

**Abstract for a Paper by W S Cummings B Econ (Qld) to the
Annual Australian Conference of Economists, Brisbane 7-10 July 2015**

**The Tropical Turnaround and Its Implications
for The Australian Economy**

Ref: J2836

After an historic lag in economic development, many of the world's tropical zone economies, including India, Indonesia and South East Asia, Brazil and Mexico have been growing strongly. The sub-tropical sunbelt phenomenon identified in the 1970s and 1980s is now spreading into the previously underdeveloped tropical and equatorial areas.

This paper identifies:

- How tropical Australia is part of this world-wide trend;
- How the rate of growth of the North's regions and cities has been outpacing equivalents in southern Australia; and
- How the North's growing successes have been having a major impact on the Australian economy, living standards and economic settings.

The paper identifies the major underlying factors that have been leading to the North's growth including development of technology suited to the tropical areas, improved transport and communications breaking down old cost barriers of remoteness, the growth of the global economy reaching out for previously underdeveloped resources (especially from nearby Asia), and how success is breeding more successes.

The paper sets out the resulting pattern of growth that is playing out across the North's six, state-sized, regions, and why this pattern is occurring.

Finally, it briefly discusses likely future growth patterns, the type of policy initiatives needed to keep the trend going and the resultant future benefits to Australia and its place in the world.

The Tropical Turnaround and Its Implications for The Australian Economy

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Examination of United Nations' statistics indicates that over the 12 years 2000-2012, countries in the world's tropical zone grew at almost twice the rate of those in the rest of the world including China; an average of 5.1 per cent per annum compared with 2.8 per cent per annum. It is evident that a 'Tropical Turnaround' has occurred and that the historic lag in development in the world's tropical zone is passing. (See **Tables #1 & #2.**)

The tropical lag was clearly defined in 1951 when prominent American economist, J.K. Galbraith, a former US Ambassador to India, wrote in the 'Journal of Farm Economics', "*.....if one marks off a belt of a couple of thousand miles in width encircling the earth at the equator, one finds within it 'no' developed countries. The industry such as there is, is extractive - tributary to the economies further north or south. The agriculture, excepting a substantial amount of plantation agriculture, is also primitive. Everywhere the standard of living is low and the span of human life is short. Surely all this is not an accident.*"

In the 1960s, W.W. McPherson & Bruce F. Johnston in "Agricultural Development and Economic Growth" made the following comments, "*The less highly developed countries of the world are concentrated to a striking degree in tropical or sub-tropical regions. Countries lying entirely or mainly in the tropics or sub-tropics contain about half of the world's population but account for less than 15 percent of the aggregate gross domestic product. Only three tropical countries had per capita incomes in 1958 above \$476, the weighted average of all countries for which UN income estimates are available.*" (See **Table #3.**)

The situation in tropical Australia was but a variation. Non-indigenous wages were high. Arbitrated awards made high wages mandatory. In any event, in an Australian common market, if workers could not receive similar wages, they simply left and shifted back south. The tropical lag in northern Australia exhibited itself in the fact that precious few people lived in tropical Australia.

Tropical Australia had historically presented a major challenge to a society with its technology and most of its population derived from north western Europe. Settlement was late starting and progress was hard-won with many initial setbacks.

By the 1950s, with 40 per cent of the area, the North accounted for only 4 per cent of Australia's population, much of it supported by a protected sugar industry.

Farm-based settlement had succeeded in a few highly favorable areas. Much of the cattle industry across the North was on sparse cattle stations, involving little more than cattle hunting. The indigenous population, especially across the Far North, remained largely at third-world standards.

But just as tropical Australia was a variation of the economic lag around the globe in the 1950s, today it is very much part of the 'Tropical Turnaround'. In recent decades the population growth rate across northern Australia has been outstripping that of southern Australia (see **Table #4**). Proportion of Australia's population has risen from 4 per cent to close to 6 per cent.

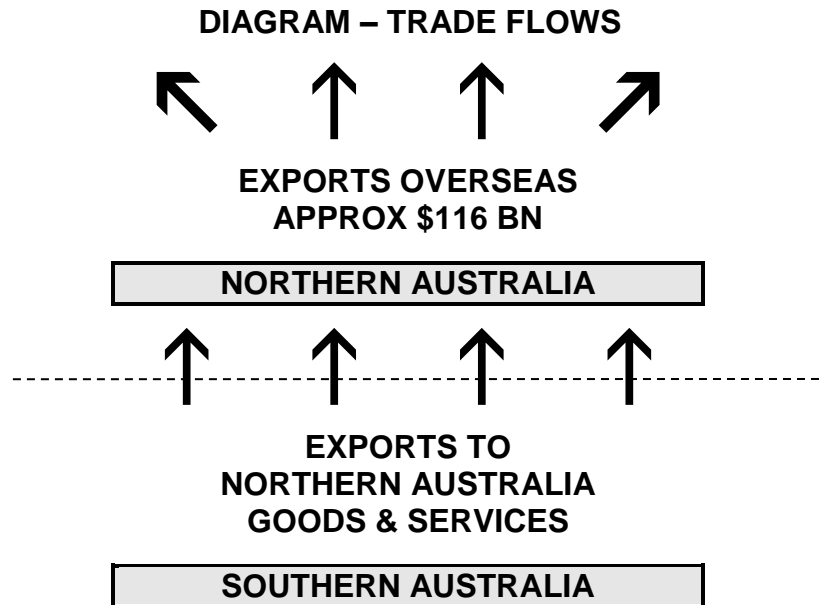
Tropical Australia covers a large area and, although populations are much smaller, realities of areas and distances leads to six major regions, in many ways equivalent in area to the six states across southern Australia (see **Map #5**). The smallest, the Mackay region, covers an area equivalent to Tasmania. The largest of the four regions in Queensland, the Cairns region, stretches over half of Queensland's latitudes (see **Map #6**), and is 1½ times the size of Victoria. There are five major regional capitals that have been growing strongly, outstripping in growth by a long way, the regional cities of the South and in growth rates, the metropolitan cities.

The fastest-growing of these cities over the period since 1976, Cairns, has passed seven other Australian cities that were larger in 1976 – Launceston, Bendigo, Ballarat, Albury/Wodonga, Orange/Bathurst, Toowoomba and Rockhampton (see **Table #7**).

However the impact on Australia was much more than that indicated by population growth. In 2012-13, especially as a result of the mining boom, the North's rising share of Australian merchandise exports reached about 50 per cent of the Australian total (see **Tables #8 & #9**).

From riding on the sheep's back in the 1950s, Australia has clearly moved to riding on the back of the North's resources.

A dynamic is now in place in the Australian economy in which the North earns massive income from overseas, imports very little direct from overseas, but imports very large amounts of goods and services from southern Australia, especially in the form of higher order manufactured goods and services.



To understand why strong development has been happening in the North, it is first necessary to understand that northern Australia is not poor in underlying resources.

These days, no one would deny the extent of the North's mineral resources. In tourism it has natural attractions that are world-class and play a major role in attracting international visitors to Australia. The pattern of marine resources in the North is different to southern Australia but includes a variety of high-value species with global demand. However what is not widely recognized, is the extent of the North's underlying plant growth-based resources. We all know that the North accounts for 60 per cent of Australia's water run-off but temperatures and evaporation rates are higher.

Satellite technology and CSIRO measurements are now telling us that plant growth potential as measured by carbon absorption by plants (NPP) Net Primary Productivity, is higher in the North per square kilometre and with 40 per cent of the land area, is about equal to southern Australia in total (see **Map #10**).

In more recent decades, four major underlying factors have been leading to the realisation of the area's potential.

First, technology has been developing more suited to tropical areas - not just relating to industry development, but to everyday living, reducing disadvantages of living in the tropics.

Secondly, a growing world economy has been reaching out for previously marginal resources in minerals, but also primary products and tourism. Much of the world's growth has been taking place nearby in eastern Asia.

Thirdly, transport and communication developments have broken down old cost penalties of remoteness from major markets in southern Australia and overseas, including the development of bulk ore carriers, improved road transport vehicles and jumbo jets.

Finally, success breeds success factors have been kicking in as population grows and as infrastructure improves, resulting in improved local availability of education and health, sporting and cultural facilities and falling costs of production.

Resulting skyrocketing mineral development is well known. What is less known is that major advances have been made in tourism. Although checked by the recent very high Australian dollar, tourism is now resurgent. A major new market is developing rapidly out of China. In international holiday visitors, Cairns, the Whitsundays and the Northern Territory are up there with the major southern centres (see **Table #11**).

But probably least realized, is the major advances that have been made in the agricultural sector – the long-term Achilles heel of northern development. There have been three major breakthroughs.

Pioneering development of mechanised sugarcane harvesting along with introduction of bulk handling so revolutionised the cost structure of the Australian sugar industry in the 1960s and 1970s that the Australian industry's complaints of having to compete with low wage underdeveloped countries was replaced within a short time by complaints from underdeveloped countries about Australia's cheap mechanised sugar. From the late 1980s, protection was removed. An expanding industry now stands on its own feet in world markets.

Introduction of tropical adapted Brahman breeds along with live cattle exports developing to South East Asia has changed the beef industry from cattle hunting to a modern primary industry. There are now more beef cattle per hectare in northern Australia than in the South. There are major prospects of expanding markets in an Asia seeking to increase protein consumption (see **Table #12**).

Thirdly, Davidson's 'Northern Myth' predictions about tropical crops being more competitively produced closer to southern markets has proved wrong. Improvement in roads and transport from the North to southern markets has opened up major new dimensions in range of crops produced in the North. Fruit production in the Cairns region has expanded from \$27 million in 1982-83 to \$540 million in 2012-13 (see **Table #13**).

While the super remote 'Ord River' scheme had difficulties due to high costs and lack of suitable crop technology, the Fairbairn, Burdekin and Tinaroo irrigation schemes were all successful.

Given the right technology and suitable infrastructure, the underlying water resources and plant growth potential in the North is such that levels of production could be expected to increase by factors like seven-fold.

A further aspect that is often not realised is the transformation that has taken place in everyday living conditions in tropical Australia that has turned the North's cities from a hardship posting to a desired place to live. Critical in this has been the widespread introduction of air-conditioning but also advances in health services and housing.

The old underdeveloped tropics situation led to many myths and misconceptions including that the tropics were unhealthy – 'the white man's grave'. Latest statistics indicate that any apparent lower-life expectancy in tropical Australia is due to the fact that indigenous populations throughout Australia have a significantly lower life expectancy than the non-indigenous population. The North has a much higher proportion of indigenous population. Separation of the two populations indicates that for both, the non-indigenous and indigenous populations, life expectancy at birth in the North's regions is equivalent to similar regions in the South (see **Chart #14**).

The attached chart shows the pattern of long-term population growth that has taken place across northern Australia's regions over the 35 years 1976 to 2011. (See **Charts #15, #16 & #17**.) Much of the early development in the North had been focused on the growth of the pastoral industry, especially sheep in western Queensland, leading to the early development of the pastoral ports of Rockhampton and Townsville in the drier coastal zones of Queensland.

The growth patterns since 1976 indicate that in more recent decades, the previously underdeveloped far northern regions based on Cairns and Darwin have been leading growth. With a swing to agricultural and tourism growth plus mining, the higher rainfall Mackay/Whitsunday region also grew relatively strongly.

Government services along with defence has particularly favored Darwin and Townsville but with naval base and border protection services development also favoring Cairns (see **Table #18**). The Cairns area has developed as the major hub for business (**Chart #19**), for aviation (**Chart #20**), for maritime servicing, and for skills-based manufacturing as opposed to minerals and primary product processing (see **Tables #21 & #22**).

Tropical Australia is on a catch-up trajectory but still with a long way to go.

Historically, it faced a developmental paradox of being too dependent on commodity exports, not because it had failed to develop manufacturing and services but because it had failed to develop enough commodity exports upon which to base a larger manufacturing and services sector.

For the foreseeable future, it will still need to concentrate on expanding the commodities and tourism export sectors with emphasis swinging with market changes in the near future from minerals to primary products and tourism.

Australia's tropical regions have never had the luxury of being able to raise tariff barriers against competition from the south for its manufacturing and service industries. The North's regions have been forced to have an outward looking policy of seeking to develop their outside earnings from overseas and the rest of Australia.

For many decades, the North paid a heavy price from the burden of protectionist policies aimed at subsidising manufacturing and some services in southern Australia. The North has benefited and Australia has benefited from the abandonment of those policies.

While there has been a degree of subsidisation of its development in the past, through the provision of a costly first-world education, health, safety and social services network for its small and dispersed population, in more recent decades, the North has been laying 'golden eggs' for the Australian economy.

On the other hand, the North's economic development has suffered from being a dumping ground for minority causes from a politically dominant South involving a plethora of 'deep green' anti-development intervention, animal-rights' activities leading to precipitant live cattle export bans, and inappropriate policies that have held back indigenous community development.

The major need for the North's progress and a continuation of it laying 'golden eggs' for the Australian economy is a continuation of policies of providing a first-world education, health, safety and social services network and to stop burdening it with policies from the South that are out of step with its needs. [Appendix 2](#) sets out seven more detailed policy needs.

Apart from the direct impact of an increasingly successful North on the Australian economy, there is a further opportunity for Australia. As the subtropical Sunbelt phenomenon spreads into the world's tropical regions, Australia has a potential to play an important role in the development of, and dispersal of, technology especially relating to the tropics with benefits to many previously underdeveloped countries in the tropical zone.

In the temperate zone, Australia has been mainly a receiver of technological progress from overseas. In technological development in the tropical world, Australia potentially has a greater leadership role to play, providing Australia as a nation with a new place in the world.

APPENDIX 1

Table #1: Growth in Gross Domestic Product, Tropical Zone & Temperate Zone (10 years 2002-2012)

<u>Zone</u>	<u>GDP</u> <u>2002</u>	<u>GDP</u> <u>2012</u>	<u>Average</u> <u>annual growth</u>
Temperate Zone	\$46,584 bn	\$61,400 bn	2.8% pa
Tropical Zone			
South East Asia	\$1,419 bn	\$2,356 bn	5.2% pa
South Asia	\$1,515 bn	\$2,871 bn	6.6% pa
South America	\$2,394 bn	\$3,410 bn	3.6% pa
Central America	\$1,091 bn	\$1,370 bn	2.3% pa
Caribbean	\$248 bn	\$308 bn	2.2% pa
Tropical Africa	\$296 bn	\$560 bn	6.6% pa
Tropical Australia & Pacific	\$73 bn	\$112 bn	4.4% pa
Total Tropical Zone	\$7,036 bn	\$10,987 bn	4.6% pa

Source: Cummings Economics from United Nations Statistics (see also Table #2 giving growth rates over 12 years 2000-2012).

Table #2: World Economic Growth Trajectories Projected

<u>Temperate Zone</u>	<u>GDP Per</u> <u>Capita 2012</u> <u>\$</u>	<u>GDP</u> <u>2012</u> <u>\$bn</u>	<u>GDP Growth</u> <u>(av annual)</u> <u>2000-2012</u>	<u>Est 2032</u> <u>\$bn</u>	<u>Increase</u> <u>\$bn</u>
North					
North America	\$51,270	\$18,074	1.8% pa	\$25,823	\$7,749
Northern Europe	\$43,933	\$4,375	1.6% pa	\$6,010	\$1,635
Western Europe	\$43,313	\$8,383	1.2% pa	\$10,642	\$2,259
Southern Europe	\$25,716	\$4,000	0.7% pa	\$4,599	\$599
Eastern Europe	\$11,525	\$3,399	4.1% pa	\$7,592	\$4,193
Eastern Asia	\$10,084	\$16,254	4.1% pa	\$36,305	\$20,051
(China)	(\$6,076)	(\$8,358)	(10.1% pa)	(na)	(na)
North Africa	\$3,643	\$750	3.9% pa	\$1,612	\$862
Western Asia	\$12,608	\$3,038	4.8% pa	\$7,759	\$4,721
Central Asia	\$4,753	\$301	7.6% pa	\$1,302	\$1,001
South					
Australia/New Zealand	\$63,092	\$1,663	3.0% pa	\$3,003	\$1,340
Southern Africa	\$6,972	\$418	3.5% pa	\$831	\$413
Argentina	\$11,610	\$477	4.5% pa	\$1,150	\$673
Chile	\$15,363	\$368	4.3% pa	\$622	\$354
Total		\$61,400 (85%)	2.8% pa	\$107,250 (78%)	\$45,850 (71%)
Tropical Zone					
Micronesia	\$3,600	\$1	1.1% pa	\$1	-
Melanesia	\$3,440	\$31	3.5% pa	\$62	\$31
Polynesia	\$14,452	\$7	2.0% pa	\$10	\$3
South East Asia	\$3,852	\$2,356	5.2% pa	\$6,494	\$4,138
South Asia	\$1,663	\$2,871	6.6% pa	\$10,380	\$7,509
South America ¹	\$10,070	\$3,410	3.6% pa	\$6,917	\$3,507
Central America	\$8,298	\$1,370	2.3% pa	\$2,158	\$788
Caribbean	\$7,477	\$308	2.2% pa	\$578	\$270
Other Africa ²	\$1,110	\$560	6.6% pa	\$3,087	\$2,527
Tropical Australia	Est \$60,000	\$73	5.0% pa	\$194	\$121
Total		\$10,987 (15%)	5.1% pa	\$29,881 (22%)	\$18,894 (29%)
Overall Total		\$72,387 (100%)		\$137,131 (100%)	\$64,744 (100%)

¹Note: Excluding Argentina and Chile.

²Note: Excluding South and North Africa.

Source: Cummings Economics from United Nations Statistics.

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Table #3: Population Distribution, Income Variations & Consumption of Inanimate Energy, Selected Tropical & Non-tropical Areas, 1963*

<u>Area</u>	<u>% of Total Population†</u>	<u>Gross Domestic Product</u>		<u>Inanimate Energy Consumption, Coal Equivalent</u>	
		<u>% of Total</u>	<u>Per Capita \$</u>	<u>% of Total</u>	<u>Kg Per Capita</u>
	(1)	(2)	(3)	(4)	(5)
<u>Non-Tropical</u>	<u>39.7</u>	<u>84.0</u>	<u>1,009</u>	<u>88.7</u>	<u>3,552</u>
U.S. & Canada	10.4	49.6	2,275	53.2	8,060
New Zealand	0.1	0.3	1,281	0.2	1,960
Western Europe	16.3	27.8	815	28.9	2,879
Argentina & Uruguay	1.2	1.2	457	0.9	1,143
East Asia	6.8	3.3	232	4.5	1,065
West Asia	4.1	1.5	174	0.9	324
North Africa	0.8	0.3	156	0.1	128
<u>Mostly Non-Tropical</u>	<u>3.8</u>	<u>3.0</u>	<u>383</u>	<u>3.5</u>	<u>1,390</u>
Australia	0.5	1.3	1,211	1.4	4,070
South Africa	0.8	0.7	431	1.5	2,710
Chile & Paraguay	0.5	0.4	353	0.3	805
North Africa	2.0	0.6	146	0.3	263
<u>Mostly Tropical or Sub-tropical</u>	<u>35.4</u>	<u>7.3</u>	<u>98</u>	<u>5.0</u>	<u>217</u>
Mexico & Brazil	5.3	2.9	263	2.0	549
Africa	1.5	0.3	112	0.2	224
Burma & Taiwan	1.6	0.3	74	0.2	221
India & Pakistan	27.0	3.8	66	2.6	147
<u>Tropical</u>	<u>21.1</u>	<u>5.7</u>	<u>129</u>	<u>2.8</u>	<u>199</u>
South America	2.1	1.5	350	1.2	878
Middle America & Caribbean	1.6	0.9	277	0.6	515
Southeast Asia	9.5	2.0	99	0.7	117
Africa	7.9	1.3	77	0.3	54
Total or Average	100.0	100.0	476	100.0	1,543

* Based on population and energy estimates in UN, *Statistical Yearbook, 1963* (New York, 1964); and income estimates in UN, *Yearbook of National Accounts Statistics, 1963* (New York, 1964). The U.S.S.R., Eastern Europe, Mainland China, North Korea, North Vietnam, Outer Mongolia, and other areas for which income estimates were not available are excluded. Population and income estimates relate to 1958; the estimates for energy consumption are for 1962.

† The total population of the areas included represents approximately 65 percent of total world population.

Source: McPherson & Johnstone.

Table #4: Population¹ Growth of Northern Australia Compared

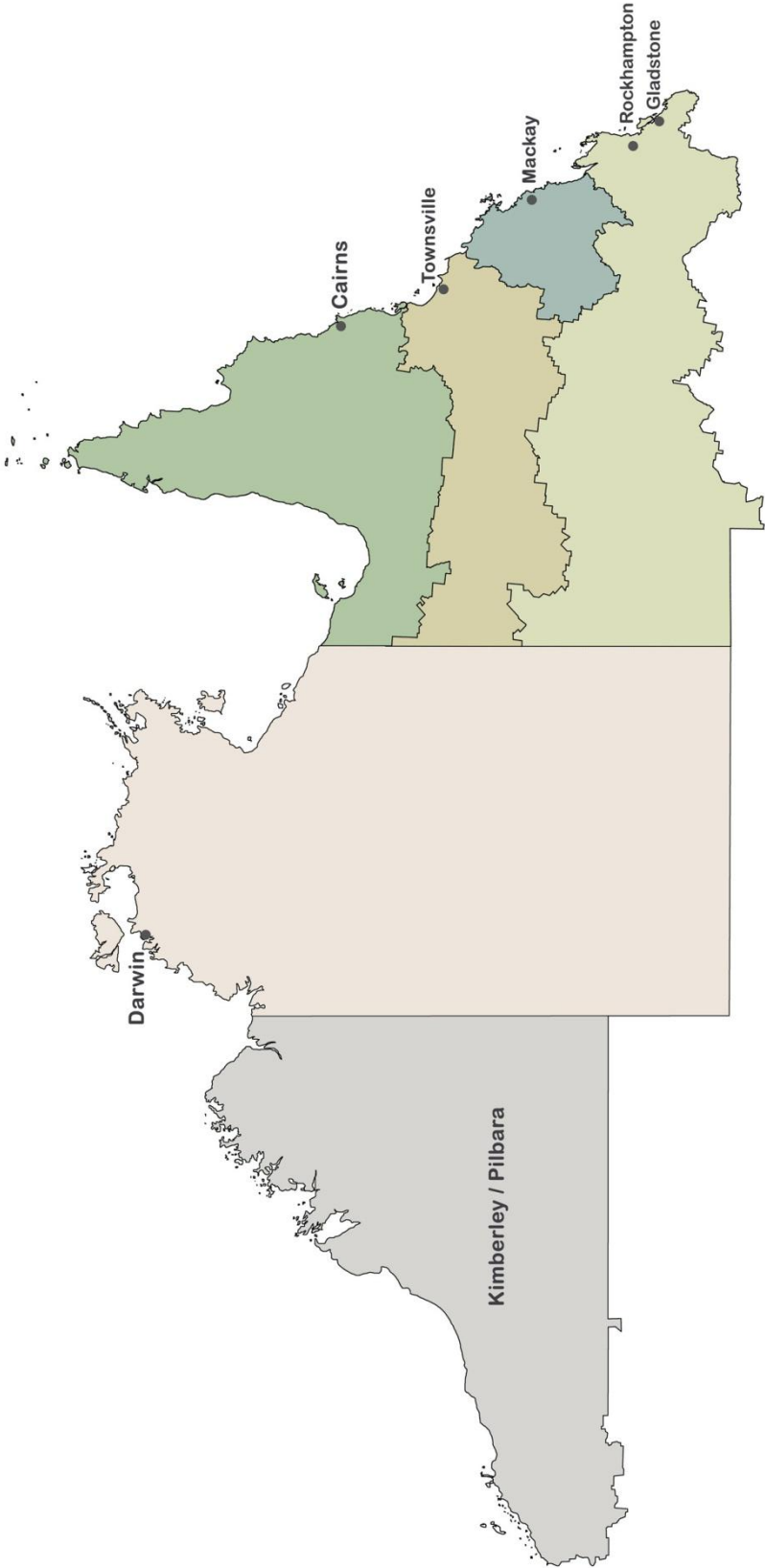
	<u>Est 1954-2011</u>	<u>1976-2011</u>
North	2.3% pa ²	1.7% pa
South	1.6% pa	1.3% pa
<u>Percent North of Australia</u>		
Est 1954 ²	4.0%	
1976	5.0%	
2011	5.6%	

¹ Note: Estimated residential population 1976 to 2011 Census count 1954.

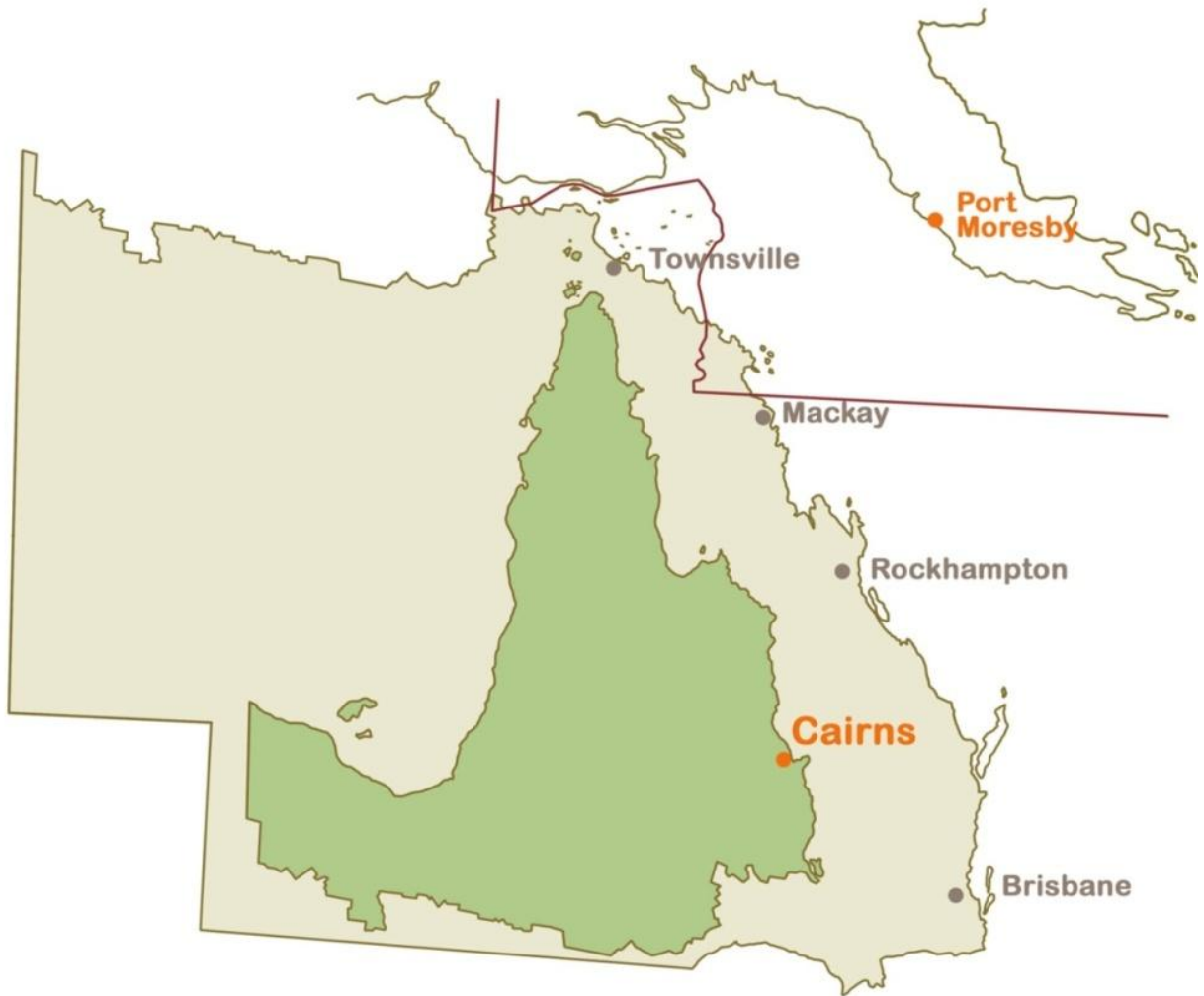
² Note: Estimated to include full blood Aboriginal population.

Source: Cummings Economics from Australian Bureau of Statistics data.

Map #5: Northern Australia Regions

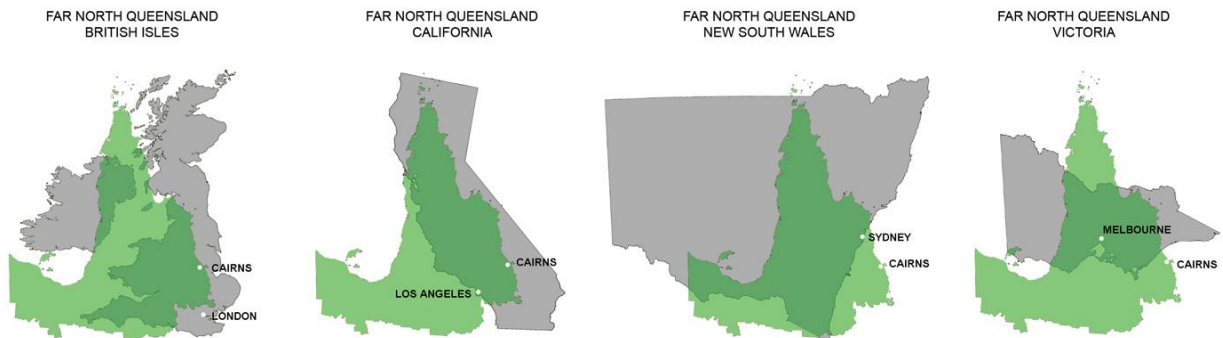


Map #6: Cairns Region's area and distances compared with rest of Queensland



Cairns Region 9° south to 19° south
 Rest of Queensland 19° south to 29° south

Comparative areas and distances



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Table #7: Cairns' Position on List of Australia's Main Cities

<u>City Stat Sub Divisions</u>		<u>Estimated residential Population, 2010</u>
15	Darwin	127,532
14	Cairns	150,920
13	Townsville	172,316
12	Geelong	178,650
11	Hobart	214,705
		<u>Census count (total including visitors), 2006</u>
15	Darwin	117,332
14	Cairns	143,436
13	Townsville	148,414
12	Geelong	159,254
11	Hobart	198,945
		<u>cf. Population (Estimated Residential), 1976</u>
	Cairns	49,590
	Rockhampton	53,660 *
	Bendigo	55,152 *
	Orange/Bathurst	55,933 *
	Albury Wodonga	63,409 *
	Ballarat	68,450 *
	Toowoomba	69,390 *
	Launceston	81,636 *
	Townsville	90,540

* Cities then larger than Cairns in population now with less population than Cairns.

Source: Australian Bureau of Statistics, *Regional Population Growth, Australia, 2012* (Cat No. 3218.0).

Table #8: Merchandise Exports Through Ports Located in Northern Australia, 2011/12

	<u>\$ bn</u>
Queensland (northern regions)	\$41 bn
Northern Territory	\$5 bn
Western Australia (northern regions)	\$71 bn
Total	\$116 bn
Australia	\$236 bn
Percent North of Australia	49%

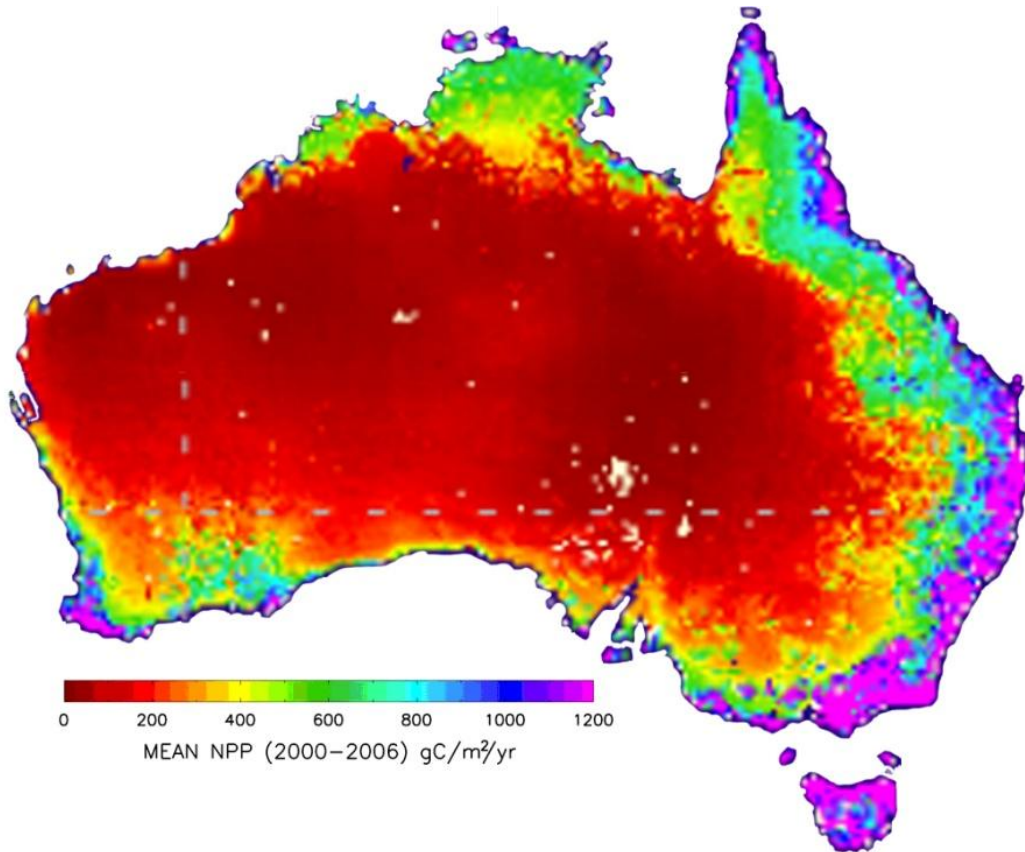
Source: Cummings Economics from Australian Bureau of Statistics data.

Table #9: Estimated Exports from Northern Australia's Ports as a Percent of Total

	<u>1961/62</u>	<u>1998/99</u>	<u>2001/02</u>
Northern Australia	\$201 m	\$22,644 m	\$115 bn
Southern Australia	\$1,954 m	\$63,356 m	\$121 bn
Total	\$2,155 m	\$86,000 m	\$236 bn
Percent North of Total	9%	26%	49%
Percent of total Growth in Australia's exports out of North			
1961/62 to 1998/99	27%		
1998/99 to 2011/12	61%		

Source: Cummings Economics from Australian Bureau of Statistics data.

Map #10A - NPP (Net Primary Productivity), Australia – Satellite Derived



Source: University of Montana from Modis Satellite Data, 2000 - 2006

Map #10B - NPP Australia Wide, CSIRO Data

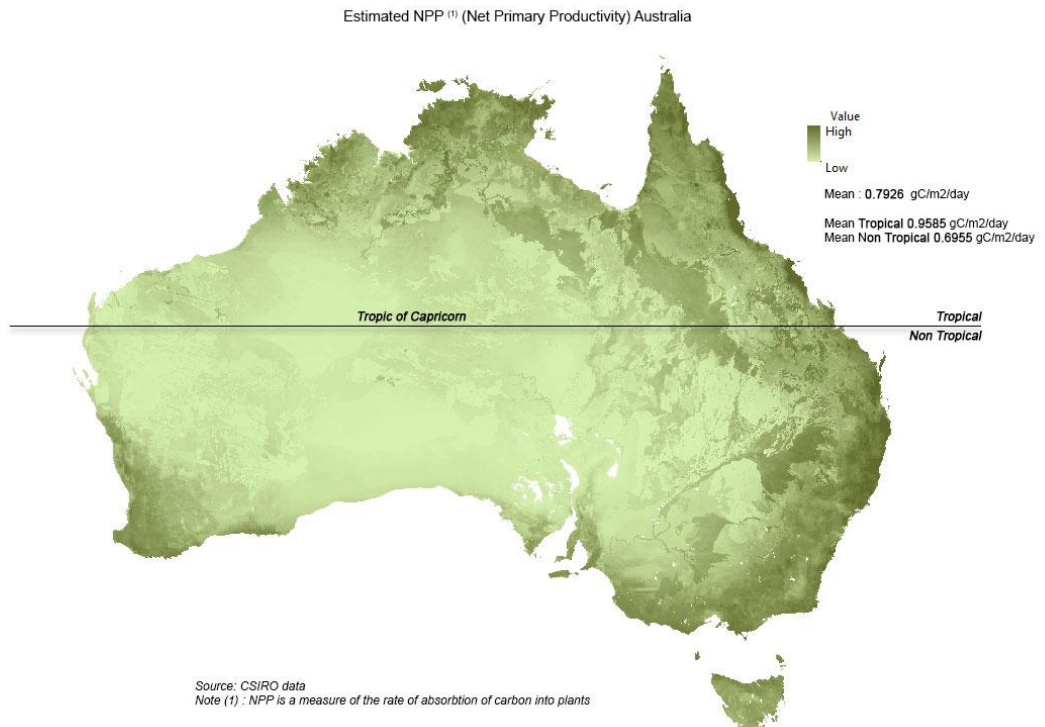
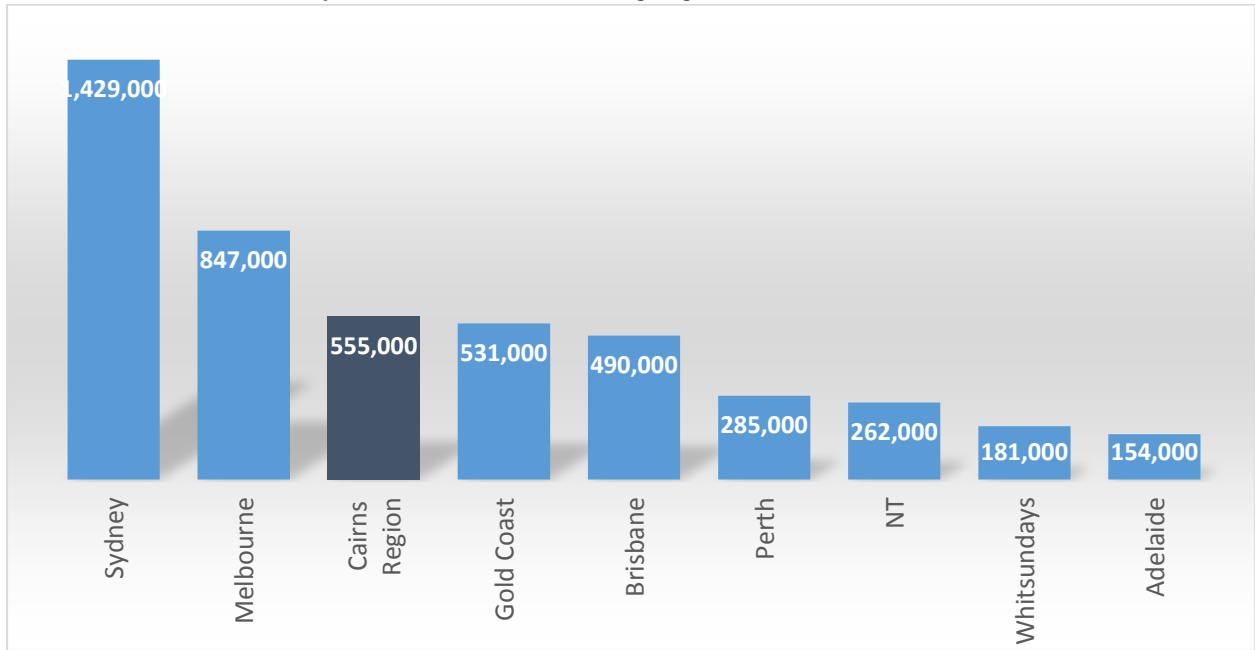


Chart #11: International Holiday Visitors to Australia – Leading Regions, 2012-13



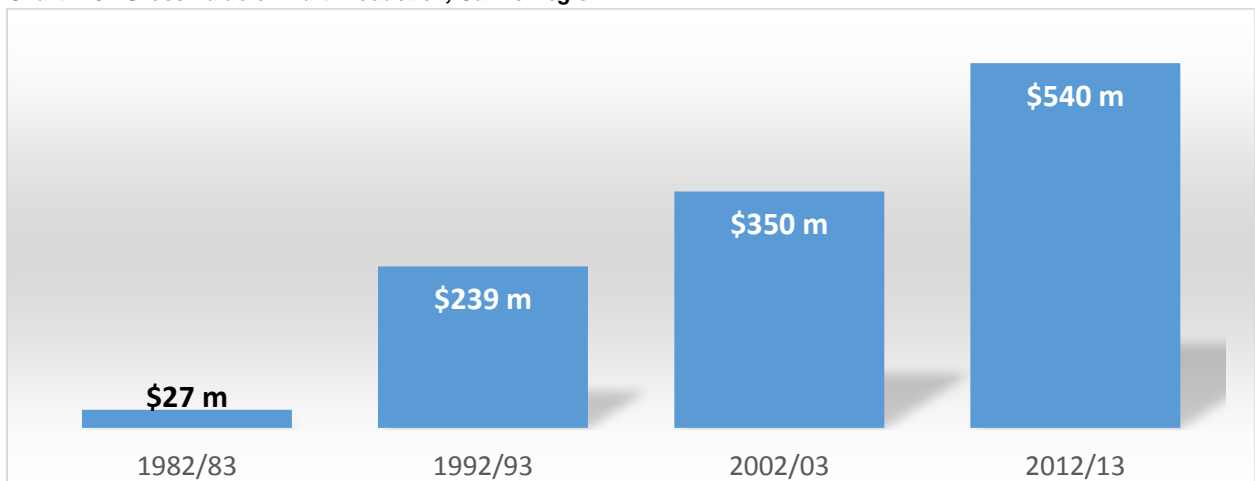
Source: Tourism Research Australia, International Visitor Survey.

Table #12: Numbers of Beef Cattle

	Aust	Non Tropical							Tropical				Tropical % of total
		NSW	Vic	SA	Tas	Bal Qld	Bal WA	Sub total	Qld	NT	WA	Sub total	
Av 1992-1994	24573	6459	3819	1162	621	3065	993	16119	6304	1430	720	8454	34%
2010 – 2011	25938	5384	2366	1110	467	3870	1128	14325	8500	2197	836	11613	45%
% growth	+5.6%	(-16.6%)	(-38.0%)	(-4.5%)	(-24.8%)	+26.3%	+13.6%	(-11.1%)	+36.0%	+53.6%	+16.1%	+37.4%	

Source: Cummings Economics from ABS Cat 7111.0 Principal Agricultural Commodities Australia.

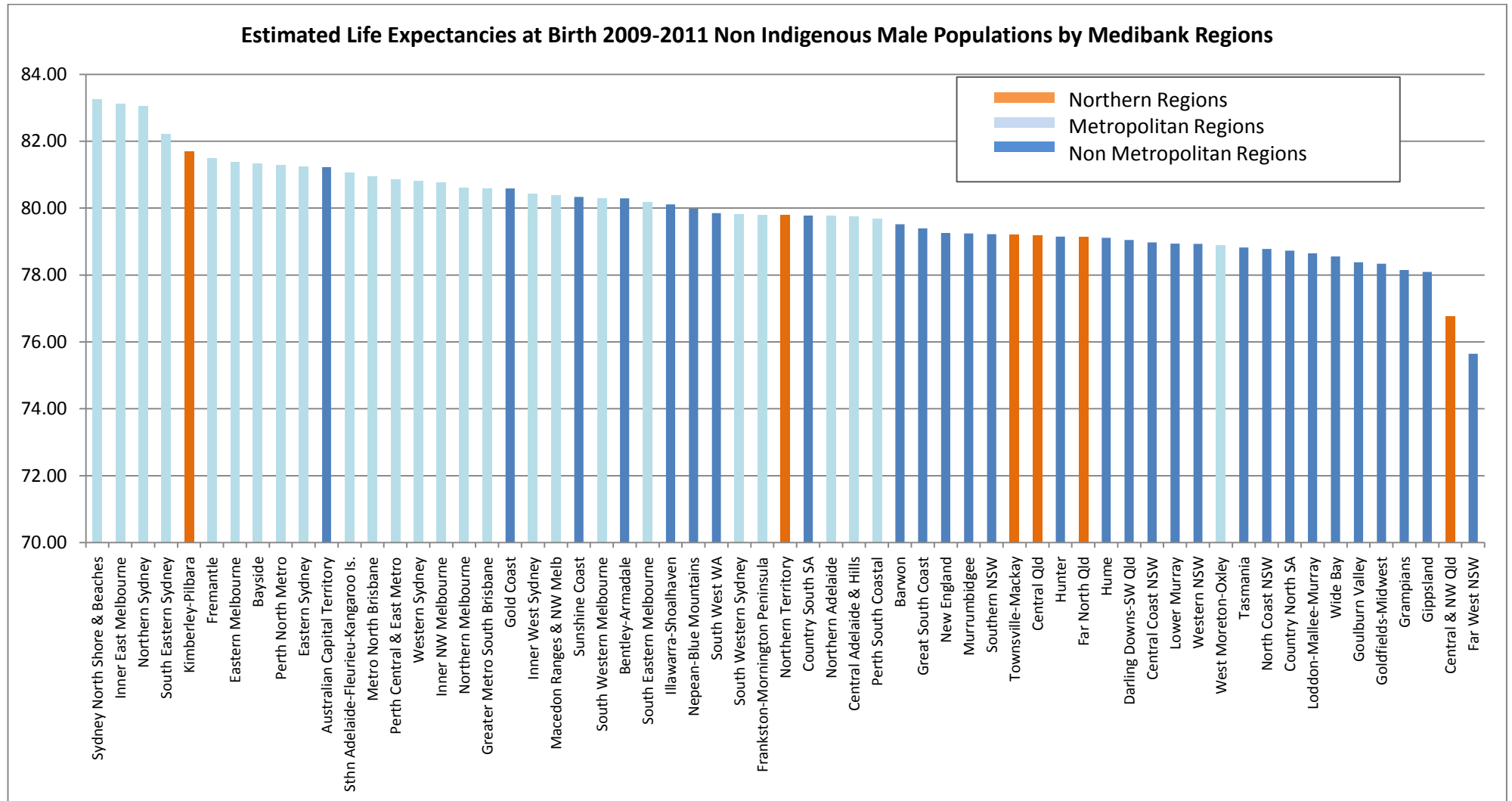
Chart #13: Gross Value of Fruit Production, Cairns Region ⁽¹⁾



(1) Note: Cairns region defined as Far North Statistical Division 1982-83 to 2002-03 and Cairns SA Level 4 in 2012-13 \$542m plus estimate of production Queensland Outback Far North \$16m.

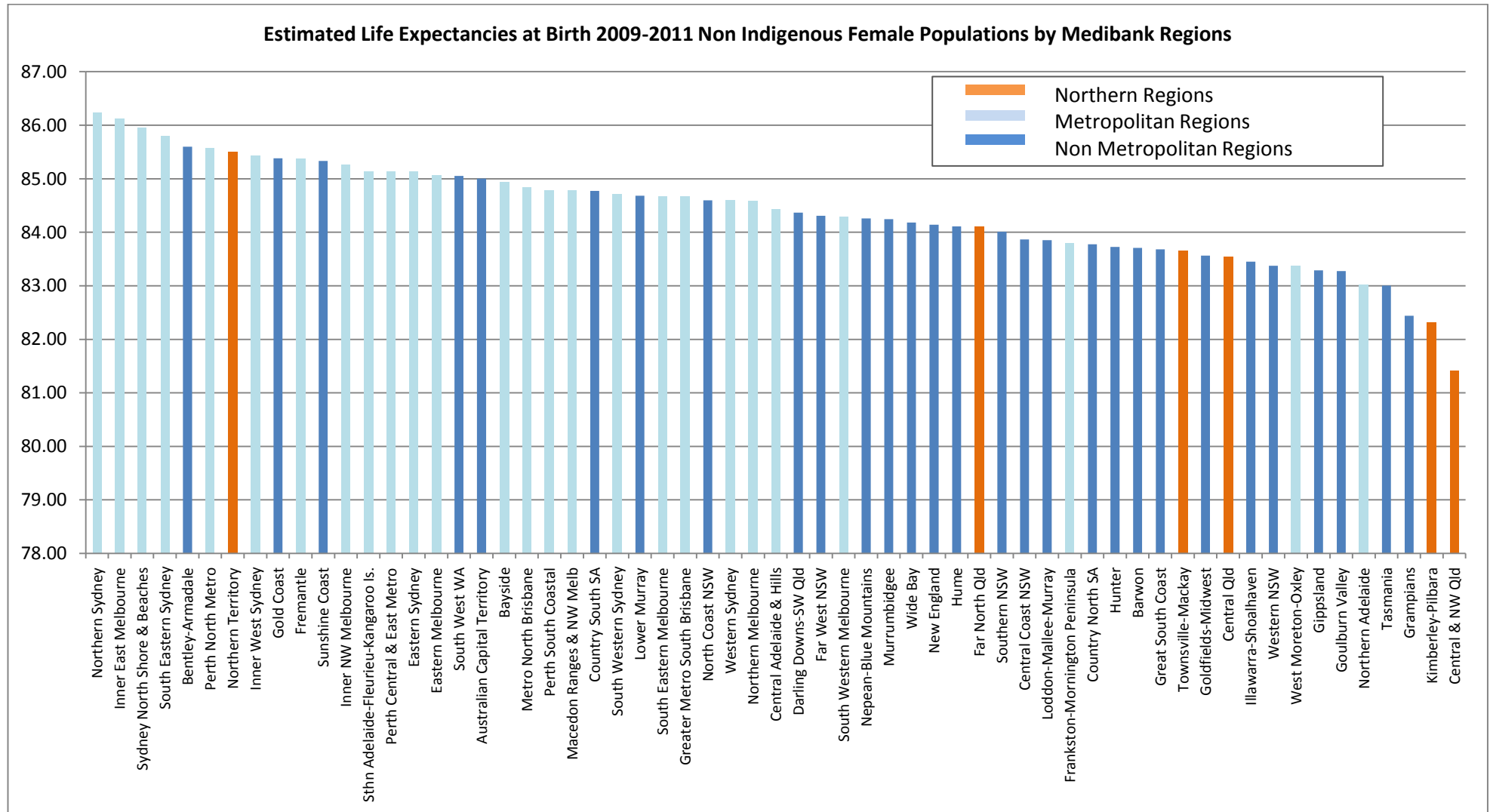
Source: Cummings Economics from ABS data.

Table #14: Estimated Life Expectancies at Birth, Non-Indigenous, 2009-011



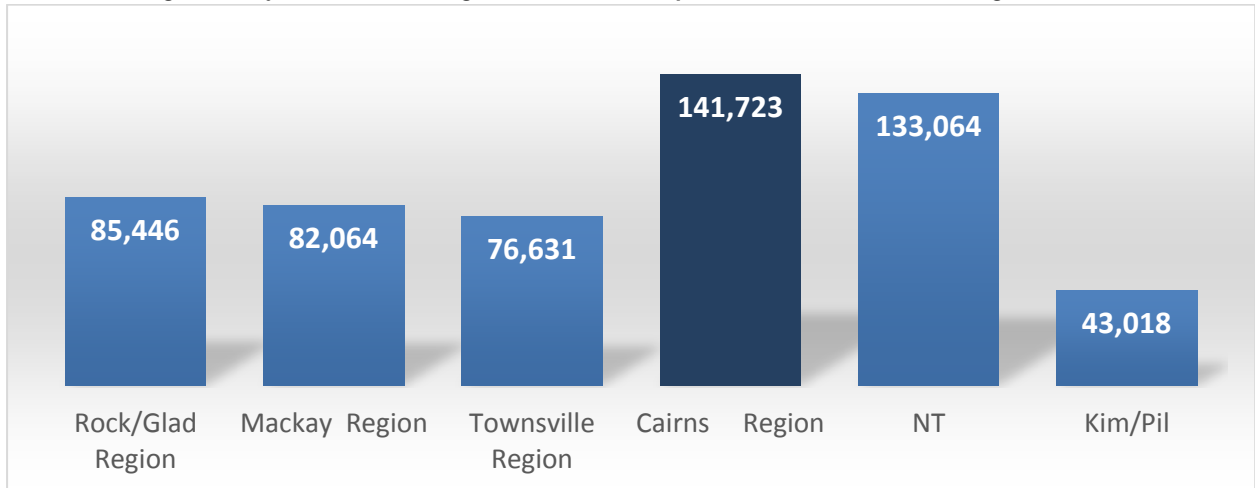
Source: Cummings Economics from ABS data.

Table #14: Estimated Life Expectancies at Birth, Non-Indigenous, 2009-011 Cont'd



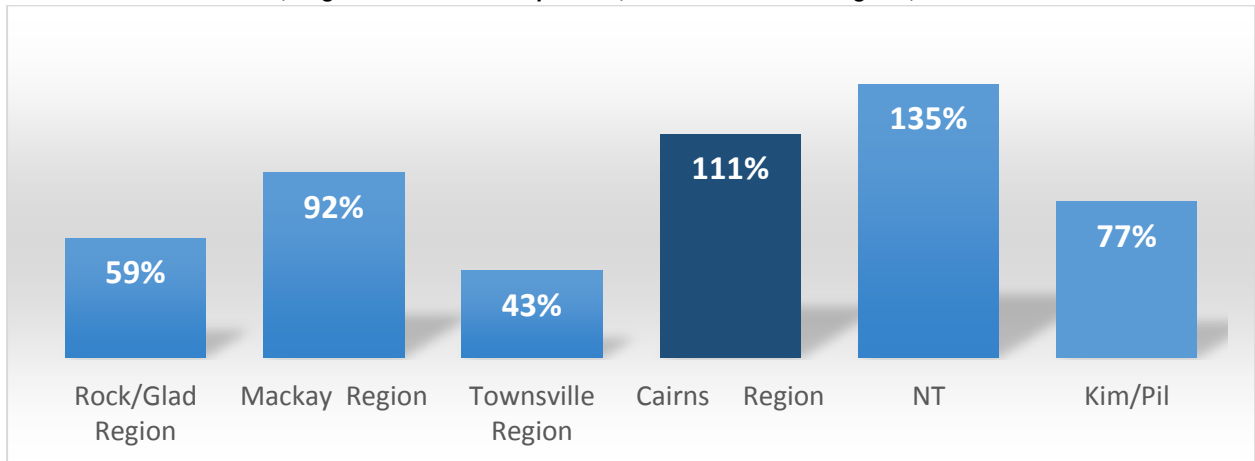
Source: Cummings Economics from ABS data.

Chart #15: Long-term 35-year Increase in Regional Residential Population, Northern Australia Regions, 1976-2011



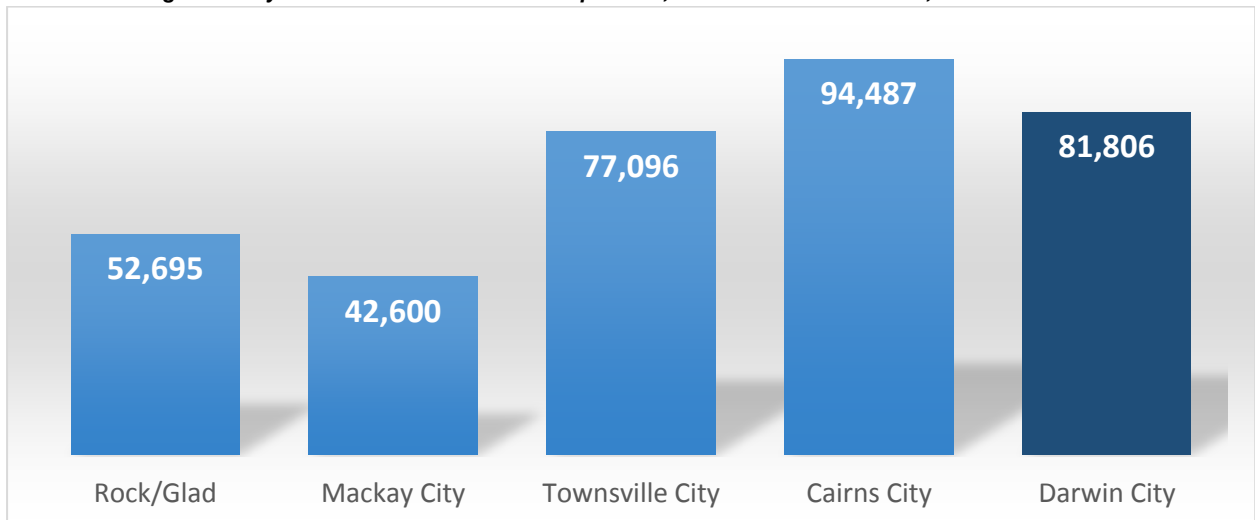
Source: Cummings Economics from ABS Cat No. 3218.0 et al.

Chart #16: Percent Growth, Regional Residential Population, Northern Australia Regions, 1976-2011



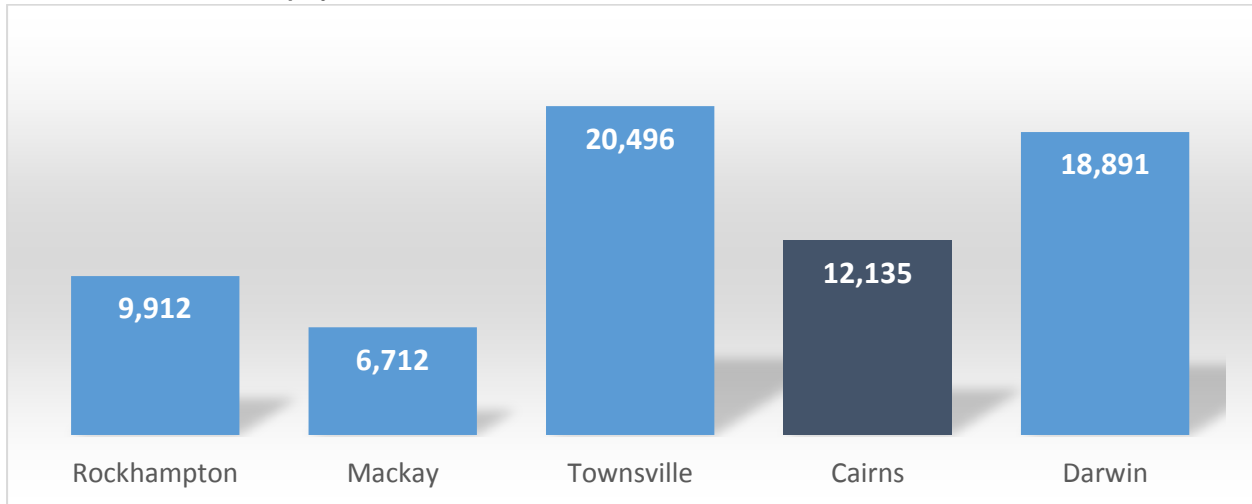
Source: Cummings Economics from ABS Cat No. 3218.0 et al.

Chart #17: Long-term 35-year Increase in Residential Population, Northern Australia Cities, 1976-2011



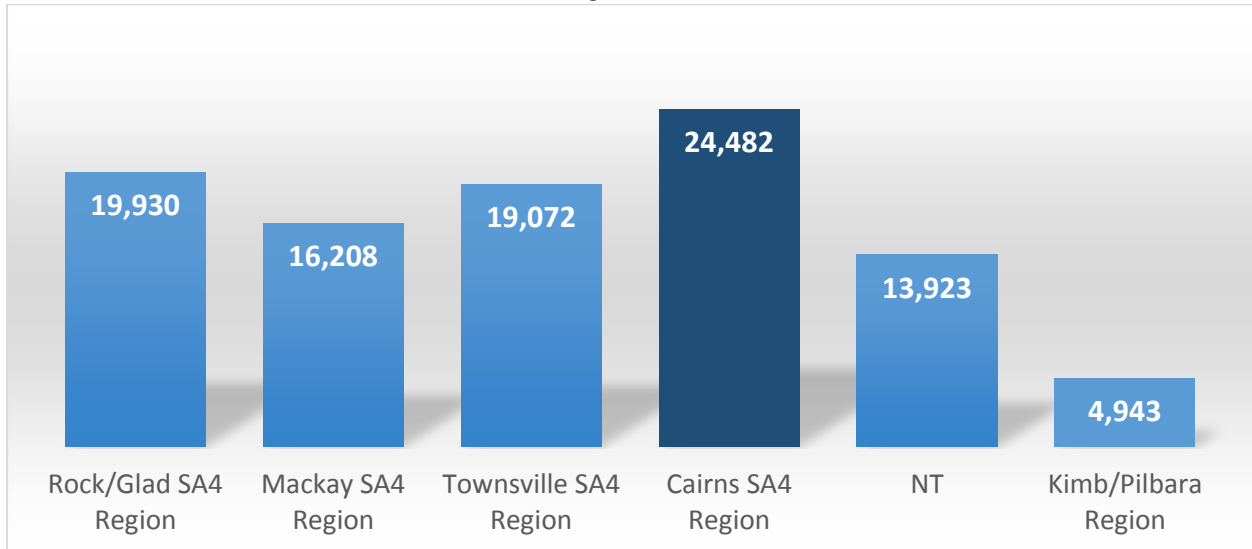
Source: Cummings Economics from ABS Cat No. 3218.0 et al.

Chart #18: Government Employment, Northern Australia Cities, 2011



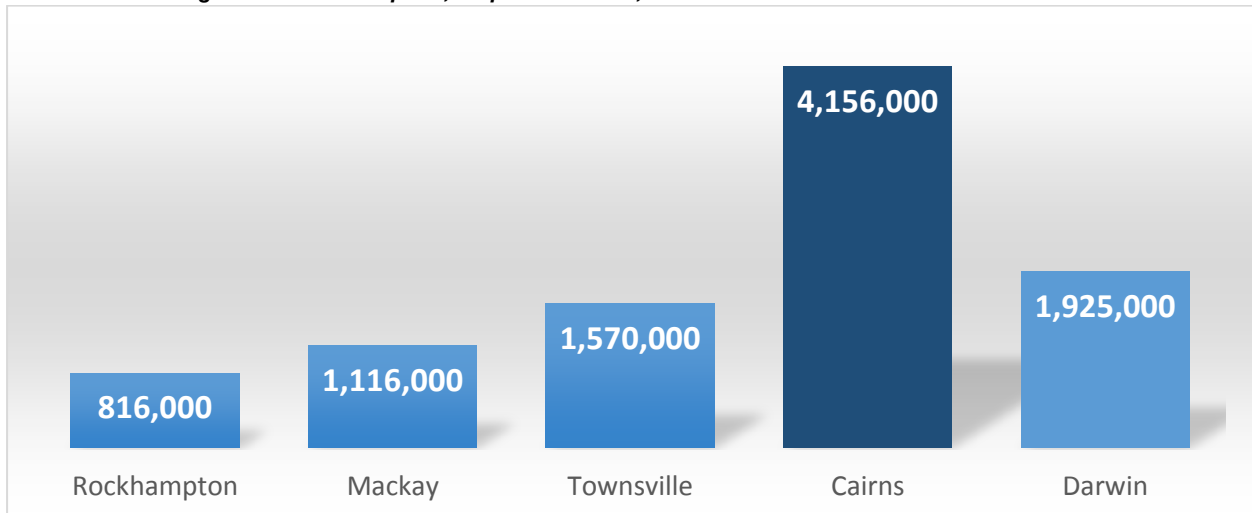
Source: Cummings Economics from ABS Census 2011.

Chart #19: Number of Businesses, Northern Australia Regions, 2012



Source: Australian Bureau of Statistics Regional Data.

Chart #20: Passenger Movements Airports, Tropical Australia, 2012-13



Source: Bureau of Industry Transport & Regional Economics.

Table #21: Manufacturing in Northern Australia, 2006/07⁽¹⁾

	<u>Number of locations</u>	<u>Employment</u>	<u>Sales of goods & services</u>
Kimberley/Pilbara	197	851	na
Northern Territory	506	3508	na
Cairns/Far North	962	6382	\$3286 m
Townsville/North	653	7137	\$4260 m
Mackay	585	4836	\$1648 m
Rockhampton/Fitzroy	586	8110	\$3600 m
Total	3489	30824	\$17294 m

(plus NT, Kimberley & Pilbara)

⁽¹⁾ Note: Latest available.

□ Denotes highest recorded.

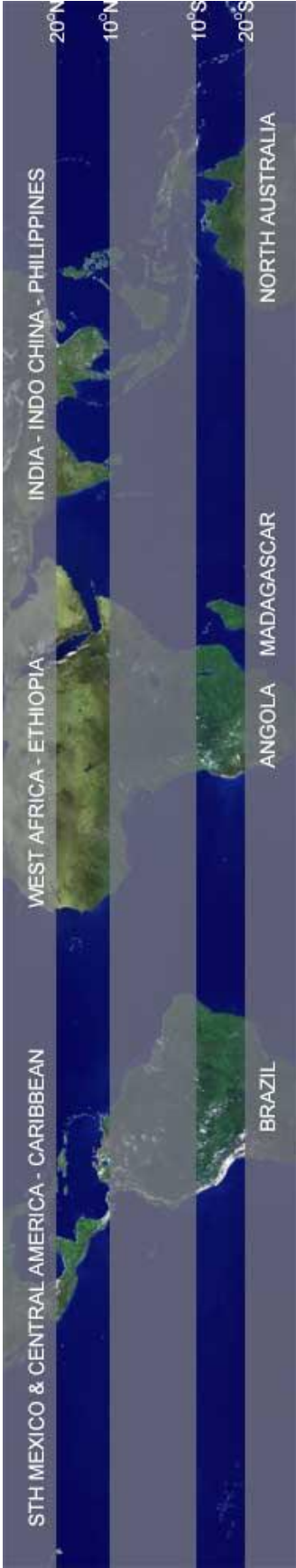
Source: Cummings Economics from Australian Bureau of Statistics Cat. 82210DO010.

Table #22: Number of Businesses by Industry - Manufacturing, 30th June 2012

	<u>Manufacturing</u>
Cairns Region (SA4)	841
Townsville Region (SA4)	606
Fitzroy Region (SA4)	563
Northern Territory	493

Source: Cummings Economics from Australian Bureau of Statistics Regional Statistics.

Map #23: World Tropics



Policies Needed to Assist the North Reach its Potential

1. Technology - There is a major need for governments to provide a framework in which further technological breakthroughs related specifically to the tropics can occur and be adopted, to overcome the technological lag that has so affected the development of tropical Australia and the tropics generally around the globe.
2. Governance – Past governance structures relating to an underdeveloped tropical Australia have been proving a major hindrance as progress accelerates. There is an urgent need to remodel and adapt government structures to meet the needs of a growing North.
3. Infrastructure – There are major inadequacies in the North's infrastructure that must be addressed if the potential new dimensions for the Australian economy are to be realised.
4. Concepts and Images – There is a need for a better understanding of Northern Australia in Southern Australia, to correct a whole range of poor economic thinking and concepts and to help remove some of the old outdated images of the North and the tropics still prevalent in Southern Australia.
5. Indigenous Progress – With indigenous population representing from 15% to 30% of total population in the major regions across the Far North and responsible for large areas of land, it is absolutely vital to the North's future that real progress is made in bringing indigenous people through to full economic and social empowerment and economic participation.
6. National Economic and Industry Policy Settings – National economic policy as it affects wages, taxation, interest rates, exchange rates and industry support can have a substantial impact on the North's progress. If the North's potential is to be realised, the setting of these policies needs to take the importance of the North's future progress into account.
7. International Engagement – With the North's regions sharing international boundaries and growing economic and social links with Asia Pacific areas to its immediate north, with expanding direct economic links with a developing Asia and in the future playing a special role in relation to the globe's tropical areas, there is a special need for stronger direct Commonwealth engagement with the North's regions and its major gateway cities.

Background WS Cummings

Bill Cummings is one of Australia's most experienced regional business economists with a special interest in the regions of tropical Australia and the tropics in general.

He was born and educated in Cairns, took an Economics degree from the University of Queensland in 1962 with majors in economics, accounting and statistics. This was followed by seven years' formative experience in Canberra with the Tariff Policy section of the Department of Trade and as research officer for the Australian Chamber of Commerce.

He returned North in 1968 and has played a prominent role in northern development including management of Development and Promotion bureaux for 13 years. In his own economic and market research business, he has carried out research into almost all industry sectors and regions across northern Australia, with work extending into the Pacific. He has served on many boards and committees including as Queensland government representative on the North Australia Development Council, on the Council of James Cook University, on Development Bureaux, Chambers of Commerce and various companies. He is a Life Member of the Cairns Chamber of Commerce, Founder and Patron of the Australia Japan Society in North Queensland, a Founder of the Cairns Campus of James Cook University and was awarded the 2015 Cairns Regional Council Citizen of the Year award. He is regularly asked for media comment and to address organisations on economic trends. For further information, see <http://www.cummings.net.au/>