully sealed in the near future, rather progressively sealed over the next 10 to 15 years. The Queensland Government has also committed to funding sections of the Outback Way through the Northern Australian Roads Program, recognising its potential to improve productivity for agriculture, tourism, and community links.^{xv} Funding for the Donohue Highway section west of Boulia remains unaccounted for.

With respect to rail access across the RAPAD region, travel is predominantly restricted to the Spirit of the Outback Tourist line (Brisbane to Longreach) that operates twice-weekly departures from Brisbane and Longreach. This tourist line also operates a shuttle from Longreach to Winton. Aurizon operates livestock freight lines with 325 services per year along the Central Queensland Corridor route from Winton through Longreach and Barcaldine to Rockhampton, with pick up location and livestock holding yards at both Winton and Longreach. Windorah, Birdsville, Bedourie and Boulia are currently inaccessible via rail.

Challenges

Currently there is limited state and federal budget allocation to address this issue. For example, while each of the development roads meet the criteria for the Federal Government's Roads to Recovery programme which has committed \$3.2 billion nationally, the allocations over four years to Diamantina and Barcoo account for just under \$4.8 million and \$7.1 million respectively. This

emphasises the need for strategic prioritisation of road maintenance and betterment, however, the region's predominant strategic document – Inland Queensland Road Action Plan^{xvi} (IQ-RAP) - does not list the Donohue Highway, Eyre or Birdsville Development Roads as high priorities. Within the IQ-RAP's multi-criteria assessment framework, each of these roads is prioritised for delivery over an 11-15 year timeframe when evaluated under economic value, safety, strategic intent, access and social value.^{xvii}

The IQ-RAP analysis highlights the strategic role that roads like the Eyre and Birdsville Development roads have in realising the potential to create greater connectivity between south and north Australia, especially by facilitating more efficient freight opportunities and access to agricultural production. However, there is a limited evidence base to assess the direct and indirect impacts or additional benefits. This creates a barrier to demonstrating key strategic value in the wider road network.

While there is a strategic case in relation to the potential for an upgraded Donohue Highway to enhance productivity of the livestock freight network and facilitate a larger outback tourism market, maintenance costs from an upgraded sealed road are substantially higher than present road condition. Significantly, the benefits that flow from this upgrade are likely to be realised by the broader region rather than by councils. Ongoing costs to maintain this section of the road may place substantial added fiscal pressure on Boulia council, which already allocates a significant share of its annual expenditure for existing infrastructure.

With respect to rail access, the Queensland Government's latest rail network strategy^{xviii} has stated that the increasingly high cost of rail infrastructure means that the majority of proposed rail projects are unlikely to be feasible in the context of demand for available funding. Accordingly, this will drive an emphasis on achievable solutions rather than technically ideal, but unaffordable solutions. This may include integration with other modes, including proximity to park and ride facilities. This places an added emphasis on delivering improvements to road networks and communities already isolated from the rail network, including LGAs such as Diamantina, Barcoo and Boulia.

Payoff analysis

The most significant benefit of bettering both the Eyre and Birdsville Development Roads comes in the form of foregone NDRRA costs attributed to maintenance of the roads over the next 15 years. While key sections of the Eyre Development Road are being progressively sealed over the next 15 years, upgrading both development roads in an advanced timeframe has the potential to deliver substantial savings. Based on previous NDRRA expenditure, the present value of the cost of completing the road progressively over a 15 year time is approximately \$16.7 M in maintenance costs and \$50.2 M in capital costs, for a total of \$67.1 million. Alternatively, expediting completion of the road by 2021 generates a present value cost of approximately \$6.2 M in maintenance costs and \$18.7 M in capital costs, totalling \$24.9 M. The present value of savings in foregone NDRRA expenditure for roads amounts to \$42.1 M through to 2031.

On the other hand, the benefits of upgrading the Donohue Highway section of the Outback Way in Queensland are significant in terms of added benefit to tourism and freight (predominantly livestock) industries. Upgrading the road to sealed standard is projected to significantly increase tourism numbers along the route from newly generated and diverted traffic volume. Overall drive tourism is estimated to increase four fold^{xix}, including potential increases in coach services. These added benefits are estimated to have a net present value of \$25.9 M out to 2031. Similarly, gains

to livestock and heavy freight from lower operating costs and distances saved from alternative routes are estimated to have a net present value of \$6.9 M. These benefits, in addition to benefits accrued to local residents from travel time and operating costs saved, mean that total estimated gains have a present value of \$35.4 M.

The primary benefit of these payoffs is realised by the outback tourism market, with increased self-drive traffic and increased opportunities for higher volume travel, e.g. extra coach tourism. To fully realise these benefits, actions must be coordinated with those set out in the 'Growing Tourism and Growing Regional Spend' priority.

Actions

1. Undertake feasibility study to assess impact of sealing Birdsville and Eyre Development Roads on freight networks and traffic flows from northern to southern Australia.
2. Secure continual grant funding for infrastructure maintenance.
3. Secure additional grant funding through funds like Roads to Recovery, Western Roads Upgrade Program.
4. Coordinate with Department of Transport and Main roads to identify priority sections of Eyre and Birdsville development roads that would be more efficiently funded/maintained by betterment to all weather road.



ENERGY AND WATER SECURITY

Energy and water security

Energy and water security – low cost and stable energy sources with secure water access.

Actions: Maximise use of renewable energy generation, establish water security options, and identify industry support.

If the RAPAD region were to meet the State's renewable energy target of 50 per cent, with residential households and small business self-consuming energy produced rather than feeding back into the grid, it stands to generate a saving of more than \$70 million in foregone community service obligation (CSO) subsidy payments out to 2031.

Eliminating limits to residential solar generation restrictions – allowing larger systems than the current 3.5kW standard – has the potential to save Queensland State Government \$5.8 million per annum in CSO subsidies.

Improving energy access will also be crucial to securing clean usable water, potentially spurring growth in the region's agricultural sector, increasing the growth rate by up to 2.9 per cent per annum.

Current situation

Climatic and geographic conditions across the RAPAD region present both challenge and opportunity with regards to energy and water security. Central and Western Queensland has arguably the greatest potential for large scale solar in Australia, as well as significant geothermal reserves. Water security, however remains a challenge, with some of the RAPAD region communities heavily reliant upon bore water, which in turn puts increasing pressures on energy costs.

The RAPAD region has already begun implementing renewable energy projects. Longreach is set to begin construction of a 15 MW solar farm^{xx} this year, Barcaldine has implemented a 25 MW remote community solar farm^{xxi} feeding energy back into the grid, Winton is currently constructing a geothermal power station with the aim of supplying 310 kW to assist in keeping power costs down and produce more reliable and efficient baseload power^{xxii}, and Birdsville Planning is advanced on a project to replace the existing 85 kW system with a new plant expected to increase net output to between 150-200 kW.^{xxiii}

A review by Local Government Infrastructure Services (LGIS) found that Barcoo, Diamantina and Longreach each have the requisite bore conditions for efficient geothermal power generation. For fringe-of-grid locations such as these, geothermal generation presents an attractive option for utility providers due to their relatively low operating cost and ability to supply constant baseload power.^{xxiv} However, concerns are surfacing about the approvals necessary for successful renewable energy projects.

Fringe-of-grid and network constrained areas are key investment priorities for the Australian Renewable Energy Agency (ARENA) funding grants. Given the small number of projects in ARENA's investment portfolio that address this priority, ARENA is interested in supporting projects that develop or demonstrate the ability of renewable energy technologies (potentially including enabling technology such as storage, load control and control systems) to improve energy supply outcomes in fringe-of-grid and network-constrained areas^{xxv}. In conjunction, Ergon Energy are

actively looking to work with councils to implement further renewable projects in fringe-of-grid areas.

The Queensland Government also currently has a broad set of renewable energy objectives including:

- assessing and establishing credible pathways for up to 50 per cent renewable energy generation by 2030,
- a target of one million solar rooftops or 3,000 megawatts of solar generation capacity by 2020,
- promoting long-term benefits for energy consumers, and
- integrating smoothly and equitably with well-functioning energy markets.^{xxvi}

While the current regional feed in tariff is set to expand to include a time varying tariff option during moments of peak demand, initial estimates suggest that the most efficient option for communities, businesses and homes generating solar power would still be to self-consume as much as possible rather than selling it back to the grid.^{xxvii}

With regard to water access and quality, specific priorities will differ between regions. The Outback Regional Water Alliance has highlighted a number of these for various regions, see Table 3.^{xxviii}

Table 3. Key priorities for local government areas in RAPAD related to water and energy security

Barcaldine	Major focus of the Barcaldine council is the maintenance of sewerage facilities. The current treatment plant does not have the population to sustain it and has no electricity to power the pump.
Barcoo	Supply system supplemented with bore water. Seasonal variations put a strain on asset capacity – dry season brings grey nomads and other travellers placing a further strain on public assets. Bore water is treated but has a high cost related directly to power use.
Boulia	Council has to rely on one sub-artesian bore. Reduced cost of repairs by implementing existing solar panels to power the bore pump. Backup generator installed to power pump in times of excessive demand or during breakdowns. This solution had the lowest ongoing operational cost and could utilise existing infrastructure.
Diamantina	Birdsville bore supplies both drinking water and provides heat to power Ergon’s geothermal plant.
Longreach	Towns relying on surface water are more prone to supply issues than those serviced by GAB, prolonged drought conditions also affect with high evaporation of larger storages.

Challenges

While the renewable energy generation opportunity is there, a number of broad challenges remain.

Firstly, fringe-off-grid locations often require bespoke solutions for implementing renewable energy generation. The diversity of infrastructure needs, economies of scale, supply chain issues, technical requirements, regulation, commercial viability and stakeholder requirements to achieve the best result for the location means that these locations suffer from a *Remoteness Premium*.^{xxix}

With regard to geothermal, its major weakness is its generally immature technological and commercial readiness. While LGIS notes that the costs of developing geothermal have decreased significantly in recent years, uncertainty in exploration of bores can substantially increase its cost. Geothermal plants, which draw from the Great Artesian Basin, would also require additional water allocation.^{xxx}

Renewable energy generation also has a number of legislative issues regarding tenure, water licencing and reinjection, and administrative costs of operation for commercial purposes. First, geothermal energy generation not only requires a geothermal lease, but will also trigger requirements under the Native Title Act 1993 which can take up to 2 years to resolve. Second, current water licencing structures means that councils cannot direct the balance of its allocation for town use through a geothermal plant without triggering additional fees as it is assessed as a commercial operation through Department of Natural Resources and Mines. Last, reinjection poses several regulatory challenges due to postproduction water produced under the Environmental Protection Regulation 2008.

These regulatory requirements are key barriers to accessing existing funding pools that councils may be able to draw upon. For example, the National Water Infrastructure Fund has been established to support construction of water infrastructure such as ground water recharge and water treatment and reuse schemes, as well as ensuring provision for access to secure and affordable water to underpin regional economic growth through initiatives such as increased agricultural production.^{xxxi} However, funding is dependent on the approval of commonwealth and state regulatory bodies to proceed.

Concerning solar, for remote and fringe-of-grid applications, the size of potential installations is critical to economic performance. Solar photovoltaic below the scale of 10 MW for example, creates inefficiencies in procuring materials and panel supply that impact on a project's feasibility.^{xxxii}

Energy Queensland is also currently restricting the extent of rooftop solar panels for residential and small businesses, limiting new rooftop solar installations to 3.5 kW systems – down from 5 kW systems previously. This effectively makes it more costly to install solar on households and small businesses.

Payoff analysis

The major benefit in generating and consuming the electricity produced through renewable energy would be the savings made from foregone Community Service Obligation (CSO) costs. CSO is the annual subsidy paid by the state government to Ergon to ensure regional consumers pay no more for electricity than those in South East Queensland. As most of RAPAD's communities operate in isolated areas from the grid, this cost is high.

Sundrop Farms – using solar energy to treat water for intensive horticulture

The Sundrop tomato farm in Port Augusta, South Australia has developed a state of the art 20 hectare solar thermal farm and desalination plant. The solar thermal technology transfers the heat from the sun utilising a field of solar mirrors, generating enough power to support the desalination plant and deliver water for irrigation to the greenhouse adjacent. The greenhouse farm produces up to 15 million kg of Truss tomatoes a year.



Source: <http://www.sundropfarms.com/>

According to the Queensland Productivity Commission, the average CSO subsidy per annum for customers in the west zone (Blackall-Tambo, Barcaldine, Longreach, and Winton) is approximately \$2,200. This rises to \$15,000 in more isolated areas such as Birdsville, Bedourie and Windorah.

Based on 2011 population figures, the state provides an estimated \$13.1 million annually in CSO subsidies for the RAPAD region's approximately 4,540 households. It is also expected that this CSO will only increase in cost to state government, with CSO expenditure forecast to rise into the future.^{xxxiii} By 2031 it is expected that the population across the RAPAD region will be approximately 11,500 ensuring that that the net present value of 2018 to 2031 CSO payments will be approximately \$384.7 million.

If the RAPAD region was to meet the State's renewable energy target of 50 per cent, with residential households and small business self-consuming energy produced rather than feeding it back into the grid, it stands to generate a saving of more than \$192.4 million in foregone CSO subsidy payments out to 2031. The benefits to

removing restrictions to residential solar power are also significant.

On average, central west residential properties each consume just over 7,000 kWh per annum. At current daytime use rates, a 3 kW system has the potential to generate just over 4,500 kWh annually, while a 4 kW system has the potential to generate just over 6,000 kWh. Limits on the current rooftop solar system restrict the region from becoming energy independent. Removing these and installing larger rooftop system could also save the state government \$57.9 million per annum in CSO subsidies to the region.

Reliable and low cost energy also has the potential to spur new growth in the agriculture sector from efficient access and treatment of groundwater during prolonged periods of drought. This is a particularly significant issue in regions that require treatment of any captured groundwater. Enabling treatment of water at a low cost has the potential to drive the agricultural growth rate up by 2.9 per cent.

Actions

1. Lobby Energy Queensland and Queensland State Government to reduce limits on residential solar production – specifically in the context of self-consuming energy produced.
2. Engage with regulatory bodies like the DNRM to facilitate through regulation to deliver efficient and reliable renewable energy construction and generation.
3. Investigate potential framework for removing RAPAD from fringe-of-grid towards energy self-sufficiency.



HEALTHY AGED
CARE LIVING

Healthy aged living

Supporting services and infrastructure to ensure the RAPAD region is a preferred retirement destination.

Actions: Co-ordinate an 'aged' working committee to strategise regional approach, supplement current RDA 'aged audit' with a services review, stimulate support for aged services across RAPAD region, and identify options for 'ageing in place' infrastructure across RAPAD that meets whole of community demand.

Councils working together to create a healthy aged lifestyle in the RAPAD region will retain more locals with a potential 2,700 people aged 65+ in the region by 2031. These people will demand more health, retail and arts and recreation services, directly stimulating an additional 600 new jobs in the region. This number could increase if significant effort and promotion of the RAPAD region as a preferred retirement destination attracted further retirees. Successful attraction could mean up to 5,400 people aged 65+ in 2031, creating an additional 2,100 regional service jobs.

Current situation

The RAPAD region with its community icons, small towns, spectacular landscape and subtropical steppe climate is seen by many as a perfect place to retire. However, its isolation and low density of population means that this 'perfect place' is better suited to healthy aged living not requiring acute care.

The RAPAD region has an ageing population profile similar to the national trend, however it is more pronounced than the state ageing profile. This indicates that on average, more aged services and infrastructure will be demanded in the RAPAD region than in other Queensland regions.

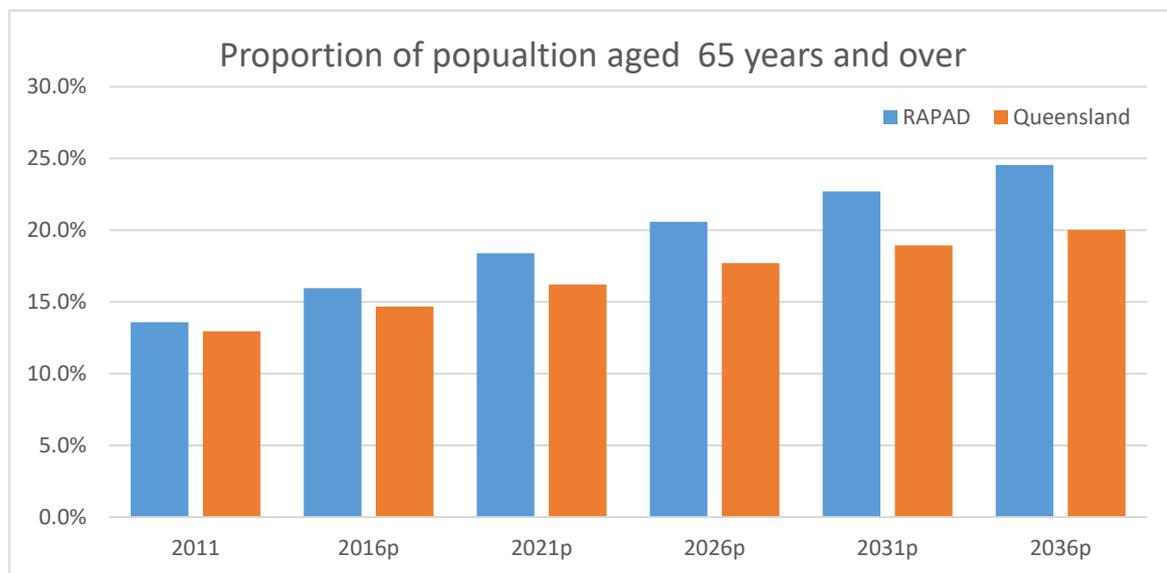


Figure 2. Age profile of RAPAD region compared to Queensland from 2011 to 2036 (p=estimate)

Healthy ageing is interpreted in many different ways. Understanding the RAPAD region's context is important to recognise its strengths and how they could best stimulate a healthy aged living experience.

The current situation in the RAPAD region is around the maintenance of current non-acute conditions of high and stable capacity, with limited support across the region for any people experiencing declining capacity or significant loss of capacity. The RDA is currently undertaking an audit of ageing services and infrastructure to clarify the current market situation. There are two early findings from this work.

First, in relation to infrastructure accommodation provision, the Ageing in Place infrastructure in Barcaldine is heralded as a big success for locals and for regional economic development. This highlights that ageing in place requires some infrastructure investment - but importantly it needs to be supported with actions that deliver an age-friendly community.

The second set of findings relate to service delivery. Currently the federal government provides programs (e.g. Home and Community Care and Home Care) that deliver services for healthy aged living in the home and community. Changes mean that the funding for a home care package will now "follow" the individual. This means that individuals can decide which service provider they want to provide help in the home, be able to change provider if desired, including if they choose to move to another area to live. They will be allocated a home care package based on individual needs and will have more choice and control over home support.

These packages depend on need and include funding for: domestic assistance, such as cleaning washing and personal care (e.g. bathing, hair care, etc.) and clinical care as well as community based services like transport for shopping or appointments and centre-based day care for social activities. In the RAPAD region to date service delivery has been a combination of local government and not-for-profit support with some generous philanthropic input. However, there has been a remarkable increase in the number of service providers stating they deliver services across the region (see www.itsyourlife.com.au). Many providers however are not based in the region and are potentially distorting the service market with over supply.

In understanding the infrastructure and service market for healthy ageing a clear distinction is made about the public health actions needed



WHO Global Network
for Age-friendly Cities
and Communities

A growing number of cities and communities worldwide are striving to better meet the needs of their older residents. The WHO Global Network for Age-friendly Cities and Communities was established to foster the exchange of experience and mutual learning between cities and communities worldwide.

Cities and communities in the Network are of different sizes and are located in different parts of the world. Their efforts to become more age-friendly take place within very diverse cultural and socio-economic contexts. What all members of the Network do have in common is the desire and commitment to promote healthy and active ageing and a good quality of life for their older residents. The Network shared strategies, stories, tools and experiences of what it is like to be a preferred choice for healthy ageing in place.

Any city or community that is committed to creating inclusive and accessible urban environments to benefit their ageing populations is welcome to join.

Find out more about the Network and its members on the dedicated website Age-friendly World.

Source:
<https://extranet.who.int/agefriendlyworld/>

across the life course of ageing. Specifically it focuses on the health services, infrastructure and community actions that are needed across three life stages; *high and stable* capacity, declining capacity and significant loss of capacity.

Importantly much can be done in the prevention of chronic conditions and early detection and control of health services as well as promoting capacity-enhancing behaviours in communities that keep people at high and stable capacity for longer.

The RAPAD region is well placed to be an icon of healthy aged living with an older-person centred and integrated care approach targeted towards the first life stage of high and stable. This focus will provide increased requirements for services and infrastructure and will service older persons with declining capacity as well as high and stable.

Challenges

This priority is a new issue for the RAPAD region to deal with directly, ensuring that there is work internally for RAPAD to 'set a direction' as well as deliver infrastructure and services that stimulate economic development and deliver healthy aged living in the region. We have identified the key challenge for RAPAD in the region is to understand what is the market for healthy aged living.

As shown the region's population is ageing and creating an internal market for increased delivery of services and infrastructure demand over the next two decades. By 2031, it is expected that the RAPAD region will cater for 2,700 people over the age of 65, this is an increase of 73 per cent more than 2011.

However, this total market may not be ageing in place as we expect some will move to other areas, and new people might move in. As quoted from a leading retirement expert,

“Every retiree is different, so they will have a different set of criteria about what they are looking for,” Jill explains. “However, generally speaking, they’re looking for leisure facilities, low crime rates, accessible transport, relatively low cost of living, good climate, good medical facilities and choice of shopping.”^{xxxiv}

We could estimate that some grey nomad tourists might be interested in staying longer term in a more permanent setting (i.e. 6 month rentals of accommodation). This number is hypothetical but the market is only a small proportion of all retirees, as we would expect that these retirees are either single or couples who own their own home and have an income of private means or aged pension. It is estimated that these two groups of retirees are the most flexible, mobile and with the greatest amount of choices of where they can retire to.^{xxxv}

Targeting this 'footloose' group of retirees would require a significant strategy with community activities and reliable health services. If this was to double the number of retirees in the region on a seasonal basis, this could reach 5,400, would represent an increase of 222 per cent from 2011. Health services could also double to accommodate this market.

Payoff analysis

Estimating the number of jobs created by taking a proactive role in supporting and attracting retirees to the RAPAD region is experimental at this stage as there is no clear starting data. Therefore, the payoff analysis proposed below is hypothetical to outline potential.

We estimate based on current state population projection numbers that aged people will grow in the region at 61 per cent to 2031. These people will need increased service delivery in health, retail and arts and recreation industries to deliver community and health services. We propose that currently half the health services are servicing directly or indirectly the aged population, whilst only 30 per cent and a quarter respectively of the arts and recreation and retail sectors are dependent on this age group. Therefore increasing the age group will directly increase jobs in these sectors.

Table 4. Hypothesised increase in jobs due to increased healthy aged living in the RAPAD region

	2011	2031 normal growth	Aged attraction strategy
Health workers	590	1,065	1,540
Arts	57	74	74
Retail	515	644	644
TOTAL direct jobs	1,162	1,783	2,258
No. of 65+ in region	1,682	2,708	5,416

Table 4 outlines the potential job creation numbers associated with RAPAD targeting retention of locals in region (i.e. 2031 normal growth) where an additional 620 jobs (1,783 in 2031 under nominal growth and 1,162 in 2011) could be created in delivering a healthy aged living community. This scenario does not include potential to attract extra aged people into the region, which could create almost twice as many jobs at 1,000 new jobs.

Actions

1. Co-ordinate an 'aged' working committee across RAPAD to identify the priority healthy aged living market and a strategic approach to meeting its expectations drawing on the WHO Age-friendly Cities and Communities insights.
2. Supplement current RDA 'aged audit' with a services review focused on market analysis of current delivery and future needs that can be delivered locally and those which should be 'outsourced'.
3. Stimulate support for aged services across the RAPAD region promoting the economic development potential of increased local service delivery through the delivery of a healthy aged care community strategy.
4. Identify options for 'ageing in place' infrastructure across the RAPAD region that will meet current and 50 year projected accommodation demands in the community.



Improve digital telecommunications

Create the environment where the RAPAD region leads remote area delivery of telecommunication and digital infrastructure for regional growth.

Actions: Implement the Smart Central Western Queensland: a digitally enabled community strategic plan, target investment in digital communications that align with priority industries e.g. Tourism, Bring back the sheep, and utilise existing technology to develop a brand and online presence for the RAPAD region, to enhance productivity benefits and increase market access for local goods and services.

Through the region effectively using existing and new digital telecommunications technology there is the potential to increase retail output by \$7.8 million, increase jobs in ICT (directly and indirectly) to 18, increase overseas tourist numbers to 33,782 for the whole Outback region and deliver enhanced regional output in 2011 dollars to \$865.9 million.

Current situation

Recently the RAPAD board has adopted 'A Smart, Digital Central West Strategic Plan', which has articulated and assessed the region's capabilities and requirements to be future ready. The Plan is the basis for this payoff analysis and should be the central document when referring to the improvement in digital telecommunications infrastructure and capacity for the region.

The strategy outlines eleven different projects that RAPAD should undertake. These eleven projects are critical in helping the RAPAD region deliver on its vision as being a region of choice for families and individuals to build rich, fulfilling lives; a place to build a successful business; with the same levels of services as is experienced by those in more populated areas.

This vision is built on the strengths of the RAPAD region:

- Strong entrepreneurial vision,
- Supportive institutions,
- Strong existing industries,
- Compelling lifestyle and sense of community,
- Bountiful resources, and
- Variety of different cultures in towns across the region.^{xxxvi}

Importantly for the RAPAD region, there is a very low base of current jobs in digital telecommunications. In 2011 there were a total of 7 ICT jobs (0.11 per cent per cent of regional jobs) a further 74 jobs as Engineering ICT, and Science technicians (1.18 per cent of regional jobs) and 82 jobs in Electrotechnology and Telecommunications Trades Workers (1.31 per cent of regional jobs). This lack of depth in the regional job market means that overcoming current challenges will require a "kick-start" from business and solutions from outside the region.

Challenges

The RAPAD region currently suffers from digital telecommunication limitations of poor and expensive internet connectivity, skills gaps, a fragmented identity to the outside and the remoteness of the region. These challenges have been discussed in the Smart Central West strategic plan.

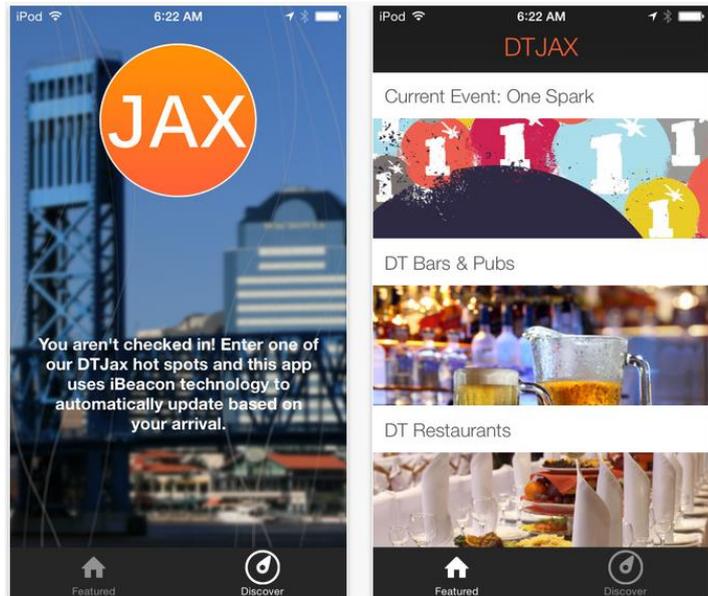
There is coherent alignment between the recent Local Investment Plan for the Regional Jobs and Investment Packages (May 2017) and the Smart Central West strategy. Specifically there are three target priorities; innovative technology and connectivity to stimulate productivity gains in tourism, food and agribusiness, engineering and heavy industrial, energy and bio futures and education.

Due to the current low level of ICT skills usage in the RAPAD region there is a challenge to ensure that every investment in digital telecommunications is as efficient and effective as possible. To achieve this, initial investments should catalyse on current infrastructure (e.g. fibre optic cable), align current desires (e.g. deploy new technology) with priority industries (e.g. Tourism, Bring back sheep), along with showing clear potential payoffs, such as improved data on tourists to attract new tourism ventures into the region. This alignment of desire, capability and expectations is important to ensure each of the region's LGAs benefit from improved digital telecommunications.

While acknowledging that digital infrastructure is an enabler for all priorities in this document, the key projects in the Smart Central West Strategy that should be the focus of this priority are 6.1 Increased Digital Infrastructure, 6.5 Economic Infrastructure and 6.7 Skills. Each has been discussed in depth in the strategy. Importantly, for these to be successful there needs to be a business attraction incentive as the region does not currently hold the technology or skills necessary for full deployment.

Discover Jacksonville with iBeacons – more than data collection

iBeacons are not only able to capture data on tourists, preferences, activities, etc. they can also transform entire towns into attractive tourist destinations. For example, tourists can be alerted about information on the history of the place, transportation schedules, weather updates and public services in *multiple languages*, and at relevant times during the day.



The DTJax app is designed to offer more information about businesses including restaurants and shops and attractions (e.g. Art Walk) in Jacksonville, USA. The app helps users explore and experience downtown Jacksonville on a whole new, interactive level. Find out more at <https://blog.beaconstac.com/2015/11/how-beacons-are-transforming-the-travel-industry/>

The Outback Telegraph, being trailed in Winton is one example of iBeacons in the RAPAD region. As in Jacksonville The Outback Telegraph app could negate the need for on-demand translators or be extended to the key attractions (e.g. Lark Quarry) to improve visitor experiences. Importantly knowledge partnerships with TAFE and Universities could be established to analyse the data gathered and stimulate app development.

Payoff analysis

Increasing digital telecommunications capability across the RAPAD region will deliver enhanced capacity to all people, communities, businesses and opportunities – the challenge in undertaking the payoff analysis is to focus the investment on activities that will deliver economic development benefits across the RAPAD region.

It is broadly acknowledged that digital technology in the RAPAD region will deliver enhanced connectivity and lower transaction costs for businesses to work together, increase productivity of businesses, stimulate investment, facilitate innovation and new ideas and access larger markets for local goods and services.

There is great potential for use of these ‘smart technologies’ and systems, for example in the electricity, irrigation, health transport and broadband communications sectors. “The economic benefits of intelligent technologies”^{xxxvii} found that adoption of these resulted in an increase in the net present value of GDP of between \$35 billion and \$80 billion over the first ten years, depending on the amount of spare capacity in the economy.

For every direct job in ICT, it is estimated that there are 1.55 jobs that are ‘indirectly’ associated with their deployment through support, manufacturing, retail etc.

Mobile technology contributes to improved productivity through various elements. Studies have shown that providing improvements of up to 9.3 per cent from increased network connecting (e.g. using nextGen or 4G rather than old technology). In addition, it was found that small businesses could improve their productivity by 20-25 per cent through better-organised communications – especially when working over large areas. Finally, the use of teleworking has found that employees may use smartphones, laptops and mobile broadband when doing work at home. As such, teleworking can reduce business costs in terms of reduced rent, less desk space and lower electricity costs.

The retail sector is a clear example of how increased digital telecommunications can result in increased sales. In 2015, a survey found that 65 per cent of Australians shop online and this trend is going up. Australians are quite used to purchasing things on the internet and 79.4 per cent of internet users prefer this to traditional shopping. Importantly about 35 per cent of ecommerce transactions were made on smartphones and 27 per cent consumers buy products from mobile devices on a weekly basis.^{xxxviii}

Digital technology can also enable broadening of tourism markets. Chinese tourists spent over 600 billion yuan (\$87 billion) via Online Travel Agencies (OTA), up 34 per cent year-on-year and much more than tourism spending via bricks-and-mortar travel agencies. The majority of the orders were made via mobile terminals such as mobile phones instead of computers. About two-thirds of tourism spending went on overseas trips. Therefore, to position the RAPAD region as a tourist destination it needs to use its digital technologies to ensure an online presence for OTA to access.^{xxxix}

These payoffs are indicative of the types of savings and benefits the RAPAD region could gain from enhanced digital telecommunications as used to stimulate economic development and regional growth. See Table 5 for a list of potential payoffs from various forms of increased digital telecommunications as utilised to increase economic development.

Table 5. Potential payoffs for increased digital telecommunications in the RAPAD region

	Current (2011)	Payoff potential with enhanced digital technology	Rationale
Jobs	7	17.85	ICT direct and non-direct jobs is 2.55 times current ICT jobs
Retail output	\$12,100,000	\$19,965,000	Increase by 65 per cent number of sales through on-line presence
Tourist numbers	25,400	33,782	Increase overseas tourists by 1/3 to Chinese (and other) overseas tourist markets with online presence
Regional Output	\$824,700,000	\$865,935,000	Increase regional output by 2-5 per cent to enhanced connectivity from telecommunications

Actions

1. Implement the *Smart Central Western Queensland: a digitally enabled community strategic plan*.
2. Target investment in digital communications that align with priority industries e.g. Tourism, Bring back the sheep.
3. Utilise existing technology to develop an online brand and presence for the RAPAD region online, to enhance productivity benefits and increase market access of local goods and services.

Appendix

Appendix A: Contract obligations

In contract the contents of this report are:

- Review of investment and economic development projects under consideration across the region,
- Identification of 6-8 projects of regional significance as priorities for the region as a whole,
- Assessment of impact of these 6-8 projects including quantitative scenario modelling of the anticipated impacts on the region's economy, should each investment be achieved,
- Assessment, based on a series of stakeholder telephone interviews, of the impediments in achieving these payoffs, and the people, businesses or other stakeholders that will need to be engaged to make the investments work, and
- Second workshop with RAPAD Directors to finalise recommendations.

Endnotes

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- ⁱⁱ Sourced from Fast Facts 2016 from meat and Lifestock Assocaiton found at https://www.mla.com.au/globalassets/mla-corporate/prices--markets/documents/trends--analysis/fast-facts--maps/mla_sheep-fast-facts-2016.pdf.
- ⁱⁱⁱ Sourced from Queensland Government at <https://www.daf.qld.gov.au/animal-industries/sheep>.
- ^{iv} ABS Industry data.
- ^v Sheep idnsutry data provided form ABARES farm survey found at Source: <http://apps.daff.gov.au/MLA/mla.asp>.
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- ^{xvi} <http://www.rdanwq.org.au/files/queensland-roads/IQ-RAPper cent20Planper cent20Webper cent20versionper cent20170207.PDF>.
- ^{xvii} <http://www.rdanwq.org.au/files/queensland-roads/IQ-RAPper cent20Planper cent20Webper cent20versionper cent20170207.PDF>.
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- ^{xix} CSIRO modelling of roads upgrade.
- ^{xx} <http://longreachsolarfarm.com.au/project/>.
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- ^{xxv} <https://arena.gov.au/funding/investment-focus-areas/fringe-of-grid/>.

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