Table of Contents

Published by the Cairns 2020/2050 BRM Partnership
38 Grafton Street (PO Box 2148) CAIRNS QLD 4870 Australia
Tel: +61 07 4051 3452 Fax: +61 07 4031 1108
Email: bgordon@cairnsbrm.com.au Website: www.cairnsbrm.com.au
Graphic Design : Andrew Cummings & Bolton Inprint

1. BACKGROUND

The city of Cairns in Australia's tropical north east is continuing its track record as one of the fastest growing centres in Australia – a city that has been roughly doubling its population every 20 years from barely 20,000 in the 1950's to over 120,000 today.

Clearly, Cairns is on the way to becoming a city of strategic national importance.

The ***Cairns 2020/2050 Business Research Manual*** looks back on 50 years of economic history to identify the underlying factors that led to a remote tropical outpost at 'the end of the line', a thousand miles away from the State capital, emerging as the vibrant, modern gateway city it is today.

It then looks forward over a similar time frame at forces that are likely to underpin the region's continuing rapid growth and the form this growth is likely to take.

2. THE PAST 50 YEARS

To understand why the Cairns region has enjoyed such strong growth over the past 50 years, it is necessary to understand:

- The region's size and the extent and diversity of its underlying resource base.
- The factors of history and geography that have shaped its economic development.

The first thing to realise is the sheer size of Queensland north of the tropic (see **Map 1**), and that, although populations are still relatively low, the realities of areas and distances leads to a series of State sized regions, each with its own major city, with a typical capital city relationship to the area it services (see **Map 2**).

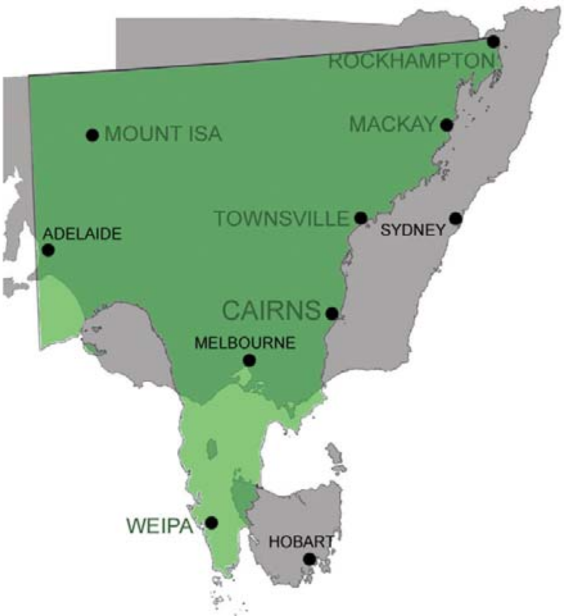
The Cairns/Far North Queensland region in itself covers an area, one and a half times the size of the State of Victoria, as large as the British Isles, and almost as large as California (see **Map 3**).

However, the area is tropical, 10° – 20° south (see **Map 4**), and historically posed much greater challenges than southern Australia to the transfer of technology from north western Europe to Australian climatic conditions. The great initial foundation industries of the Australian economy (wheat and sheep), did not prosper in the area. The region was late being settled (almost 100 years after Sydney) and was initially slow to develop.

However, the area is not poor in underlying natural resources. It accounts for 27% of Australia's water run off and areas of Australia's highest plant growth potential (see **Map 5**). It has a rich and diverse marine environment, including the northern half of the Great Barrier Reef, the Torres Straits, and the shallow waters of the Gulf of Carpentaria.

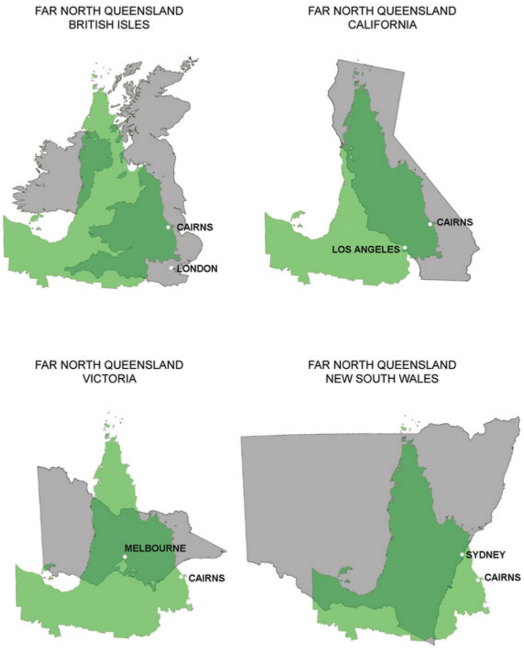
Importantly today, the region's rainforests, tropical scenery, and the Great Barrier Reef (close to the coast and easily accessible), offer a world class combination and quality of natural tourist attractions (see **Map 6**). The region has substantial mineral resources (see **Map 7**).

Map 1
Q'ld North of the Tropic of Capricorn reversed & compared with South Eastern Australia

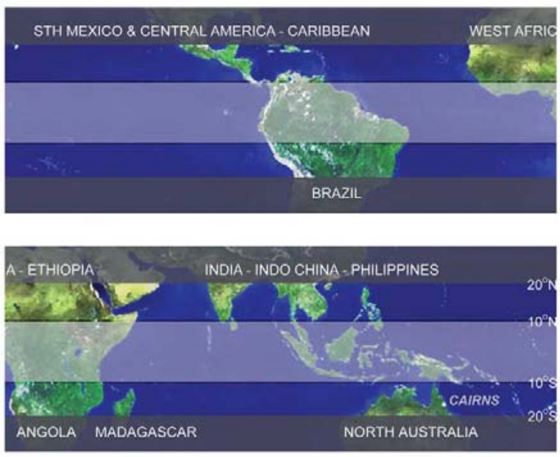


Map 2
Queensland's Northern & Central Regions & Regional Capitals

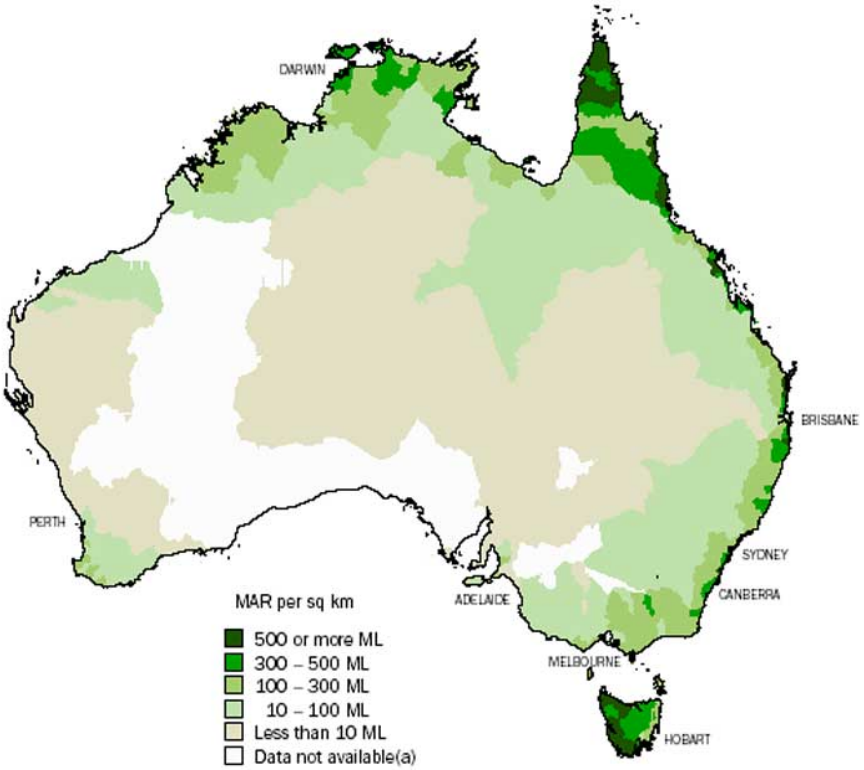
Map 3
The Cairns Region – Comparison of Area



Map 4
Areas Similar Latitudes to the Cairns Region



Map 5
Water Runoff – Australia

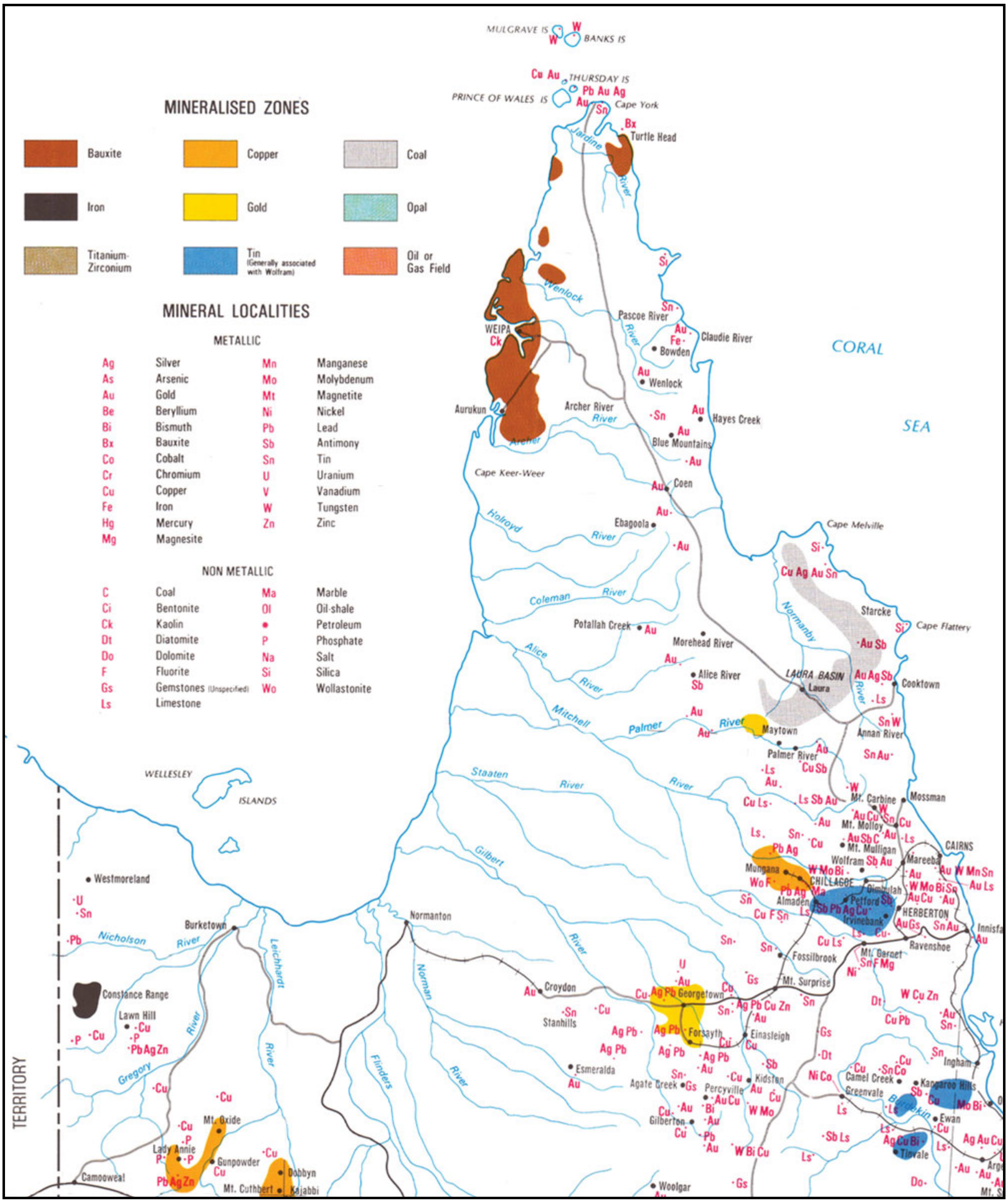


Source : Year Book Australia 2005.

Map 6
Wet Tropics World Heritage Area

Source : Wet Tropics Management Authority.

Map 7
Mineral Deposits



Source : Qld Dept of Natural Resources & Mines.

Over the past 50 years, major underlying factors have been conducive to the realisation of the region's diversified resource potential:

- An ***Expanding World Economy*** has been reaching out for previously under developed natural resources with a great deal of global growth taking place in nearby Asia.
- ***Transport & Communication Developments*** have broken down barriers of remoteness from national and world markets including the advent of bulk ore carriers, jumbo jets, greatly improved road transports and road transport systems and the development of the internet and global communication systems.
- ***Development of Technology suited to the area***, has reduced disadvantages of living in the tropics and allowed advantages to come to the fore – developments not just in plant and animal breeds, but in tourism and in aspects affecting every day living conditions like air-conditioning, superior insecticides and detergents, health, and meteorological services,.
- As population, industry and infrastructure have grown up, ***Success Breeds Success*** factors have come into play, providing the basis for development of higher order services in education, medical services, the arts and entertainment, making the area a more comfortable place in which to live and in the process reducing real costs of living and production.

The resulting growth in the region's 'outside earnings' has been spectacular. From an economy about 60% based on sugar cane production and milling in the 1950's (see **Table #1**), the region has held onto and expanded its sugar industry, developed other agricultural production now worth twice as much as sugar, become one of Australia's major fishing industry regions, expanded mining production and become a leading tourism destination (in recent years second only to Sydney in international holiday visitors).

Table #1 – Estimated[(1)] Gross Value of Production 'Base Industries'[(2)], FNQ, 1957 & 2002/03

	1957		2002/03	
	$m	% of Total	$m	% of Total
Sugar Cane	$33.9 m	*42.2%*	$241 m	*5.6%*
Other Agriculture/Pastoral	$21.6 m	*26.9%*	$639 m	*14.9%*
Total Agriculture	$55.5 m	*69.1%*	$880 m	*20.6%*
Mining	$ 1.5 m	*1.9%*	$230 m	*5.4%*
Fishing (see Note [(3)])	na	*na*	$200 m	*4.7%*
Manufacturing (est Value Added) [(4)]	$23.3 m	*29.0%*	$650 m	*15.2%*
Tourism	na	*na*	$2,020 m	*47.2%*
Other	na	*na*	$300 m	*7.0%*
Total	**$80.3 m**	***100%***	**$4,280 m**	***100%***

[(1)] *Note : It should be noted that a number of the figures for 2002/03 are estimates and basis is given below.*
[(2)] *Note : 'Base Industries' generally refers to those industries earning income from outside the region.*
[(3)] *Note : For 1957, included in other agriculture.*
[(4)] *Note : Mainly sugar milling.*
Source : Cummings Economics from :
1957 Figures – 1959 Q'ld Year Book.
2002/03 Agriculture - ABS Agstats.
2002/03 Mining – Q'ld Dept of Mines.
2002/03 Fishing – Estimate from various work carried out by Cummings Economics.
2002/03 Manufacturing – Estimate based on ABS Turnover Figures less Value of Input, Crops like Sugar.
2002/03 Tourism – Estimate based on Q'ld Office of Economic & Statistical Research Paper, 1998/99.
2002/03 Other – Estimate based on information from other work.

Almost 5-fold 'real' growth in 'outside earnings' since 1957 (see **Table #2**) has underpinned almost a 3-fold growth in regional population and a 5-fold growth in the population of Cairns itself (see **Table #3**).

Table #2 – Base Industries Comparative Value[(1)] of Production in Constant 2005 Dollars[(2)]

	1957 (in 2005 Values [(2)])	2002/03 (in 2005 Values [(2)])	'Real' [(2)] Av Annual Growth
Sugar Cane	$388 m	$255 m	*(-0.9% pa)*
Other Primary Industry	$248 m	$887 m	*2.9% pa*
Total Primary Industry	$636 m	$1,142 m	*1.3% pa*
Manufacturing	$266 m	$688 m	*2.1% pa*
Mining	$8 m	$243 m	*7.9% pa*
Tourism & Other	Not identified	$2,454 m	*na*
Total	**$910 m**	**$4,528 m**	***3.6% pa***

[(1)] *Note : Estimated Values (see Notes to Table #1 previous).*
[(2)] *Note : Deflated by Consumer Price Index Brisbane.*
Source : Cummings Economics from: (see sources previous).

Table #3 – Population Growth Cairns & Cairns Region

	1947	1958	2004 (est res)
Cairns	16,644	23,400	120,296
Cairns Region [(1)]	71,606	92,460	239,886

[(1)] *Note : Far North Statistical Division plus Carpentaria, Burke & Mornington.*
Source : Cummings Economics from ABS data.

As a result (see **Table #4**), Cairns has been growing much faster than the rest of Queensland and Australia and has been moving rapidly up the scale of regional cities. It has passed in size along the way, regional cities of Launceston, Ballarat, Bendigo, Albury Wodonga, Orange Bathurst, Toowoomba and Rockhampton (see **Table #5**).

Table #4 – Population Growth Compared

	Census Count 1976 - 2001	Est Resident Population 1976 - 2004
Cairns [(1)]	3.6% pa [(1)]	3.0% pa [(1)]
Cairns Region	2.4% pa	2.2% pa
Queensland	2.3% pa	2.2% pa
Australia	1.2 % pa	1.2% pa

[(1)] *Note : Adjusted for boundary changes, 1991.*
Source : Cummings Economics from ABS data.

Table #5 – Relative Growth, Important Australian Regional Cities, Census Count Populations

	1976 Census	2001 Census	Av Annual Growth
Darwin	46,655	109,419	3.5% pa
Cairns	52,300 [(1)]	126,364	3.6% pa
Townsville	88,753	135,142	1.7% pa
Mackay	39,500	63,149	1.9% pa
Rockhampton	51,669	62,845	0.8% pa
Toowoomba	66,436	105,302	1.9% pa
Orange Bathurst	55,933	73,199	1.1% pa
Albury Wodonga	63,409	93,624	1.6% pa
Bendigo	55,152	75,839	1.3% pa
Ballarat	68,450	80,045	0.1% pa
Launceston	81,636	95,604	0.1% pa

[(1)] *Note : Adjusted for boundary changes, 1991.*
Source : Cummings Economics from ABS data.

The Cairns region has become the largest in population in northern Australia (see **Table #6**).

Table #6 – Cairns/FNQ in the North – Census Count Population, 2001	
Cairns/Far North	244,848
Darwin/NT	210,664
Townsville/North	191,321
Rockhampton/Fitzroy	182,169
Mackay Statistical Division	143,578

Source : Cummings Economics from ABS data.

Cairns itself had become by 2001, the fifth largest truly regional city (ie. excluding metropolitan fringe cities) in Australia after Newcastle, Canberra, Hobart and, after being half the size of Townsville in 1947, had grown to be just behind Townsville in size (see **Table #7**).

Table #7 – Census Count Population, 2001		
1.	Newcastle	470,610
2.	Canberra	311,518
3.	Hobart	191,969
4.	Townsville	135,142
5.	Cairns	126,364

Source : Cummings Economics from ABS Census data.

In the process, Cairns has gone from being a small remote tropical outpost in Australia's 'backyard' to being one of Australia's major international gateways and transport centres.

Its airport was switched to local management in the early 1980's, and was upgraded to take wide bodied jets on long distance international flights in 1984. Cairns International Airport now has direct overseas flights to and from 10 Asia Pacific cities. It exceeds Adelaide in international passenger numbers and is on a par with Perth in number of direct overseas connections. It has become the major hub airport in northern Australia with direct domestic jet services to all metropolitan centres in southern Australia, and to Alice Springs and Darwin (see **Map 8** and **Table #8**).

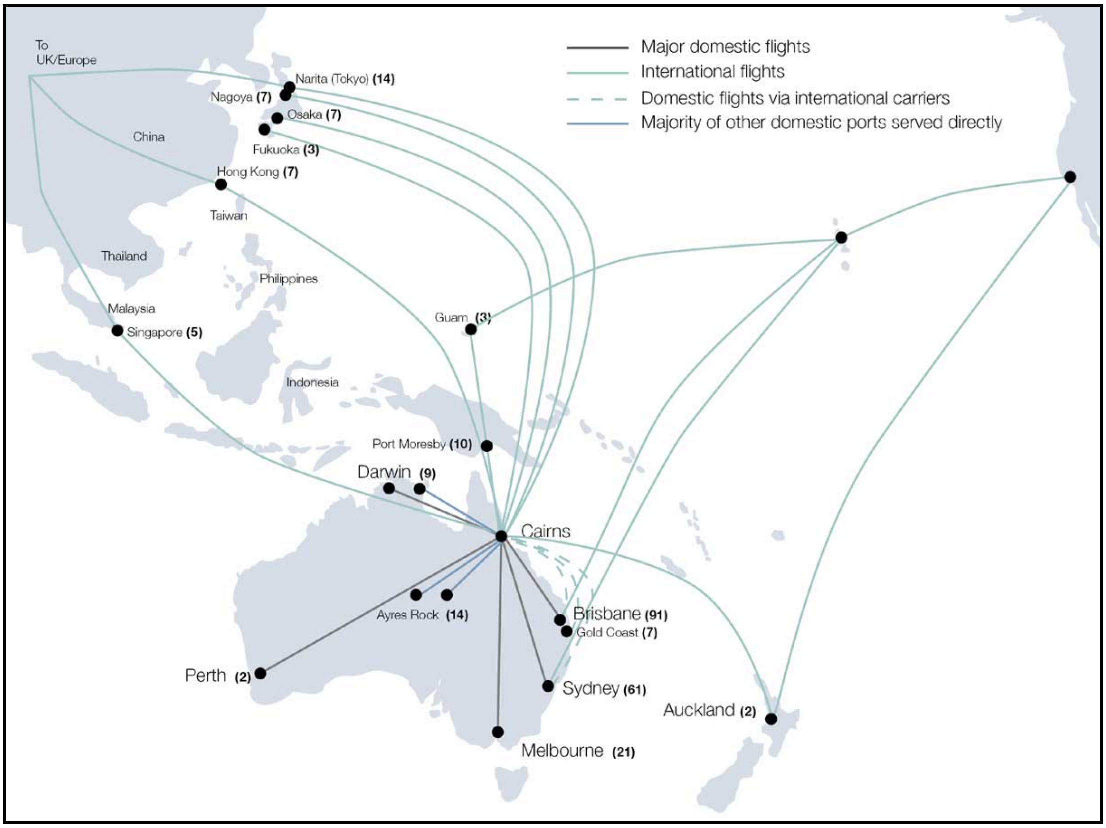
Table #8 – Comparative Passenger & Air Cargo Statistics – Northern Cities, 2002/03

	Domestic	International	Total	Air Cargo - Tonnes
Cairns	1,899,991	752,526	2,652,517	18,940
Darwin	788,700	89,306	878,000	5,822
Townsville	599,720	-	599,720	1,428
Rockhampton	230,030	-	230,030	na
Mackay	319,540	-	319,540	na

Source : Cummings Economics from Dept of Transport & Regional Services data.

Growth in production of tropical fruit, vegetables and ornamentals for markets in southern Australia and growth of tourism has made the region the major generator of road transport movements in northern Australia. Three new seaports have been developed with cargo tonnages through the region's seven seaports now roughly on a par with South East Queensland, South Australia and ahead of Tasmania and the Northern Territory (see **Table #9**).

Map 8
Cairns Region – International Air Services



Source : Cairns Port Authority.

Table #9 – Comparative Tonnages Through Seaports, 2002/03	
Cairns/Far North Qld	20 million tonnes
Townsville/North Qld	22 million tonnes
Brisbane	24 million tonnes
South Australia	23 million tonnes
Tasmania	17 million tonnes
Northern Territory	7 million tonnes

Source : Cummings Economics from BTRE Information Paper 53, Australian Sea Freight, 2002/03.

A growing economy has seen the region develop specialist manufacturing and services for wider national and international markets. Cairns has developed as one of Australia's leading maritime servicing centres, a role that is extending to aviation servicing. Its international education sector has been growing along with business, sports and events tourism. The city has been developing as a skills based engineering hub and 'fly-in/fly-out' centre.

On balance, 'globalisation' trends have been extremely beneficial to the region. However, like other parts of Australia, it has experienced some restructuring of its economy, with much growth in employment taking place in support and 'follow on' services.

The region has major trading and business links with nearby areas to the immediate north, in Indonesia, Papua New Guinea and the Pacific Islands.

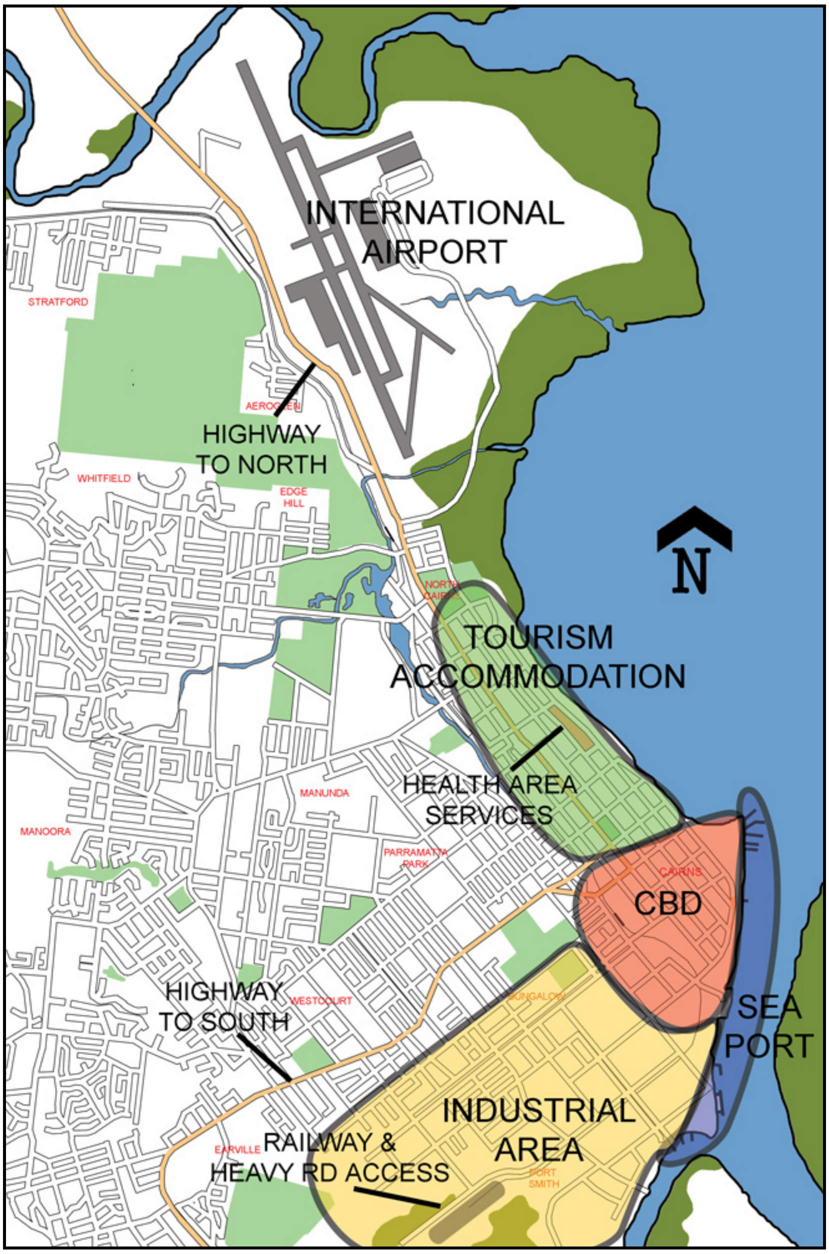
Spending on defence and surveillance activity has become important along with special programmes to assist the region's relatively large indigenous population.

However, by and large, the city's growth has been private enterprise led, with past spending by government much less important to economic growth than other major northern centres of Darwin and Townsville.

Development has tended to come in surges and resulted in an increasing integration with the international economy. (The Asian financial crisis was a factor in a slower growth period in the late 1990's.)

The city has a highly efficient internal layout with the airport, the CBD and tourism area, the seaport, and industrial areas being located close to one another, but separated (see **Map 9**).

Map 9
Cairns Today – Location of Major Functions



3. LOOKING FORWARD

Future growth of the region will come from two broad directions:

- The continuing, progressive realisation of the region's diversified natural resource potential.
- An increasing growth of Cairns as an Asia Pacific gateway and as a regional, national and international servicing city.

3.1 Diversified Resource Development

General

Despite the growth of the past 50 years, the underlying diversified resource potential of the region remains very large compared with its current population of about 250,000.

In general terms, while the past 50 years has seen growth in agriculture, fisheries and mining, the past 20 years especially has seen a heavy acceleration of realisation of the region's tourism potential.

While the next 50 years is likely to see continuing growth of tourism and its spread throughout the region, a new emphasis is likely to occur in other directions, especially:

» A new wave of industry development stimulated by world demand for mineral resources and new energy parameters in the region.

» The impacts of global advances in biotechnology in a region rich in water and biological resource potential, along with the impacts of new global environmental parameters.

The same basic underlying factors that led to the region's increasing realisation of its diversified resource potential over the past 50 years are likely to underpin future advances. World economic growth seems likely to continue, and probably accelerate (see **Table #10**). Technology suited to the region can be expected to continue advancing. Transport developments will continue to shrink the world with new air links likely to develop especially in the Asia Pacific area (see **Table/Chart #11**). Road connectivity with the rest of Australia is likely to continue improving, including more direct routes to Melbourne, Adelaide and Perth (see **Map 10**).

Large areas within the region remain unconnected by sealed roads, especially in Cape York Peninsula. The next 50 years will see this change with major new developmental opportunities opening up.

Apart from enhancing global contact, continuing communication development will open up new opportunities for the remote under-developed areas within the region and in nearby areas to the immediate north.

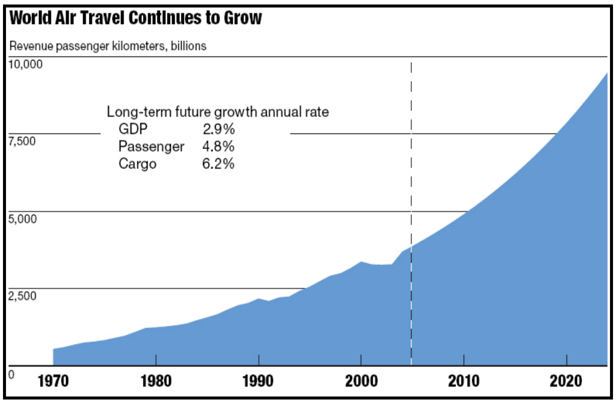
Finally, success breeds success factors will continue to be important with the city and region moving through to a new national position in terms of population, and developing as an increasingly comfortable and civilised place in which to live.

Table #10 – World Development Levels & Growth, 1990 - 2004 – Summary $US 1990 Constant Prices

Temperate Zone	2004 GDP Per Capita	GDP $ bn	GDP Growth 1990-2004
North			
North America	$38,818	$9,645	3.3% pa
Northern Europe	$35,595	$2,381	3.1% pa
Western Europe	$34,203	$4,946	1.9% pa
Southern Europe	$21,575	$2,417	2.4% pa
Eastern Europe	$4,218	$835	2.9% pa
Eastern Asia	$4,935	$6,113	3.1% pa
(China)	($1,283)	($1,419)	(9.6% pa)
North Africa	$1,530	$278	3.7% pa
Western Asia	$4,756	$733	3.7% pa
South			
Australia/New Zealand	$30,415 (est)	$564	3.6% pa
Southern Africa	$4,278	$166	3.1% pa
(Argentina)	($3,988)	($216)	(1.1% pa)
(Chile)	($5,838)	($73)	(4.7% pa)
Total		**$28,367**	
Tropical Zone			
Melanesia/Micronesia	na	$12	1.5% pa
Polynesia	$10,049	$5	1.7% pa
South East Asia	$1,396	$666	3.8% pa
South Central Asia	$695	$1,098	5.4% pa
South America	$3,179	$1,122	2.1% pa
Caribbean	$4,894	$123	3.7% pa
Sub Saharan Africa	na	$259	4.0% pa
Total		**$3,162**	

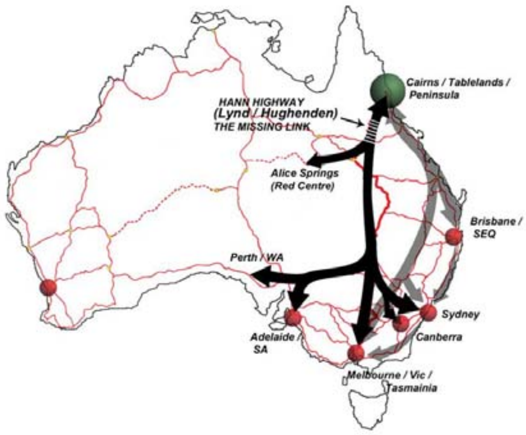
Source : Cummings Economics from UN Statistics.

Table/Chart #11
Estimates of Growth in World Air Travel



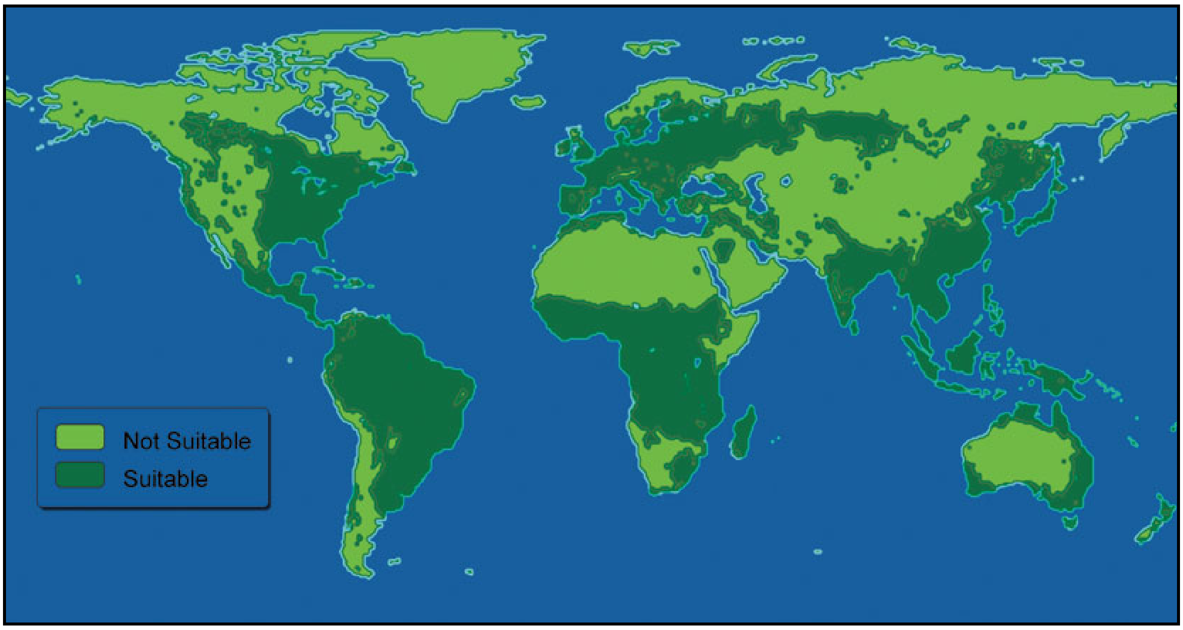
Source : Boeing Corporation

Map 10
Direct Inland Route – Cairns/Melbourne



Of special importance to the region is the 'turnaround' taking place in the belt of previously under-developed countries in the tropics that account for over 40% of the world's population (see **Map 11**). The global lag in technology especially suited to the tropics, is passing. This has significance for the development of nearby areas in tropical South and South East Asia and the Pacific. But it also means that the Cairns region will benefit immensely from an accelerating interflow around the tropics of technology in areas such as plant and animal breeds, farming systems, marine industries, medical and health technology, meteorology, building design, and the like.

Map 11
Global Areas where Climate is Suitable for Crop Agriculture



Source : US Department of Agriculture.

A Maturing Tourism Leader

At 2.3 million visitors a year (1.5 million domestic, 0.8 million international), the region has emerged as a significant tropical tourism destination that ranks highly in its ability to draw visitors from distant destinations (see **Table #12**).

Table #12 – Cairns Visitor Numbers Compared with Other Major Tropical Asia/Pacific Destinations

	Visitor Numbers '000						
	Cairns Region (2004)	Hawaii (2004)	Bali (2004)	Phuket (2001)	Fiji (2004)	Guam (2003/04)	Jamaica (2002)
Total	**2,304**	**6,912**	**na**	**3,789**	**na**	**na**	**na**
Domestic	**1,497**	**5,896**	**na**	**1,077**	**na**	**na**	**na**
International	**807**	**1,016**	**1,458**	**2,712**	**430**	**1,156**	**1,266**
Aus/NZ	na	(nsr)	288	na	218	(nsr)	(nsr)
US/Can	110	na	74	na	68	44	1023
Japan	244	1482	326	na	23	897	5
UK/Europe	299	115	320	na	22	1	179
Other	154	742	450	na	99	214	59

(nsr – not separately recorded.)
Source : Cummings Economics from Various Data.

Markets are expected to continue diversifying with the future growth of countries like China and India, Middle East and Eastern Europe as tourism sources:

- Growth is expected to remain strong over the next 50 years but not record the spectacular growth rates of the past 20 years.
- Predicted strong growth will still only take it up to visitor numbers equivalent to those of Hawaii over a 30-year period (6.9 million).
- Most of the region's tourism is currently contained in the Cairns/Port Douglas/Cape Tribulation coastal area. Continuing growth is likely to see it spread into the coastal areas south of the city, the Tablelands, and further north along the Great Barrier Reef and into the Torres Straits (see **Tables #13 & #14**).

Table #13 – Tourism Forecasts Australia, 2005 - 2014	
International	5.8%
Domestic	0.9%
Outbound	3.2%

Source : Cummings Economics from Tourism Forecasting Cttee, Tourism Research Australia.

Table #14 – Longer-Term Tourism Projections – Cairns Region

	International Visitors		Domestic Visitors		Total	
	'000	Av An % Growth	'000	Av An % Growth	'000	Av An % Growth
2004	807		1,497		2,304	
2014	1,445	6.0%	1,805	2.0%	3,250	3.5%
2024	2,240	5.0%	2,344	2.0%	4,584	3.5%
2050	4,789	3.0%	3,922	2.0%	8,711	2.5%

Source : Cummings Economics.

Industrial North - Minerals & Energy

World demand for minerals, especially from China, has already led to major mining project development in the nearby northern, north-west and central Queensland regions.

There is plenty of evidence that buoyant and increasing demand for minerals is likely to be sustained well into the future.

A resurgence of base metal mining is taking place in the south-east of the Cairns region with an upsurge in copper, zinc, tin, wolfram and gold mining on the way.

Bauxite and kaolin mining in the Weipa/Upper Peninsula area has recently been expanded and the extensive bauxite reserves at Aurukun just south of Weipa are being opened up. There are large deposits of top grade silica sand along the east coast on top of that being mined at Cape Flattery for shipment to Japan.

The other important new dimension in the region is the imminent construction of the Papua New Guinea/Queensland pipeline down Cape York Peninsula, opening up new possibilities for mineral and other processing in a region previously poor in fossil fuel energy sources (see **Map 12**).

After being a net exporter of electricity from hydro power stations in the 1950's, the region has become almost totally dependent on electricity imported from coal fired power stations 1000 km away in central Queensland. On long-term trends, demand for electricity power in the region is expected to reach a level to sustain a 500 MW power station in 10 years and a 1000MW power station in a 20-year time frame (see **Table #15**).

Table #15 – Electricity Consumption (Peak Demand) & Projections – Cairns Region

		Peak Demand MW	Growth Rate		
ACTUAL	1976/77	75 MW			
	1984/85	113 MW	4.2% pa	(1976/77 to 1984/85)	
	1994/95	242 MW	7.9% pa	(1984/85 to 1994/95)	
	2004/05	335 MW	3.3% pa	(1994/95 to 2004/05)	
			(5.2% long-term)	(1976/77 to 2004/05))	
		(1)		(2)	
PROJECTED	2014/15	493 MW	3.9% pa	556 MW	5.2% pa
	2024/25	725 MW	3.9% pa	923 MW	5.2% pa
	2034/35	1,067 MW	3.9% pa	1,533 MW	5.2% pa
	2044/45	1,570 MW	3.9% pa	2,545 MW	5.2% pa

Note (1) : Based on Ergon estimate for 2014/15 and continuation over following decades.
Note (2) : Based on continuation of 1976/77 to 2004/05 long-term growth rate.
Source : 1976/77 to 1994/95 FNQEB data. 2004/05 Ergon data. (See Specialist Paper No. 9 Part-D.)

The region is one of the best placed in Australia to develop 'alternative' non-fossil sources of energy including:

- ❑ Bio fuels (see next section)
- ❑ Hydro electricity
- ❑ Wind power
- ❑ Solar power

New Bio Industry Opportunities

"*Biological sciences are likely to make the same impact on the formation of new industries in this century as physical and chemical sciences have had on the last century*", US National Research Council. 2000.

"--- Cairns is favourably positioned --- to launch a biotechnology industry precinct concept to commercially exploit the genetic resources of Queensland's exceptional biodiversity", Dunlap & Battershill, Australian Institute of Marine Science, 2005.

Within the Australian context, the extent and diversity of the Cairns region's existing and potential biological resources is outstanding.

There is a major prospect of the Cairns region developing as a centre of excellence in biotechnology and associated activities related to the tropics.

Map 12
Proposed Route PNG/QLD Gas Pipeline

- **Cairns is a first world city located in an area of exceptional tropical bio diversity, both marine and terrestrial.**
- **The Cairns region is now the largest in population in northern Australia.**
- **Cairns has international and domestic air links comparable with and in some respects superior to some of the metropolitan centres (including direct air links throughout the north and into nearby tropical South West Pacific areas).**
- **The region is a major player in national terms in bio resource based industries of agriculture, fisheries and tourism and has a strong entrepreneurial and commercial base.**
- **Cairns and the region have become an increasingly desired and comfortable place in which to live.**
- **Cairns University Campus has already established courses in aspects of biotechnology.**
- **Other major government R&D bodies located in the region include DPI&F, CSIRO, and AIMS.**

The first major impact of new capabilities in biotechnology will be on existing and new agricultural industries. The underlying situation is that the region accounts for 27% of Australia's water run off but still only accounts for 2.7% of its value of agricultural production.

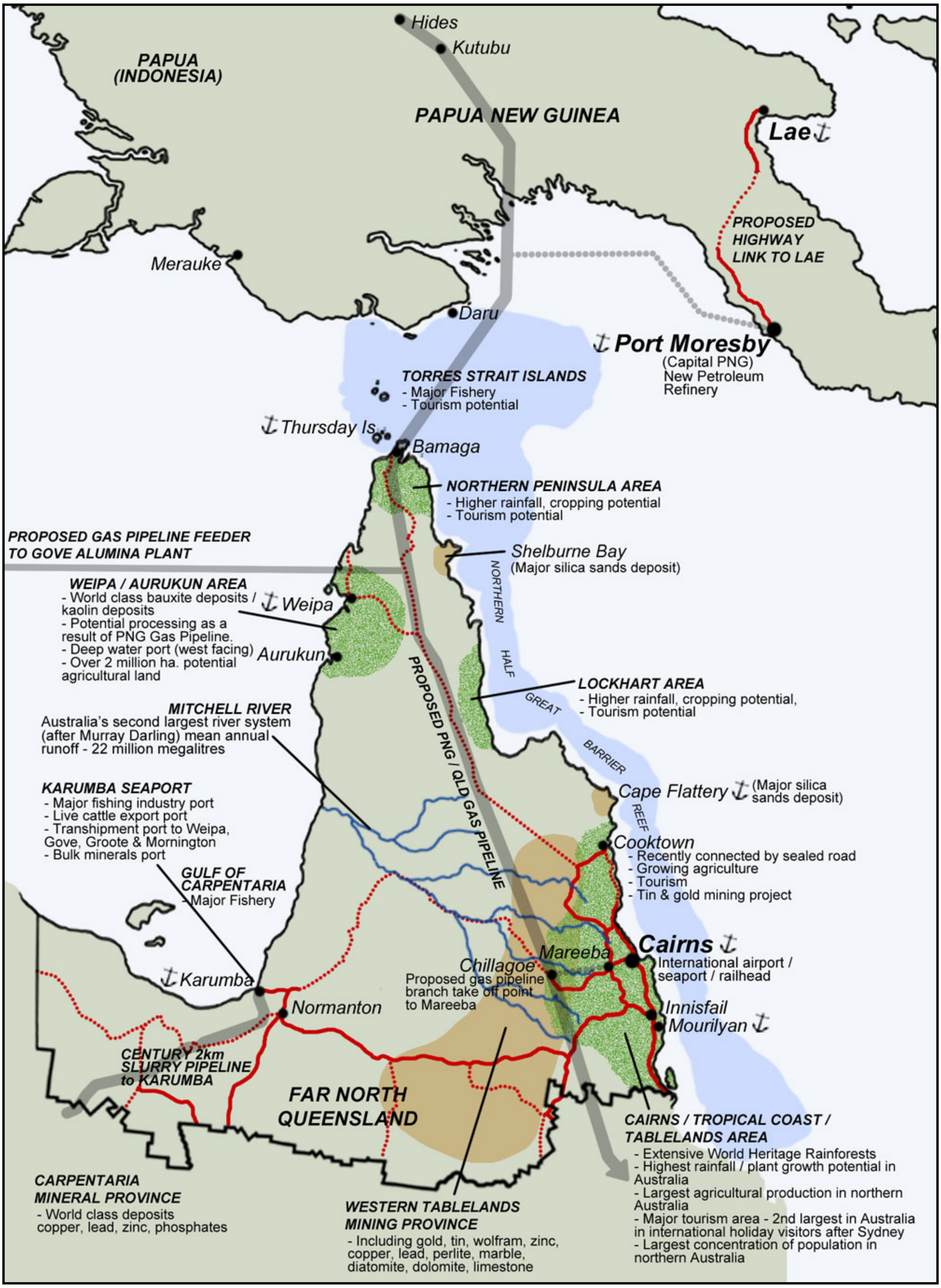
Current crop production is mainly located in the high rainfall areas in the region's south-east. While there is virtually no opportunity to expand acreages in this area, it can be expected that the process already evident in this area of intensification, diversification and value adding will continue. New biotechnological advances and farm management improvements will play a significant role.

The current major cropping area extends into the lower rainfall irrigated northern Tablelands/Dimbulah area.

Prospects for expansion of agriculture throughout the rest of the region are substantial. This includes a continuation of the steady trend to more intensive cattle production through the use of locally grown feeds and supplements, additional water storages, and more intensive management through fencing. Substantial areas of suitable soils exist to the south/south-west, west, north-west and north of the Tablelands. Cropping is already creeping into these areas. With additional water storages and irrigation, there is potential for expansion. The recent extension of sealed roads into the Cooktown district is already leading to a rapid increase in production in that area from a small base.

Queensland Department of Primary Industries in CYPLUS reports (Cape York Land Use Study) during the 1990's identified some 2.9 million ha of land suitable for cropping in Cape York with a high rainfall and reliable wet season, suitable soils and significant supplementary dry season water available. The area is close to the excellent port facilities of Weipa and located north-east and south-east of Weipa. It is considered suitable for crops like peanuts, maize, sorghum, rice and various horticultural crops. Even if only 120,000 ha were cropped of the 2.9 million ha identified, potential farm gate value was estimated at $345 million (at mid-1990's prices). A sealed road into the Peninsula would reduce costs of inputs. Current policy on tree clearing affects potential development of agricultural industries in this area (see **Map 13**).

Map 13
Cairns Region Diversified Resource Potential



Impacts on the Cairns region of biotechnological and farm management advances identified in various specialist papers in the report include:

- Biodegradable plastics from sugar cane.
- Fibre products from the sugar industry.
- Molecular farming based on new age tobacco for pharmaceuticals, etc.
- Bio fuels (ethanol) from sugar.
- Bio energy generation.
- New tree crops.
- Bush tucker crops.
- Paper from banana fibres.
- By-products from the dairy industry.

Indeed, the various specialist papers in the report point to an opportunity for the Cairns region (based on its ability to grow tropical crops and produce biomass at low costs) to develop, over time, as a manufacturing centre of national importance for the production of compounds used in pharmaceuticals, nutraceuticals, cosmeceuticals, biofuels, bioenergy, biodegradable fibres and plastics, industrial enzymes and biochemicals (see **Table #16**).

Table #16 – Examples of Biobased Products & Categories

Category	Examples of Biobased Products & Markets	Remarks
Biopharmaceuticals	Vaccines, antibodies, anti-cancer agents	20% p/a growth rate: US$160B world market by 2010
Nutraceuticals	Over the counter health-care products/pills	6.1% p/a growth rate: US$9.6B world market by 2008
Cosmeceuticals	Personal-care products (skin, hair, anti-ageing)	US – anti-ageing products: US$30B by 2009
Biofuels	Transportation – ethanol & biodiesel	Qld ethanol – worth up to $1.5B by 2010
Bioenergy	Green electricity & heat	Biomass (64% of green power 2003-04 Australia)
Biodegradable fibres	Automobile, housing, textiles, construction	US fibre market US$1.4B 2005; 54% p/a growth
Biodegradable plastics	Automobile, electronics, construction, furniture	Aust imported $3B polymers / products in 1999
Industrial	Chemicals, paints, dyes, enzymes, solvents, inks	World enzymes 6.6% p/a growth rate: US$5B by 2009

Source : Specialist Paper No. 15 Part-D, DPI Mareeba.

3.2 Global Cairns – A New National & International Service Centre

The Cairns region has emerged over recent decades as the largest in population in Northern Australia (see **Chart/Table #17**).

Table #17 – Population Growth Northern Australia – Census Count Population

	1976 [1]	2001	Av Annual Growth
Cairns/Far North	124,661	244,848	2.7% pa
Darwin/NT	101,400	210,664	3.0% pa
Townsville/North	134,168	191,321	1.4% pa
Rockhampton/Fitzroy	126,395	182,169	1.5% pa
Mackay/Mackay Region	88,330	143,578	2.0% pa

Note [1] : At 2001 boundaries.
Source : Cummings Economics from ABS Census data.

Forward projections by the Australian Bureau of Statistics envisage the nation's northern regions will continue to grow faster than the rest of the nation. Queensland Government Planning & Information Unit projections envisage a continuation of the trend for the Cairns/Far North region to be the fastest growing of Queensland's central and northern regions.

Based on Queensland Planning Information and Forecasting Unit, medium and high forward projections (see **Table #18**), Cairns city census count population is projected to grow to a range of 350 – 420,000 by 2050. A repeat of the long-term average from 1976 to 2001 would see the city at about 680,000 by that time and the region over 900,000.

Table #18 – Range of Projections 2026 & 2050, Cairns City LGA & Far North Statistical Division

		2001 Actual	2026	2050
Cairns City LGA	Est Residential			
	PIFU Low	117,629	170,612	247,550
	PIFU Medium	117,629	184,603	283,260
	PIFU High	117,629	199,832	329,066
	Long-Term Average	**117,629**	**240,380**	**477,384**
	Census Count			
	Based on PIFU Low	133,199	194,563	287,210
	Based on PIFU Medium	133,199	213,343	350,281
	Based on PIFU High	133,199	234,272	417,346
	Long-Term Average	**133,199**	**307,266**	**685,500**
Far North Stat Div	Est Residential			
	PIFU Low	224,163	294,540	382,976
	PIFU Medium	224,163	320,802	454,136
	PIFU High	224,163	347,994	543,583
	Long-Term Average	**224,163**	**386,221**	**651,115**
	Census Count			
	Based on PIFU Low	244,786	335,175	456,474
	Based on PIFU Medium	244,786	367,561	549,614
	Based on PIFU High	244,786	406,424	683,746
	Long-Term Average	**244,786**	**481,145**	**920,503**

Source : See previous table.

Thus the indications are that the region's census count population will rise to pass that of the State of Tasmania (currently 470,000) in about a 25 – 30-year time frame and in a 50-year time frame could be up to about half the State of South Australia (currently 1.5 million). Cairns itself seems likely to be over the 200,000 population mark and larger than Hobart in a 20-year time frame, especially in census count population. It seems likely to be larger than Canberra in 2050. A repeat of the past long-term growth rate would see it over 600,000 in census count population by 2050, ie. about the size of Adelaide (646,000) in 1947.

Substantial construction of dwellings and new tourist accommodation is likely to be needed (see **Tables #19 & #20**).

Table #19 – Projected Stock of Dwellings Needed at Current Per Capita Supply Levels, Census Count Population - Cairns LGA

	PIFU Based Census Count Population Medium Projection (av an 2.0% pa.)			
	House	Non-House	Total	Av Annual Extra Stock
2001	31210	23,027	54,237	
2005	33783	24,925	58,708	1,118
2010	37299	27,519	64,818	1,222
2015	41181	30,384	71,565	1,349
2020	45467	33,546	79,013	1,490
	Continuation Long-Term Historical Growth Rate (av an 3.4% pa.)			
	House	**Non-House**	**Total**	**Av Annual Extra Stock**
2001	31210	23,027	54,237	
2005	35676	26,322	61,998	1,940
2010	42168	31,111	73,279	2,256
2015	49840	36,773	86,613	2,667
2020	58909	43,464	102,373	3,152

Source : Cummings Economics.

Table #20 – Projected Stock of Rooms Required – Hotels/Motels & Serviced Apartments (Forward Projections at Average 3.5% pa.)

	June Quater	Rooms	Additional Need	
Actual	2004	11,264		
	2005	11,658		
	2006	12,066		
	2007	12,489		
	2008	12,926		
	2009	13,378		
	2010	13,846	2005 to 2010	2,582
	2011	14,331		
	2012	14,833		
	2013	15,352		
	2014	15,889		
	2015	16,445	2010 to 2015	2,599
	2016	17,021		
	2017	17,616		
	2018	18,233		
	2019	18,871		
	2020	19,532	2015 to 2020	3,087

Source : Cummings Economics.

Apart from its role as a regional servicing city, Cairns is likely to increasingly develop a role:

= As a pivotal servicing hub in the wider tropical South West Pacific region.
= As an Asia Pacific gateway city.
= As a centre selling services to wider global markets.

First priority will be the city's development as a <u>regional servicing centre</u>. Comparisons with economic profiles of Tasmania and South Australia (see **Table #21**) indicate that Cairns, as a city, is likely to develop very strongly over the next 20 to 50 years in manufacturing, wholesaling, finance and insurance, property and business services, education, health and community services.

Table #21 – Proportions of Workforce by Industry – FNQ, Tasmania & South Australia			
Industry	**FNQ**	**TAS**	**SA**
Agriculture, Forestry & Fishing	8.4	6.7	5.8
Mining	1.1	0.8	0.6
Manufacturing	6.9	11.6	14.7
Electricity, Gas & Water Supply	0.7	1.0	0.7
Construction	6.9	5.1	5.7
Wholesale Trade	3.0	4.6	5.0
Retail Trade	14.8	15.0	14.6
Accommodation, Cafes & Restaurants	9.3	5.2	4.5
Transport & Storage	6.5	4.3	3.8
Communication Services	1.0	1.5	1.6
Finance & Insurance	1.8	2.4	3.1
Property & Business Services	7.4	7.7	9.3
Government Administration & Defence	8.0	5.3	4.2
Education	6.8	8.2	7.1
Health & Community Services	8.4	11.4	11.6
Cultural & Recreational Services	2.4	2.1	2.4
Personal & Other Services	3.5	3.8	3.8
Non-classifiable economic units	4.0	0.8	0.5
Not stated	2.1	1.8	1.4

Source : Cummings Economics from ABS Census data.

As political and economic development progresses in the nearby areas of the tropical South West Pacific (including other regions of tropical Australia, Papua New Guinea, eastern Indonesia and the Pacific Islands), there are prospects that the current fragmented markets in this wider region can be increasingly integrated to facilitate the establishment of higher order manufacturing and servicing facilities. Cairns, with its international hub airport and first world infrastructure, is well placed to play a pivotal role. However, Cairns' strategic location in relation to the wider Asia Pacific region combined with its superior air services, will open up opportunities for the city to play a servicing role in some specialist fields throughout this wider area.

A global role seems likely to develop through Cairns' position as a first world city in the tropics and relate especially to the development and spread of technology suited to the tropics.

Against this background, the Cairns region seems likely to develop as a centre of excellence in a number of fields.

This includes a continuation of the strong national role it has already established as a maritime servicing centre based on the region's large fleet of small fishing, tourism, trade, leisure and naval vessels, a role that is likely to be enhanced by the South West Pacific's growth as a major cruising area for luxury yachts. It will also include the city's growing role as an aviation servicing hub of national importance.

The city is strong in skills based engineering and as a base for 'fly-in/fly-out' of skilled personnel to mining and other projects in the wider tropical South West Pacific area.

New non-leisure tourism opportunities are opening up including business, sports, and events tourism.

While the city faces strong competition from metropolitan centres in the provision of financial and business services, there is a growing tendency for Cairns based businesses in these fields to reach out into wider regional, national, and international markets.

The region's small 'off centre' position from major national markets is diminishing, as improved land and air transport services are established with southern capitals. Opportunities to sell to national markets are likely to increase especially for goods in which the region has advantages including products based on tropical produce, the region's large tourism market and its high level of maritime, aviation and engineering expertise.

Clearly, the region has a developing role to play in relation to bio sciences and technology, including environmental management, bio prospecting, biotech industry development and practical skills in tropical agriculture and landscaping. The city has had a strong tradition in the public health field and its Tropical Public Health Unit has already established a role as a key global facility.

In education, the city is already an Australian regional leader in attracting international students at school, technical and English language level. Its university campus was initially late being established and its development retarded. Strong community moves are currently underway to ensure that Cairns' University Campus joins the city's other education sectors in attracting international students and becomes a leader in education, research, and development in the tropics.

Appropriate institutional arrangements would see domestic equivalent full time university student numbers rise 2.7-fold to 5,600, to reach typical Australian participation levels, and for international student numbers to increase 10-fold to 2,000 equivalent full time students.

In summary, it can be expected that the Cairns region will develop as a centre of excellence, that earns income from sales outside the region from services, manufacturing, education and research in the following fields:

Likely Areas of Excellence

At a GLOBAL Level -	=	Tourism management.
	=	Environmental management.
	=	International business, cultural and language studies.
	=	Tropical health.
	=	Tropical bio discovery.
	=	Tropical bio technology.
	=	Tropical agricultural sciences.
	=	Tropical food and cooking.
	=	Tropical gardening and landscaping.
	=	Tropical expertise in various other areas.
	=	Water management.
At an ASIA/PACIFIC Level -	=	Biotechnology products (pharmaceuticals, etc).
	=	Aviation services.
	=	Maritime services.
	=	Tropical food products.
	=	Fibre products.
At a REGIONAL Level -	=	Food manufacturing.
	=	Business services (including IT).
	=	Skills based engineering.
	=	Fly-in/fly-out services.
	=	General trade and supply.

4. OVERVIEW

The Cairns region has grown from a very small base over the past 50 years. Much of this growth has been underpinned by a massive increase in outside earnings based on previously underdeveloped natural resources of plant growth potential, minerals, marine resources, and natural tourism resources. This growth has been spurred along by major underlying forces of growing global markets reaching out for previously underdeveloped resources, of transport developments breaking down previous barriers of remoteness, of technology being developed especially suited to the area, and of success breeds success factors coming into play.

Growth based on the region's diversified natural resource base has been supplemented by impacts of the region's strategic position including development of trade with nearby areas to the north and through defence and security spending.

In assessing development potential of the region over the next 50 years, a number of factors stand out.

Population of the region of 250,000 is still very low compared with its very large and diversified resource potential. The region is close to major resource hungry global growth areas in Asia.

The region will continue to be an underlying winner from improving global transport and communications.

The region has a special interest in strong economic progress being achieved in the wider tropical South West Pacific/South East Asia area.

The region is exceptionally rich in water and in underdeveloped biological resources.

The region is in a position to benefit immensely from major global advances taking place in biotechnology through its impacts on the region's agricultural, forestry and marine resource potential.

The region has an immense interest in the passing of an historic global lag in technology in tropical areas.

The region is likely to benefit from a sustained growth in demand for minerals.

The region's energy situation is being transformed by the gas pipeline to be constructed from Papua New Guinea. It is very well placed to play a national role in the development of alternative energy sources.

The region is likely to continue developing as a global provider of nature based tourism experiences.

The city and region offers lifestyle advantages as it passes from a hardship posting to being a desired place in which to live.

The city and region are projected to grow more rapidly than the nation as a whole.

Importantly, while the region has potential for continuing strong growth based on its diversified resource based industries, the city of Cairns is developing a role as a gateway hub into Australia and in relation to the wider Asia/Pacific region. It has strong prospects of developing areas of excellence and outside earnings in a range of services and associated manufacturing, including maritime and aviation services, environmental management, tourism management, tropical biotechnology and bio sciences, tropical health and a range of other areas of tropical expertise.

Particularly important to the city's growth as a centre of excellence in various fields will be its growth as an international centre for higher education and research.

In moving into this new era, Cairns will change its image from being a tropical frontier town of the early 1900's to being a 'sugar town' of the 1950's, and from being a 'tourism town' of the 1990's.

Its new image will reflect the beauty and richness of its surroundings, its superior lifestyle attributes, its international character, its burgeoning business opportunities, its strategic/gateway position, and its position as a centre for science, technology, education and the arts in the tropics.

SPECIALIST CONTRIBUTED PAPERS

Apart from the main text, the following specialist contributed papers are included in the manual.

PART - D : SPECIALIST PAPERS

1 "*Cairns Seaport & Airport*" by Brad Geatches, CEO, Cairns Port Authority.
2 "*Town Planning Aspects*" by Bruce Hedley, Director, Planning Far North.
3 "*Future IT Development Opportunities in Cairns*" by Colin MacKinnon, Managing Director, Brilliant Technologies.
4 "*Current & Future Trends in the Education Sector*" by Conni Fuerst, Study Cairns.
5 "*Advance Cairns Deals the China Card*" by David Maguire, CEO, Advance Cairns.
6 "*Advance Cairns has its Eye on the Future*" by David Maguire, CEO, Advance Cairns
7 "*Health in North Queensland the Zonal Picture*" by Dr Ross Spark, Director, Cairns Tropical Health Unit.
8 "*New Opportunities in Marine Biotechnology*" by Dr Walt Dunlap/Dr Chris Battershill, Aust Institute of Marine Science.
9 "*Regional Electricity Distribution*" by Ergon Energy Corporation.
10 "*Business Events & the Cairns Convention Centre*" by Geoff Donaghy, CEO, Cairns Convention Centre.
11 "*Super Yacht Industry Development*" by Jacqueline Brinkman, Manager, Super Yacht Group-Great Barrier Reef.
12 "*Cairns Water*" by John Gersekowski, Manager, GHD Services, Cairns.
13 "*Telecommunication Yesterday, Today & Tomorrow*" by May Barrett, Business Manager, Telstra Country Wide FNQ.
14 "*The Media in the Cairns Region*" by Nick Trompf, General Manager, The Cairns Post Newspaper.
15 "*Fostering the Bio Economic Revolution*" by Peter Holden, Dept of Primary Industry & Fisheries.
16 "*Climate Change*" by Prof Bob Miles, Executive Director, Sustainable Regional Development.
17 "*The Future of Tropical Agricultural Science*" by Prof Gadek, School of Tropical Biology, James Cook University.
18 "*Agricultural Sustainability in FNQ - Boom or Bust*" by Prof Geoffrey Leakey, School of Tropical Biology, James Cook University.
19 "*The Great Barrier Reef – Defining a Research Agenda*" by Prof Russell Reichelt, CEO, Reef Co-operative Research Centre.
20 "*Towards Sustainable Tropical Forest Landscape*" by Prof Stephen Turton, Deputy CEO, Rainforest Co-operative Research Ctr.
21 "*Private Hospital Regional Health Services in TNQ*" by Richard Lizzio, CEO, Cairns Private Hospital.
22 "*The Cairns Real Estate Outlook*" by Rick Carr, MD, Herron Todd White, Cairns.
23 "*Qld Rail in the Cairns & Far Northern Region*" by Robert Moffat, Mngr, Transport Services Contracts, QR.
24 "*The Future of the TNQ Tourism Industry*" by Rob Giason, CEO, Tourism Tropical Nth Qld.
25 "*The Law in Cairns*" by Russell Beer, Partner, MacDonnells Solicitors.
26 "*The Role of the Cairns Chamber of Commerce*" by Sandy Whyte, CEO, Cairns Chamber of Commerce.
27 "*The Role of Area Consultative Committees*" by Tomas Vieira, CEO, FNQ Area Consultative Committee.
28 "*CREDC's Cluster Programme*" by Tracy Scott-Rimington, Manager, CREDC FNQ.
29 "*Accounting & Business Services Industry*" by Trevor Mahony, Partner, Pricewaterhouse Coopers.

Principal Business Sponsor

Major Sponsors

Sponsors

Special Supporting Sponsors