

Joint submission to the

Northern Australia Taskforce
Department of the Prime Minister and Cabinet

by

The Regional Australia Institute, James Cook University, Central Queensland University, The University of Notre Dame and Ninti One



Contents

About the Northern Australia Research Alliance

Summary of Findings of Contributed Papers

Contributed Papers

Understanding the characteristics of remote Northern Australia for successful policy development

Jan Ferguson and Apolline Kohen, Ninti One Limited

Underpinning development: Health and health workforce in northern Australia

SR Davies, MS Alex Edelman and Dr Felicity Croker, Faculty of Medicine, Health and Science, James Cook University.

The relationship between workforce mobility, liveability and development in northern Australia

Professor John Rolfe, School of Business and Law, CQUniversity, Australia

Human Services sector development in northern Australia

Professor Hurriyet Babacan, School of Health, University of New England, Founding Director, The Cairns Institute, James Cook University.

What type of future for northern Australia's tourism sector?

Professor Bruce Prudeaux, Faculty of Law, Business and Creative Arts, James Cook University.

Northern Australia Agriculture Policy: Opportunities and Risks

Jim Turnour, Adjunct Research Fellow, The Cairns Institute, James Cook University. PhD Candidate, Northern Futures Collaborative Research Network, The Cairns Institute, JCU.

Themes in development of the agricultural and resource sectors in Northern Australia

Professor John Rolfe, School of Business and Law, Central Queensland University, Australia.

Education futures in northern Australia

Professor Sue McGinty, School of Indigenous Australian Studies, Dr Claire Campbell, School of Education, Dr Margaret Carter, School of Education, Ms Helen McDonald, School of Education, James Cook University, Townsville.

Re-imagining post-secondary education as a driver of social and economic development in northern Australia

Professor Drew Dawson, Director, Appleton Institute, Central Queensland University, Professor Denise Wood, Central Queensland University, Professor Marie Brennan, Victoria University, Professor Helen Huntley, Central Queensland University.

Defence in the three tropical cities: How to sustainably seize the potential?

Dr Riccardo Welters, Discipline of Economics, James Cook University.

What climate change and cyclones mean for northern Australia

Professor Steve Turton, Discipline of Environmental Sciences and Geography, James Cook University.

Economic equity and major development

Professor Natalie Stoeckl, Faculty of Law, Business and Creative Arts, The Cairns Institute, James Cook University.

Land Tenure and development in northern Australia

Adjunct Professor Allan Dale, The Cairns Institute, James Cook University and Bruce Taylor (CSIRO).

Aboriginal Local Government and Community Sector Partnerships – sustainable employment in northern Development

Patrick Sullivan, Associate Professor, Nulungu Research Institute of Notre Dame, Broome

About the Northern Australia Research Alliance

The Northern Australia Research Alliance (the Alliance) is a collaborative alliance between the the Regional Australia Institute (RAI) and northern universities, James Cook University (JCU), Central Queensland University (CQU), the University of Notre Dame Australia (UNDA) and Ninti One. The RAI has worked with the Alliance to develop papers on a range of topics relating to the Commonwealth Government's Green Paper on Northern Australia. Papers explore the themes of health, human services, tourism, agriculture, education, defence, climate change, land tenure and economic equity and major development.

The RAI is independent and informed by both research and ongoing dialogue with the community, the RAI develops policy and advocates for change to build a stronger economy and better quality of life in regional Australia – for the benefit of all Australians. The RAI was established with support from the Australian Government.

Summary of Findings

Infrastructure and human capital are the two most serious bottlenecks for growth in northern Australia. Business sophistication is also weaker on average compared to the rest of Australia and is likely to act as a constraint in many areas. In contrast, economic fundamentals in northern Australia have been very high, reflecting the extent to which the resources boom has occurred, and continues to occur in northern Australia.ⁱ

Common findings that emerge in a number of papers include:

- Successful outcomes in northern Australia will require the inclusion and participation of remote Australians. Indigenous disadvantage continues in northern Australia in key social areas such as life expectancy, education, income, labour market participation and health. Education, health and services in northern Australia face problems of accessibility, availability, relevance and acceptability, especially in the more remote areas.
- Governance arrangements across the various jurisdictions and regions of northern Australia are fragmented and require streamlining and/or collaboration. For example, land and water use.
- The need for better data collection.
- The importance of policies and investment to encouraging people to live and remain in northern Australia.
- The importance of effective community consultation and engagement in the design and delivery of government policy and programmes.
- The need to move away from a structure where northern Australia's strategic planning is driven by interests outside the regions. There is a need to devolve responsibility to people in the regions, incentivises their leadership in building a different future and allow time for this to occur.

- Infrastructure shortfall, including the need to reform the governance of public investment to provide remote communities with more responsibility and say over their future.
- Although significant challenges remain, the lessons learned from past service delivery initiatives (health and education) and current policy successes, position northern Australia as a leader in innovation.
- The need for private sector and philanthropic investment, recognising that government will continue to be the main provider of services and infrastructure.
- Climate variability, scarce resources, sparse population, remoteness from markets and political power, social variability and cultural differences are the core common features of remote areas in northern Australia.

The following pages detail the key findings, messages and recommendations of the Alliance papers.

Understanding the characteristics of remote northern Australia for successful policy development

Jan Ferguson and Apolline Kohen, Ninti One Limited

Findings

- Successful development of Northern Australia requires the inclusion and participation of remote Australians.
- Remote Australia is characterised by a set of features that are not individually unique but which together causes it to function in ways that are fundamentally different to any other physical and social environments.
- A shift in policy development and implementation is required to stimulate and achieve economic and social development outcomes in remote areas and especially in Aboriginal and Torres Strait Islander remote communities.
- Remote Australia is characterised by a set of features that are not individually unique but which together causes it to function in ways that are fundamentally different to any other physical and social environments.
- Effective community engagement in the design and delivery of government programs and initiatives significantly improves outcomes. Genuine and strong local involvement is paramount. A proven effective community consultation mechanism is the Aboriginal Community Researchers (ACR) model.
- The success of Northern Australia development will depend on an increased Aboriginal and Torres Strait Islander participation in the economy.
- Aboriginal and Torres Strait Islander employment rates remain low in remote communities with the employment to population ratio at approximately 45%.
- There are real jobs in remote Australia but over 90% of them are taken by non-Aboriginal and Torres Strait Islander people. Training and qualifications are not pre-requisite to engagement in employment in remote Australia as 44% of all employees have not completed a Certificate or higher qualification. Similarly, 41% of all employees had not gone beyond Year 10 at school.

Underpinning development: Health and health workforce in northern Australia

SR Davies, MS Alex Edelman and Dr Felicity Croker, Faculty of Medicine, Health and Science, James Cook University.

Findings

- A healthy population means that there is a healthy and productive workforce available to industry and business to underpin economic development.
- Establishing an overarching East-West governance arrangement, supported by a series of alliances and focussed on the critical issues (see Table 1), will enhance the region's capacity to grow and develop, with significant benefits for Australia and its near neighbours.
- Health in Northern Australia reflects a combination of unique geographic and demographic factors, including poorer health status (with northern Australia representing approximately one third of Australia's outer regional and remote population), and geographic maldistribution of health professionals, meaning shortages in rural and remote areas.
- In health workforce development, ensuring availability and affordability of clinical training remains a significant challenge, particularly for providers in rural and remote areas where there is a less established tradition of education, training and research, less investment and less infrastructure to support these activities as well as higher costs associated providing clinical placements.
- Universities play an essential role in training future health professionals of the region to meet health workforce needs, strengthening the economy and building vital diplomatic links internationally.
- Northern Australia is leading the country in developing and delivering a number of health service and health workforce innovations to meet health needs in the region. This includes building rural pipelines in medicine, expanding scopes of practice for health practitioners, smart use of technology including telehealth, and promoting rural and remote generalist specialists across all health professional groups.
- Northern Australia is well-placed to develop its health service and health workforce innovation expertise as an export, particularly to Asia.

Author's Recommendations

- Establish and strengthen inter-sectoral and cross jurisdictional partnerships to provide accessible, effective and efficient health services across Northern Australia through East –West governance arrangements and regional partnerships.
- Employ strategies that develop an appropriate health workforce for Northern Australia and the region, including creating and further developing education and clinical training hubs and East- West arrangements that transcend jurisdictional barriers.
- Reform resourcing and governance models across jurisdictions and sectors in Northern Australia.

The relationship between workforce mobility, liveability and development in northern Australia

Professor John Rolfe, School of Business and Law, CQUniversity, Australia
Economic equity and major development

Findings

- There are risks that Northern Australia will only capture the direct economic and employment impacts of further major developments, and that the larger indirect and social benefits of development will be transferred to major urban or southern centres.
- Minimising these risks will involve attention to policy in the following areas:
 - regional business chains;
 - regional specialisation and concentration; and
 - liveability and lifestyle factor to attract new population to key centres.

Human Services sector development in northern Australia

Professor Hurriyet Babacan, School of Health, University of New England, Founding Director, The Cairns Institute, James Cook University.

Findings

- Northern Australia is diverse, vast and sparsely populated. Most of Northern Australia fits within the characterisation as regional, rural and remote.
- There is evidence to indicate a correlation between spatial location and disadvantage. The data identifies Northern Australia as having significant levels of socio-economic disadvantage, particularly Indigenous disadvantage.
- The data on welfare expenditures is patchy with major gaps in it. Existing data shows historical under-investment by Western Australia, Queensland and Northern Territory in health, human and social services. There is ample evidence from around the world to indicate that social investment in welfare and human services yields much bigger economic and social returns on the investment and has strong correlations with increased prosperity and productivity.
- Service delivery in Northern Australia is very different due to a number of factors and is more expensive to deliver. There are major challenges to the sector in relation to service gaps, workforce issues and funding. While there are models of service delivery in regional, rural and remote areas there is no evidence about what works best in Northern Australia. The capacity to be proactive and responsive to needs and to take preventative approaches is critical. This will not happen unless sustainability issues are addressed.
- Governance arrangements in Northern Australia are fragmented and lack coordination and integration. Human service policies and funding are centralised and driven by the Australian, State and Territory governments which are not easy to influence from a distance. As a result, there disconnected with what happens in the regions of Northern Australia and policy/governance. This results in a loss of ability to be responsive to local needs and to have integrated and coordinated approaches.
- Human services sector tends to have less secure, part time-casual positions with lower pay levels. There is a shortage of appropriately qualified and experienced staff in selected areas across Australia. The recruitment and availability of appropriate staff becomes more difficult with remoteness. There are professional, personal and community factors that need to be addressed to attract and retain appropriate staff in Northern Australia.
- Not investing in human services sector will have major detrimental impacts on creating liveable communities, development of vibrant economies, opportunities for participation, sustainable places, inclusive cultural expression and social cohesion.

- Northern Australia continues to experience strong growth in the planning capacity of its economic and natural resource sectors, however the social and human services sectors have not been supported at a strategic level.

Author's Conclusion

- Human service delivery in Northern Australia needs to be innovative, flexible and diverse. It needs to be regionally specific and coordinated and integrated across different service agencies in the specific locations. While specialisation is important, narrowly focused one-type of model of service delivery models are unlikely to work in Northern Australia.
- Northern Australia will continue to gain significance for Australia as a whole for a range of economic, political, social and cultural reasons. A renewed focus in Northern Australia will not succeed if human capital and social issues are not addressed.
- Areas that require priority attention include:
 - building an evidence base (ie appropriate data);
 - integrated planning, service coordination and relevant policy development;
 - ongoing and secure funding models; and
 - sector capacity building and workforce development.: It is critical to document the nature of workforce and skills issues for the human sector across NA as there is a critical gap in our knowledge base.
- Building an environment conducive to supporting the social and human services sectors requires multi-dimensional approach.

What type of future for northern Australia's tourism sector?

Professor Bruce Prudeaux, Faculty of Law, Business and Creative Arts, James Cook University.

Findings

- The tourism sector is using the region's natural environment in a sustainable manner.
- This situation will change in the long-term as the impact of global warming is reflected in changes in the structure and resilience of the region's ecosystems.
- The long-term economic sustainability of the region's tourism sector is being adversely affected by the growing mismatch between consumer demand and what the region has chosen to supply.
- In the long-term continued over-reliance on the region's ecosystems to attract tourists is likely to lead to stagnation.
- Stagnation can only be overcome with new investment targeted at new markets and offering new experiences. Several proposed integrated resorts in the Cairns region (Aquis Resort and Ella Bay Resort) exemplify the type of large-scale investment that may be required to reignite tourist demand.

- The Chinese market offers significant potential for growth throughout the study region but the types of experiences currently offered will need refreshing to attract this market.
- The need for new activities and experiences to augment the study region's current suite of environmental experiences has not been widely recognised.
- The ongoing health of the region's ecosystem is closely tied to the health of the region's tourism economy.

Author's Recommendation

- There is a need to reappraise the long-term direction of the tourism sector in Northern Australia. The key steps required are:
 - determine a vision based either on maintaining the status quo or embarking on growth;
 - establish a mechanism for co-ordinating tourism strategies; and
 - establish a regionally based research group to provide region relevant analysis. One option is to establish a region wide monitoring system able to produce regular reports based on data collected in the region as well as externally.

Northern Australia Agriculture Policy: Opportunities and Risks

Jim Turnour, Adjunct Research Fellow, The Cairns Institute, James Cook University. PhD Candidate, Northern Futures Collaborative Research Network, The Cairns Institute, JCU.

Findings

- There are opportunities for new developments in Northern Australia and to leverage greater value from established agriculture industries. This will require additional investment to develop new markets, supply chains and farming systems.
- Development policy needs to be able to respond to the different opportunities and risks presented by the diversity of regions and communities in Northern Australia. Place-based regional development approaches provide one way to achieve this by engaging local communities in planning and development based on regional competitive advantage.
- Applying place-based approaches to agricultural development in the Northern Australia would align agriculture policy with natural resource management and Indigenous policy approaches.

Author's Recommendations

- Place-based agricultural development approaches be adopted so as to identify and leverage regional competitive advantages and to ensure effective industry and community engagement in decision making.
- Agricultural development in Northern Australia be driven by markets and supply chains with a particular focus on developing niche high quality markets for Asia rather than Australia's traditional focus on increasing productivity within bulk commodity markets.
- Agricultural development requires secure access to resources including land and water. Tenure reform may be required to support development and conservation needs. State governments should use market mechanisms to allocate water resources allowing smaller mosaic developments to compete fairly against larger agricultural developments.

- That established industries, not just green field developments, be a focus of Northern Australia agricultural development.
- Where major green field agriculture developments are considered, decisions should be based on sound economic, environmental and social impact assessments not driven by populous narratives about northern food bowls.

Themes in development of the agricultural and resource sectors in northern Australia

Professor John Rolfe, School of Business and Law, Central Queensland University, Australia.

Findings

- Agricultural development will require private enterprises to be enterprising and successful. The author has identified six key principles for private sector investment.
 1. Access to resources and certain property rights are essential to attract new investment. Access includes both the physical access to land, water and capital resources, as well as better information about the extent, quality and availability of those resources.
 2. Financial returns are the key driver of investment and production decisions. Reliable and improved access to markets is required to underpin any agricultural development.
 3. Control over costs is essential to the longer term performance of an industry. Agriculture has little ability to pass on increases in input costs, so key policy priorities should be to limit cost increases.
 4. Ongoing improvements in productivity are required to make sectors viable in the face of longer term declines in the terms of trade. Improvements in productivity can be generated in a number of ways through better efficiencies in the supply chain as well as improvements at the enterprise level.
 5. Risks and uncertainties need to be minimised. This can be achieved in a number of ways, through provision of rigorous planning, better information, and ongoing research programs to improve productivity.
 6. Investment priorities should be analysed in rigorous and transparent ways. Economic evaluation should be conducted for all proposed developments, using tools such as cost benefit analysis. This will help to prioritise the proposals that deliver the largest public and private returns, ensure public investments generate positive returns, and provide transparency of analysis for industry and decision makers.
- Key limitations for the development of the agriculture and resource sectors are available soil and water resources, climate, access to markets, lack of infrastructure, and environmental and land use constraints.

Education futures in northern Australia

Professor Sue McGinty, School of Indigenous Australian Studies, Dr Claire Campbell, School of Education, Dr Margaret Carter, School of Education, Ms Helen McDonald, School of Education, James Cook University, Townsville.

Findings

- Whilst there has been progress and increased enrolments in kindergarten and preparatory settings across northern Australia, the issue of high quality education and care for children under 4-years-old prevails. There are limited affordable places for young children in high quality child care centres that are conveniently located and the sector experiences difficulty in securing and retaining high quality, qualified staff due to low wages.
- A fundamental challenge for schools in Northern Australia, is the provision and retention of quality teachers.
- Whilst Australia faces significant Early Childhood Education and Care issues nation-wide, northern Australia is further challenged by high percentages of vulnerable children, high Indigenous populations and remote locations
- The building of social and cultural capital of the young people of northern Australia is essential for long-term development.
- The most effective educational interventions are those in the early years.
- The growth of northern Australia will need to take into consideration the educational aspects of good living, not just education for industry purposes. Good schools will attract people who will stay and contribute to the economy.

Author's recommendation

- Develop northern Australia-specific Early Childhood Education and Care centres as 'Early Years Hubs' that offer services that go beyond the typical long day care centre and/or kindergarten setting.

Primary & Secondary Education

- Resource and sustain a cross cultural global educational hub with:
 - world class facilities for education, research and scientific inquiry;
 - quality national and international training, recruitment and retention of quality educators to work across rural, remote and metropolitan areas of northern Australia;
 - equitable access to high quality schooling and educational opportunities for all students and teacher educators; youth programs, targeting alienated and disengaged individuals within the education and community;
 - sustainable investment in innovative ICTs including ICT infrastructure (e.g., access to high capacity broadband); and
 - ongoing internationalisation of the national curriculum; global marketisation of the national curriculum with support for the deployment of educators across the Asia Pacific region and higher education training grounding students in working with culturally rich and diverse students living in the tropics.

Re-imagining post-secondary education as a driver of social and economic development in northern Australia

Professor Drew Dawson, Director, Appleton Institute, Central Queensland University, Professor Denise Wood, Central Queensland University, Professor Marie Brennan, Victoria University, Professor Helen Huntley, Central Queensland University.

Findings

- Challenges facing industry, post-secondary education providers and communities in Northern Australia include:
 - a lack of residual development in the North;
 - reliance on fly-in-fly-out workers as the preferred solution for some industries instead of investment in building an educated workforce within the region;
 - recognition by the Australian Government of the need for further investment to ensure that rural and regional areas of Australia can lead the country in economic recovery and sustainability;
 - the need for investment in the physical (particularly high speed and affordable broadband services) and social infrastructure to attract and retain a skilled local population;
 - resistance to encouraging young people from the community to undertake post-secondary education due to the need for them to relocate to urban centres;
 - high levels of attrition of students from these communities who are studying in distance mode; and
 - continuing underrepresentation in post-secondary education and lower rates of success, retention and completion of Aboriginal and Torres Islander students.
- There is a need for investment in physical infrastructure of the North and a radical revisioning of traditional approaches to post-secondary distance education.
- There is a need for dialogue with local communities, industries and Government to explore the potential of a distributed partnership model, which provides access to facilities and supports for the members of their communities undertaking post-secondary education within the region.
- The cost of not providing access to postsecondary education are likely to undermine investment in Northern Australia.

Author's recommendation

- An alternative community-based model for post-secondary education in Northern Australia. This model would allow the educator to go to the community to deliver high quality education through partnerships with local communities, not-for profit and government agencies.

Defence in the three tropical cities: How to sustainably seize the potential?

Dr Riccardo Welters, Discipline of Economics, James Cook University.

Findings

- In 2012, Defence employed 12,000 permanent members (20% of Australia's permanent Defence personnel) and a further 1,000 civilian personnel (4% of Australia's civilian Defence personnel) across the three tropical cities - Cairns, Darwin and Townsville.

- Defence is part of the economic backbone of these cities (especially in Darwin and Townsville) solidifying the city wage structure and protecting the economy to the ebbs and flows of the business cycle.
- The Defence community creates sizeable demand for social infrastructure in the cities, which is not necessarily well resourced in the tropical cities.
- The economic interaction of Defence with other industries in a tropical city economy should be explored more deeply, i.e. the backward and forward linkages between Defence and other local and non-local industries.
- Lack of data at the city level prevents a holistic analysis of the reliance of the Defence community on social city infrastructure. Such an analysis would compare and contrast demand and supply for social infrastructure at a city level and could be used to benchmark social city infrastructure provision in garrison cities. Addressing shortfalls in social infrastructure safeguards the sustainability of the relationship between Defence and the tropical cities

What climate change and cyclones mean for northern Australia

Professor Steve Turton, Discipline of Environmental Sciences and Geography, James Cook University.

Findings

- Air and ocean temperatures are expected to increase in response to increasing Greenhouse Gas (GHG) emissions.
- We can expect more hot days and fewer cold days in the future.
- There is uncertainty about how climate change may affect rainfall across Northern Australia due to naturally high rainfall variability but with higher GHG emissions there is evidence that the dry season will be longer and drier while the wet season will remain similar.
- Extreme rainfall intensity may increase in the future
- The intensity of tropical cyclones is likely to increase in the future while overall cyclone frequency may decrease.
- Sea levels should continue to rise but may vary at the regional level.
- Frequency and height of storm surges are expected to increase due a combination of rising sea levels and more intense tropical cyclones.
- Fire weather conditions are expected to worsen with increased frequency or intensity of extreme fire days.
- Solar radiation is expected to decrease in winter (dry season) and spring (wet season build up), and increase in autumn (monsoon retreat season) under the highest Representative Concentration Pathways (RCP) emission scenario; however there is a large spread of model simulations.
- Small decreases in relative humidity are favoured over increases during summer and autumn periods, with little change in winter and increases more likely in spring, especially under the highest RCP scenario.
- Evapotranspiration is projected to increase in all seasons.
- Average wind speeds are expected to increase across eastern areas.
- Ocean acidity will increase in line with increases in atmospheric CO₂.

Author's recommendations

- Adaptation to climate change across Northern Australia must engage all of society, including industry sectors, communities and individuals (Turton et al. 2014).
- Key priorities for natural resource management and community planning in Northern Australia are:
 - infrastructure, including roads, ports, coastal structures, water and energy supplies and commercial and residential buildings at risk due to rising temperatures, rising sea levels and more extreme weather events;
 - coastal zones and estuaries and all areas at risk of sea-level rise, storm surges and floods;
 - agriculture, the food supply, and other primary production, including forestry and mining that are highly sensitive to rising temperatures, greater seasonality in rainfall and saltwater intrusion in coastal aquifers due to rising sea levels;
 - other climate-dependent industries that will be negatively impacted by rising temperatures and sea levels, e.g. tourism on the Great Barrier Reef and Kakadu National Park;
 - natural environment, including and all the biodiversity within them that is likely to be highly sensitive to rising temperatures, greater seasonality of rainfall and increased bush fire risk; and
 - biosecurity risk, including weeds, pathogens and exotic tropical diseases that will benefit from increasing temperatures.
- If we are to build 'pathways' to climate adaptation across Northern Australia we need to position our natural resource management(NRM) sectors, regions and human communities so that they are flexible and ready to adapt to change. This will require the knowledge and tools to build the necessary biophysical, social and institutional capacity to adapt to climate change and to inform government policy at all levels.

Economic Equity and Major Development

Professor Natalie Stoeckl, Faculty of Law, Business & Creative Arts, The Cairns Institute, James Cook University

Key Finding

- There are numerous different 'projects' that could be implemented in Northern Australia for the benefit of the region and the country as a whole.
- If these projects are assessed and implemented as isolated enclaves (Faal, 2007), the growth that occurs may be uneconomic (Daly and Farley 2004) in that the costs of achieving such growth (including those associated with increased inequality) may exceed the benefits.
- Projects could be selected on their ability to reduce inequalities (or, at the very least, not to exacerbate them) by forging strong financial links with existing residents and businesses of the north.

Author's Recommendations

- Institutional reforms – particularly those relating to the ownership of core assets such as land and water. This may be particularly important for Indigenous people.
- Community consultation processes (prior to projects being approved) that are specifically designed to identify opportunities for local residents and businesses to forge financial connections with project proponents.
- Developing programs that support the development of small business to supply goods and services to large-scale projects. This includes the need to developing long-term programs which initially involve training, education and work experience, but which would evolve over time, culminating in the situation where participants took over management, and then ownership of businesses that supply the goods and/or services to the large-scale developments.
- Positive Discrimination Policies for large-scale projects – specifically designed to favour 'local' or marginalised employees or suppliers.

Land Tenure and development in northern Australia

Adjunct Professor Allan Dale, The Cairns Institute, James Cook University and Bruce Taylor (CSIRO).

Key Findings

- Features of land tenure and its administration in northern Australia that make it both complex and unique (JCU and CSIRO, 2013):
 - there are multiple and often overlapping tenure types for the same area of land;
 - administrative arrangements for land tenure and classifications of similar tenure types vary across State and Territory jurisdictions;
 - for potential investors, multiple interactions are often required with government to gather the tenure-related information to assess sovereign risk and implement tenure change;
 - there are new and emergent tenures or changes to rights related to assets such as water, carbon and biodiversity. Tenure regimes related to these assets are uncertain and evolving; and
 - some of these tenures co-exist with other tenures, creating circumstances in which there are multiple, overlapping and possibly contested entitlement.
 - The opportunity for reform in land tenure to drive diverse investment in the sustainable development of northern Australia is significant.
- Such changes could reduce conflict and encourage more optimal use and management of the north's natural resources, while also protecting the rights of interests of traditional owners.
- Potential new reforms could also enable land owners to sequester and manage vital ecosystem services such as water, biodiversity and carbon while providing additional economic development opportunities.
- It is also important to understand that while tenure is an important consideration, it is only one of a number of factors that may impede investment. Infrastructure, distance to market, land values and terms of trade all have significant weight in investment decisions.
- The case for improving tenure arrangements in northern Australia is compelling, but the challenge in doing so is substantial, requiring significant cross-jurisdictional cooperation and national investment in R&D. It will not happen quickly.

- Tenure reform in the north must essentially preserve the rights of, and create opportunities for the north's traditional owners.
- The most significant gains in terms of improving investor certainty, and improving development outcomes for northern enterprises and communities, will come from engaging with the complexity and diversity in land tenure in a constructive and more informed ways that recognise the unique mix of land uses, resources, rights and interests in northern lands.

Author's recommendations

- Improve tenure complexity through administrative or legislative reform. This could involve supporting collaborative research and policy development partnerships on critical issues of investment and financing on Indigenous tenures; developing consistent principles to guide tenure reviews in the different jurisdictions; and, improving the quality and accessibility of tenure-related data for northern regions.
- Improve the efficiency of development assessment and regulation. This could involve, clarifying major project assessment responsibilities between jurisdictions; better resourced negotiation and streamlined administration of assessment processes; and, resources to assist with tenure-resolution processes that arise following project approval.
- Focus on actions to improve the effectiveness of land and resource planning so that broader 'regional' or 'landscape' level signals exist about the preferred infrastructure and resource use futures for different northern regions. Such planning would provide the broader context in which local level conflicts over tenure can be resolved.
- Finding the means by which traditional owners can leverage their land assets to raise capital for social and economic development offers great national and local benefit. Support is required to progress policy options which will have general applicability to traditional owners across northern Australia including:
 - progressively resolving ongoing native title/land claim issues;
 - supporting and resourcing the capacity of traditional owners to develop country-based / land use planning across their estate, township-based land use planning, and wealth generation strategies;
 - exploring further the most appropriate tenure and financial mechanisms for facilitating investment leverage (within Indigenous land estates);
 - supporting traditional owners to explore new and innovative governance models for managing aspirational/country-based planning and "wealth funds" emerging from economic development;
 - exploring some form of northern Australian "guarantee or trust fund" to support traditional owners with sound business investment projects to secure commercial finance, funded either from amendment to existing or new government funds, private sector investment or innovative investment of local traditional owner-based sovereign wealth funds at local scale; and
 - pan-northern partnering with lending institutions to build investment confidence.

Aboriginal Local Government and Community Sector Partnerships – Sustainable Employment in Northern Development

Patrick Sullivan, Associate Professor Research, Nulungu Research Institute, university of Notre Dame, Adjunct Professor, National Centre for Indigenous Studies, Australian National University

Key Findings

- The foundation for social, economic and cultural development in the north lies in Aboriginal communities. These communities should receive the necessary services to bring them to acceptable levels of development.
- This can increase Aboriginal employment, and therefore income, leading to the necessary conditions for sustainable local economies, particularly small-scale commercial enterprises.
- Aboriginal development can be pursued through greater involvement with local governments and changes to the fiscal arrangements that disadvantage Aboriginal and Torres Strait Islander people.
- The social development of the north can be addressed by reviewing current Commonwealth Grants Commission funding formulas, both for the Goods and Services Tax (GST) and local government assistance. In addition, direct Commonwealth grants to local government also need to be clarified.
- The Indigenous sector has great potential for meeting priority development goals for Northern Australia through the personal development, training and employment of Aboriginal and Torres Strait Islander individuals.
- Aboriginal organisations and local governments are important employers of Aboriginal people in Northern Australia.
- The network of Aboriginal community service organisations has evolved to fulfil almost every aspect of Aboriginal services with, in many cases, up to three or four decades of experience in the field.

Author's recommendations

- There is opportunity to support the long-term permanent population of the north through:
 - reform of formulas and funding mechanisms for local government;
 - alliances between local governments, state/territory governments, and Aboriginal-controlled service organisations; and
 - new models for public service employment in Aboriginal towns, villages and settlements

ⁱ Rethinking the future of northern Australia's regions

Contributed Papers

Understanding the characteristics of remote Northern Australia for successful policy development

By Jan Ferguson and Apolline Kohen, Ninti One Limited

Unlocking the potential of Northern Australia is hardly a new concept. Proposed schemes to develop the north have been put forward throughout the 20th Century and at times, gained political momentum. However, to date, attempts to realise the dreams for the north expressed over many years have failed. In June 2013, the Coalition, prior the September Federal election released their 2030 Vision for Developing Northern Australia with a commitment to produce a comprehensive White Paper. Since in government, the Coalition has established the Joint Select Committee on Northern Australia, the Northern Australia Strategic Partnership and produced a Green Paper, which builds on the pre-election 2030 vision paper. The Green Paper sets out the Government's views on the major challenges and opportunities facing northern Australia, and the policy directions that could tackle them.

This discussion paper aims at contributing to the debate by focusing on the issues, challenges and opportunities, which are specific to remote and very remote areas. We believe a successful development of Northern Australia requires the inclusion and participation of remote Australians. Without their inclusion and participation in growing the north, government and private sector initiatives will unlikely achieve their full potential. Indeed, Northern Australia, apart from a handful of regional cities (Townsville, Cairns, Darwin, Mackay, Rockhampton and Alice Springs) and a diverse group of small towns, mostly comprises very remote areas, which include diverse settlements: pastoral, farming, mining, tourism and predominantly Aboriginal and Torres Strait Islander communities.

To date, most Federal, State and Territory government policies, initiatives and programs have not realised the full potential of remote areas. A shift in policy development and implementation is required to stimulate and achieve economic and social development outcomes in remote areas and especially in Aboriginal and Torres Strait Islander remote communities. This paper explores how by understanding the characteristics of remote Northern Australia and focusing on developing local solutions, successful policies can be developed to increase remote economic participation and grow Northern Australia.

The poor understanding of the complexity and integrated nature of the 'empty north' by governments and policy makers has led not only to unrealised economic opportunities but to the failure of addressing the worrying disparity of health, social and economic outcomes between remote residents and the rest of the population. Indeed, despite Northern Australia's natural advantages and existing strength, particularly in agriculture, mining and energy, remote Australians living in the north continue to have lower incomes, lower employment rates, and lower education attainment than the rest of Australians. These trends are exacerbated in Aboriginal and Torres Strait Islander population. The 'Desert Syndrome'ⁱ, a concept developed under Ninti One co-funded research asserts that remote Australia is characterised by a set of features that are not individually unique but which together causes it to function in ways that are fundamentally different to any other physical and social environments. Understanding these characteristics and how they interact together will assist with the development of successful policies and initiatives for Northern Australia. Climate variability, scarce resources, sparse population, remoteness from markets and political power, social variability, limited research knowledge and cultural differences are the core common

features of remote areas in Australia. Acting individually these may not be significant but collectively they are. This implies that addressing in isolation the challenges associated with each of these characteristics may prove counterproductive and is unlikely to achieve desired outcomes. A holistic approach is required and must take into account local circumstances, which are often complex and poorly understood by policymakers who have no or little experience of the realities and daily challenges experienced by remote residents. Recognition that local circumstances are complex is critical.

The fact that policies and programs aimed at developing remote areas have often been engineered far away from the communities themselves has been recognised by governments as a contributing factor to disappointing results on the ground. In recent years, attempts to consult remote residents, especially in Aboriginal and Torres Strait Islander communities, have led to 'drop in drop out' types of community consultations, which have often not proven effective and achieved very little. Mostly it has left residents with meeting fatigue and a frustrating sense of their voices not been heard or understood. Importantly, it has failed to significantly change the social and economic circumstances of people on the ground and improve economic participation. Indeed, Aboriginal and Torres Strait Islander employment rates remain low in remote communities with the employment to population ratio at about 45%. Furthermore, Aboriginal and Torres Strait Islander participation in the largest sectors in Northern Australia, namely mining, agriculture, government services and tourism, remains very low. A common assumption, which needs to be challenged is that there are no real jobs in remote areas and that the few jobs available require levels of education, which most Aboriginal and Torres Strait Islander remote residents do not have. Our recent research paints a very different picture. Our CRC-REP Remote Education Systems and Pathways to Employment projects have recently completed an analysis of 2011 Census Place of Enumeration data for Very Remote Regions. Findings demonstrate that there are plenty of real jobs in remote Australia but that over 90% of them are taken by non-Aboriginal and Torres Strait Islander people. Our research also shows that training and qualifications are not pre-requisite to engagement in employment in remote Australia as 44% of all employees have not completed a Certificate or higher qualification. Similarly, 41% of all employees had not gone beyond Year 10 at school. For example, the mining industry, which operates mostly in remote areas and is a key industry in the north, has a large pool of workers (36%) with no more than Year 10 qualifications. We can only conclude that other factors are at play and would benefit to be unpacked in the context of the development of the north. Based on population number, occupation and ownership of land, we believe the success of Northern Australia development will ultimately depend and rely on an increased Aboriginal and Torres Strait Islander participation in the economy. Their continued occupation of land in very remote areas will also be essential to ensure appropriate land management practices occur to enable leverage of the rich natural advantages present in the north. Incentives and policies to encourage remote residents to move to regional centres to take jobs are not desirable in the context of developing the north. Indeed, the management of the rich natural environment of north to support key existing and emerging industries such as the pastoral, agriculture, tourism, energy and carbon economy industries is essential and remote communities are best placed and have the local knowledge to do it.

How can government policies and incentives better assist development in remote areas? And what mechanisms can be put in place for the development of policies and programs that will better work?

Conventional regional development policy thinking and approaches are unlikely to be an agent of change. Government policies and programs to improve service delivery and to setup a conducive environment for economic participation in remote Aboriginal and Torres Strait Islander communities need a new approach. Such approach should be based on the recognition of the complex and interrelated features of remote Australia and the need for developing with local residents tailored solutions. Genuine and strong local involvement is paramount. Strong consultation mechanisms need to be put in place and practice. It requires more than quick 'drop in drop out' consultation processes and meetings with 'community leaders' to find out what may work or is best for local residents. Our research shows that effective community engagement in the design and delivery of government programs and initiatives significantly improves outcomes. A few initiatives have been successful and need to be considered here. Whilst they have been mostly happening on a small scale, we believe it is possible to learn from them and apply the methodology more systematically to develop and setup policy directions.

Our research and community development approaches at Ninti One is based on our knowledge that sustainable, healthy and viable remote communities depend on the participation, ownership and partnership of the people who live in remote regions and communities. This is why Participatory Action Research (PAR) methods are integral to our work. The innovation is that we use teams of local Aboriginal Community Researchers (ACR) to work in all our research and community development projects. ACRs are based in remote and regional communities and are essential in our research and evaluation teams. They assist in the design of the research and then, conduct on the ground the research, participate in the analysis and finally test and provide feedback to the communities. They can also contribute to achieve better results in implementation and monitoring phases. The ACRs are trained and employed by Ninti One and supported by the staff and Ninti One corporate structure. ACRs can deliver better quality research outcomes than most external researchers because of their unique competitive advantage based around location and local knowledge. They use a variety of skills, such as languages, cultural concepts and local knowledge that no outsider is equipped with. This leads to collection of better information, which translates into successful and ethical research and applications outcomes that have positive impacts on employment, education and delivery of services in remote communities. Aboriginal Community Researchers can significantly improve the design and implementation of government policies in remote areas. ACRs are involved in a variety of Ninti One projects at present including CRC-REP research and consultancies for organisations as well as the NT and Federal governments.

The following example demonstrates how ACRs can assist in improving service delivery outcomes and foster new initiatives in communities. In 2012, the then Department of Families, Housing, Community Services and Indigenous Affairs (FaHCSIA) commissioned Ninti One to conduct *Strengthening Community Research on Remote Service Delivery project* in the communities of Ntaria, Yuendumu, Amata, Mimili and Lajamanu. The projects worked with members of each community on a particular research topic, chosen by them, to contribute through the research program to the implementation of Local Implementation Plans. The ACRs at Ntaria chose to work on safe driving and vehicle safety issues to improve community safety and reduce number of road accidents and driving related offences. The ACRs conducted a survey on safe driving and ran focus groups and photo elicitation on vehicle safety. The survey instrument was designed by the ACRs with the assistance of a Ninti One Senior Researcher. Then, they used new technology (iPad) to conduct the survey in the community. Trends that emerged from the survey included showed that 61% of the survey

respondents felt their driving was sometimes less than safe and that 78% of them would drive when it is unsafe. A further 46% of respondents felt the car they drive is not always roadworthy. These trends needed to be considered in light of several facts: there is no mechanical workshop, tyre repair station or access to vehicle tools and equipment at Ntaria and the closest place to go for repairs and maintenance is Alice Springs, some 130 kilometres away. Additionally, at the time, there was no public transport around the community or outstations and no public bus service to Alice Springs. The ACRs presented the survey findings summary of focus group discussions to their Local Reference Group (Wurla Nyinta) with the following recommendations: a) investigating how a local driving school at Ntaria might be progressed; b) running the driver rehabilitation program at Ntaria instead of Alice Springs where currently delivered c) starting broad community discussion about the relationship between vehicle maintenance, driver attitudes and safe driving at Ntaria. This research proved relevant to a community need and gained full engagement of the community. The ACRs delivered a detailed reportⁱⁱ about safe driving, which has informed Government about the community needs for onsite driving training services and the establishment of a garage. It also created further employment opportunities for the ACRs involved in the project. The team was subsequently engaged by FaHCSIA to work on the Local Cultural Awareness Program (LCAP) and the Mobility Research Project of CRC-REP employed the research team to work on their pilot consultation. Furthermore, one of the ACRs gained employment with the Strehlow Research Centre in Alice Springs. Different topics were picked in the other communities participating in *Strengthening Community Research on Remote Service Delivery* projects, reflecting local differences and circumstances. In the other communities, the ACRs too, at completion of the project, gained other employment opportunities with organisations such as Housing SA and Tjala Arts. Interestingly at Lajamanu, it led to the development of the Local Community Awareness Program as a local business.

Using the ACR model is a proven effective community consultation mechanism. In order to develop innovative policies, we believe the ACR model can assist policy formulation for economic development in Northern Australia. For example, the ACR could be used to explore the critical issue of how we can accommodate better Aboriginal and Torres Strait Islander employees in the workplace, including in the public sector. Standard offerings do not work and there is a need to articulate a new and creative way of framing employment. Importantly, ACRs can assist with improving service delivery models in remote communities.

We believe the development of the north will be constrained or undermined if remote communities are not involved in developing the plan for action and its implementation. The opportunity is there to get it right as policy directions and the White Paper are still in development. A holistic approach is required for ensuring that the remote and very remote areas of the north are not left behind. We must avoid a 'one size fits all' approach and develop local solutions, which recognise the unique social and environmental local circumstances of communities and are aligned with residents' needs and aspirations. This can only be achieved with a 'whole of system' approach and strong community engagement. A 'whole-of-system' approach will enable the understanding of the key drivers and causes of the economic challenges in remote areas and to identify successful methods to overcome them. Active collaborations between all levels of governments and Aboriginal and Torres Strait Islander communities to develop a sustainable plan for improving service delivery, employment, education and safety outcomes in remote areas is essential and can be achieved in using the ACR model. Initiatives that involve people from the beginning increase chances to have major risks identified early and lead to more sustainable outcomes.

ⁱ Mark Stafford Smith. *The 'desert syndrome' – causally-linked factors that characterise outback Australia*, The Rangeland Journal 30(1) 3–14, 2008

ⁱⁱ *Strengthening Community Research in Remote Service Delivery at Ntaria*, Ninti One, 2012
http://www.nintione.com.au/resource/Ntaria_FaHCSIA_ProjectReportFinal.pdf

Underpinning development: Health and health workforce in Northern Australia

Authors: SR Davis; A Edelman; FA Croker.

The renewed focus on Northern Australia as an economic development zone recognises its unique proximity to Asia in the Asia-Pacific century and its position within the fastest growing global zone: The Tropics. Northern Australia is recognised as vital to Australia's future economic development over the next 30 years.¹⁻³ With sustained policy and political commitment, Northern Australia has the capacity to be the leading provider of health professional training, public health research and innovative health service models for the region internationally.²⁻⁴

Achieving this vision and future-proofing Northern Australia's capacity within the Tropics worldwide and throughout the Asia-Pacific century requires recognition that the future success of an Economic Development Zone must be underpinned by a healthy and productive population. This population needs to be supported by a health system that can respond to significant demographic and epidemiological transitions, including population ageing and the global epidemic of non-communicable diseases.⁵

Northern Australia has the potential to be a leader in health systems innovation and health workforce training in the Tropics worldwide, leading to significant health, social and economic benefit to both Australia and its near neighbours.³ With appropriate policy and political support, this region can build on a substantial base of existing capacity and expertise in health, education and research sectors.

This paper outlines the critical health challenges facing Northern Australia, provides an overview of the raft of health and health workforce reforms that are leading to improved health outcomes, and makes recommendations for future actions based on key opportunities in the region.

Northern Australia: The Context

According to Health Workforce Australia:

'There is a big divide between the health of metropolitan Australia and that of Australians living in rural and remote areas. There is also a dichotomy in terms of the health services available. In essence, if you live in rural or remote Australia your health will on average be poorer, and your access to health services more limited, a trend which worsens with increasing remoteness'¹ (p.6)

However, the Australian Institute of Health and Welfare notes that: "On the positive side, Australians living in rural areas generally have higher levels of social cohesiveness—for example, higher rates of participation in volunteer work and feelings of safety in their community."² (p.24)

Health in Northern Australiaⁱ reflects a combination of unique geographic and demographic factors. While the tropical cities of Cairns, Townsville and Darwin are uniquely positioned as thriving hubs servicing the

ⁱ

Northern Australia is defined as being above the Tropic of Capricorn by GNARTN Council. This is consistent with the definition provided by the Joint Select Committee into the development of Northern Australia

region, the remainder of Northern Australia is classified as rural or remote,ⁱⁱ representing approximately one third of Australia's outer regional and remote population.⁸ Northern Australia's population of 1.3 million people is distributed across a vast geographic area, and only four out of the 74 Local Government Areas have populations of over 100,000 people. Northern Australia also encompasses around 30% of the nation's Aboriginal and Torres Strait Islander population.⁹

People living in rural and remote parts of Australia are at risk of poorer health status, shorter lives, higher rates of accident and injury, greater levels of illness, and lower rates of certain medical treatments. Mortality and hospitalisation rates, and prevalence of health risk factors, generally increase, and access to health services becomes more limited, with increasing remoteness.^{6,8,10} This is compounded for Indigenous Australians within the northern region.⁵ Their health outcomes are significantly worse when compared with either non Indigenous Australians within the same region or with other Indigenous Australians living in urban areas. Health in Northern Australia also encompasses tropical, exotic and infectious disease, necessitating consideration of biosecurity, relationships with neighbouring countries and people movements across the northern border.^{3,5 10}

Multiple political, social and economic factors contribute to the health disadvantage experienced by people living in rural and remote communities, including population transience, high capital costs of infrastructure, and workforce recruitment and retention difficulties.¹¹ These factors are compounded by significant geographical challenges in delivering accessible, affordable and appropriate health care services to low population densities, in small settlements and across large distances.

Accordingly, health care in Northern Australia has evolved unique characteristics and strengths, including a multidimensional practice environment requiring generalist (rather than specialist) skills and training. Health practitioners working in remote areas work in a cross-cultural context, serve small, dispersed and often highly mobile populations, operate in a physical environment of climatic extremes and contend with geographical, professional and often social isolation.⁶ Many of these characteristics present unique challenges for health service providers and policy makers, with the following being highlighted in the Productivity Commission Report into Australia's Health Workforce:¹²

- Limited access to supporting health professionals, facilities and locum services;
- Lesser availability of continuing professional development;
- Lower housing standards; and
- More restricted education and employment opportunities for other family members.

One of the most pressing and persistent health challenges in northern Australia is the geographic maldistribution of health professionals, meaning shortages in rural and remote areas. The Review of Australian Government Health Workforce Programs (Mason Review)⁴ identified maldistribution as the most significant health workforce issue, finding 'inadequate or non-existent service provision' in rural, remote and Indigenous communities, populations of extreme disadvantage and some outer metropolitan communities; coexisting with oversupply in other areas for some health professions.^{4,6,10} The undesirable outcomes of workforce shortages and maldistribution, including poor access, unmet need, poorer health outcomes for patients, overworked health professionals and expensive strategies to address immediate workforce shortages by government have long been recognised.^{6,13}

ⁱⁱ Based on the Australian Bureau of Statistics (ABS) Australian Standard Geographical Classification Remoteness Area classification, the term 'rural and remote' encompasses Inner regional, Outer regional, Remote or Very remote geographical areas.

A trend towards specialisation and sub-specialisation within the medical profession has also resulted in a shortage of medical generalists, and the high dependence on migration of international health professionals, particularly to remedy health workforce shortages in rural and remote areas, is predicted to continue.¹⁴ There is now broad acknowledgement that a ‘business as usual’ approach to health workforce development in Australia is unsustainable.¹⁴ Nation-wide challenges accompanying sustained growth in the demand for health services and ageing of the population and workforce are also relevant to Northern Australia. Continuing health disparities and health workforce challenges across Northern Australia have driven significant health system and health workforce innovation and reform in recent years.

Innovation and reform of health care and health workforce in northern Australia

Successive administrations at commonwealth, state and territory level have sought to address the complexity of providing health care to those rural and remote populations most in need, but many have been unsuccessful. Although significant challenges remain, the lessons learned from past initiatives and current policy successes position northern Australia as a leader in innovative health and health workforce policy to meet the needs of a diverse and dispersed population.

Service models and models of care to provide high quality patient care in rural and remote areas are different from those in larger communities, and while rural and remote heterogeneity means that no single model of service can be applied, exemplars provide a basis for future development of service models.¹¹

Recognising the benefits of local innovation and governance to meet local health needs, the National Health Reform Agreement of 2011 provided for the establishment of Local Hospital Networks (LHNs), with the aim of delivering better access to services, improved local accountability and transparency and greater responsiveness to local communities. Ten are located within Northern Australia (wholly or in part).ⁱⁱⁱ Decentralised hospital and health service management within the LHNs is provided for by local governance arrangements so that the health services located in Northern Australia will be more responsive to local needs and challenges.

To meet health workforce challenges, Health Workforce Australia⁴ was established by the Council of Australian Governments (COAG) through the 2008 National Partnership Agreement on Hospital and Health Workforce Reform. HWA’s mandate was to deliver a national coordinated approach to create health workforce able to meet the current and future healthcare needs of all communities. HWA developed a significant array of programs to address some of the challenges in health workforce development across Australia, including innovative rural and remote workforce reform strategies.⁶ HWA as a statutory authority has been abolished, but many of its functions and programs are continuing through consolidation within the Commonwealth Department of Health.

One of HWA’s key programs, the Clinical Training Funding (CTF) program, provides significant and welcome investment to increase clinical placement capacity across the health professions, including expanding opportunities in private placement settings. However, an unforeseen consequence of the payment of fees to

ⁱⁱⁱ These have evolved into various entities with Hospital and Health Services (HHS) in Queensland; Health Districts in the Northern Territory and Health Networks in Western Australia.

placement providers for the clinical training of health professional students was the creation of an expectation of continuing payment from universities for placements across the health disciplines at the HWA rate. Currently, there is significant variation in the rate charged by placement providers across health services, jurisdictions and discipline areas. This is a significant challenge facing the health and higher education sectors across Australia, and particularly for providers in rural and remote areas where there is a less established tradition of education, training and research, less investment and less infrastructure to support these activities as well as high costs associated providing clinical placements in this context. However, there is recognition of the vital role that Northern Australian universities working in partnership with health service providers play as clinical education and training institutions. Further, the potential for collaborative Academic Health Research Centres is also emerging.^{6,15} Future policy directions must address these trends and capitalise on the available opportunities to grow the health workforce and build tropical expertise.

The Greater Northern Australia Regional Training Network (GNARTN) was established in 2012^{iv} and has commenced work to build and enhance clinical placement and health workforce capacity across northern Australia. GNARTN is a partnership between the Director Generals of WA, QLD and NT Health Departments, and has demonstrated the benefits, including efficiency gains, of East–West collaboration between all parties involved in health professional training: governments, NGOs and higher education providers. In 2013, GNARTN, through a shared investment and governance model delivered a range of initiatives at a price point that allowed a higher return on the investment made by the individual jurisdiction.

Northern Australia is leading the country in developing and delivering a number of health service and health workforce innovations to meet health needs, including:

- Building rural pipelines, or the continuum of training in rural or remote areas, in medicine (from recruitment to graduation, to junior doctor training, to employment as a junior doctor and on to vocational training in a medical speciality including general practice). Key recommendations of the Mason Review centre on the imperative to create coherent pathways for rural and regional education and training, particularly generalist medical training, with more appropriate resource allocation to nursing, midwifery, allied health and dentistry.⁴ There is strong evidence from within the data on medical training at undergraduate level, junior doctor and vocational training that by supporting rural and remote service providers and health professional trainees with accommodation and travel, supervision capacity and peer support while on rural and remote clinical placement, many health professionals return to rural and remote areas following graduation. Supporting the articulation of rural training pipelines across the health professions is an important health workforce initiative and remains a critical area for further investment.
- Expanding scopes of practice for health practitioners. Rural and remote clinical practice in Australia already has established traditions of multidisciplinary team based approaches to health care, including delegation, expanded scope of practice roles or nurse practitioners, midwives, practice nurses, enrolled nurses, remote area nurses, rural pharmacists, Aboriginal and Torres Strait Islander health workers or practitioners, rural paramedics and lay health care assistants. There is significant scope for expanded scopes of practice of other registered health professionals to address workforce

^v For information on GNARTN governance and scope see www.gnartn.org.au

shortages and help to ensure that the evolving abilities of all members of the health care team can be fully applied.

- Smart use of technology, supported by the integrated telehealth system, point of care testing and ‘tele-supervision’ of students and trainees. The availability of broadband technology supported by effective models of care which utilise the existing rural and remote health workforce, has the capacity to reduce cost of service while providing high quality care to rural and remote patients. WA and QLD have already made significant advances in telehealth models of care. For example, QLD has been piloting a telehealth supported model to deliver treatment and ongoing care to rural clients with cancer without them having to travel into the major urban centres. In Western Australia, the WA Country Health Service has been effectively using videoconferencing to support nurses dealing with medical emergencies in small rural communities, thus providing immediate access to specialists who can support the rural practitioner in complex cases.
- Promoting rural and remote generalist specialists across all health professional groups, based on the model offered by rural generalist medicine, which is defined as the provision of a broad scope of medical care by a doctor in the rural context. Rural generalist medicine encompasses comprehensive primary, hospital and emergency care with a population health approach and within a multi-disciplinary team, and is in contrast to medicine and medical training in major Australian cities, which has become increasingly sub-specialised and often shaped by income-earning opportunities rather than by community needs. Rural generalism is well established in Queensland, with more recent adoption in the Northern Territory and other jurisdictions.

These areas of health and health workforce innovation and reform, within a cross jurisdictional Northern Australian model, are outlined in Table 1.

As highlighted by the Mason Review, the current health reform era represents a shift away from acute care toward more coherent delivery of connected primary health care, with a focus on prevention and better management of chronic diseases and on encouraging greater flexibility and productivity.⁴ This approach offers many benefits to health care in northern Australia, and underscores the need for continuing investment in, and policy support for, key innovations and reforms that meet health care needs in rural and remote areas that are cognizant of demographic and epidemiological transitions.

A healthy population leading Australia in the Asia-Pacific century

Northern Australia continues to establish itself as a leader in innovative health and health workforce policy to meet the needs of a diverse and dispersed population. Domestically, a healthy population means that there is healthy and productive workforce available to industry and business to underpin economic development. Looking further afield, Northern Australia is well placed to develop these areas of expertise as an export commodity. Northern Australia has established significant expertise in responding to disasters, managing tropical diseases, and developing strategies to prevent and managing chronic diseases. Combined with significant experience in rural and remote health workforce development and health system innovations, Northern Australia also has a lot to offer other nations striving to achieve the goal of universal health coverage.^{16,17}

Engagement with Asia in education and health care has enormous strategic significance - efficient and effective health systems, with equitable foundations, underpin sustainable development, security and

economic growth, benefiting regional stability. In addition, Australia’s reputation as a quality provider of health care within a region in which there is significant growth of a middle class offers significant market opportunities in health care, including medical tourism.

The contribution of the higher education sector to the health and economic positioning of the region is significant. Universities in Northern Australia not only train the future health professionals of the region to meet health workforce needs, they strengthen the economy and build vital diplomatic links internationally. Currently at around \$15 billion each year, international education is Australia’s largest export earner after resources and Australia’s fourth largest export industry.³

Research into emerging and re-emerging tropical infectious diseases and new models of care and service delivery for chronic disease offer the potential for huge economic, social and health benefits to the local region, the nation and neighbouring countries.

Ongoing investment in health services strengthening, health workforce development and health and medical research will ensure that Northern Australia is recognised as a global leader in rural, remote and tropical health care and workforce innovation.

There are significant health and economic benefits to developing Northern Australia. To maximise these benefits there is a need for sustained bipartisan political commitment to establish a robust Northern Australia East-West dialogue. This dialogue should be supported by a governance mechanism that enables collaboration between the Commonwealth and the WA, NT and QLD governments.

Table 1: Directions of health system and workforce innovation and reform in Northern Australia^v

A healthy and productive Northern Australian population to drive economic development in Northern Australia			
Cross Jurisdictional Collaborative Model for Improved Health Outcomes			
Improve access to health services	Health Professional Workforce Development	Telehealth	Reformed Resourcing & Governance Model

^v Adapted from the Davis S, Vernon M (2014) GNARTN Submission to the Joint Select Committee on Northern Australia – tabled on the Broome committee meeting

Fair, equitable and universal access to health services Smart use of technology, including telehealth, point of care testing and 'tele-supervision' of students and trainees Regional partnerships between government and non-government organisations to support continuum of care Shared specialist health workforce in Northern Australia Expand roles of practice for health professionals – generalist Share collaborative health service /population health planning models Strengthen public health as a preventive mechanism Strengthen Indigenous and rural and remote primary health care infrastructure	Address mal-distribution of the health workforce across northern Australia Appropriately educate and train workforce for rural/remote practice Share and mobilise workforce across jurisdictions Share recruitment models Increase access to specialist workforce across jurisdictions Strengthen links between the health system and the higher education sector Enhance Aboriginal and Torres Strait Islander workforce development opportunities, including health practitioner workforce Technology-enabled solutions to address the significant mal-distribution of the health workforce across rural & remote northern Australia	Enable greater access and equity to health services Reduce costs inconvenience associated with accessing specialist health services Improve access to quality of clinical services locally available Access to continuing education and professional development for health professional Networking and collaboration to support workforce retention Across jurisdictional telehealth service development and delivery without geographical boundaries Achieving service delivery that reduces current inequity in service access and associated poor health outcomes.	Northern Australia Governance mechanism to support the adoption of evidence based models across jurisdictions Legislative and policy alignment (e.g. Harmonised of Drugs and Poisons regulations) Co-investment model to reduce cost burden and risk, achieving greater access through greater equity in resourcing Integrated research, education and healthcare, via an Academic Health Centre combining research, higher education and health sectors Cost effective service models based on collaborative service planning Models need to recognise the cost of provision of services in rural and remote environments Innovative service and workforce models
--	--	---	---

Key summary points

- A healthy population means that there is a healthy and productive workforce available to industry and business to underpin economic development;
- Establishing an overarching East-West governance arrangement, supported by a series of alliances and focussed on the critical issues identified in Table 1, will enhance the region's capacity to grow and develop, with significant benefits for Australia and its near neighbours;
- Health in Northern Australia reflects a combination of unique geographic and demographic factors, including poorer health status (with northern Australia representing approximately one third of Australia's outer regional and remote population), and geographic maldistribution of health professionals, meaning shortages in rural and remote areas;
- In health workforce development, ensuring availability and affordability of clinical training remains a significant challenge, particularly for providers in rural and remote areas where there is a less established tradition of education, training and research, less investment and less infrastructure to support these activities as well as higher costs associated providing clinical placements;

- Universities play an essential role in training future health professionals of the region to meet health workforce needs, strengthening the economy and building vital diplomatic links internationally;
- Northern Australia is leading the country in developing and delivering a number of health service and health workforce innovations to meet health needs in the region, including building rural pipelines in medicine, expanding scopes of practice for health practitioners, smart use of technology including telehealth, and promoting rural and remote generalist specialists across all health professional groups; and
- Northern Australia is well-placed to develop its health service and health workforce innovation expertise as an export, particularly to Asia.

On the basis of research evidence and the opportunities discussed in this paper, the following recommendations are made for future policy and practices. Implementation of these recommendations enables strategic investment in the opportunities to build the capacity of the region to develop a healthy and productive population in Northern Australia.

Recommendation 1: Establish and strengthen inter-sectoral and cross jurisdictional partnerships to provide accessible, effective and efficient health services across Northern Australia through:

- East-West governance arrangements that strengthen service delivery and improve efficiency
- Regional partnerships between government and non government organisations that:
 - facilitate collaborative health services planning and modelling
 - provide an integrated and cooperative continuum of care across services and the region that supports the patient journey
 - effectively address inequities in access to services
 - collaboratively and inclusively address critical challenges to population health

Recommendation 2: Employ strategies that develop an appropriate health workforce for Northern Australia and the region by:

- Creating and further developing education and clinical training hubs that:
 - work co-operatively and collaboratively with health service providers across Northern Australia to grow an appropriate regional, rural and remote health workforce
 - provide affordable, quality clinical experiences for students
 - enable the export of health professional education and clinical training to the Asia – Pacific region
 - maximise opportunities to implement and evaluate innovative workforce models such as Indigenous Health Practitioners, Nurse Practitioners and Tropical / Rural Training Pathways
 - provide the expertise to develop rural generalist practitioners with the expanded scope of practice required in this context
 - provide continuing education and professional development for health professionals
- East- West arrangements that transcend jurisdictional barriers and enable
 - implementation of strategies to address the maldistribution of the health workforce

- shared specialist health workforce in Northern Australia
- shared recruitment and retention strategies
- telehealth service delivery that provide access to networks, support and training without geographical barriers

Recommendation 3: Reform resourcing and governance models across jurisdictions and sectors in Northern Australia so as to:

- align legislation and harmonise policies, for example around credentialling and Drugs and Poisons regulations
- enable co-investment into training, resources and technology-assisted solutions that enable equitable access with a reduced cost burden
- developing and evaluating innovative service models and providing cost-effective service delivery
- integrate research, education and healthcare through Academic Health Centres to build regional expertise
- support and share evidence-based workforce models
- Strengthen Indigenous and rural and remote primary health care infrastructure

Prioritisation of, and ongoing investment in, health services strengthening, health workforce development and health and medical research in northern Australia will ensure that the region is recognised as a global leader in rural, remote and tropical health care and workforce innovation. This needs to be underpinned by an overarching governance arrangement that is focussed on the critical health and health workforce issues in the region. With sustained political commitment to Northern Australia, this tropical region has the potential and capacity to be the leading provider of innovative health service models, public health research and health professional education.

References

1. Joint Select Committee on Northern Australia. *Inquiry into the Development of Northern Australia—Interim Report*. Canberra: The Parliament of the Commonwealth of Australia;2014.
2. Davis S, Vernon M. GNARTN Submission to the Joint Select Committee on Northern Australia. – tabled on the Broome committee meeting: GNARTN; 2014.
3. Liberal Party. The Coalition’s 2030 Vision for Developing Northern Australia 2013. <https://lpaweb-static.s3.amazonaws.com/Policies/NorthernAustralia.pdf> Accessed 29 July 2014.
4. Mason J. *Review of Australian Government Health Workforce Programs*. Canberra: Department of Health, Australian Government ;2013.
5. Australian Institute of Health and Welfare. *Australia’s health 2014*. Cat. no. AUS 178. Canberra: AIHW;2014.
6. Health Workforce Australia. *National Rural and Remote Workforce Innovation and Reform Strategy*. Adelaide: Health Workforce Australia; May 2013.
7. Australian Medical Workforce Advisory Committee, Australian Institute of Health and Welfare. *Medical Workforce Supply and Demand in Australia: A Discussion Paper*. AIHW Cat. No. HWL 12. Sydney: AMWAC; 1998.
8. Wakerman J. Defining Remote Health. *Aust J Rural Health*. 2004;12:210-214
9. Queensland Treasury and Trade, Office of Economic and Statistical Research. Regional Distribution, Census 2011: Aboriginal and Torres Strait Islander Population in Queensland. 2013. <http://www.qgso.qld.gov.au/products/bulletins/atsi-pop-qld-c11/atsi-pop-qld-c11.pdf>. Accessed 29 July 2014.
10. Australian Institute of Health and Welfare. Rural Australians. *Australia’s Health 2010*. Vol Cat. no. AUS 122.Canberra AIHW; 2010.
11. Humphreys J, Wakerman J, Wells R, Kuipers P, Jones J, Entwistle P. *A Systematic Review of Primary Health Care Delivery Models in Rural and Remote Australia 1993-2006*. Canberra: Australian Primary Health Care Research Institute; September 2006.
12. Productivity Commission. *Australia’s Health Workforce*. PC;2005.
13. Godwin DM, Hoang H, Crocombe LA, E. B. Dental practitioner rural work movements: a systematic review. *Rural and Remote Health*. Accessed 29 July 2014;14(2825):online.
14. Health Workforce Australia. *Health Workforce Australia, 2012, A summary of health workforce 2025 – Volumes 1 to 3*. . Adelaide: HWA;2012.
15. Universities Australia. *Universities Australia Pre-Budget Submission 2014-15*. Universities Australia; January 2014.
16. United Nations. Universal Health Coverage at the center of sustainable development: contributions of sciences, technology and innovations to health systems strengthening. 2013;

http://www.un.org/en/ecosoc/julyhls/pdf13/concept_paper-uhc_during_ecosoc_amr.pdf. Accessed 27 July, 2014.

17. World Health Organisation. Health: essential for sustainable development. 2014;
http://www.who.int/universal_health_coverage/un_resolution/en/. Accessed 27 July, 2014.

The relationships between workforce mobility, liveability and development in Northern Australia

Professor John Rolfe

School of Business and Law, CQUniversity Australia

Background and Scope:

Opportunities for further development in northern Australia, particularly in the agriculture and resources sector, are widely canvassed as mechanisms to generate economic growth in the north. An implicit assumption that underpins these proposals is that further development will stimulate growth through direct employment and spending in the business services sector, and that further indirect employment and spending effects would lead to broader economic development. Demographic growth as well as other positive social benefits would follow.

Increased use of workforce commuting operations, including drive-in/drive out (DIDO) and fly-in/fly-out (FIFO) arrangements, are creating a divergence between direct economic development initiatives and the flow-on economic and social benefits to communities. There are a number of reasons why remote commuting operations exist, but they include the lower costs of travel (particularly by air), and preferences by workers to live in larger and attractive communities. The potential for workforce commuting, and for lower levels of local business expenditure mean that development in northern Australia may have much lower positive growth effects on local communities than policy makers anticipate.

This paper provides a broad review of the factors that drive workforce commuting and distant business supply chains, and links these to the challenge of regional development in the north. Communities and regional areas are presented as competing for workforce and businesses, and factors that improve the liveability and cost-competitiveness of communities relative to others will improve the level of economic benefits gained from major developments.

The development of remote commuting in mining

The development of commuting arrangements in mining provides an example of changing development patterns. The use of a non-resident workforce is now an integral part of many mining operations in Australia. There has been increased usage of FIFO and DIDO operations in mining activities in Australia since the 1970s. While the use of FIFO was initially focused on remote locations where it was difficult to provide appropriate infrastructure and services, there is now increasing application of FIFO and DIDO in more accessible areas. The use of FIFO is particularly evident in resource operations in Western Australia, while the use of DIDO is particularly evident in the Bowen Basin region in Queensland. While remote locations may be only serviced by FIFO, many resource operations are serviced by a mixture of FIFO, DIDO and local workforce when the range of direct employees, contractors and indirect employees are considered.

The development of the Bowen Basin in Queensland over the past forty years provides an example of the increased use of remote commuting operations. This area is located in central Queensland, but can be classified as part of northern Australia. The area is much more closely settled than most parts of northern Australia, with more than 20 smaller towns and centres in the basin, and close proximity to major centres such as Mackay and Rockhampton on the coast.

When mining began in the 1960s and 1970s, all workers lived in local mining towns, some purpose built. Changes in roster patterns towards longer block shifts encouraged moves towards DIDO arrangements, with a proportion of mine workforce choosing to commute from coastal cities such as Mackay. During the mining boom from 2003 to 2012, more FIFO operations emerged for a variety of labour supply, cost-effectiveness and industrial relations reasons. The Queensland Government Statistician's Office (QGSO) (2013) reported that there were 34,890 jobs in the coal sector in the Bowen Basin in June 2013, and that 22,900 non-resident workers were on shift in the Bowen Basin at any one time. Given that off-shift workers were not included in the estimates, it is clear that the majority of direct employment in the Bowen Basin is commuting in some form from outside the region.

The proximity of the Bowen Basin to coastal areas has meant that the majority of workforce has remained in the regional area whether they commuted by DIDO or FIFO patterns. Most economic and social benefits of the mining developments and flow-on effects through the economy have thus accumulated at the regional level, even if the local impacts around the mining areas have been limited. The extent of the economic impacts of the resources sector on the Bowen Basin and associated regional areas is outlined in Rolfe et al. (2011).

A new phase of economic development is emerging in the Bowen Basin, where newer mines are being developed that operate solely on FIFO operations from Brisbane and Cairns, despite workforce being available in central Queensland. These are similar in operation to many of the remotely operated mines in northern Australia, where remote operations mean that most of the direct and indirect economic benefits flow to host rather than local communities. Increasing use of automation and mechanisation and more efficient workforce operations further limit the likelihood that mining will generate major benefits to many local communities.

The development of remote commuting in other sectors

The use of FIFO and DIDO arrangements is not restricted to the mining industry (de Silva et al. 2011). Australian workforces have become much more mobile in recent decades, in part because the costs and time involved in long distance travel have improved. There are many cases of workers and professionals commuting between cities and to other locations for block shifts or a working week on a temporary or a full-time basis.

FIFO and DIDO arrangements are much more common in resource areas and communities because of (a) use by the mining industry, (b) housing shortages (c) workforce demands, and (d) short term growth pressures. The small size of many communities in regional areas makes it difficult to provide workforce and/or housing during growth times. While mining industries often provide the core of FIFO and DIDO workforces, the need for the mining services sector, the business supply chain and

the wider community and government services sectors mean that the non-resident workforce commuting into an area may be very diverse.

The visible growth of commuting in the resources sector has created some perceptions that remote commuting is a mining industry phenomena driven by short term pressures to attract labour force and capacity to pay. This can be characterised as a **cyclical** effect, where reductions in workforce commuting can be expected as the resource boom wanes.

However there is substantial evidence that long-distance commuting represents a **structural** change in the way that developments and services are staffed in regional areas. Under this view, the trends towards long-distance commuting are not going to disappear, and cut across different industries and regions in non-discriminating ways. The implications of these structural shifts for northern Australia are profound, as it is possible that:

- There may be very limited flow-on effects to local and regional communities from major developments,
- Long-distance commuting will become more common across all sectors of the economy, not just resource industries,
- There will be increasing concentration of population and economic activity in major urban and regional centres, and in lifestyle regions,
- There will be increased polarisation in growth patterns and wealth distribution across communities.

Rolfe et al. (2007) identified two types of structural changes that were seeing the benefits of development accrue more to larger, centralised communities than smaller, remote ones. The first can be termed the economic drivers, where better transport and communication facilities, increased emphasis on service industries and the increased scale of firms and enterprises meant that supply networks tended to be longer and firms tended to locate in major centres. The second are the social changes, where people prefer to live in larger centres because of better employment opportunities, better education and health services, increased recreation opportunities, and quality of lifestyle factors.

The policy challenge

There are risks that northern Australia will only capture the direct economic and employment impacts of further major developments, and that the larger indirect and social benefits of development will be transferred to major urban or southern centres. Minimising these risks will involve attention to policy in a number of areas.

First, local and regional business chains need to be fostered. Establishing successful business sectors creates much larger multiplier effects from economic stimuli, and helps to strengthen and diversify economic conditions. Mechanisms to develop business chains include having low cost and regulatory environments, establishing strong business relationships and networks, and encouraging quality performance.

Second, search for areas of regional specialisation and concentration. Larger centres will continue to grow faster, so northern Australia will need to compete by finding ways for their regional centres to provide services to industry and businesses that are lower cost or unique.

Third, focus on liveability and lifestyle factor to attract new population to key centres. With increased wealth, working flexibility and access to services, people increasingly have the freedom to live in attractive locations. Liveability relates to access to major services, lower cost of living and diversity of employment, and is also closely aligned with the tourism and recreation sectors. For a region to be successful, it is not enough to simply create jobs and economic prospects. Liveability is now a key driver of regional development, and a major factor in competition between regional areas for population and growth prospects.

References

De Silva, H., Johnson, L. and Wade, K. 2011. Long distance commuters in Australia: A socio-economic and demographic profile. Paper presented at the Australasian Transport Research Forum, 28-30 September 2011. Available at <http://www.patrec.org/atrf.aspx>

Queensland Government Statistician's Office (QGSO) (2013) Bowen Basin Population Report, 2013. Queensland Treasury and Trade, Brisbane. Available at: www.oesr.qld.gov.au

Rolfe, J., Miles, R., Lockie, S. and Ivanova, G. 2007 Lessons from the social and economic impacts of the mining boom in the Bowen Basin 2004 – 2006, *Australasian Journal of Regional Studies*, 13(2): 134-153.

Rolfe, J., Lawrence, R., Rynne, D., Gregg, D. and Ivanova, G. 2011 The Economic Contribution of the Resources Sector by Regional Areas in Queensland, *Economic Analysis and Policy*, 41(1), 15-36.

Rolfe, J. 2011. *Rolfe (CQU) Submission to the House Standing Committee on Regional Australia of Fly-in and Fly-out (FIFO) workforce practices in regional Australia*, Submission number 63, Australian Government, Canberra.

Human Services Sector Development in Northern Australia

Professor Hurriyet Babacan
University of New England

Introduction

There is universal agreement that strong, resilient and healthy individuals, families and community play a vital role in building the ongoing prosperity, wellbeing and economic development. It has been demonstrated that long term economic growth in the regions occurs through investment in human capital development (OECD, 2012). 'Inclusive growth' and broader notions of 'human security' are emerging, encompassing areas such as sustainable economic development; food security; health; and environmental, personal, community, political and cultural security (Babacan and Babacan 2007; UNESCAP 2013).

This section considers human service sector development¹ issues in Northern Australia. The chapter visits key issues in human service delivery including the population profile and the link between spatial location and social disadvantage. There is a critical examination of service delivery models and their sustainability in the context of Northern Australia. It is argued that that Northern Australia's human service sector lags behind major cities and has a history of being underfunded. Insufficient past investment and governance problems has negatively impacted on the sector as a whole causing fragmentation, service gaps and workforce shortages. There is a significant gap in data and evidence base in relation to Northern Australia and the human services sector, making policy and planning difficult. The chapter concludes with a discussion of future directions and strategies.

Brief Glance at Social Aspects of Northern Australia

Northern Australia comprises over 1.2 million people; approximately six % of the national population (Regional Australia Institute 2013). The area described as Northern Australia (NA) is located across three jurisdictions, namely Queensland, Western Australia and Northern Territory. It covers 74 local government areas (LGAs): 8 in Western Australia, 16 in Northern Territory and 50 in Queensland. There is significant level of variability within and between regions in Northern Australia.

Aboriginal and Torres Strait Islander peoples have strong presence and interest in Northern Australia. A quarter of people who usually reside in NA are Indigenous (Stoeckl, 2010:106). Some 67,000 Aboriginal people represent 32% of the total NT population (Manderson 2008). Indigenous people represent 15% of the Far North Queensland population and 46.5% of the East Kimberley population (Taylor 2008) The Indigenous population is expected to continue to grow at a faster rate than the non-Indigenous population (1.97 % per annum compared to 1.78%) (Carson, Taylor & Campbell, 2009). Stoeckl (2010:106) concludes that "Indigenous people are not only an important and numerically significant-part of this region's current population, but they will become even more important in the years ahead".

¹ A number of terms are used interchangeably to refer to this sector including human services sector, social and community services sector, and health and community services.

Northern Australia can be considered regional, rural or remote. While there is much debate about what these terms mean, the Rural, Remote and Metropolitan Areas (RRMA) classification developed by the Australian Government specifies it as follows:

- “regional” refers to non-urban centres with a population over 25,000 and with relatively good access to services;
- “rural” refers to non-urban localities of under 25,000 with reduced accessibility; and
- “remote” communities are those of fewer than 5,000 people with very restricted accessibility (Roufeil & Battye, 2008:3)

Most of Northern Australia fits in the definition of rural and remote with only five regions had a population larger than 70,000, 13 had between 15,000 and 70,000 people, and 55 regions had populations of less than 15,000 in 2011(RAI, 2013:31)

Development in NA has gained political and media attention in recent years. In particular the need for economic diversification and economic growth has become a central focus (see Office of Northern Australia website). While there is a renewed focus on NA, disparities and inequities exist in a number of ways: between NA and the rest of Australia, variability within NA locations and across population groups. The key priorities of the Regional Development Australia Committees reflect the issues facing NA. The top issue that was identified by RDA regions was infrastructure including basic infrastructure such as power, water and waste management. Diversification of the economic base, information and communication technologies and access to affordable housing, basic health services and education are other important areas of focus.

The think tank for regional development established by the Government of Australia, the Regional Australia Institute, states that “regional development in northern Australia requires a range of approaches that address both the variability and the disparity; between the north and the rest of Australia, between and within regions, and between population groups ” (2013:11).

Summary Point 1: Northern Australia is diverse, vast and sparsely populated. Most of NA fits within the characterisation as regional, rural and remote.

Spatial Dimensions of Disadvantage in NA

Northern Australia comprises 2,773,000 km² making up 36% of the land mass of Australia. The population is sparse and spread over large area with only 6% of the population of Australia residing in NA. The connection between disadvantage, demography and geography are well established (Cheers and Taylor 2001, Chenowith & Stehlik 2001). A long list of social issues are identified regional, rural and remote areas including mental health (Fragar et al 2007), domestic violence (Wendt & Hornosty 2010), and needs of older adults (Winterton & Warbarton 2011), health (AIHW) just to name a few. Factors which exacerbate aspects of rural disadvantage have been identified as financial strain, family and community relationships, out-migration from rural areas, changing gender roles and social isolation (Hall & Scheltens, 2005). The Australian Institute for Health and Welfare has identified that life expectancy, income and education levels are lower for people in regional, remote and rural areas. Cheers and Taylor (2001:207) have identified that people in rural areas are disadvantaged in comparison to urban people on most of the social and economic

indicators including 'life chances, income levels, poverty, unemployment, living costs, housing quality, health status, education, and a range of social problems, and in gaining access to health, welfare, community, personal support, and essential services'. Discrimination, marginalization, isolation, deprivation are terms that have been used characterise link between rurality and wellbeing (Winterton & Warbarton 2011).

The spatial disadvantage is evident in Northern Australia. The Australian Bureau of Statistics calculates the Socio-Economic Indexes for Area (SEIFA). The index is derived from attributes that reflect disadvantage such as low income, low educational attainment, high unemployment, and jobs in relatively unskilled occupations. Based on 2011 Census data the SEIFA index in NA demonstrate disadvantage in a significant number of local government areas. The following indicates the SEIFA index of selected local government areas in Northern Australia. It should be noted that the average Australian SEIFA score is 1000. The lower the SEIFA score, the higher the disadvantage.

State	Local Government Area	SEIFA Score	State	Local Government Area	SEIFA Score
QLD	Aurukuun	586	WA	Broome	966
	Burke	915		Derby-West Kimberly	791
	Cairns	975		Halls Creek	671
	Carpentaria	865		Wyndham-East Kimberly	911
	Charters Towers	931			
	Cloncurry	934	NT	Alice Springs	1010
	Hopevale	678		Central Desert	646
	Kowanyama	644		Darwin	1044
	Mackay	1007		East Arnhem	624
	Mt Isa	986		Katherine	944
	Townsville	1002		Palmerston	1024
	Tablelands	932		Roper Gulf	650
	Torres Strait Islands	729		Victoria Daly	662
	Winton	931		West Arnhem	715
	Yarrabah	554			

Table 1: Scores for Northern Australia Socio-Economic Disadvantage

Source: ABS 2011 Census of Population and Housing SEIFA Data

The above table demonstrates socio-economic disadvantage in Northern Australia. The disadvantage is evident in large regional cities such as Cairns as well and more remote areas. Areas with high Indigenous populations have the lowest SEIFA scores. For example Yarrabah is one of the most disadvantageous locations in Australia with a SEIFA score half that of the Australian average.

Some of the key indicators of the disadvantage is outlined by Catholic Social Services Australia (2014). They argue that there is greater government and welfare dependence in

NA than Australia, 75 % of the Statistical Local Areas in Australia with a median individual weekly income amounting to less than \$250 per week were within Northern Australia (in 2006); increased drug and alcohol issues; limited housing stock; and poor infrastructure. The high cost of living is a critical issue in Northern Australia particularly in food, housing, transport which compounds the disadvantage of the people on low incomes (CSSA 2014:6-7). Regional Australia Institute notes that Northern Australia is well below the national average for six of the nine indicators of competitiveness in the human capital theme including across all the indicators which assess skills development, especially in early childhood performance and school performance (primary and secondary) and the English language proficiency averages at a level equivalent to the lowest decile in Australia.

Indigenous disadvantage continues in Northern Australia in key social areas such as life expectancy, education, income, labour market participation and health. For example, the gap in life expectancy between Indigenous and non-Indigenous people was 10.6 years for males and 9.5 years for females. Between 2008 and 2013, the proportion of Indigenous students at or above the National Minimum Standards (NMS) in reading and numeracy has shown improvement in only two out of eight instances. Only 31 % of Indigenous students in remote areas reached NMS in year 9 in 2013. Only 38.5 % of Indigenous 20–24 years in remote areas had completed Year 12 in 2012. The proportion of Indigenous people aged 15–64 who are employed in 2012 was 47.5% compared to 75.6% non-Indigenous (Australian Government 2014). A number of government responses has been initiated over the last decade. Some of these have been highly contentious including *Closing the Gap* and *The National Partnership Agreement on Remote Service Delivery*. These interventions have been contested and with limited results. For example in relation to Closing the Gap outcomes, the Australian Government (2014: 3-4) concludes “there had been no improvement in Indigenous school attendance over five years. The record of progress against other targets has also been disappointing. There has been no progress on the employment target and while Indigenous life expectancy has improved, the pace of change is far too slow to close the gap by 2031.”

Summary Point 2: There is evidence to indicate a correlation between spatial location and disadvantage. The data identifies Northern Australia as having significant levels of socio-economic disadvantage, particularly Indigenous disadvantage.

Investment in Human and Community Services

The human service delivery agencies fall into three categories: i) community based (also referred as not for profit or third sector agencies), ii) government agencies and iii) for profit agencies (mainly private sector). Human service delivery in rural and remote areas tends to be provided by government or community service organisations (which are often publicly funded). For example, in the area of residential aged care, for profit providers constitute 40% of services across Australia. However, only 4.1% of services are located outside of major cities and inner regional locations. In contrast, 91% of all services in rural or remote areas are operated by either government or community based providers (Baldwin et al

2013:8). There is an gap in evidence about the nature of the sector in NA. It is known that there are large charitable agencies such as the Catholic Social Services across NA, Indigenous health agencies, government agencies and a network of smaller community organisations.

In 2010–11, total government welfare expenditure in Australia was estimated at \$119.4 billion (AIHW 2011). \$90.0 billion was provided as cash payments (including unemployment benefits) and \$29.4 billion was spent on welfare services. In the same year an estimated \$90.1 billion was spent on health. In comparison with other developed nations, Australia ranks lower on the welfare expenditure rankings, although it does well in some areas. Australia's total welfare expenditure was estimated at 13.3% of GDP in 2009. This is lower than the OECD average of 16.3%, with Australia ranking 27th out of 33 countries. In 2007, Australia was ranked 24 out of 34 countries, indicating the downward trajectory in international rankings (AIHW 2011). Australia's per person expenditure was higher than the OECD average in the areas of families and incapacity, and below the OECD average for old age, survivors, unemployment and 'other' (OECD 2012).

The Australian Institute of Health and Welfare (AIHW) (2013:399) notes that "there is currently no dedicated routine monitoring of total welfare expenditure, comprising government and non-government spending, in Australia". While aggregated data exists for government expenditure it is very difficult to break it down to analysis at different scales. Thus an accurate assessment of investment in social and community services is not possible in Northern Australia.

An examination of data from 1999-2007 reveal chronic underinvestment in welfare in the States and Territories that comprise Northern Australia. For example the AIHW concludes that funding of recurrent expenditure on welfare services by all state and territory governments averaged \$421 per person in 2005–06. The states with the lowest average government funding were Queensland (\$358) and Western Australia (\$361) (AIHW 2007). The average amount spent by governments on welfare services per person in 2010–11 was \$1,308 (AIHW 2013). However, a breakdown of welfare expenditure per person based on States and Territories is not available beyond 2007 as the AIHW's work focusing on welfare was been defunded.

In terms of health expenditures, in 2011–12, the estimated Australian Government funding per person on health averaged \$2,620. WA and Qld were below the national average with \$2,270 and \$ 2,585 respectively. NT invested significantly in health and had a higher per person investment in health of \$3379 (AIHW 2014). However, it should be noted that NT is compensating for past underfunding as it came from the lowest Australian Government funding on health per person in 2001–02 (\$1,697). In terms of non-government funding the lowest level of non-government funding was in the Northern Territory and Queensland at \$744 and \$815 per person in 2011-12 (AIHW 2014), demonstrating the significance of public funding in health and welfare.

A number of factors influence welfare spending including population growth, the cost of providing services and rates of service use, and capacity to pay privately. The capacity to pay privately in Northern Australia is limited (CSSA 2014) and is reflected by the small private sector human service delivery. The reason why welfare services are provided are

given by Government as improving ‘the lives of Australians by creating opportunities for economic and social participation by individuals, families and communities’ (FAHCSIA 2011) and ‘increasing national prosperity through improvements to productivity, participation and social inclusion’ (DEEWR 2011). Investment welfare yield multiple returns to society in social and economic terms. The Social Return on Investment work undertaken in international and community development fields demonstrates this many times. For example, in the UK it was found that a £1 invested in local area community development yielded a return valued at £15, a social return investment ratio of 2.16: 1 (NEF 2010:4). At a more macro scale there is evidence between increased public spending on human capital and improved prosperity. For example, Lamartina and Zaghini (2008), in an analysis of 23 high income countries from 1970-2006, confirmed a positive correlation between public spending and per capita rise in GDP.

In Northern Australia, recognizing the preventative role of social and human services sector, the Regional Australia Institute argues that as both sectors play a vital role in the early detection and treatment of preventable health conditions. They argue that lack of appropriate investment in the sector impacts on Northern Australia’s competitiveness and reinforces the persistence of human capital weaknesses over time and increases the costs to regions for the provision of social services. Similarly, the Mineral Council of Australia, in its submission to a Parliamentary Inquiry, pointed out the need for investment in community and community infrastructure in Northern Australia when they wrote: “Research suggests that communities that do not have sufficient infrastructure, social amenity and economic diversity will not attract new residents and this will in turn constrain the industry’s recruitment capacity” (House of Representatives 2013).

Recent studies have focused on social capital and community resiliency. There is a positive and strong correlation between growth of human services and progressive change in communities. For example, Chenoweth and Stehlik (2001) have demonstrated in Queensland rural communities that human services *is* contributing to new forms of community resiliency. They argue that the potential for resiliency rests in partnerships and proactive planning at the local level. There is a strong imperative for strong communities given the challenges that face Northern Australia such as climate change, boom-bust economic cycles and significant disadvantage. Concepts of community and resilience has been associated with terms such as ‘bouncing back’, transforming’ and ‘adaptive’ (Kirmayer et al. 2009, Gow & Paton 2008).

Summary Point 3: The data on welfare expenditures is patchy with major gaps in it. Existing data shows historical under-investment by WA, Qld and NT in health, human and social services. There is ample evidence from around the world to indicate that social investment in welfare and human services yields much bigger economic and social returns on the investment and has strong correlations with increased prosperity and productivity.

Sustainable rural and remote human service delivery

The delivery of human services in rural, remote and regional areas is very different for a range of reasons. Distance that impacts on service costs, productive time on site, and staff exhaustion due to travel commitments (Roufeil & Battye 2008). The Catholic Social Services

Australia (2013) argue that it costs much more to provide a service in Northern Australia which are often not recognized in funding models. Other factors identified include community pressure to be “all things to all people” in the absence of an adequate range of health and welfare services; the long time required to foster community acceptance, the challenge of managing confidentiality in small communities; limited access to other support professionals, especially specialists; difficulty recruiting and retaining staff; the limited ability of communities to pay for services and general reluctance to seek help when needed (Roufeil & Battye 2008, Judd et al 2006).

These issues have been echoed in meetings held by the author across Northern Australia from 2010-2013. In an extensive consultation undertaken in 2011, involving service providers in Far North Queensland, a number of key issues were identified including: Insufficient resources relative to need, funding not taking account of ‘real service delivery costs’; service agency growth without co-ordination, integration and planning resulting in major service gaps; difficulties with being proactive around community needs and limitations on responsiveness due to a culture of short-term competitive funding processes in the face of long term social problems; the need for preventative and outcomes based approaches to human service planning and delivery rather than the current reactive and crisis based approaches; professional staff not having enough time to do the higher order thinking and planning to be proactive as they were stretched responding to current demand; tendering processes acting as a barrier for collaboration across agencies; little connectivity between funded and unfunded agencies; difficulties with maintaining long term sustainability of service viability and ‘churn over’ of services and staff. This was also linked to difficulties of influencing decision makers who were located long way away in Canberra or Brisbane. Workforce issues identified included difficulties of recruiting and retaining appropriately qualified workforce, loss of experienced personnel due to lack of funding and job security; and lack of career and personal development opportunities. As a result, human services sector was seen as variable in strength and coverage, often varying with funding opportunities rather than being based on need (Babacan 2011).

An analysis of the human services sector in Northern Australia requires an analysis of human service delivery models. As can be seen from the above list of issues there are major challenges across Northern Australia relating to sustainable and functional service delivery models. Battye (2007:5) defines a dysfunctional service model as “a model of service delivery that does not support or enable health professionals to provide effective care to individuals and communities on a sustainable basis”. The evidence from Northern Australia suggests that professionals to provide effective care and service.

Identifying and implementing models of service in regional, rural and remote areas is not easy. Current practice in Northern Australia is mixed although there is no specific comprehensive study available. In the absence of data, it is useful to utilise the typology provided from Wakerman et al (2008) from their study from rural and remote public health service delivery.

Discrete Services	Integrated Services	Comprehensive	Outreach	Virtual
• Walk-in, walk-out • Specific services • Based in specific location	• Co-ordination • Single point entry • Multi-service • Shared care • Linkages with other programs	• Broader in focus • Community controlled e.g. Aboriginal controlled health service	• Hub- & Spoke • Fly-in-fly out • Visiting professional • Periodic services	• Use of IT • Tele-health

Each of these models has different features and advantages and disadvantages which the scope of this paper does not permit discussion. The authors identify essential elements of sustainable services and outline a number of *enablers* which are crucial in preparing in order to provide accessible services. The environmental enablers are: a supportive policy which ensures sustained service funding; co-ordination of policy and funding across national and state governments; and an appropriate level of community readiness for involvement in planning, implementation and monitoring of service activity. Furthermore, at the service level, requirements include workforce— numbers and mix of staff; funding; governance, management and leadership; linkages, which include integration of services within an organisation and external linkages with other key organisations to ensure continuity of care; and infrastructure – physical infrastructure as well as adequate information and communication technology. It is important to note that these factors are all inter-related.

Sustainability issues need urgent attention as regional, remote and rural services are under enormous pressure and are unable to meet the demands of the communities they serve (Alston & Kent, 2004). Services in Northern Australia face problems of accessibility, availability, relevance and acceptability, especially in the more remote areas. Regional centres services cater for more remote surrounding areas without appropriate resources. Due to better communication people expect same level of services in Northern Australia as they receive in the Southern parts. Raised expectations from government and disappointment are often publicly reported in the media. Regional Australia Institute argues that access to allied health is low and GP access (visits per capita) is extremely low relative to the national average (2013:26). One of the major non-profit social service agencies in Northern Australia, Catholic Social Services Australia (CSSA) argues that “a “one size fits all” approach will not work for Northern Australia given the diversity, governance, social, environmental and economic issues” (2014:5). Identifying effective and sustainable models in Northern Australia about service delivery is severely constrained by a lack of evidence about ‘what works best’. While there is now a growing body of evidence about the needs of

communities in Northern Australia, we have scant research base about appropriate models of services and how to respond effectively to the diverse community needs.

Summary Point 4: Service delivery in Northern Australia is very different in Northern Australia due to a number of factors and is more expensive to deliver. There are major challenges to the sector in relation to service gaps, workforce issues and funding. While there are models of service delivery in regional, rural and remote areas there is no evidence about what works best in Northern Australia. The capacity to be proactive and responsive to needs and to take preventative approaches is critical. This will not happen unless sustainability issues are addressed.

Governance Challenges

Governance is a complex term that encompasses the way decisions are made in order to achieve a public good. Dale (2013:5) reminds us to take a wide view of governance and defines it as “how the overall system of decision-making works to deliver social, economic and environmental outcomes for our society”. Governance arrangements in Northern Australia have been characterised as being on the ‘knife’s edge’ (Dale 2013:10). The governance arrangements are centralised by in the State/Territory capitals and Canberra (Babacan et al 2012, Dale 2013) which often do not take into account the issues and needs of Northern Australia. Dale (2013:11) argues that “this traditionally leads to a high level of frustration both among northern Australian communities and even among the North’s elected members”. The governance arrangements across the different regions of NA are quite fragmented although some degree of collaboration is beginning to emerge, particularly in the Natural Resource Management bodies (Dale 2013). There is very little collaboration across the human services sectors although regional bodies exist. For example, the Cairns Social Services Alliance is a network of services in Far North Queensland and it has been calling for policy and human services reform (Babacan 2011). Diverse Indigenous governance systems characterise Northern Australia organised around traditional owner groups, land trusts and not-for profit service agencies. Indigenous leaders in Northern Australia have also been calling for governance reform such as rights based reforms in the governance for land, community development and welfare work (NAILSMA, 2012) and welfare reform by Noel Pearson (Pearson 2013).

Governments play a relatively more important role in regional economies within northern Australia than for Australia as a whole due to higher local government expenditures and greater proportion of public servants in the workforce than in the rest of Australia (RAI 2013:29). Walker et al (2012:8) argue that current governance arrangements in Australia is “nothing less than a crisis in governance, and an urgent need for systemic change”. They argue that there is a governance dysfunction which has come about incrementally over 20 years. The governance arrangements are not well attuned to the current circumstances and emerging trends in remote Australia.

Pointing to disconnect, disengagement and discontent, consultations undertaken by Desert Knowledge Australia reveal what people want: a say in decisions which affect them; equitable and sustainable financial flows; better services and a locally responsive public

service; local control and accountability where possible; and inclusion in a greater Australian narrative (Walker 2012:9) . This is supported by other writers who argue that short term, fragmented, inflexible and annualised government program delivery models simply do not work in Northern Australia (Dale 2013). It has been argued that centralization of power and people, and the domination of welfare services by federal and state governments have resulted in highly standardised services which has problems with responding to diversity of needs and populations (Cheers 1992). Cheers (1992:13) states that as a result of centralisation “Australian welfare services have tended to be dominated by capital city administrators...their colleagues ... in provincial and rural locations attract comparatively few, often inappropriate, resources to their regions and have had relatively little influence over policy and services”.

The importance integrated and coordinated approaches cannot be overstated. For example, the Organisation for Economic Cooperation and Development (OECD), in a study of 23 regional case studies across Europe, identified that success was based on improvements in horizontal coordination of policies, regional institutional capacities, infrastructure provision and human capital development (2012:10). Quality of institutions, labour market fragmentation and connectivity were essential elements of prosperous regional development. Successful regional approaches require addressing a range of challenges at the same time but as many authors point out not in ‘one size fits all’ manner (Cheers 1992, OECD 2012).

Achieving integration and planning in human services will not happen by itself and will require intentional effort and resources. As Keast et al. (2011:5) argue, integration and planning

is not easy to achieve nor is it an inexpensive undertaking, it requires dedicated consideration, planning, resourcing and adequate funding. In particular, interpersonal relationships are resource and labour intensive with associated (albeit often transparent) transaction costs and must be legitimised as a ‘core’ element of work and adequately funded. Coordination or linking points are critical in holding the elements of the system together and, when necessary, mobilise them to action.

Integration and coordination requires a shift of mind-sets and practice of how policies and programs are designed and implemented. The Regional Australia Institute (2013:76) posits that the challenge for policy is to create an approach that devolves genuine responsibility to people, incentivises their leadership in building a different future and provides the time needed for this seismic shift in approach to occur.

Summary Point 5: Governance arrangements in NA are fragmented and lack coordination and integration. Human service policies and funding are centralised and driven by the State/Territory capitals and Canberra which is not easy to influence from a distance. As a result there disconnected with what happens in the regions of NA and policy/governance. This results in a loss of ability to be responsive to local needs and to have integrated and coordinated approaches.

Workforce Issues

The 'community services workforce' comprises people in paid employment who provide community services such as personal and social support, child care, and corrective services (AIHW 2013). This is complemented by volunteers, family members and informal carers. In 2011, there were more than 755,000 workers in community services occupations in Australia—an increase of 24% since 2006 (AIHW 2013:25). Workers in community services occupations were more likely to be female (87%), employed part time (57%), older and generally earning less than the average Australian worker (AIHW 2013:25).

The shortage of human and community services and health professionals in rural areas is well documented (Davies et al 2009, Lonne & Cheers 2004, Roufeil & Battye 2008) although the Community Services and Health Industry Skills Council (2014) argues that there is a need for relevant and high quality training and workforce data. They argue that appropriate planning in the sector is challenging without appropriate evidence, particularly in the context of a fast changing policy and funding domain. The environmental scan conducted by the Community Services and Health Industry Skills Council (2014) identified shortages in aged care, childcare, child protection, mental health, counselling , social workers, nurses, disability workers. Managers and senior staff in leadership roles in the community services and health sector was also identified as a shortage.

The shortage of appropriate workforce increases with greater remoteness (AIHW 2013). For example early childhood teachers were 852 per 10,000 population in major cities compared to 680 and 738 for outer regional and remote, nurses were 926 for major cities compared to 876 and 676 for outer regional and remote, counsellors 752 in major cities and 689 and 684 in outer regional and remote, social workers were 806 in major cities and 625 and 490 in outer regional and remote and so on across the different occupational categories (AIHW 2013:17). Babacan (2011) has identified challenges in recruiting and retaining appropriate workforce across Northern Australia including the difficulty of attracting appropriately qualified staff, problems with retaining staff in the face of short term funding cycles and job insecurity, difficulty of career progression, burnout and stress and lack of opportunity for professional development. These findings were echoed by others. For example Roufeil and Battye (2008:8) suggest three key areas that contribute to workforce shortages: i) professional issues (e.g., job dissatisfaction, overload/burnout, professional isolation, lack of support and training, burden of rural travel, inadequate orientation to rural/Indigenous practice, lack of adequate remuneration, inflexible award conditions); 2) personal factors (e.g., housing, partner employment issues, access to quality childcare/ education); and 3) community factors (e.g., establishment of social networks, local facilities). Similarly Davies et al (2009:xv) found that barriers to attracting staff included negative perceptions of rural employment and lifestyle opportunities; limited health and education facilities and services; lower wages and cost of living considerations; and cost, availability and quality of housing.

Reflecting on the difficulties of staff development in Centacare, Northern Territory, Trinidad (2001) draws our attention to the need to invest more in the ongoing professional development of staff, building on the knowledge, skills, and qualities that they bring. He states that "the temptation for cash-strapped agencies like ours is to put that responsibility solely on the shoulders of the individual staff member"(p.12). Strategies for retaining staff

were identified as providing competitive employment packages, improving the opportunities for structured career advancement pathways, generating activities and networks to overcome issues of social isolation, providing improved access to health and education facilities and addressing issues of limited housing options. Regional collaborative approaches were recommended to address workforce shortages as many small employers would not be in a position to address key problems such as the provision housing.

Summary Point 6: Human services sector tends to have less secure, part time-casual positions with lower pay levels. There is a shortage of appropriately qualified and experienced staff in selected areas across Australia. The recruitment and availability of appropriate staff becomes more difficult with remoteness. There are professional, personal and community factors that need to be addressed to attract and retain appropriate staff in Northern Australia.

Conclusion and Future Directions

Northern Australia is Northern Australia is diverse, vast and sparsely populated. Most of NA fits within the characterisation as regional, rural and remote. There is a significant link between geography, demography and social problems. There is considerable evidence that spatial location impacts negatively on wellbeing and increases disadvantage. This chapter has demonstrated significant disadvantage in Northern Australia and severe and persistent Indigenous disadvantage on all major indicators of health and wellbeing. The approaches to social problems is patchy and fragmented. There is a major evidence and data gaps to inform planning, coordination and service delivery. There is insufficient evidence about what service models work best, in what locations, type of services and which social issue. Human service delivery in Northern Australia needs to be innovative, flexible and diverse. It needs to be regionally specific and coordinated and integrated across different service agencies in the specific locations. While specialisation is important, narrowly focused one-type of model of service delivery models are unlikely to work in Northern Australia.

Northern Australia will continue to gain significance for Australia as a whole for a range of economic, political, social and cultural reasons. A renewed focus in NA will most likely not succeed if human capital and social issues are not addressed. A number of areas require priority attention:

Building an evidence base: appropriate data needs to be collected about nature of social issues; disaggregated data collected on welfare expenditure, social services sector and the workforce; and evaluation/research projects on current practice, where the service gaps are and what service delivery models work best under what circumstances. There is a need to build capacity in NA to undertake social impact assessment, needs analysis and social research by better support to the human services sector and the universities in NA.

Integrated planning, service coordination and relevant policy development: It is clear that centralised funding and policy models are not effective in responding the Northern Australia. A greater location and presence of State/Territory and Federal governments are needed in NA. As noted above, a 'one size' approach is not effective and therefore it is important to have a devolved and coordinated approach to service planning in NA. This means progressing mechanisms for formal and informal, placed –based, cross-sectoral

planning and delivery, driven by local stakeholders and local leadership. Moreover, it is critical that such devolved approaches are embedded in policy frameworks so that decision making is not driven from Canberra, Brisbane, Darwin or Perth for NA. There needs to be effort put into develop appropriate governance mechanisms at the third sector level, clearly articulating connectivity, vision for the sector and strategies to address capacity and social infrastructure constraints. There is a need for a Northern Australia community services umbrella agency or council, rather than the State/Territory based ones trying to undertake outreach, to be an advocate to address sectoral issues.

Ongoing and secure funding models: There has been a chronic underinvestment in Northern Australia per capita for health and human service delivery. While the fragmentation in the sector is well known, the service gaps, capacity and resource constraints and priority areas are not well documented at the sub-regional level. There is a need develop on-going funding models which provide preventative, sustainable and outcomes based service delivery rather than the current ad-hoc, competitive and fragmented approaches that currently exist. Programmatic approaches to funding, over a number of years is critical rather than one-off competitive models. The 'churning' of services and workforce due to poor funding model results in greater long term inefficiencies and wastage of precious public resources. While government will continue to be the main funder of health and human services there is a need to diversity the funding base with strategies to enable support from the private sector and philanthropic organisations which requires incentives to trial different partnership models across sectors.

Sector capacity building and workforce development: It is critical to document the nature of workforce and skills issues for the human sector across NA as there is a critical gap in our knowledge base. There is a need to address workforce loss of skills due to short term funding in the non-government sector. Regional, coordinated and cohesive efforts are needed to attract and retain employees in Northern Australia addressing professional, personal and community issues. It is important to develop improved future career progression strategies in the social and community services industry by education, training and professional development initiatives.

While Northern Australia continues to experience strong growth in the planning capacity of its economic and natural resource sectors, the social and human services sectors have not been supported at a strategic level. Building an environment conducive to requires multi-dimensional approaches and neglecting the human services sector will have serious long term consequences economically, socially and in other ways. Not investing in human services sector will have major detrimental impacts on creating liveable communities, development of vibrant economies, opportunities for participation, sustainable places, inclusive cultural expression and social cohesion.

References

AIHW (2014) *Health Expenditure Australia 2011–12: Analysis by Sector*, Health and Welfare Expenditure Series no. 51. Cat. No. HWE 60, Australian Institute of Health and Welfare, Canberra.

AIHW (2013) *Australia's Welfare 2013*, Cat. No. AUS 174, Australian Institute of Health and Welfare, Canberra.

AIHW (2011) *Australia's Welfare 2011*, Cat. No. AUS 142. Australian Institute of Health and Welfare, Canberra.

AIHW (2007) *Welfare Expenditure Australia 2005–06*, Australian Institute of Health and Welfare, Canberra.

Alston, M., & Kent, J. (2004). Coping with a crisis: Human services in times of drought. *Rural Society*, 14, 214–227.

Australian Government (2014) *Closing the Gap Prime Minister's Report 2014*, Commonwealth of Australia, Canberra.

Babacan H., Dale A., Andrews P., Beazley L., Horstman M., Campbell A., et al. (2012) *Science Engagement and Tropical Australia: Building a Prosperous and Sustainable Future for the North*, Department of Industry, Innovation, Science, Research and Tertiary Education <http://www.innovation.gov.au/Science/InspiringAustralia/ExpertWorkingGroup/Documents/Science%20engagement%20and%20tropical%20Australia.pdf>

Babacan H. (2011) *Social and Community Services in FNQ: Issues Facing the Sector*, unpublished consultation notes, James Cook University, Cairns.

Babacan H. & Babacan A (2007) Sustaining Human Security, *The International Journal Of Environmental, Cultural, Economic and Social Sustainability*, Vol 3(1), pp.115-122.

Balwin R., Stephens M., Sharp D. & Kelly J. (2013) *Issues Facing Age Care Services in Rural and Remote Australia*, Aged & Community Services Australia, Canberra.

Battye K. (2007) *Workforce Shortages or Dysfunctional Service Models?* Paper presented to the 9th Rural Health Conference, Albury
http://ruralhealth.org.au/9thNRHC/9thnrhc.ruralhealth.org.au/keynotes/docs/presentation/Kristine_Battye.pdf

Carson D., Taylor A. & Campbell S. (2009) *Demographic Trends and Likely Futures For Australia's Tropical Rivers*, Charles Darwin University, Darwin.

Cheers B. (1992) Rural Social Work and Social Welfare in the Australian Context, *Australian Social Work*, Vol. 45(2), pp. 11-21.

Cheers B. & Taylor J. (2001), Social Work in Rural and Remote Australia in M. Alston & J. McKinnon (eds), *Social Work: Fields of Practice*, Oxford University Press, Sydney.

Chenoweth L. & Stehlik D. (2001) *Building Resilient Communities: Social Work Practice and*

Rural Queensland, *Australian Social Work*, Vol. 54(2), pp. 47-54.

Community Services and Health Industry Skills Council (2014) *Environmental Scan 2014: Agenda for Change*, Sydney, http://www.cshisc.com.au/media/264207/2014_EScan.pdf

CSSA (2014) *Submission to the Joint Select Committee on Northern Australia*, Catholic Social Services Australia, Curtin, Canberra, <http://www.cssa.org.au/storage/CSSA%20Submission%20Joint%20Select%20Committee%20on%20Northern%20Australia%20170214.pdf>

Dale A. (2013) *Governance Challenges for Northern Australia*, The Cairns Institute, James Cook University, Cairns.

Davies A., Tonts M., Troy L., & Pelusey H. (2009) *Australia's Rural Workforce: An Analysis of Labour Shortages in Rural Australia*, RIRDC Publication 09/008, Rural Industries Development Corporation, Canberra.

DEEWR (2011) *DEEWR Annual Report 2010-2011*, Department of Education, Employment and Workplace Relations, Canberra

FAHCSIA (2011) *FAHCSIA Annual Report 2010–11*, Department of Families, Housing, Community Services and Indigenous Affairs, Canberra.

Fragar L., Henderson A., Morton C., & Pollock K. (2007) *The Mental Health of People on Australian Farms: The Facts*, Rural Industries Research & Development Corporation and Australian Centre for Agricultural Health and Safety, Barton ACT.

Gow K. & Paton D. (2008) In *The Phoenix of Natural Disasters: Community Resilience*,: Nova Science Publishers, New York.

Hall G. & Scheltens M. (2005). Beyond the Drought: Towards a Broader Understanding of Rural Disadvantage, *Rural Society*, Vol.15 (2), pp. 347-358.

House of Representatives Standing Committee on Regional Affairs (2013) *Inquiry Into the Use of 'Fly-in, Fly-Out' (FIFO) Workforce Practices in Regional Australia* http://www.aph.gov.au/parliamentary_business/committees/house_of_representatives_committees?url=ra/fifodido/report.htm

Judd F., Jackson H., Komiti A., Murray G., Fraser C., Grieve, A., & Gomez, R. (2006). Help-Seeking by Rural Residents for Mental Health Problems: The Importance of Agrarian Values, *Australian and New Zealand Journal of Psychiatry*, Vol.40, pp. 769–776.

Keast R, Waterhouse J., Murphy G. & Brown K. (2011) *Pulling It All Together: Design Considerations for An Integrated Homelessness Service System, Place-Based Network Analysis*, A report produced for FACHSIA and Qld Government, Queensland Uni of

Technology, Brisbane

Kirmayer L. J., Sehdev M., Whitley R., Dandeneau F. S. & Isaac C. (2009) Community Resilience: Models, Metaphors and Measures, *Journal of Aboriginal Health*, Vol. 5(1), pp.62-117.

Lamartina S. & Zaghini A. (2008) Increasing Public Expenditures: Wagner's Law in OECD Countries, Center for Financial Studies No. 2008/13
https://www.ifk-cfs.de/fileadmin/downloads/publications/wp/08_13.pdf

Manderson D. (2008). Not Yet: Aboriginal People and the Deferral of the Rule of Law, *ARENA*, Vol. 29(30), pp. 219-272.

NAILSMA (2012) *Towards Resilient Communities Through Reliable Prosperity: First Indigenous Experts Forum Report*, NKS 013/2012
<http://www.nailsma.org.au/hub/resources/publication/towards-resilient-communities-through-reliable-prosperity-first-indigenous>

NEF Consulting (2010) *Catalysts for Community Action and Investment: A Social Return on Investment Analysis of Community Development Work Based on a Common Outcomes Framework*, Community Development Foundation, London.

OECD (2012) *Promoting Growth in All Regions*, Organisation for Economic Cooperation and Development, www.oecd.org/site/govrdpc/50138839.pdf

Pearson N. (2013, June 15-16). Failures Can't be pinned on Aborigines, *The Weekend Australian*, p. 19.

Regional Australia Institute (2013) *Rethinking the Future of Northern Australia's Regions*, Canberra.

Roufeil L. & Battye K. (2008) *Effective Regional, Rural and Remote Family and Relationships Service Delivery*, The Australian Family Relationships Clearinghouse, Australian Institute of Family Studies, www.aifs.gov.au/afrc/pubs/resource/resource5/resource5.pdf

Stoekl N. (2010) Bridging the Asymmetric Divide: Background to, and Strategies for Bridging the Divide Between Indigenous and Non-Indigenous Economies in Northern Australia, in R. Gerritsen (ed.), *North Australian Political Economy: Issues and Agendas*, CDU Press, Darwin, pp. 106-129.

Taylor J. (2008) Ord Stage 2 and the Socioeconomic Status of Indigenous People in the East Kimberley Region, Working Paper No 49/2008, Centre for Aboriginal Economic Policy Research, Australian National University, Canberra.

Trinidad M. (2001) Centacare in the Northern Territory, *Australian Social Work*, Vol. 54(1), pp. 10-13.

UNESCAP (2013) *Asia-Pacific Trade and Investment Report 2013: Turning the Tide: Towards Inclusive Trade and Development*, United Nations Economic and Social Commission for Asia Pacific, <http://www.unescap.org/resources/asia-pacific-trade-and-investment-report-2013-turning-tide-towards-inclusive-trade-and-0>

Wakerman J., Humphreys J.S., Wells R., Kuipers P., Entwistle P., & Jone J. (2008) *Primary Health Care Delivery Models in Rural and Remote Australia: A Systematic Review*, Centre for Remote Health, Alice Springs.

Wendt S. & Hornosty J. (2010) Understanding Contexts of Family Violence in Rural, Farming Communities: Implications for Rural Women's Health, *Rural Society*, Vol. 20 (1), pp. 51-63.

Winterton R. & Warburton J. (2011) Does Place Matter? Reviewing the Experience of Disadvantage of Older People in Rural Australia, *Rural Society*, Vol 20(2), pp. 187-197.

What type of future for northern Australia's tourism sector?

For: [Regional Australia Institute \(RAI\)](#)

Professor Bruce Prideaux

The Cairns Institute

James Cook University

Australia

Australia

E bruce.prideaux@jcu.edu.au

M 0403936146

This paper is based a previous research published by the Cairns Institute. See Prideaux, Bruce (2013) *An investigation into factors that may affect the long term environmental and economic sustainability of tourism in northern Australia*. Working Paper. Cairns Institute, James Cook University, Cairns, QLD, Australia

What type of future for northern Australia's tourism sector

1 Introduction

1.1 Aim of Research

The aim of this paper is to identify issues that require urgent attention to ensure the long-term economic and environmental sustainability of the tourism sector in northern Australia. In the context of this paper environmental sustainability is described as the use of the study region's natural ecosystems (including coral reefs, wetlands, rivers, forests, fauna and flora, arid areas, landscapes and so on) as tourism attractions in a manner that does not lead to their long-term ecological decline. A definition of this nature poses specific problems in an era when ecosystems are under pressure from human interventions including agriculture, urbanisation, mining and from global warming. Economic sustainability is broadly described as the ability of the tourism sector to operate profitably over the long-term in a manner that maximises both its comparative and competitive advantages to develop a high level of competitiveness. The long term, as discussed in this research, is defined as 20 or more years.

1.2 Background

In any tourism region the relationships between demand and supply are continually changing for a plethora of reasons including changing consumer tastes, innovation, changes in the cost and quality of inputs, the regulatory environment, changing elasticity of demand, environmental factors, political changes and destination image. In the tourism sector all destinations face the ongoing task of matching consumer 'push' factors (demand side factors that include the desire to travel, income, travel preferences etc) with destination 'pull' factors (supply side factors that include price, quality and range of experiences on offer, security etc). When a mismatch occurs, for example where a destination fails to respond to changing consumer demand (ie change in push factors) by adjusting its pull factors, or where the destination becomes uncompetitive, tourism demand will plateau or fall. Arresting a decline of this nature will generally require identifying new markets, adjusting product offerings, attracting new investment and encouraging innovation.

Over the past 30 years the tourism sector in northern Australia has developed an impressive catalogue of nature-based experiences but the markets they were originally built to serve have changed and new groups of consumers have taken their place, often with demands for experiences and services that simply did not exist in the past. To illustrate, the initial stage of expansion of Cairns into the international market was primarily targeted at the Japanese market in addition to Europe and the US. The infrastructure built to service these markets still exists but the markets have changed dramatically. The total number of Japanese visiting Cairns in the year to September 2013 was 94,000, down from the 2006 high point of 251,000. In the same period the number of Chinese visitors to Cairns has risen from 34,384 in the 12 months to September 2006 to 144,000 for the 12 months to September 2013 and

is forecast to continue to rise provided the region can deliver the type of experiences expected by Chinese visitors.

In the future, further changes will be precipitated by anticipated and unanticipated global scale events, new demand and supply side opportunities and threats, changes in the environment and changes in government policy. Anticipated events in the future include population ageing, changes in the composition of key markets, urbanisation, emergence of new destinations, changing demand for tourism experiences, the emergence of the 'experience' economy and the manner in which national economies respond to the changes generated by global warming. Unanticipated or difficult to forecast events may include further disruptions to the international economy, pandemics, political turmoil, natural disasters and events that we currently have no forewarning about.

The health of the environment, not just as a tourism resource but as a key life support mechanism for all living things, is likely to become of increasing concern as: the global population continues to grow; global warming driven impacts accelerate (IPCC 2013); global urbanisation rates continue to climb; and there is a growing realisation that an unhealthy environment can have a significant adverse impact on individual and community health as demonstrated by current pollution problems in China. How governments, consumers and the private sector respond to these and other factors will have a significant impact on the future success of the tourism sector.

Over the last decade northern Australia's tourism sector has stagnated as illustrated in Figure 1. Reasons given for decline include the high value of the Australian Dollar, impacts of global events such as the Global Financial Crisis (GFC), structural issues within the industry and growth of new international destinations. The bottom line however is that many Australian destinations are failing to offer the types of experiences demanded by contemporary tourists.

Given the extent of the unanticipated changes in recent decades it is imperative that the region's tourism industry identifies issues that may affect it in the future, both in environmental and economic terms. This is a difficult task given that the future is likely to be affected by forces that are not yet apparent.

1.3 Limitations of this Discussion

The range of factors that could be considered in a paper of this nature are enormous, complex and multi-jurisdictional and for these reasons many are beyond the immediate scope of this research. Key limitations of this discussion are:

- The future is difficult to predict however the observations in this paper highlight factors that at the time of writing appear to have some capacity to influence future events.
- No attempt is made to give predictions of the future.
- Results are based on data collected through extensive interviews across northern Australia in 2012 and early 2013. As a result the potential impact of the recently announced Aquis Resort (Aquis 2013) project in Cairns was not included in the discussions. If the project does go ahead it is likely to create a new wave of expansion of the tourism industry based primarily on growth in the Chinese market in a manner similar to that which occurred with the rapid expansion of Japanese visitors in the past.
- It is very likely that many of the factors that will in the future shape the study area will not be identified in this paper; such is the nature of the future.
- Many of the factors dealt with in this paper were not identified by previous reports that examined future trends concerning northern Australia and have therefore escaped scrutiny in the past.
- Australia's post-resources economy will require numerous policy responses by state and federal governments. While this factor will be a key driver of change in many areas of the national economy, this paper will not attempt to identify specific responses.

2 Recent Tourism Trends

2.1 The Global Context

During the period between 1995 and 2013 international arrivals increased by 189% from 528 million to 1 billion. In a recent United Nations World Tourism Organisation (UNWTO 2011) report global tourism arrivals were projected to continue increasing to reach 1.8 billion by 2030. Between 2010 and 2030 the share of international tourism received by the Asia Pacific region will increase from 22% to 30% while the number of outbound tourists from the region will grow from 204 million to 541 million.

2.2 The Study Region

Figure 1 (TNQ) illustrates the problem faced by the tourism sector in northern Australia. In Darwin the combined total of domestic and international arrivals in 2013 (524,000) was 9%

below those of 2000 (574,000). In Western Australia's North West centred on Broom, 2013's combined domestic and international arrivals were 300,000, down 30% on 2000 arrivals (426,000). The extent of the study region's failure to match arrival figures for 2000 is magnified when it is compared to international growth patterns over the same period.

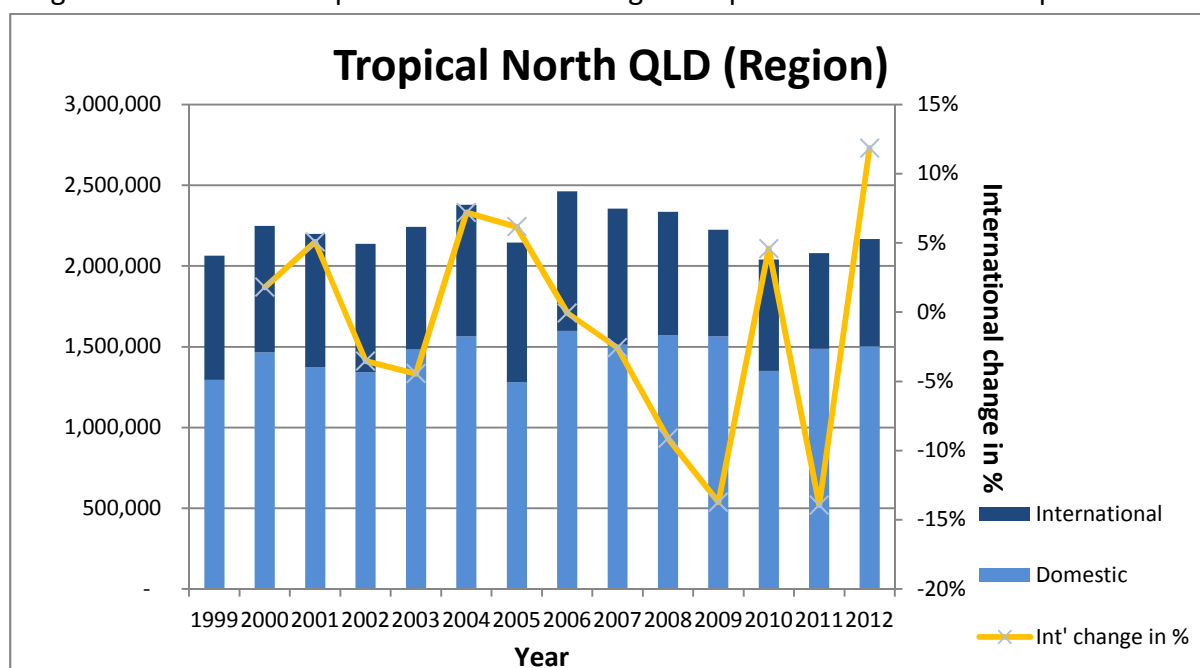


Figure 1. Annual arrivals (domestic and international) and percentage change in international arrivals for Tropical North Queensland 1999- 2012

Source: Tourism Research Australia (2013)

Questions that arise from visitor patterns in the period 2000 to 2013

Given that the study region's tourism industry has not grown in the last 13 years the following questions (Table 1) need to be addressed:

Table 1 Major questions in relation to tourism in the study region

1. Why has the region suffered a decline in its competitive position since 2000?
2. Is further growth achievable?
3. Is growth necessarily the best course for the future? If yes, what strategies are required to maximise the study region's comparative and competitive positions?
4. What type of tourism experiences will consumers demand in the future?
5. What externalities will have the greatest impact on tourism markets in the future?
6. How will future externalities affect the study region's competitiveness and what preparations need to be undertaken to enable the region to prepare for significant changes of this type?

These questions, but not the potential answers, provide the context for the following discussion.

3. Discussion

3.1 Relationship between the past, present and future

While this paper has a very specific focus on the future it is useful to look into the past to identify issues that may resurface, perhaps in a different form, and impact on the future. The GFC for example was only the latest of a number of economic crises that have impacted on the tourism industry. Given that it is possible to learn lessons from the past, this paper uses the relationships that exist between the past, present and future illustrated in Figure 1 as a lens to identify the type of events that may lie in the future and that are likely to impact on the regional and global tourism sectors.

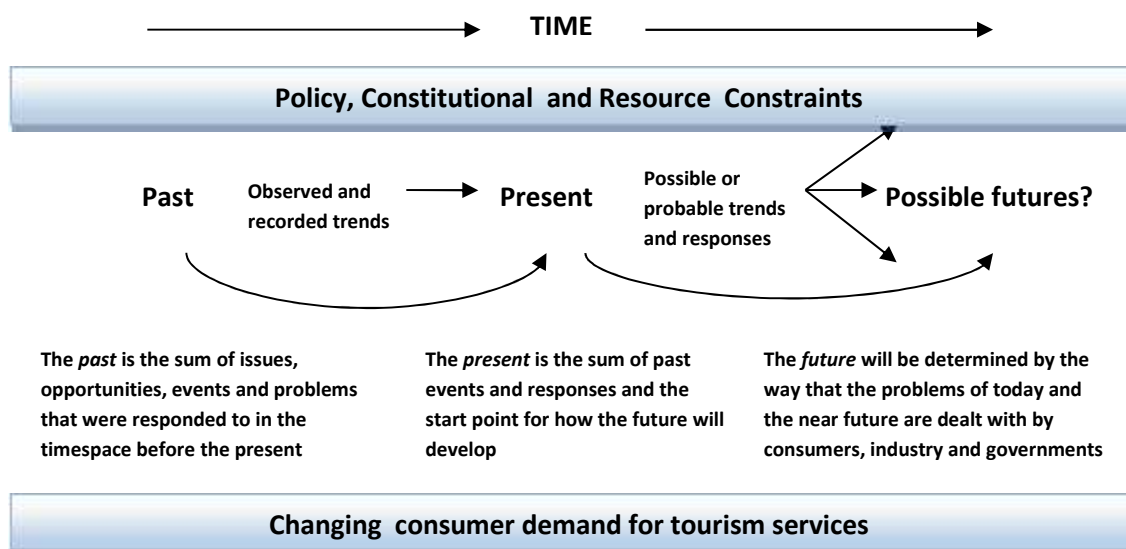


Figure 1 The relationship between the past, present and future in linear time

Source: Adapted from Prideaux (2009)

Figure 1 presents a very simplified view of the relationship between the past, present and future and argues that the present is the sum of how policy makers, the private sector and consumers responded to the issues, opportunities, events and problems of the past within the policy and resource restraints and patterns of consumer demand that have shaped these responses. Similarly, the future will be determined by the manner that today's decision makers deal with the problems and opportunities of today and those of the near future. Given that there are multiple options for dealing with a particular problem or suite of problems there is an opportunity for multiple futures. This observation indicates that although the decisions we make today influence the future we may have only limited control over the eventual outcome. For example, policy may have unanticipated outcomes,

unanticipated shocks may affect the tourism system or a new innovation may create a significant disruption in tourism markets.

Figure 1 also contains a cautionary element that decisions made about the future should avoid the rhetoric used by policy makers and managers to explain the failure, and successes, of the present. The future will have its own dynamics and offers the opportunity for a range of outcomes that will be determined by the decisions made in the present.

This understanding is vital if the questions raised in Table 1 are to be responded to by policy makers and the private sector in a way that capitalises on the study region's comparative advantages and convert these into a competitive advantage that can underpin renewed growth.

3.2 Competitiveness

A key element in determining a destination or region's ability to develop and retain markets is its level of competitiveness (Ritchie and Crouch 2000). From a regional perspective competitiveness in its most basic form is the ability of a region to identify its key selling propositions, identify markets that are likely to purchase these propositions, create a market space where these products are able to be purchased, identify change and future threats, and have the ability to maintain this process over a long period of time in a manner that is both environmentally and economically sustainable. A region's level of competitiveness will determine the type and number and visitors it can expect to receive. Regions that lose their competitiveness face the possibility that they will begin to decline as their existing markets seek more competitive alternatives. Conversely, regions that look for new markets and products have the potential to thrive.

4 Methodology and Findings

4.1 Methodology

The research used a three step study methodology based on (1) a review of previous research; (2) an environmental scan to identify factors that could impact on the tourism sector in the future; and (3) interviews with 25 key public and private sector stakeholders in the northern Australia tourism sector (for a detailed discussion see Prideaux 2013).

4.2 Findings

The following points summarise the major findings of this research:

- The region's natural environment does not appear to being used in an unsustainable manner by the tourism sector.
- This situation will change in the long-term as the impact of global warming is reflected in changes in the structure and resilience of the region's ecosystems.

- The long-term economic sustainability of the region's tourism sector is being adversely affected by the growing mismatch between consumer demand and what the region has chosen to supply.
- In the long-term continued over-reliance on the region's ecosystems to attract tourists is likely to lead to continued stagnation.
- Stagnation can only be overcome with new investment targeted at new markets and offering new experiences. Several proposed integrated resorts in the Cairns region (Aquis Resort and Ella Bay Resort) exemplify the type of large scale investment that may be required to reignite tourist demand in the study region.
- The Chinese market offers significant potential for growth throughout the study region but the types of experiences currently offered will need refreshing to attract this market.
- The need for new activities and experiences to augment the study region's current suite of environmental experiences has not been widely recognised.
- The ongoing health of the region's ecosystem is closely tied to the health of the region's tourism economy.

Factors that have led to the findings outlined above include:

- Many parts of the study region continue to display a reactive mentality with a limited vision of the future.
- With a few notable exceptions there has been limited innovation in recent years.
- There appears to be a reluctance to accept that past plans and policies had failed to ignite growth.
- The region's traditional product mix, largely based on nature-based tourism, has consistently failed to stimulate a new phase of growth.
- The need to develop new non-environment centred activities and experiences has been largely neglected.

4.3 Observations and Challenges

It is apparent that there is a major gap between the views of key industry stakeholders and the results outlined above. Before considering a way forward it is worth considering the following observations:

- The future rarely takes the form predicted;
- Little thought has been given by the Australian tourism sector to many of the factors that will impact on the future environmental and economic sustainability and competitiveness of the tourism industry, and;

- Without proactive action the sector will continue to find itself in the position of reacting to challenges, not taking advantage of new opportunities.

The challenge for stakeholders is to consider how the challenges of the future should be confronted.

Other issues that arise from this research include:

- The need to consult communities involved in tourism activity to establish the level of support for increased tourism if further growth is retained as a policy objective;
- Are tourism growth and economic and environmental sustainability mutually compatible objectives?
- Will the impact of global warming degrade existing ecosystems and landscapes that are currently tourism drawcards?
- Will future generations of tourists be satisfied with the current range of tourism offerings?
- Are data currently collected sufficiently robust to understand what is occurring at the regional level and be used to facilitate predictions on what might happen in the future?;
- Is there a need to build new platforms to identify future opportunities and threats and pass these back to the industry?; and
- Is sustainable tourism achievable in areas where other industries such as mining are able to generate greater economic returns?

5 Conclusion

Given that current policies and strategies have not succeeded in stimulating growth over the last 13 years it is apparent that a reappraisal of the long-term direction of the study region's tourism sector is required. Understanding the role of change is a fundamental challenge but one that must be addressed. The key steps required in such a reappraisal are to:

First, determine a vision for the tourism sector based either on maintaining the status quo or embarking on growth. Answering the questions posed in Table 1 about visitor patterns over the last decade will assist in this process.

Second, establish a mechanism for co-ordinating tourism strategies to assist in this process.

Third, establish a regionally based research group to provide region relevant analysis of the tourism sector.

One way of developing an understanding of change and how it is currently and will in the future impact on tourism is to establish a region wide monitoring system able to produce regular reports based on data collected in the region as well as externally. The development of an annual or biannual scorecard is one tool that should be central to any monitoring system.

References

- Aquis Resort (2013), http://aquisgreatbarrierreefresort.com/wp-content/uploads/2013/08/Aquis-GBR-Resort_Project-Booklet_MedRes1.pdf accessed 10 Oct 2013
- IPCC (2013) *Climate Change The Physical Science Basis Headline statements from the summary for Policy Makers*
http://www.ipcc.ch/news_and_events/docs/ar5/ar5_wg1_headlines.pdf accessed 16 October 2013.
- Long-Term Tourism Strategy <http://www.ret.gov.au/tourism/documents/tmc/jackson-report-july09.pdf> accessed 15 May 2013.
- Prideaux, B. (2009) *Resort Destinations: Evolution, Management and Development*, Butterworth Heinemann, Oxford., pp1-310.
- Prideaux, Bruce (2013) *An investigation into factors that may affect the long term environmental and economic sustainability of tourism in northern Australia*. Working Paper. Cairns Institute, James Cook University, Cairns, QLD, Australia
- Ritchie, J.R. Brent and Crouch, G.I. (2000) The competitive destination: A sustainability perspective, *Tourism Management* 21 (1), 1–7.
- UNWTO (2011). *Tourism Towards 2030 Global Overview*. Madrid: UNWTO.

Title:

Northern Australia Agriculture Policy: Opportunities and Risks

Author:

Jim Turnour

Affiliations:

Adjunct Research Fellow, The Cairns Institute, James Cook University.

PhD Candidate, Northern Futures Collaborative Research Network, The Cairns Institute, JCU.

Contact:

Email: jim.turnour@jcu.edu.au

Phone: 0409 093420

1. Introduction

Government policy not always in obvious ways has played an important role in shaping agriculture in northern Australia (NA). Trade, immigration and Indigenous policies have been important as have economic investments in infrastructure and research, development and extension (RD&E). These policies have evolved over the past century influencing agriculture in different ways. This history is briefly discussed to provide a context, prior to considering the current opportunities and risks for agriculture in NA.

Understanding and learning from the past is important as pioneering narratives continue to influence government policy in NA. This is despite the emergence of neoliberal policies over recent decades that have had a profound influence more broadly on Australian agriculture. As in the past, there are important choices to be made by governments that will shape not only agriculture, but related communities and the type of society we have in NA.

The difficulties of farming in NA have been well documented with relatively infertile soils, variable and highly intense rainfall, intense radiation and soil temperatures and pests and diseases. Combined with distance from major markets and infrastructure constraints these all limit development (Chapman, Sturtz, Cogle, Mollah & Bateman, 1996; Cogle, Bateman & Heiner, 1991; Courtenay, 1978; Stewart, 1962; Webster, et al., 2009). These challenges have for decades limited agriculture development to extensive pastoral grazing in the majority of the Northern Territory and Western Australia. More intensive agricultural development has occurred in coastal north Queensland which is relatively closer to southern markets and has more favourable soils and climatic conditions. As a result, approximately 88% of the total agriculture production from NA is produced in Queensland (Table 1)¹ where more than 70% of the region's population resides (BITRE, 2011).

Region	Agriculture - total value (\$)	Crops - total value (\$)	Pasture, cereal and other crops cut for hay - total value (\$)	Crops (excluding hay) - total value (\$)	Nurseries, cut flowers and cultivated turf - total value (\$)	Vegetables - total value (\$)	Fruit - total value (\$)	Livestock slaughtering - total value (\$)	Livestock products - total value (\$)
NORTH AUSTRALIA (W.A.)	178 105 879	58 951 713	2 364 689	56 587 024	1 532 788	44 673 843	2 803 589	117 719 657	1 434 507
PILBARA REGION	34 734 747	59 500	59 500	0	0	0	0	34 292 045	383 202
KIMBERLEY REGION	143 371 132	58 892 213	2 305 189	56 587 024	1 532 788	44 673 843	2 803 589	83 427 612	1 051 305
WESTERN AUSTRALIA STATE TOTAL	5 793 283 205	3 930 320 942	162 294 080	3 768 026 862	190 988 933	292 398 834	261 650 155	1 213 352 135	649 610 127
NORTH AUSTRALIA (N.T.)	239 188 013	80 402 466	9 314 141	71 088 324	8 888 690	14 413 206	47 001 805	156 996 457	1 789 088
DARWIN-EAST ARNHEM REGION	83 311 690	45 697 084	3 903 162	41 793 921	8 061 378	4 297 837	28 856 612	35 828 659	1 785 946
KATHERINE-LOWER TOP END REGION	47 974 320	23 805 455	4 150 442	19 655 013	800 169	9 400 619	9 247 695	24 168 864	0
BARKLY-CENTRAL NT REGION	107 902 003	10 899 927	1 260 537	9 639 390	27 143	714 750	8 897 498	96 998 934	3 142
NORTHERN TERRITORY STATE TOTAL	306 238 922	80 676 090	9 570 189	71 105 901	8 888 690	14 413 205	47 001 806	223 773 744	1 789 088
NORTH AUSTRALIA (QLD)	2 966 025 385	1 771 930 100	12 931 764	1 758 998 338	51 260 589	309 178 819	507 548 822	1 125 563 908	68 531 373
MACKAY REGION	883 227 929	569 655 762	4 739 287	564 916 476	10 717 914	211 435 080	34 057 858	308 092 238	5 479 926
NORTHERN REGION	626 728 875	470 038 306	1 987 024	468 051 284	8 513 977	67 363 336	20 774 879	150 319 893	6 370 675
FAR NORTHERN REGION	953 141 128	730 237 983	4 207 927	726 030 055	32 028 698	30 380 403	452 716 085	187 017 674	35 885 472
NORTH WEST	502 927 453	1 998 049	1 997 526	523	0	0	0	480 134 103	20 795 300
LONGREACH REGION	0	0	0	0	0	0	0	0	0
QUEENSLAND STATE TOTAL	8 708 905 011	4 167 944 688	114 726 487	4 053 218 201	297 033 120	945 026 775	910 769 470	4 125 157 859	415 802 464
NORTH AUSTRALIA SUB-TOTAL	3 383 319 277	1 911 284 279	24 610 594	1 886 673 686	61 682 067	368 265 868	557 354 216	1 400 280 022	71 754 968
AUSTRALIA TOTAL	14 808 427 138	8 178 941 720	286 590 756	7 892 350 964	496 910 743	1 251 838 814	1 219 421 431	5 562 283 738	1 067 201 679

Source: ABS, 2008. *Agricultural Commodities: Small Area Data, Australia, 2005-06 (Reissue)*, Cat. 7125.0

Today development opportunities are changing with the rise of Asia and improvements in infrastructure and technologies (Commonwealth of Australia, 2013; Stephens, 2012). This may enable the physical and climatic limitations of some of the more remote parts of the north to be overcome and there is renewed interest in a number of new agricultural precincts (Ag North, 2014). Large corporate investors are emerging as potentially major players in these developments (Barnett

¹ Table originally published by the Bureau of Infrastructure, Transport and Regional Economics. (2009). *Northern Australia statistical compendium*. Retrieved from http://www.bitre.gov.au/publications/2009/other_003.aspx

& Grylls, 2012; De Lacy, 2014). This could see a new form of agro-industrial development emerge in the north challenging established stereotypes of Australian agriculture based on family farming.

While proposals are being put forward to develop new agricultural precincts there is also a need to recognise that many established rural communities and family farms are in decline (Gray & Lawrence, 2001). Agriculture is changing driven by globalisation, industry deregulation, declining terms of trade, technological innovation, consumer preferences and an aging farm population (Productivity Commission, 2005). Family farmers who are resisting these changes are either getting bigger, working off farm, or developing new farming systems that emphasise environmental sustainability, food safety, value adding and diversification to generate new income streams and premium prices for agricultural products. The latter providing opportunities to consider alternate place-based models of agricultural development in NA (Turnour, et al., 2014).

2. A brief history of agriculture in NA

Australian agriculture development policy can be broken up into three broad periods (BTRE, 2003).

2.1 Colonial policies (prior to the 1920s)

Prior to the 1920s, white settlers pushed north to establish pastoral leases and plantations and Chinese migrants began farming for a livelihood following the gold rush (Atherton Centenary Committee, 1985). This period involved frontier conflict with Aboriginals who were driven off their land (Kid, 1997; Trudgen, 2000). The Queensland government in desperate need of income in the 1800s supported the establishment of large plantation sugar mills built on indentured South Sea Islander labour. The advent of the White Australia policy after Federation forced the disbanding of these large plantation mills and a shift in government policy towards the establishment of family farms and cooperative marketing arrangements (Griggs, 2010).

2.2 Pre-trade liberalisation era (1920s to 1970s)

The pre-trade liberalisation era between the 1920s and 1970s saw post war immigration combined with protectionist agricultural policies supported by government investment in infrastructure and RD&E. This enabled a rapid expansion of agriculture. In coastal north Queensland which was the physically least difficult and economically least peripheral to southern markets, a large number of small rural communities sprang up as migrants took up land to grow sugar cane, tobacco, field crops and run dairy and beef cattle. The Mareeba Dimbula Irrigation Area was built and the Brigalow scheme was established in Central Queensland expanding farming and beef cattle production (Courtenay, 1978; Harrison & Longworth, 1977).

During this period government also sought to develop more remote parts of the Northern Territory and Western Australia. Significant investments were made in infrastructure including the Ord River Irrigation Scheme (ORIS) and in RD&E through departments of agriculture and the CSIRO.

Experiment stations and pilot farms were established to trial a great variety of crops but farming struggled in the NT and Western Australia due to distance from markets, pest and diseases and less favourable soils and climatic conditions.

2.3 Post trade liberalisation era (1980s to present)

By the 1970s economists were becoming central to the policy making process and industries increasingly had to justify the assistance they received (Botterill, 2005). By the 1980s policy making entered what has widely been described as a period of neoliberal economic reform of the Australian economy including agriculture (Beeson & Firth, 1998). Successive Australian governments have opened up the economy to increasing global competition through deregulating markets, privatisation, labour market reforms and free trade agreements.

These economic reforms have led to a decline in many parts of rural and regional Australia as smaller farms have struggled to compete and governments have cut services (Gray & Lawrence 2001; Lawrence, 1987). Improved transport and technology has also changed work practices and the way that people can access goods and services contributing to the decline of many smaller rural towns (BITRE, 2014).

Governments responded to this decline through the implementation of regional development policies in the 1990s (Beer, et al., 2005). Regional Development Australia is the most recent attempt at this approach (RDA, 2013). Governments have tended through regional programs to devolve responsibility for planning while maintaining overall power and control over funding and decision making. This has limited the capacity of programs to empower regional communities and meant that at times, funding has been used to address political problems rather than long term strategic regional agendas (Beer, Clower, Haughtow & Maude, 2005; Maude, 2004).

During the 1980s and 1990s environmentalism also emerged as a social movement that began to call into question the sustainability of many agricultural practices. The National Landcare and Property Management Planning programs began to encourage farmers to take responsibility for the sustainable management of their natural resources and environment (Lockie & Higgins, 2007). Today regional natural resource management bodies have been established across the country and significant investments are being made to improve agricultural practices (Dale, McKee, Vella & Potts, 2013). As a result, governments, industry and the community are much more aware of the risks of inappropriate agricultural development on the environment.

3. Future agriculture policy for northern Australia

Government policies will be as important in shaping the future of agriculture in the north as they were in the past. The *Green paper on developing northern Australia* provides a guide to the current government's thinking (Department of Prime Minister and Cabinet, 2014a). The paper focuses on creating the right environment to enable private sector investment for new developments with a particularly focus on emerging opportunities in Asia.

There will need to be important decisions made about existing industries as well as new development opportunities. These could be competing agendas or synergistic depending on the approach adopted. Indigenous and immigration policies are re-emerging as important influences on the type and shape of potential developments. Indigenous Australians have legal rights and interests in the majority of land in NA (Walker et al., 2013) and must now be engaged in decision making about any new developments. They are also major landowners in their own rights and there are opportunities to increase production and profitability from Indigenous owned lands (NAILSMA, 2014). Immigration policy could also play an important role in new developments as there are signs that foreign investors are wanting to use overseas labour to support new large scale agricultural developments as part of negotiations around free trade agreements (Beder, 2014).

Different visions for NA agriculture development are emerging. The seemingly more populist approach detailed in the Coalition's 2030 Vision for Developing Northern Australia (Liberal National Party, 2013) and reflected in 2013 Labor Party Northern Australia election policies (Liberal National Party, 2013) would see significant new government investment in irrigation infrastructure and R&D. This vision of the north as a food bowl although populist has risks. A more modest vision for agriculture development in the north was set out in the Northern Australia Land and Water Taskforce Report. This vision developed by industry, Indigenous and conservation interests and underpinned by a CSIRO Science Review would rely on governments improving the investment

environment for smaller scale agricultural development through for example RD&E and regulatory and tenure reform (NALWT, 2009).

The diversity of the north and the competing visions and narratives of vested interests can make untangling fact from fiction difficult. There is a need to maximise the contribution of established industries while also looking to new development opportunities. This requires an assessment of not only the physical and economic constraints and opportunities but a consideration of development proposals in the context of evolving social and environmental values.

3.1 Irrigation and a northern food bowl

For generations political and public discussion around developing agriculture in NA has centred on the idea of the north becoming a food bowl for Asia. Proposals for new agriculture developments in the north, however, differ from earlier periods in that the focus of developments is now often large scale corporate foreign investment rather than the establishment of family farms and rural communities as occurred during the pre-trade liberalisation era post the second world war. The \$700 million Ord Stage 2 development, for example, led by the Chinese Kimberly Agricultural Investments is underpinned by \$311 million in funding from the Western Australian Government Royalties for Regions Program (Barnett & Grylls, 2013). Large corporate investors are similarly seeking government support for other projects, for example, the Integrated Food and Energy Development project in the Gilbert Catchment of Queensland (De Lacy, 2014). The emerging NA Agriculture Cooperative Research Centre bid is structured to attract corporate investors and is focused on development in agriculture precincts with irrigation potential (Ag North, 2014).

Irrigation is essential to any large scale expansion of agriculture in the north as the region's climate and soils make dry land farming unreliable (Webster et al., 2009). Large scale dam based irrigation schemes, however, have been economically unviable without significant government investment in the water infrastructure. A recent study of the Flinders and Gilbert Rivers in Queensland again confirmed this analysis (CSIRO, 2013). An earlier assessment of the ORIS found that between 1958 and 1991 it incurred a combined public private loss of \$687.2 million in 2009 dollars corrected for inflation (Webster et al., 2009). It is not surprising then that new private investments like that occurring in Ord Stage 2 have been contingent on government funding. Initial estimates of the costs of new in stream dams to develop irrigated agriculture in the Gilbert River catchment is one billion dollars. It is estimated that between 20,000 to 30,000 hectares of cropping could be established and reliably irrigated in 85% of years because of high rainfall variability (CSIRO, 2013).

Further investments may also be required in roads and social infrastructure including schools and health facilities if irrigation was to be expanded in NA to support associated increases in population. Alternatively, foreign investors may want to import foreign labour to undertake new agricultural developments (Wroe & Whyte, 2014). This would likely require new immigration policies potentially adding to concerns in relation to foreign investment in Australian agriculture (Keogh, 2012).

Large scale irrigated agriculture developments also bring with them significant environmental risks. These are difficult to quantify and can take decades to emerge. Any new developments will require stringent environmental impact assessments so that the mistakes of southern irrigation schemes do not occur in the north (Rayner, 2013). Given these risks and a history of poor returns on investment it makes sense for the Australian government to resist populous calls for large investments in new irrigation projects, particularly given the current fiscal context (Hockey, 2014).

3.2 Mosaic agriculture and maximising returns from the beef industry

The Northern Australia Land and Water Taskforce examined the opportunities for development in northern Australia based on a more modest vision for agricultural development. The Taskforce brought together industry, Indigenous and environment interests and worked with a CSIRO scientific review team to develop a new vision for NA based on available land and water resources. The taskforce focused on the more remote parts of northern Australia with already well developed coastal Queensland excluded from its Terms of Reference (NALWT, 2009).

It estimated that approximately 40,000 to 60,000 ha of irrigated agriculture could be developed in NA. An initial increase over 20 years could raise the gross value of agricultural production by 40% from 2000 levels based on new agriculture production systems reliant on rapid advances in biotechnology and farm management practices. If the industry doubled in size over 20 years, 1,400 full-time jobs would be created, the regional population could increase by an extra 2,200 people and the gross regional product would increase by about \$185 million (Webster et al., 2009).

The Taskforce presented an alternative vision to major agro-industrial development based on dams. Irrigation, it found, was more likely to be sustainably develop based on a large number of small scale ground water fed irrigation systems. These smaller scale irrigation developments could complement established industries (NALWT, 2009). For example productivity in the northern beef industry could be significantly increased through irrigated fodder cropping and provide feed products to the live export trade.

Opportunities to increase profitability and productivity within established agricultural industries often gets overlooked in discussion about developing NA. Many of these industries have struggled for survival as a result of industry deregulation but are now more productive and are well placed to profit from emerging Asian markets. On the Atherton Tablelands only 51 farmers remain supplying the Malanda dairy factory where there were 186 in 2000 just prior to industry deregulation. The sugar industry is similarly facing a decline in farm numbers as farmers retire and businesses struggle for survival post deregulation (Turnour et al., 2014).

Family farm businesses have adopted three distinct strategies to continue farming depending on their capabilities and attitudes to risk. They have sought off-farm employment, increased their scale of production or sought to diversify into niche markets. Some farmers have adopted one or a combination of these strategies. No matter which strategy is adopted, understanding and leveraging the advantages of place has become more important. The Atherton Tablelands dairy industry has leveraged its competitive advantage in the supply of fresh milk to north and west Queensland to survive.

Where farmers have been able to develop new niche markets these have been linked to new place-based regional supply chains leveraging premium prices for organic products and the regions tourism industry. Industries see opportunities to expand these regional supply chains into Asia and the Pacific but need support to further develop markets, supply chains and farming systems (Turnour et al., 2014).

3.3 Place-based regional development

Place-based approaches encourage collaboration between a range of different actors including industry, community, businesses and government to tackle complex social, economic and environmental problems within a defined geographic location (Barca, McCann & Rodríguez-Pose, 2012; Tomaney, 2010). They have been adopted as a framework for natural resource management in Australia and are integral to the new Australian Government's Indigenous Advancement Strategy (Department of Prime Minister and Cabinet, 2014b). Internationally they have been identified as

providing an alternative approach to tackling entrenched agriculture and rural community decline as a result of globalisation and economic reforms by supporting regions to leverage their innate competitive advantages (OECD, 2006).

In Far North Queensland a place-based agriculture development framework has been developed to identify and support the emergence of new agriculture markets, supply chains and farming systems. The framework provides opportunities to leverage additional value from agriculture particularly for family farmers through value adding, niche marketing and diversification not only within agriculture but across sectors including tourism, manufacturing and emerging ecosystem services markets (McCarthy, 2014; Turnour et al., 2014).

Historically Australian agriculture has relied on maintaining its competitive advantage by continually increasing productivity whilst marketing its products through bulk commodity markets. The emerging Asian middle classes, however, are not necessarily seeking cheap food but safe high quality products for which they are prepared to pay a premium (The Economist Intelligence Unit, 2013). Place-based regional development approaches provide an opportunity to identify and support the development of these niche high value markets based on regional competitiveness.

National and international research has identified a range of factors that determine a region's competitiveness including social and human capital, enabling infrastructure and natural resources and strong regional governance and institutions (Enright & Petty, 2013; OECD, 2012; Regional Australia Institute, 2013a; Turnour, et al., 2014). An analysis of NA's competitiveness by the Regional Australia Institute (2013b) identified investment in infrastructure and human capital as being particularly important to unlock NA's potential. Their report highlighted the need for a regional approach to development that recognised the diverse challenges and opportunities within the different parts of NA.

4. Conclusions

Communities in the north welcome the renewed interest in developing NA. It is important however that we move beyond old myths about big dams and northern food bowls. There are opportunities for new developments and to leverage greater value from established agriculture industries. If this is to be achieved, additional investments are needed to develop new markets, supply chains and farming systems.

Development policy needs to be able to respond to the different opportunities and risks presented by the diversity of regions and communities in NA. Place-based regional development approaches provide one way to achieve this by engaging local communities in planning and development based on regional competitive advantage. Importantly, applying place-based approaches to agricultural development in the NA would align agriculture policy with natural resource management and Indigenous policy approaches, both critically important to the successful sustainable development of NA.

5. Recommendations

1. That place-based agricultural development approaches be adopted so as to identify and leverage regional competitive advantages and to ensure effective industry and community engagement in decision making.
2. That agricultural development in NA be driven by markets and supply chains with a particular focus on developing niche high quality markets for Asia rather than Australia's traditional focus on increasing productivity within bulk commodity markets to remain competitive.

3. Agricultural development requires secure access to resources including land and water. Tenure reform may, therefore, be required in some circumstances to not only support development but to set aside areas for conservation. State governments should use market mechanisms to allocate water resources allowing smaller mosaic developments to compete fairly against larger agricultural developments.
4. That established industries, not just green field developments, be a focus of NA agricultural development.
5. Where major green field agriculture developments are considered, decisions should be based on sound economic, environmental and social impact assessments not driven by populous narratives about northern food bowls.

6. References

- Ag North. (2014). *Ag North Cooperative Research Centre proposal*. Retrieved from [http://www.agnorthcrc.com/files/AgNorth%20Brochure_FA\(web\).pdf](http://www.agnorthcrc.com/files/AgNorth%20Brochure_FA(web).pdf)
- Atherton Centenary Committee. (1985). *Tall timber and golden grain, Atherton 1885-1985*. Atherton, Qld: Atherton Centenary Committee.
- Australian Labor Party. (2013). *Growing the north: A plan for northern Australia*. Barton, ACT: Australian Labor Party. Retrieved from http://d3n8a8pro7vhmx.cloudfront.net/australianlaborparty/pages/935/attachments/original/1376536954/Fact_Sheet_-_Growing_the_North.pdf?1376536954.
- Barca, F., McCann, P., & Rodríguez-Pose, A. (2012). The case for regional development intervention: Place-based versus place-neutral approaches. *Journal of Regional Science*, 52(1), 134-152. doi: 10.1111/j.1467-9787.2011.00756.x
- Barnett, C., & Grylls, B. (2013). *Ord development takes important step*. Ministerial media statement. Retrieved from <http://www.mediastatements.wa.gov.au/pages/StatementDetails.aspx?listName=StatementsBarnett&StatId=7425>
- Beder, S. (2014, April 13). Beware sting in tail of free trade agreements, *Sydney Morning Herald*. Retrieved from <http://www.smh.com.au/comment/beware-stings-in-tail-of-free-trade-agreements-20140413-36kl.html>
- Beer, A., Clower, T., Haughtow, G., & Maude, A. (2005). Neoliberalism and the institutions for regional development in Australia. *Geographical Research*, 43(1), 49-58. doi: 10.1111/j.1745-5871.2005.00292.x
- Beeson, M., & Firth, A. (1998). Neoliberalism as a political rationality: Australian public policy since the 1980s. *Journal of Sociology*, 34(3), 215-231. doi: 10.1177/144078339803400301
- Botterill, L. (2005). Policy change and network termination: The role of farm groups in agricultural policy making in Australia. *Australian Journal of Political Science*, 40(2), 207-219. doi: 10.1080/10361140500129982
- Bureau of Infrastructure, Transport and Regional Economics (BITRE). (2011). *North Australian statistical compendium 2011 update*. Canberra: BITRE. Retrieved from http://www.bitre.gov.au/publications/2011/files/stats_014.pdf
- Bureau of Infrastructure Transport and Regional Economics (BITRE). (2014). *The evolution of Australian towns, report 136*. Canberra, ACT: BITRE. Retrieved from http://www.bitre.gov.au/publications/2014/files/report_136.pdf
- Bureau of Transport and Regional Economics (BTRE). (2003). *Government interventions in pursuit of regional development: Learning from experience, working paper 55*. Canberra: Commonwealth of Australia. Retrieved from http://www.rdasouthwest.com.au/_content/documents/Working%20Paper%2055%20-%20Govt%20interventions.
- Chapman, A., Sturtz, J., Cogle, A., Mollah, W., & Bateman, R. (1996). Farming systems in the Australian semi-arid tropics - a recent history. *Animal Production Science*, 36(8), 915-928. doi: 10.1071/EA9960915

- Cogle, A., Bateman, R., & Heiner, D. (1991). Conservation cropping systems for the semi-arid tropics of north Queensland, Australia. *Animal Production Science*, 31(4), 515-523. doi: 10.1071/EA9910515
- Commonwealth of Australia. (2013). *Australia in the Asian century white paper*. Canberra: Commonwealth of Australia. Retrieved from <http://asiancentury.dpmc.gov.au/white-paper>
- Courtenay, P. P. (1978). Agriculture in north Queensland. *Australian Geographical Studies*, 16(1), 29-42. doi: 10.1111/j.1467-8470.1978.tb00313.x
- CSIRO. (2013). *Agricultural resource assessment for the Gilbert Catchment. An overview report to the Australian Government from the CSIRO Flinders and Gilbert agricultural resource assessment, part of the north Queensland irrigated agriculture strategy*. Brisbane: CSIRO. Retrieved from http://www.regional.gov.au/regional/ona/files/FGARA_GilbertSummaryReport_WEB_140201.pdf
- De Lacy, K. (2014). *The IFED proposal: Etheridge integrated agriculture project*. ABARE outlook 2014 presentation. Retrieved from <http://www.daff.gov.au/ABARES/outlook-2014/Documents/presentation-slides/keith-deLacy-presentation.pdf>
- Dale, A., McKee, J., Vella, K., & Potts, R. (2013). Carbon, biodiversity and regional natural resource planning: Towards high impact next generation plans, *Australian Planner*, 50(4), 328-339. doi:10.1080/07293682.2013.764908.
- Department of Prime Minister and Cabinet. (2014a). *Green paper on developing northern Australia*. Retrieved from <https://northernaustralia.dpmc.gov.au/green-paper>
- Department of Prime Minister and Cabinet. (2014b). *Indigenous Affairs budget 2014-15*. Retrieved from http://www.dpmc.gov.au/accountability/budget/2014-15/IA_budget.cfm
- Enright, M., & Petty, R. (2013). *Australia's competitiveness from lucky country to competitive country*. Singapore: John Wiley & Sons.
- Gray, I. W., & Lawrence, G. A. (2001). *A future for regional Australia: Escaping global misfortune*. Cambridge: Cambridge University Press.
- Griggs, P. (2010). Sugar. *Queensland Historical Atlas*. Retrieved from <http://www.qhatlas.com.au/content/sugar>
- Harrison, S., & Longworth, J. (1977). Optimal growth strategies for pastoral firms in the Queensland Brigalow Scheme. *Australian Journal of Agricultural Economics*, 21(2), 80-96. doi: 10.1111/j.1467-8489.1977.tb00196.x
- Hockey, J. (2013). *Budget speech 2014-15*. Retrieved from <http://www.budget.gov.au/2014-15/content/speech/html/speech.htm>
- Kidd, R. (1997). *The way we civilise: Aboriginal affairs, the untold story*. St Lucia, Qld: University of Queensland Press.
- Keogh, M. (2012). *An overview of the challenges and opportunities associated with foreign ownership of Australian agricultural land and agri-businesses*. Retrieved from http://www.ioa.uwa.edu.au/__data/assets/pdf_file/0006/2151690/1Mick-Keogh-Keynote-address-speech.pdf

- Lawrence, G. (1987). *Capitalism and the countryside: The rural crisis in Australia*. Sydney: Pluto Press.
- Liberal National Party. (2013). The Coalition's 2030 vision for developing northern-Australia. Retrieved from <https://lnp.org.au/wp-content/uploads/2013/06/The-Coalitions-2030-Vision-for-Developing-Northern-Australia1.pdf>
- Lockie, S., & Higgins, V. (2007). Roll-out neoliberalism and hybrid practices of regulation in Australian agri-environmental governance. *Journal of Rural Studies*, 23(1), 1-11. doi: 10.1016/j.jrurstud.2006.09.011
- McCarthy, B. (2014). Sustainable food systems in north Queensland. *Journal of Economic and Social Policy*, 16(1), Art. 4.
- Maude, A. (2004). Regional development processes and policies in Australia: A review of research 1990-2002. *European Planning Studies*, 12(1), 3-26. doi: 10.1080/09654310310001635670
- North Australian Indigenous Land and Sea Management Alliance Limited(NAILSMA). (2014). An indigenous prospectus for northern development: Effective engagement, resilient communities, secure futures. A submission to parliament of Australia: Joint committee on northern Australia. Retrieved from <http://www.nailsma.org.au/nailsma-submission-joint-select-committee-northern-australia>
- Northern Australia Land and Water Taskforce (NALWT). (2009). *Sustainable development of northern Australia: A report to government from the northern Australia land and water taskforce*. Canberra: Department of Infrastructure, Transport, Regional Development and Local Government. Retrieved from <http://www.regional.gov.au/regional/ona/files/NLAW.pdf>
- OECD. (2006). *The new rural paradigm: Policies and governance*. Paris: Organisation for Economic Co-operation and Development. Retrieved from <http://www.oecd.org/gov/regional-policy/thenewruralparadigmpoliciesandgovernance.htm>
- OECD. (2012). *Promoting growth in all regions: Lessons from across the OECD*. Paris: Organisation for Economic Co-operation and Development. Retrieved from <http://www.oecd.org/site/govrdpc/50138839.pdf>
- Productivity Commission. (2005). *Trends in Australian agriculture, research paper*. Canberra: Productivity Commission. Retrieved from http://www.pc.gov.au/__data/assets/pdf_file/0018/8361/agriculture.pdf
- Rayner, T. (2013). Dam it all? River futures in northern Australia. *The Conversation*, 16 August. Retrieved from <https://theconversation.com/dam-it-all-river-futures-in-northern-australia-17131>
- Regional Australia Institute. (2013a). *Insight: Australia's regional competitiveness index*. Retrieved from <http://www.regionalaustralia.org.au/wp-content/uploads/2013/07/Regional-Australia-Institute-Results-Guide.pdf>
- Regional Australia Institute. (2013b). *Rethinking the future of northern Australia's regions: More than mines, dams and development dreams*. Retrieved from <http://www.regionalaustralia.org.au/wp-content/uploads/2013/11/Rethinking-the-future-of-northern-Australias-regions1.pdf>
- Regional Development Australia [RDA]. (2013). *Who we are*. Cairns: Regional Development Australia. Retrieved from <http://rda.gov.au/node/13>

- Stephens, M. (2012). Invigorating agriculture - the Asian opportunity. *Agricultural Science*, 24(2), 36.
- Stewart, G. A. (1962). Agricultural development in monsoonal northern Australia. *Economic Botany*, 16(3), 161-170. doi: 10.1007/BF02860033
- The Economist Intelligence Unit. (2013). *A healthy future for all? Improving food quality for Asia*. Retrieved from <http://business.nab.com.au/wp-content/uploads/2013/10/improving-food-quality-for-asia.pdf>
- Tomaney, J. (2010). *Place-based approaches to regional development: Global trends and Australian implications*. Retrieved from http://www.tci-network.org/media/asset_publics/resources/000/004/399/original/place_based_competitiveness_australia.pdf
- Trudgen, R. (2000). Why warriors lie down and die. *Darwin: Aboriginal Resource and Development Services Inc*, 270.
- Turnour, J., Dale, A., McShane, C., Thompson, M., Prideaux, B., & Atkinson, M. (2014). *A place based agriculture development framework. Project report*. Rural Industries Research and Development Corporation, Canberra.
- Walker, D., Dale, A., Lane, M., Taylor, B., McAllister, R., Marinoni, O., et al. (2013). *Land tenure in northern Australia: Opportunities and challenges for investment*. Brisbane: CSIRO. Retrieved from <http://www.regional.gov.au/regional/ona/land-tenure/pdfs/land-tenure-20130717.pdf>
- Webster, T., Morison, J., Abel, N., Clark, N., Rippin, L., Herr, A., et al. (2009). *Irrigated agriculture: Development opportunities and implications for northern Australia*. Canberra: CSIRO. Retrieved from http://www.regional.gov.au/regional/ona/nalwt_files/Chapter_10-Irrigated_agriculture.pdf
- Wroe, D., & Whyte, S. (2014, April 15). Free trade agreement push to import Chinese workers criticised. *Sydney Morning Herald*. Retrieved from <http://www.smh.com.au/federal-politics/political-news/free-trade-agreement-push-to-import-chinese-workers-criticised-20140415-zqv3u.html>

Themes in development of the agricultural and resource sectors in Northern Australia

Professor John Rolfe

School of Business and Law, CQUniversity Australia

Background and Scope:

The agriculture and resources sector (including mining) play a major role in the economies of northern Australia, and underpin many regional and rural communities. There has been a long history of programs and infrastructure to develop agriculture in the north; however the majority of agricultural land use is still for low intensity grazing. Among the key limitations are available soil and water resources, climate, access to markets, lack of infrastructure, and environmental and land use constraints.

Levels of agricultural development in northern Australia remain very low. The conundrum that faces government planners is that Northern Australia also holds great potential. There are substantial land and water resources, potential for future development of energy and minerals resources, close proximity to Asian markets, and a younger population than in southern Australia.

This paper provides a broad review of the constraints and opportunities for development in northern Australia through an economic lens. Using a desk top review, the focus is to identify key themes that can be used to understand the current situation and future prospects. The review summarises several approaches in economic analysis to northern development issues.

The viability of agricultural development in the north

Broadscale pastoral activities account for the bulk of land use in northern Australia, with beef cattle grazing the predominant industry. The region accounts for about 60% of Australia's beef herd on just over a quarter of Australia's beef cattle properties with a gross value of production of about \$5 billion in 2009-10 (Gleeson, Martin and Mifsud 2012). Outside of the Queensland coast and the adjacent inland in central and southern Queensland, cropping is almost non-existent in northern Australia. Key areas of note are the Ord River Irrigation area in Western Australia, the Katherine-Douglas-Daly area in the Northern Territory, and the Mareeba-Dimbulah Irrigation area in northern Queensland. While irrigated crops account for the bulk of non-pastoral agriculture in northern Australia, the total area irrigated was only about 34,000 hectares in 2010, less than 0.03% of the land area of northern Australia and about 1.3% of the total area irrigated for agriculture nationally (Webster et al. 2009).

The reasons why agriculture development is limited and slow in northern Australia are well canvassed. Webster et al. (2009) and Cook (2009) summarise the agronomic issues in terms of poor soil fertility as a result of millennia of monsoonal rain, low infiltration rates, high rates of solar radiation and evaporation, low water use efficiency, low water availability in the dry season, and harsh climatic conditions. Other issues relate to distances to markets and suppliers, transport costs and the lack of supporting services and infrastructure.

However, a number of researchers have pointed out that there is substantial suitable land and water resources in northern Australia to enable further irrigated agricultural development (e.g. Webster et

al. 2009; Abel and Rolfe 2009). Webster et al. (2009) estimated that there is approximately 17 million hectares of soil suitable for annual crops in northern Australia, and a further 32 million hectares suitable for forestry. However limited water availability means that only about 1% of this potential could be realised through irrigation. The proximity of northern Australia to emerging markets in Asia has underpinned the development of the live export trade, with potential for further substantial development.

A key reason for the lack of growth in northern agriculture is the low level of economic returns (Queensland Government 2014). McCosker et al. (2010) noted in a review of the northern beef industry that financial performance in the decade from 2000 to 2009 was at the lowest level since the beef slump of the 1970s, with a return on assets of less than 1 percent in 2008. Costs of production have increased substantially, almost doubling from \$0.70/kg in the 1970s to \$1.20/kg by 2009 (McCosker et al. 2010). As well rural debt has increased significantly (Queensland Government 2014). Other issues that limit the development potential for agriculture in the north of Australia include issues around land tenure and potential environmental impacts, and the regulatory processes around these issues.

Trends in productivity growth

Agricultural production in northern Australia has grown in past decades, despite declining terms of trade and decreasing productivity growth. Declining terms of trade mean that output prices have tended to fall relative to input prices, requiring productivity to increase to maintain competitiveness. While productivity growth in northern agriculture has been positive, rates of growth have been declining in recent decades, in line with trends in Australian agriculture (Nossel and Sheng 2010).

Nossal et al. (2008) reported that productivity in the northern beef industry was close to zero between 1977-78 and 1995-96, but increased to about 1.4 percent between 1995-96 and 2006-08 following the development of the live cattle trade. Gleeson, Martin and Mifsud (2012) report that total factor productivity for the northern beef region grew by an average of 1.3 percent from 1977-78 to 2009-10. Underpinning the rate of growth were the adoption of the Bos indicus cattle, the lower turnoff weights associated with the development of the live export market, and adoption of improved technology and management associated with higher cash flows.

There is some evidence of large variations in rates between different types of enterprises. Gregg and Rolfe (2011) analysed productivity in selected beef enterprises in Queensland and identified annual productivity growth of 3.8 percent per annum, largely from technological progress (accounting for 2.7 percent per annum). Nossal et al. (2008) report that rates of productivity growth vary by production scale, with the larger producers (800 to 1600 head) and largest producers (more than 1600 head) achieving rates of growth of 5.03 and 3.21 percent per annum respectively, while small producers had negative productivity growth.

Government support for northern development

Proponents of developing agriculture in northern Australia have often enlisted government support, with the Federal takeover of the Northern Territory in 1911 driven in part by concerns over the slow pace of agricultural develop (Cook 2009). There has been substantial government attention on development in the north, with waves of action in the form of relevant government committees and development proposals. For example the Forster Committee was established to develop a blue print for the development of agriculture in the Northern Territory in the 1950s, the Ord River Scheme was constructed in Western Australia in the 1970s, the Commonwealth and Queensland Governments established the North Queensland Irrigation Agriculture Strategy in 2010 to explore the potential for

irrigation schemes on the Flinders and Gilbert Rivers in north-western Queensland, and the Ord Stage 3 is currently being built.

Development activities have rarely met economic criteria. Bruce Davidson, an economist, was critical of the lack of economic justification for the development of the Ord River Scheme in his 1965 book “The Northern Myth: a study of the physical and economic limits to agricultural and pastoral development in tropical Australia”. His pessimistic analysis about the constraints on northern development was prescient, as the Ord River has failed to develop into a substantial agricultural region despite substantial government support.

The failure of the Ord River Scheme in economic terms has generated more attention to the environmental and resource constraints and difficulties of developing agriculture in northern Australia. Wittwer and Banerjee (2014) note that despite the Ord River Scheme being projected to employ more than 1,000 agricultural workers by 2060, only 179 workers or 4.8% of the local Wyndham Shire workforce were employed in agriculture (including beef cattle grazing) at the 2011 census. The issues with the live export market have highlighted the vulnerability of regional industries to market conditions and export opportunities, while the 2014 closure of the alumina refinery at Gove (the largest private employment site in the Northern Territory) highlights the challenges of operating in high cost environments and remote locations.

Categorising government support for northern agriculture

Government support for agriculture in northern Australia has taken many forms over the past century. The largest and most visible forms of support have been infrastructure developments, particularly for large scale irrigation such as in the Ord River. The development of transport infrastructure, particularly roads and ports, has also been instrumental in linking agricultural producers with markets.

Apart from infrastructure, the most important form of government support has been in research and development in agricultural and environmental sciences. The physical and climatic conditions in the north require specialised crops and agronomic practices, as well as knowledge about the land and water assets and the environmental pressures.

Other forms of government support have included industry support programs and development initiatives, environmental, disease and weed control programs, and more general provision of public services and infrastructure.

The limited growth in agricultural production in the north over the past fifty years indicates that substantial amounts of public investment and funding to date have been wasted, endorsing Davidson’s concerns that the focus on agricultural development did not take proper account of the constraints and risks involved. The failures demonstrate that governments can make poor decisions about priorities for future development. In part this is because politicians and bureaucrats face different incentives and requirements for knowledge compared to private producers.

Setting directions for future development

The political interest in agricultural development in the north remains high, driven to a large extent by the same strategic, emotive and optimistic themes that have underpinned successive government inquiries and initiatives in the past century. As well, concerns that climate change will reduce agricultural production in southern Australia has prompted renewed interest in developing a

northern 'food bowl'. This has culminated in the announcement by the Australian Government in February 2014 that a Northern Australia White Paper would be developed¹.

The failures of previous government initiatives and concerns about environmental constraints show that caution is required about the potential for further agricultural development. Past history has shown that it is not enough to provide infrastructure and subsidised water; agronomic, environmental and logistical constraints remain as major hurdles. Policy failures appear to be particularly pronounced for greenfields projects involving new crops and production areas; this suggests that caution is needed when promoting greenfields projects over further development of existing industries. Previous approaches have essentially had the Government 'picking winners', with planners then surprised subsequent private enterprises fail.

The Queensland Government (2014) has identified four key priorities for further development of the beef industry in Queensland; this provides a starting point for identifying the key challenges.

- Improving access to resources, including land and water resources, as well as better access to capital and investment.
- Improving productivity by investing in new research, promoting best practices to producers, intensifying production, and supporting processing expansion.
- Improving market access by building relationships, advocating for market access and maintaining and promoting food safety standards.
- Reducing costs by improving transport efficiency, developing better freight strategies and reducing red tape.

These are important priorities for developing established industries, but do not provide sufficient guidance about where governments should be involved. Agricultural development will require private enterprises to be enterprising and successful, whether for greenfields projects or further development. Here six key principles that relate to the decisions of private enterprises are identified.

- **Access to resources and certain property rights** are essential to attract new investment. Access includes both the physical access to land, water and capital resources, as well as better information about the extent, quality and availability of those resources.
- **Financial returns** are the key driver of investment and production decisions. Reliable and improved access to markets is required to underpin any agricultural development.
- **Control over costs** is essential to the longer term performance of an industry. Agriculture has little ability to pass on increases in input costs, so key policy priorities should be to limit cost increases.
- **Ongoing improvements in productivity** are required to make sectors viable in the face of longer term declines in the terms of trade. Improvements in productivity can be generated in a number of ways through better efficiencies in the supply chain as well as improvements at the enterprise level.
- **Risks and uncertainties** need to be minimised. This can be achieved in a number of ways, through provision of rigorous planning, better information, and ongoing research programs to improve productivity.
- **Investment priorities should be analysed** in rigorous and transparent ways. Economic evaluation should be conducted for all proposed developments, using tools such as cost benefit analysis. This will help to prioritise the proposals that deliver the largest public and private returns, ensure public investments generate positive returns, and provide transparency of analysis for industry and decision makers.

¹ See: <https://www.pm.gov.au/media/2014-02-28/northern-australia-white-paper-underway-0>

References

Abel, N. and Rolfe, J. 2009. Public and Private conservation of aquatic systems in northern Australia: threats and opportunities, in *Northern Australia Land and Water Science Review*, CSIRO, Canberra.

Cook, G. 2009. Historical perspectives on land use developments in northern Australia: with emphasis on the Northern Territory, in *Northern Australia Land and Water Science Review*, CSIRO, Canberra.

Davidson, B. 1965. *The Northern Myth: a study of the physical and economic limits to agricultural and pastoral development in tropical Australia*, Cambridge University Press, Cambridge UK.

Gleeson, T., Martin, P. and Mifsud, C. (2012). Northern Australian Beef Industry: Assessment of risks and opportunities. Report prepared for the Northern Australia Ministerial Forum, Australian Bureau of Agricultural and Resource Economics and Sciences, Canberra.

Gregg, D. and Rolfe, J. 2011. Identifying sources and trends for productivity growth in a sample of Queensland broad-acre beef enterprises, *Animal Production Science*, 51: 443-453.

Nossal, K. and Sheng, Y. 2010. Productivity growth: Trends, drivers and opportunities for broadacre and dairy industries, *Australian Commodities*, 17(1): 216-230.

Nossal, K., Sheng, Y. and Zhao, S. 2008. *Productivity in the beef cattle and slaughter lamb industries*. ABARE research report 08.13. Australian Bureau of Agricultural and Resource Economics, Canberra.

Queensland Government 2014. *Draft Beef Industry Action Plan 2014-2016*, Report compiled by Chris Chilcott, Cathy Waide and Renata Berglass, Department of Agriculture, Fisheries and Forestry, Brisbane.

Webster, T., Morison, J., Abel, N., Clark, E., Rippin, L., Herr, A., Taylor, B. and Stone, P. (2009). Irrigated Agriculture: development opportunities and implications for northern Australia, in *Northern Australia Land and Water Science Review*, CSIRO, Canberra.

Wittwer, G. and Banerjee, O. (2014). Investing in irrigation development in North West Queensland, Australia, *Australian Journal of Agricultural and Resource Economics*, in press.

Education Futures in Northern Australia

Sue McGinty, School of Indigenous Australian Studies,
Claire Campbell, School of Education,
Margaret Carter, School of Education,
Helen McDonald, School of Education,
James Cook University, Townsville.

Introduction

The ways in which development is conceived in the coalition's Green Paper on Northern Australia (2013) is via three major ideas: developing a food bowl, growing the tourism industry, and building our internal and exportable energy capacity. Importantly for this paper, three allied issues are also addressed. They are:

- Establishing medical research facilities;
- ***Creating an education hub;***
- Growing technical skills for the resources sector and agriculture.

The Green paper emphasises;

- Building the population of the north;
- Developing an education hub (referring specifically to technical and higher education);

What the Green paper does **not** say is;

- The building of social and cultural capital of the young people of Northern Australia is essential for long term development; and
- The most effective educational interventions are those in the early years.

This paper addresses specifically, the creation of an education hub in northern Australia. It expands on the Green Paper's concept of an education hub, to include important issues in any development concept: the provision of early childhood education and care, primary and secondary education. *A second paper addresses the need for expanded VET and higher education offerings.* In order to attract and retain population in the north, the provision of education at all levels needs to be planned. In light of this assertion, we have the following information and recommendations.

Background issues

The following points have been made in relation to population growth:

- By 2050 half the population of northern Australia will be Indigenous (Submission from the Northern Territory Government to the Federal Government Agricultural Competitiveness Issues Paper, April, 2014).

- There is a low proportion of northern Australians with science and technology qualifications and poor access to the digital economy. The implication being that science education and no doubt other types of education are not so good in the north and inadequate for development. We need to strengthen science capacity and educational standards in general in northern Australia and to build a stronger science/decision-making interface within the tropics (Babacan et al., 2012).

The facts are:

- There are lower NAPLAN Scores across the board in northern Australia and higher school dropout rates;
- Nearly 70% of remote Indigenous students in Year 9 are not meeting national minimum standards for reading. This is compared to 80% of Year 9 Indigenous students in metropolitan areas performing at or above this level. The more remote, the bigger the gap becomes (Riddle, 2014);
- The growth of the Indigenous population over the next 15 years is expected to reach 1 million Australia wide, that is double the rate of the non-indigenous population - mostly in the south but there will be dramatic increases in the north;
- In a number of Indigenous communities in the north many children suffer from foetal alcohol spectrum disorders (FASD) and other developmental disorders. Education programs such as that of the Fitzroy Valley Community combine research with intervention for community control and management (Elliott, 2012).

Will the long-term social and intellectual capital of the three northern regions of WA, NT, and QLD be achieved by just bringing in talent from the south?

Without a strong school education policy, there could be:

- An underclass of local citizens if education standards are not raised;
- Local jobs will continue to be taken by backpackers;
- An unemployable local citizenry; and
- A continued push by prominent Indigenous leaders to educate young people in southern boarding schools (The majority of whom do not complete and often dropout of school early).

There are three issues and policy considerations that this paper advocates in any proposed development of the north:

- Early childhood education and care
- Primary and secondary education
- Indigenous education

Each of these areas is discussed in terms of key issues and policy directions.

- **Early Childhood Education and Care**

In recent years it has been identified that Australia's early childhood education and care (ECEC) sector is underperforming in comparison with other Organisation for Economic Co-operation and Development (OECD) countries (OECD, 2006, 2010, 2012, 2013). In 2009, Australia was noted as being in the bottom 17% of OECD countries for expenditure on ECEC as a percentage of GDP (OECD, 2013). Furthermore, in 2010 Australia was in the bottom 15% of OECD countries for enrolment rates of 4-year-olds in ECEC settings (OECD, 2013). Also, it is widely known that Australian families experience unnecessary difficulty in finding high quality, affordable and flexible ECEC services close to their homes and/or workplaces (Australian Government, 2013).

Whilst Australia faces significant ECEC issues nation-wide, northern Australia is further challenged by high percentages of vulnerable children, high Indigenous populations and remote locations. The 2012 Australian Early Development Index (AEDI) (now known as the Australian Early Development Census [AEDC]) shows that the Northern Territory and Queensland have the highest rates of children considered to be 'developmentally vulnerable on one or more domains' of all Australian states and territories at 35.5% and 26.2% respectively (Australian Government, 2013). In comparison to their interstate counterparts, Queensland students in primary school were found to be more developmentally vulnerable and underachieving in English, Mathematics and Science (Department of Education and Training [DET], 2011). The National Report for 2013 *National Assessment Program: Literacy and Numeracy* (NAPLAN) results reveals that the Northern Territory has consistently and significantly been outperformed by all other states and territories in all areas of reading, persuasive writing, language conventions and numeracy (ACARA, 2013) since data collection commenced in 2008. Whilst this latest report indicates Queensland has somewhat 'caught up' with achievement levels comparable to Western Australia, South Australia and Tasmania, the state is still experiencing achievement issues surrounding remote and very remote locations, vulnerable children and Indigenous children. Evidently, there are challenges for ECEC Australia-wide, but particularly more so for northern Australia.

The Australian Government has responded to these findings in a number of ways. Nationally, the National Education Agreement of January 2009 saw the development of the Australian Curriculum to promote excellence in Australian schools as part of the Rudd Government's Education Revolution. Also, the then Federal Minister for Education, the Hon. Julia Gillard MP, commissioned a review of the funding arrangements for schools to promote excellent educational outcomes for all Australian students (Department of Education, Employment, and Workplace Relations [DEEWR], 2011, p. xi). In 2013, Treasurer Joseph Hockey requested the Productivity Commission undertake the *Inquiry into Child Care and Early Childhood Learning* in order to establish "more flexible, affordable and accessible child care and early childhood learning market" that better meets the needs of Australian families (Productivity Commission, 2013, p.iii). The Draft Report (released 22 July 2014) puts forward some workable ideas, however, the focus is clearly on women's participation in the workforce rather than it being every Australian child's right to have access to high quality care and education in

their community. Also, attention needs to move beyond the mere provision of services and focus more on the nature and quality of them (Tayler, 2013).

Also in 2013, the Council of Australian Governments (COAG) endorsed the *National Partnership Agreement on Universal Access to Early Childhood Education*, which focuses on improved participation rates in high quality early childhood education programs in the year prior to full-time schooling by Australia's most vulnerable and disadvantaged children (Australian Government, 2014). The latest Queensland (Department of Education, Training and Employment [DETE], 2012) and Northern Territory Annual Reports (Department of Education and Children's Services [DECS], 2012) indicate that some progress is being made, however, the issues and increased costs of having small populations in widely dispersed areas and higher proportions of Indigenous, vulnerable and disadvantaged children in these two jurisdictions continues to impede progress. "On average, it costs the Northern Territory about three times as much as the majority of other Australian jurisdictions expend to provide [ECEC] services" (DECS, 2012, p. 12)

In response to the *Universal Access to Early Childhood Education* initiative, the ECEC sector in Queensland is undergoing a period of transformation, renewal and growth due to both state and national government funding (DET, 2011). The Queensland Government acknowledges the significance of high-quality early childhood education and care to future success in school and later life in its *A Flying Start for Queensland Children: Queensland Government Education White Paper* (DET, 2011). The first of three key objectives outlined in the white paper is "making kindy available for all Queensland children" (DET, 2011, p. 4). Consequently, in an effort to boost participation rates in ECEC settings the Commonwealth and Queensland Governments committed approximately \$900 million – the biggest investment in the state's history – to create new kindergarten services in the state by 2014. This initiative resulted in around 85 new kindergartens being opened which boosted kindy participation rates up from 29% in 2008 to 77% in 2012. Several more kindergartens opened in 2013 on both state and private school sites.

Key Challenges and Policy Directions

Whilst there has been progress and increased enrolments in kindergarten and preparatory settings across northern Australia, the issue of high quality education and care for children under 4-years-old prevails. There are not enough places for young children in high quality child care centres that are affordable and conveniently located. Furthermore, the sector experiences difficulty in securing and retaining high quality, qualified staff as the wages are so low (Australian Government, 2013). With Australia being one of the lowest investors in ECEC of all OECD countries, at around 0.1% of GDP compared to the 0.5% average for all OECD countries (OECD, 2013), clearly more investment is needed to address the issues evident in the sector.

Participation in high quality ECEC directly affects brain development, creates strong foundations, supports human potential and contributes to community

cohesion (Tayler, 2008). It promotes equity, reduces poverty, boosts school achievement, enhances wellbeing, improves social mobility and advances future life trajectories (OECD, 2012, 2013). The ECEC sector in northern Australia must be strengthened in ways that are sensitive to the unique challenges that our region faces. The children of northern Australia deserve support that enables progress and enhances their life prospects.

Although there is no one set prescription for high-quality cognitive interventions, effective [ECEC] programs share the following characteristics: they target multiple factors (education, health, and parenting); they start early and are ongoing (although they need not be full-day); and parents and local communities are involved and respected. (Tayler, 2013, p. 26)

Policy Direction: Develop northern Australia-specific ECEC centres as ‘Early Years Hubs’ that offer services that go beyond the typical long day care centre and/or kindergarten setting. In addition to offering high quality care and education services delivered by highly qualified and well-rewarded educators from local communities, the Early Years Hubs would be (mobile) spaces where families can come to meet one another, play, learn, seek advice, borrow resources, learn how to prepare their youngsters for school, and create a community that values high quality ECEC as every Australian child’s entitlement, and not just for parents who wish to re-join the workforce. The Early Years Hubs would have access to extra funding, resources, personnel and training to support the people of northern Australia in caring for and educating the vulnerable, widely dispersed, and Indigenous students that are not yet experiencing the successful learning outcomes that their counterparts in other jurisdictions are in their early schooling.

- **Primary & Secondary Education in Northern Australia**

The challenges associated with expanding primary and secondary school educational provision to parts of Australia north of the tropic of Capricorn, are less a conundrum and more about capitalizing on existing Commonwealth, State and Territory government policies, along with business, private and community investments and initiatives. It is about taking advantage of the tropics geographic location with the Asia Pacific region and building a cross-cultural global educational hub with world-class facilities for education, research and scientific inquiry.

This will involve the global marketization of Australia’s national curriculum (Australian Government, 2014; Australian Education System, 2013), in conjunction with opportunities for the deployment of educators across the Asia Pacific region to rural, remote and metropolitan locations in the region. This deployment encompasses teacher recruitment and retention schemes and inventive and incentive relocation packages. Varied sustainability structures could incorporate eligibility for promotion aligned with service in metropolitan, rural and remote locations across Northern Australia.

Promoting northern Australia as a cross-cultural global educational hub, means attention to the findings reported in The National Assessment Program Literacy and Numeracy (NAPLAN) Achievement in Reading, Persuasive Writing, Language Conventions and Numeracy: National Report for 2013 (ACARA, 2013). The NAPLAN data for example, report the following with regard the literacy performance of year 3, year 7, and year 9 students in the Northern Territory:

NAPLAN Year 3 commentary “For the Northern Territory, more than 50% of Indigenous students achieved at or above the national minimum standard in reading and more than 50% achieved at or above the national minimum standard in numeracy” (ACARA, 2013., p. 61).

NAPLAN Year 7 commentary: “The percentage of Indigenous students who achieved at or above the national minimum standard ranges from a minimum of 61% in persuasive writing to a maximum of 78% in numeracy ... The percentage of Indigenous students who achieved at or above the national minimum standard ranges from a minimum of 61% in persuasive writing to a maximum of 78% in numeracy” (ACARA, 2013, p. 191).

NAPLAN Year 9 commentary: “Mean scores for students from a language background other than English are lower in all five achievement domains compared with the mean scores for students from an English language background” (ACARA, p. 255).

For higher education providers, courses customized for the unique needs of the Northern Australia region would need to be developed. Such programs would have a strategic focus on Northern Australia with core subjects inclusive of literacy education, numeracy and mathematics education, science and sustainability, culturally responsive pedagogy, inclusive and transnational education.

An Australian primary and secondary curriculum responsive to cross cultural issues, needs to be accessible to all, and structured in a way that guarantees both equitable and better educational outcomes for all (Roberts, 2012). This includes differentiated and meaningful alternative education targeting youth disengaged from mainstream schooling and/or their communities. As reported by the Australian Research Alliance for Children and Youth (2008): “Young people who feel engaged and who are provided with opportunities to participate, experience a better quality of life and contribute to creating and building better communities” (p. 4).

A key component of this deliverable will be high quality career and life skills professional development provided to educators on a consistent basis across regional, remote and metropolitan environments (Carter & Fewster, 2013). Currently, funding is provided at the national level for schools to conduct professional learning programs for staff. Equitable distribution of funding and professional development opportunities will require rigorous monitoring and accountability thus ensuring school communities in rural, remote and

metropolitan areas of the tropics are accommodated and that the professional development provided remains contextualized, relevant and current.

Policy directions include resourcing and sustaining a cross cultural global educational hub with world class facilities for education, research and scientific inquiry; quality national and international training, recruitment and retention of quality educators to work across rural, remote and metropolitan areas of northern Australia; equitable access to high quality schooling and educational opportunities for all students and teacher educators; youth programs, targeting alienated and disengaged individuals within the education and community; sustainable investment in innovative ICTs including ICT infrastructure (e.g., access to high capacity broadband); ongoing internationalization of the national curriculum; global marketization of the national curriculum with support for the deployment of educators across the Asia Pacific region and higher education training grounding students in working with culturally rich and diverse students living in the tropics.

- **Indigenous Education in Northern Australia**

High quality Aboriginal and Torres Strait Islander education is recognised as a key determinant in improving the quality of life for Indigenous Australians (Ma Rae, Anderson & Aitkinson, 2012. p.10). Young Aboriginal and Torres Strait Islander people make up a significant proportion of the Northern Australian school population and many schools in rural and remote Northern Australia are identified specifically as Indigenous schools. Thus the quality of education provided to Aboriginal and Torres Strait peoples is a significant factor in the development of Northern Australia with a stronger economy and a better quality of life for its citizens. While there are examples of excellent schools in Northern Australia, the “gap” between the educational achievement of Indigenous students and other Australian students nationally is amplified in this region.

The Northern Territory Department of Education commissioned Professor Geoff Masters from the Australian Council of Education Research (ACER) to review and evaluate the current school education initiatives with specific focus on literacy and numeracy achievement (Masters, 2011). In his report, Masters highlights just some of the challenges for the Northern Territory regarding their NAPLAN results:

Any general interpretation of literacy and numeracy performances in the Northern Territory obviously must take account of the unique characteristics of this system, with nearly half of all students living in remote or very remote locations, an unusually high proportion of students living in low socio-economic areas, and a high proportion of students who speak English as a second or other language. More than forty per cent of the student population is Indigenous. (Masters, 2011, p. 36)

Acknowledging the NAPLAN achievement gap between Northern Territory students and their interstate counterparts, Masters observed that the gap is:

greatest in Year 3 and generally reduces the longer children are in school. Extrapolating downwards, it is likely that the gap is greatest on commencing school. Many children in the Northern Territory begin school with low levels of school readiness, including low levels of oral English language competence and limited reading and numeracy skills. (2011, p. 39)

This comment by Masters corresponds with the 2009 and 2012 AEDI data that confirms that the percentage of children in the Northern Territory considered to be vulnerable and at risk is substantially greater than for the country as a whole (Australian Government, 2013). Evidently, northern Australia not only shares the ECEC challenges that the rest of the nation faces, northern Australia also has it's own set of distinctive issues that must be overcome as well.

Another fundamental challenge for schools, particularly but not exclusively those in remote and very remote places in the region, is the provision of **quality teachers**.

Effective teaching in Indigenous education is dependent on the quality and commitment of teaching staff to the instruction of Indigenous students. ... The research evidence shows that effective teachers are those who remain in schools for long periods of time and who have high levels of focus and energy. (Griffiths, 2011, p.75)

For a variety of reasons, teacher turnover in small schools is high and often teachers are relatively inexperienced. Education departments have initiated a range of incentives to attract high quality teachers to hard to staff schools but these have had limited success. An alternative approach has been to capitalise on the expertise and commitment of local Aboriginal and Torres Strait Islander para-professionals within schools by providing specific pathways into university based-teacher education and teacher registration. Award winning programs such as *RATEP: Community-based Indigenous Teacher Education* run in partnership by Queensland Department of Education Training and Employment, Tropical North Queensland TAFE and James Cook University exemplify this approach (Office of Learning and Teaching, 2013).

Adequate provision of appropriate on-site professional development to meet the diverse needs of their teachers is also a challenge for schools who face considerable additional costs in funding such programs which are often city-centric in their location and content. Additionally, professional development offerings need to focus on the significant issue of school-community relationships to support teachers and schools as they work in partnership with communities to meet the educational needs and aspirations of Indigenous families and communities.

A significant challenge in Northern Australia is the provision of adequate secondary education for students from small and remote Indigenous communities. According to Karmel, et al, (2014) "employment and education and training participation outcomes for Indigenous Australians are poorer the

further away they live from urban areas.” Further “lack of access in remote areas to labour markets in both the public and private sectors, and lack of access to centres of secondary and post-secondary education, means that opportunities to study and/or work are less plentiful.” While there are opportunities for some Indigenous students to attend elite boarding schools in large urban areas, this choice is not available to all or suitable for all. There is a desperate need for appropriate and varied boarding facilities linked to quality schools for secondary students within Northern Australia to ensure secondary education, including university, TAFE and employment pathways, is genuinely available at the same level as for other Australians. This is particularly relevant in maintaining cultural and social capital within the region.

Other challenges in Indigenous education of particular relevance to Northern Australia reflect the social-economic status of many Indigenous people. The interaction between factors experienced by many Indigenous families such as high unemployment, lack of adequate housing, poverty, poor health status with education is well recognised and especially in smaller centres, the school as a full service hub to provide “wrap-around services” seems to provide the most effective means of addressing the multiple issues that impact on the opportunities for Indigenous students to maximise their education potential.

While issues such as school attendance and specific programs such as direct instruction have received considerable political and media attention, the core issue for improving Indigenous Education in Northern Australia remains the provision of **quality teachers** who understand their learners and their communities and who have the professional knowledge, skills and commitment to make a difference to educational outcomes for Indigenous learners across Northern Australia.

The coalition’s Green Paper on Northern Australia (2013) acknowledges the importance of quality education to attract people to Northern Australia. Parity of educational outcomes for Indigenous Australians would provide a clear indicator of the quality of education offered for all in Northern Australia. Excellent education and quality teachers for Indigenous students would make a significant, even essential, contribution to the economic development and general well being of all Northern Australians.

Conclusion

The growth of northern Australia as proposed in the Coalition’s Green Paper will need to take into consideration the educational aspects of good living. Not just education for industry purposes. Good schools will attract people who will stay and contribute to the economy. If this is not taken into consideration, the development will be dependent on fly-in-fly-out workers.

References

- Australian education system. (2013). Australia education system-global-study in Australia. Retrieved from <http://www.studyinaustralia.gov.au/global/australian-education/education-system>.
- Australian Government, Department of Education (2013). Broadband enabled education and skills services programme-Projects. Retrieved from <http://www.education.gov.au/broadband-enabled-education-and-skills-services-programme-projects>.
- Australian Government (2014) School education. Retrieved from <http://australia.gov.au/topics/education-and-training/school-education>
- Asia Education Foundation (n.d.). Retrieved from <http://www.asiaeducation.edu.au/>.
- Babacan, H., Dale, A., Andrews, P., Beazley, L., Horstman, M., Campbell, A., Morris, S., Webb, B., Rowlands, M., Bowen, L., Callin, R., George, M., and Miley, D. (2012). *Science engagement and tropical Australia: building a prosperous and sustainable future for the north*. Report. Department of Industry, Innovation, Science, Research and Tertiary Education, Kingston, ACT.
- Business Council of Australia (2014). Submission to the Joint Select Committee on Northern Australia, 2014. Accessed on 6 May, 2014. <http://www.bca.com.au/publications/submission-to-the-joint-select-committee-on-northern-australia>
- Carter, M. A., & Fewster, C. (2013). Diversifying early years professional learning - one size no longer fits all. *Australasian Journal of Early Childhood*, 38 (1), 73-80.
- Department of Education and Training. (2011). *A flying start for Queensland children: Queensland Government Education white paper*. Brisbane, QLD: Queensland Government.
- Department of Education, Employment and Workplace Relations. (2011). *Review of funding for schools: Final report*. Canberra, ACT: Australian Government.
- Elliott, E., Latimer, J., Fitzpatrick, J., Oscar, J., and Carter, M. (2012). There's hope in the Valley. *Journal of Paediatrics and Child Health*. 48, 3, 190-192.
- Griffiths, A. (2011). The components of best-practice Indigenous education: A comparative review. *The Australian Journal of Indigenous Education*, 40, 69-80.
- Karmel, T., Misko, J., Blomberg, D., Bednarz, A., and Atkinson, G. (2014). Improving labour market outcomes through education and training: Issues paper no. 9 produced for the Closing the Gap Clearinghouse. Available: http://www.aihw.gov.au/uploadedFiles/ClosingTheGap/Content/Our_publications/2014/ctgc-ip9.pdf
- Kim, T. (2009a). Shifting patterns of transnational mobility: a comparative and historical approach. *Comparative education*, 45(3), 387-404.
- Ma Rhea, Z., Anderson, P., and Atkinson, B. (2012). Teaching in Aboriginal and Torres Strait Islander Education: National Professional Standards for Teachers Standards Focus Areas 1.4 and 2.4 Available: <http://www.aitsl.edu.au/initial-teacher-education/aboriginal-and-torres-strait-islander-education>

- Ministry of Education, Singapore (2013). Primary Education Ministry of Education. Retrieved from <http://www.moe.gov.sg/education/primary/>.
- OECD. (2006). *Starting strong II: Early childhood education and care*. Paris: OECD Publishing house.
- OECD. (2010). *PISA 2009 results: Equity in learning opportunities and outcomes (Volume II)*. Paris: OECD & PISA Publishing house.
- OECD. (2012). *Starting strong III – A quality toolbox for ECE and care*. Paris: OECD Publishing house.
- OECD. (2013). *Education Indicators in focus: 2013/02 (February)*. Paris: OECD Publishing house.
- Office of Learning and Teaching (2013). *2012 Awards for Teaching Excellence and Awards for Programs that Enhance Learning*. Available http://www.olt.gov.au/system/files/2012_Awards_recipients.pdf.
- Riddle, S. (2014). Closing the gap on Indigenous literacy requires more than increased attendance. *The Conversation*. Accessed 6 May, 2014 at <http://theconversation.com/closing-the-gap-on-indigenous-literacy-requires-more-than-increased-attendance-23142>
- Roberts, K. (2012). Education at a Glance Australia 2012: OECD Indicators <http://www.oecd.org/australia/EAG2012%20-%20Country%20note%20-%20Australia.pdf>.
- Submission from the Northern Territory Government to the Federal Government Agricultural Competitiveness Issues Paper, April, 2014.
- Tayler, C. (2008). Challenges for early learning. In S. Marginson & R. James. (Eds). *Education, science and public policy: Ideas for an education revolution*. Carlton, VIC: Melbourne University Press.
- The Coalition's 2030 Vision for Developing Northern Australia. 2013, Barton, ACT. Accessed 6 May, 2014 at <http://lpaweb-static.s3.amazonaws.com/Policies/NorthernAustralia.pdf>

Title: Re-imagining post-secondary education as a driver of social and economic development in Northern Australia

Lead institution CQUni

Disciplinary alignment: Education and economic development

Authors

Professor Drew Dawson, Director, Appleton Institute, Central Queensland University

Professor Denise Wood, Central Queensland University.

Professor Marie Brennan, Victoria University

Professor Helen Huntley, Central Queensland University.

Corresponding Author

Professor Drew Dawson, CQUni,

drew.dawson@cqu.edu.au

+61438329766

PO Box 42 Goodwood, S.A. 5034

Abstract

In recent years, the economic development of Northern Australia has returned to the national political agenda. A recent parliamentary enquiry, along with a dedicated office of Northern Australia under the Department of Prime Minister and Cabinet (PM&C), suggests the current government considers this a priority issue. However, the development of Northern Australia is predicated on the development of significant economic activity beyond mining and the FIFO/DIDO communities that regularly commute north to support this activity then fly south to spend and invest their wealth in southern coastal cities. A vibrant Northern Australia requires an investment in Northern communities and the physical and social infrastructure necessary to attract and support economic activity especially in agriculture, tourism and the SME sectors required to support these industries.

In this submission we look at

- The centrality of education in underpinning strong economic development in the North, especially in the Small and Medium Enterprise (SME) sector;
- The challenges associated with providing traditional models of education infrastructure into Northern Australia
- The opportunities provided by new digital technologies to ensure we can develop and deliver high quality life-long learning for Northern Australians
- The benefits of developing partnerships between education providers and place-based organisations to reduce the cost and improve the accessibility of high quality education infrastructure especially in remote areas of Northern Australia.
- Recent examples of place-based approaches to providing high quality educational infrastructure into Northern Australia.

The proposal concludes with a series of recommendations focusing on the need for investment into the physical infrastructure of the North and a radical revision of traditional approaches to post-secondary distance education based on a distributed partnership model. The proposed community-based approach provides access to facilities and supports for the members of their communities undertaking post-secondary education within the regions.

Background and Scope

The recent mining and the rapidly emerging ‘dining’ booms have refocused attention on the economic potential of Australia’s North. However, to date, many of the economic benefits appear to have been exported to the capital cities ringing our southern coast. As the Centre for Policy Development response to the draft Queensland plan notes, the mining boom has failed to deliver on hopes for diversified industrial economies to develop in Queensland’s remote regions (Eadie & Hayman, 2014, p. 80 and there has been relatively little investment in developing local communities and new economic activities in the North. Nothing is more emblematic of this geographic and economic divide than the current ‘army’ of fly-in-fly-out (FIFO) workers who travel north every week then return to our major cities to spend and invest their Northern wealth in the South (Eadie & Hayman, 2014; *Resourcing the Future: National Resources Sector Employment Taskforce Discussion Paper*, 2010; Zandvliet, Bertolini and Djist, 2008).

For over a century politicians have dreamed of developing, rather than exploiting and exporting, the economic potential of Northern Australia. For example, in 1999 the Federal Government declared that 2002 would be Australia's Year of the Outback with a commitment of \$2 million over three years to raise awareness of regional Australia and its importance in the development of our culture and economic wealth (Regional Australia: Making a Difference, 2000). In 2008-2009, the Australian Government 's \$42 billion nation building and jobs plan contributed to critical investments in rural, regional as well as urban infrastructure, and in the 2010-2011 budget further investment was committed to ensure that rural and regional areas of Australia could benefit from the economic recovery following the global financial crisis (*Stronger Rural and Regional Communities*, 2010). With last year’s announcement of a parliamentary enquiry into Northern Australia, our eyes have again turned northward and a new national dialogue about the potential benefits of developing the North has begun.

Although the drivers for this renewed discussion may have changed, (e.g. climate change, the rise of Asia and the need for greater regionalisation) the untapped

development potential of the North is, yet again, self-evident. There seems to be a renewed appetite for localised economic development and the diversification of economic activity of Northern Australia (Eadie & Hayman, 2014): for reversing rural decline by de-centralising growth away from the capital cities and re-investing in the economic development of regional communities in Northern Australia.

However, developing the North will require a significant national investment in physical and social infrastructure in order to attract and retain the population necessary to develop economic activity in areas beyond the resources, primary production and tourism sectors. Enterprise development (especially in the small and medium-sized enterprise (SME) sector) is increasingly dependent on a well-educated resident workforce in order to create economic opportunity. Therefore, post-secondary education will be a critical element of this investment as noted in both the Regional Universities Network report (2013) focusing on strategies for engaging with regions to build a stronger nation and the Australian Workforce and the Productivity Agency's discussion paper on Australia's Skills and Workforce Development Needs (2012).

Post-secondary education will be especially critical for Aboriginal communities. It has been estimated that by 2050, close to half the population in Northern Australia will be Aboriginal and the majority of this group will be under 40 years of age. Moreover, the Australian Bureau of Statistics projections for growth among the Aboriginal and Torres Strait Islander Australians suggests the increasing population of Queensland Aboriginal and Torres Strait Islander to be the fastest growing of the states and territories, with an average growth rate of between 2.6% and 2.7% per year (ABS, 2009). There is clearly an urgent need to improve remote Aboriginal and Torres Island student access to and participation in post-compulsory education (McLoughlin, 2000; Price & Hughes, 2009). However, despite the progress that has been made in recent years (see for example Asmar, Page, & Radloff, 2011; Ottmann & White, 2010; Price & Hughes, 2009), their continuing underrepresentation in higher education and lower rates of success, retention and completion (DEEWR, 2009 cited in Price & Hughes, 2009; James & Devlin, 2006) remain areas of major concern. As James and Devlin also note, improving the post-secondary education outcomes for Aboriginal and Torres Island students has a direct impact on the social, cultural and

economic development of their communities (2006, p. 2). Aboriginal Australians will constitute a significant proportion of the population and a significant potential local workforce. Yet as the Australian Workforce Productivity discussion paper (*Australia's Skills and Workforce Development Needs*, 2012) identifies, labour force participation among Indigenous people in remote areas remains low. To ensure that businesses in Northern Australia have access to the well-educated local workforce necessary to underpin regional economic development, we will need to ensure that educational opportunity is appropriate and available to the entire community.

The challenge in Northern Australia is that education, especially in the post-secondary sector, is typically limited to a small number of local providers often based in the larger regional cities (Alloway & Dalley-Trim, 2009). As a consequence, current models of education delivery inadvertently hollow out regional and remote Australia by 'pulling' (or attracting) students to larger population centres or the capital cities (Bartholomaeus, 2009); in effect depriving their communities of their best and brightest. Irrespective of cultural background, relocation to larger or capital cities has often been the unintended cost of pursuing educational advancement and the cost has been borne by the communities (Grunewald & Smith, 2014) that have often surrendered their future economic and political leaders and the subsequent wealth they generate in the South. The challenge will be to retain and develop the local population in order to provide the skills and expertise necessary to underpin sustainable economic development.

For the vast majority of the people who choose to live in Northern Australia, local provision of high quality post-secondary education has been a dream. Most are required to use distance learning or travel to major coastal communities or to the southern capitals to access high quality secondary and post-secondary education. The reasons for this are quite straightforward. Historically, Australian universities and TAFEs have been large institutions that require significant capital investment and have traditionally been located in large cities in order to be financially viable. The consequence of this is that for relatively well-off families with a strong commitment to educational advancement, children often had to leave their regional or remote community to gain an education (even at a regional university). Not surprisingly, many of those who leave their communities never return. Similarly, less well-off

parents are sometimes reluctant to encourage their children to aspire to a post-secondary education, as it is (a) prohibitively expensive or (b) will likely encourage their children to leave their family and community for the 'big smoke' (Alloway & Dalley-Trim, 2009). While remaining in their communities, these children (and their families and communities) often fail to realise their educational potential and the local economic benefits that would subsequently flow

The problem is not restricted to those who grow up and live in the North of Australia. Attracting people from the South to move to Northern Australia is often difficult because families are concerned about the lack of high quality educational opportunities for themselves and their children in Northern Australia. Nowhere has the tyranny of distance been felt more acutely than by the families looking at the likely educational impact on their children when contemplating a move northward.

Historically, the structural issues associated with delivering high quality education into regional Australia have long been considered a brake on regional economic development. However, recent developments in communications technology (and the delivery of broadband Internet services to regional and remote communities in particular), have considerable potential to redress the educational inequalities for those living in, or considering moving to Northern Australia. The Australian Government's widening participation agenda (Gillard, 2009) was implemented in response to several reports highlighting the continuing inequalities in access to higher education and learning outcomes (Bradley, Noonan, Nugent & Scales, 2008; Elliott, 2010; James et al., 2008). This reconsideration is taking place through evaluation of current and future practices informed by the experience of those who are from under-represented and/or disadvantaged groups within the education sector (Willems, 2010). As Australian universities position themselves to respond to the government's equity targets there is growing recognition of the need for strategies to overcome a range of barriers to further study such as geographic isolation for students living in remote regions, high mobility, particularly among rural Indigenous communities, economic barriers, family issues and disability related factors (Wood & Willems, 2012). Flexible learning options using digital technologies play a key role in expanding the options available for such students, and have "...the potential to include and engage

students with multiple and complex needs that typically prevent access to traditional university programs" (Elliott, 2010).

The Australian Government's Digital Economy Goal released in 2011 was a response to the recognition that Australia's long-term economic and social prosperity relies on a workforce with high-quality skills and access to high speed internet access. The Government's Digital Economy Goal therefore focuses on the importance of providing harness high speed broadband infrastructure to significantly extend the reach, availability and quality of education services, to help meet these regional needs (*NBN Empowering Australia: Education, 2011*). The Digital Economy Goal envisaged that by 2020 the NBN would enable more intensive and immersive online interactions, resulting in higher-quality learning outcomes for students in Australian schools, TAFEs, universities and higher education institutions, which would be of benefit to learners who cannot access courses via traditional means. However, even though the Australian Government's planned development of the NBN aimed to ensure that all Australians have access to fast broadband, the current Government's strategic review into the NBN rollout released in December 2013, reports that inadequate access to infrastructure across the country is a continuing concern. As the report identifies, approximately 1.4 million premises (13 per cent) located in regional or remote and small pockets of poor service in metropolitan and outer metropolitan areas of Australia areas where less than 40 per cent of premises can access a fixed broadband service. The recommendations arising from the strategic review focus on prioritising the rollout of broadband to areas with poorer current broadband service based on considerations of the areas of greatest need where this is logistically and commercially feasible (*Broadband Availability and Quality: Summary Report, 2013*).

Australia's use of these technologies and delivery models of post-secondary education in remote areas has been gradual, reflecting an incremental modification of historical practice and slow growth in infrastructure. Traditional universities typically provide many of their courses through 'blended modes' enabling students to access traditional course materials via the Internet to support on campus delivery. Many universities are moving to fully online offerings to reach a wider student population. Although such flexibility offers greater reach to more diverse populations, much of the value of tertiary education is derived from the non-technical, social aspects of learning; the

networks created through peers and informal access to high quality teaching staff as mentors. This is particularly important for 'first in family' students located in regional locations, especially at post-secondary levels, who frequently lack the experience of having their ideas and expectations of the world challenged by peers and teachers. Strategies for enhancing student engagement, creating a greater sense of community and increasing student persistence in online courses are well documented (Boling et al, 2012; Palloff & Pratt, 2013; Rovai, 2003; Rovai & Whiting, 2005; Salmon, 2013). However, despite the possibilities afforded by online technologies, evidence suggests that the continuing high levels of attrition from fully online courses (Hart, 2012; Patterson, & McFadden, 2009) are at least in part related to feelings of isolation (Nielsen, 2013) and disconnectedness (Rovai, 2003).

If we are to develop the North, access to high quality educational experiences over the life-span will be critical in driving population growth and economic development. But it will require us to rethink our traditional approaches to providing education in the North. In the current economic climate, the capital investment necessary to create traditional campuses to service small population centres in Northern Australia is unlikely. Even if these resources were available, the vast majority of people would still need to move away from their local communities to attend post-secondary education, adding to the expense. Research shows that the combined factors of financial stresses and travel-related factors contribute to lower participation rates (Koshy, 2014) and deferrals; with a third of high school students who defer their studies never taking up their offer of a university place (Polesel & Klatt, 2014). Similarly, Wilks and Wilson (2012) report the findings of several studies showing the relationship between lower participation rates in remote, rural and regional settings, and social exclusion and restricted access to education. Clearly, given the low population densities of Northern Australia and continuing evidence of educational disadvantage, our current delivery models and approaches to addressing the post-secondary educational experience and how it is created, resourced and staffed will need to change if we are to meet the development needs of the North over the next 50 years. How education providers and students will use emerging technologies to provide a high quality educational experience will also need to change. Although the provision of educational resources via the Internet will be critical, we will need to develop the underpinning IT infrastructure in the North. Moreover, we will need to

use that technology in creative and innovative ways to ensure we can provide the critical social dimensions of learning to people studying in Northern Australia.

Key infrastructure requirements

For the first time since the widespread introduction of the book in the 15 and 16th centuries, we have a very disruptive new educational technology that potentially enables us to deliver the best educational content in the world to any one, anywhere, at any time. More importantly, regional and rural Australia has clearly demonstrated a very significant demand for high bandwidth Internet access. The recent Broadband in the Bush forum in Alice Springs (*Broadband for the Bush Forum III*, 2014) reported that demand for high bandwidth services had been underestimated significantly and that meeting the demand for bandwidth and content is one of the biggest challenges facing rural and remote Australia.

The development and delivery of online content is now one of the fastest growing sectors of the knowledge economy and considered part of the critical infrastructure required to underpin economic development. However, as William Gibson famously noted, “The future is already here—it’s just not very evenly distributed” (Gibson, 1999). Paradoxically, the communities most likely to benefit from the capacity of the Internet to deliver world-class educational content are often the ones with the least access. To a certain extent, it is self-evident that the provision of a world-class post-secondary education system will be predicated on the provision of a reliable, high bandwidth Internet access to as many people in the North of Australia as possible. This will involve both technical and educational support.

Technical requirements

At a technical level, investing in the hardware infrastructure necessary to support high bandwidth access will be critical for providing access via synchronous video links and/or high definition downloads of asynchronous educational materials. In addition, it will require a significant investment in the development of relevant educational content for those regional and remote students looking to gain a first-class education. Other submissions to the Parliamentary Enquiry are sure to address the provision of

bandwidth, power and necessary associated infrastructure as part of their discussions on this topic. Therefore, we will omit any technical discussion other than to note that it is imperative that all communities looking to generate economic development and requiring well-educated staff will require state-of-the-art internet access as soon as is reasonably practical and that it will need to be maintained at 'state-of-the-art levels to ensure equitable access and utilisation for those living, studying and working in Northern Australia.

Developmental requirements

In contrast to traditional classroom-based delivery modes, high quality Internet-based educational materials require a much greater investment due to greater up-front production costs. Although marginal distribution costs for Internet-based courseware are significantly cheaper than classroom-based delivery models, it is unlikely that small post-secondary education providers (especially in regional or remote Australia) will be able to develop high quality content cost-effectively given the small class-sizes. Although it will be possible to access inexpensive global content delivered by multi-national corporations working in a global market place, this will be limited to content with a global appeal.

It is important to note that there will be some content that will always remain parochial (e.g. some aspects of Australian History or Social Studies/Culture) and will, therefore, always require a degree of developmental subsidy. Relevant elements of the national curricula may need to be subsidised in the same way film and television are subsidised in small countries such as Australia, Canada, France or Germany. To this end, it will be important to provide centralised resources to underpin the development of educational content that has high national strategic value, but lacks the global appeal to fund its development.

Alternative community (place) based models

A secular trend toward globalisation of content has been driving educational innovation for the last 10-15 years in Australia and perhaps longer internationally. There is little doubt that our traditional notions of what constitutes a post-secondary educational institution, who should attend them and how they will interact with the institution are also changing (Grunewald & Smith, 2014). Not least is the idea that as we democratise education it is increasingly important that we reverse the direction of travel since this imposes a significant financial burden on the student and their family. That is, the education provider should go to the student, not vice-versa. There are compelling reasons for this alternative view of education as situated and located within students' communities. As Grunewald and Smith (2014) note, place-based education or community-based education aims to reconnect education, culture, and human development in ways that contribute to the well-being of the community, while also facilitating the development of the skills required to regenerate and sustain communities. The community-based model has its foundations in cultural-historical activity theory (Engeström, 2001; Leont'ev, 1978; Vygotsky, 1978), a social constructivist approach which recognises that learning is not solely an individual activity, but a collectively shared process with significant cultural and historical dimensions. The approach draws on Vygotsky's (1978) concept of the zone of proximal development (ZPD). ZPD is defined as the distance between what an individual can achieve on their own and what they can accomplish when guided by more capable peers or adults through social interactions that take place in a historical context; one that is also imbued with cultural artefacts (Barab, Evans, & Baek, 2004, p. 201).

Regardless of location, the delivery modes that people are currently choosing increasingly involve a significant online component. Indeed, the market imperative for Internet-based delivery is compelling. It is more cost-effective to create high quality content and deliver it to classes of hundreds, or even hundreds of thousands than to deliver face-to-face in a traditional classroom setting. For the regional education consumer, it holds the promise of 'access' to higher quality teachers, peers and content than is typically available locally. Internet-based delivery can also provide greater amenity through asynchronous communication. This can enable students to learn when and where they choose, at the rate that best suits them and can potentially reduce the work-study conflict associated with traditional delivery modes.

There is growing recognition of the benefits of blended learning models, variously defined according to modes of web-based technology, different pedagogical approaches or the combination of online, face-face and work based learning (see Partidge, Ponting & McCay, 2011 for more detailed discussion of the differing definitions and understandings of the term). Courses based on this blended model incorporate the "thoughtful fusion of face-to-face and online learning experiences" in ways that are "optimally integrated such that the strengths of each are blended into a unique learning experience congruent with the context and intended educational purpose" (Garrison and Vaughan, 2008, p. 5). Evidence suggests that such courses enjoy higher levels of student interaction and satisfaction, better rates of retention and achievement, and more effective interaction than fully online courses (Nielsen, 2013).

The exponential rise of interest in the development of online courseware, and MOOC's (Massive Online Open-source Courses) is testament to the perceived economies of scale, amenity and educational opportunities associated with globalised online educational content. Sandeen (2013), for example, suggests that MOOCs are "an extremely positive development" (p. 11) in addressing social and educational challenges by increasing the numbers of students who achieve post-secondary education and providing access to high-quality, low-cost education. However, for these goals to be realised, more research is needed on a number of related issues, not the least being the high attrition rates reported for this form of open education. Recent local and international experience with distance education and MOOCs suggest that these courses are not necessarily better nor a simple substitute for traditional modes of education delivery due to reduced opportunities for personal contact between the student and teacher or between peers. This is especially true in xMOOC offerings such as those offered by consortia (for example EdX, Coursera, and Udacity), which Bragg (2014) argues follow more traditional publishing models and provide very little opportunity to engage with others. Although recognising that cMOOCs, which are based on the principles of connectivism (Siemens, 2005) offer the potential for more active student engagement (Milligan, Littlejohn & Maegaryam, 2013), such formats may not be suitable in populations where levels of disengagement are already high, given the well documented significant levels of attrition from MOOCs (Bragg, 2014).

There is significant research indicating the centrality of social interactions in the effective construction of knowledge and understanding (Barab, Sasha, Evans, Michael, & Baek, 2004; Cole, 1998; Jonassen & Rohrer-Murphy, 1999; Vygotsky, 1978). In traditional face-to-face delivery modes, the presence of a teacher and other students can provide a rich social environment and a sense of belonging and place for students. The challenge with non-traditional approaches has always been the high attrition rates. For regional and remote students in Australia, attrition rates in post-secondary education are as high as 40-50% (2012 *Appendix 4 – Attrition, success and retention*, 2012; *More to university drop-outs than meets the eye*, 2012; *New student retention rating*, 2014; *University student attrition rates across Australia*, 2014, March 12). This reflects a very poor return on investment for both stakeholder groups, i.e. individual students who pay through HECS and the taxpayer via the tax system.

At this time, governments and taxpayers are not apparently willing to extend the more traditional approaches to post-secondary education to a significant proportion of the post-secondary student cohort outside the current settings. Post-secondary education is often considered

- too expensive
- potentially culturally inappropriate for some groups in some circumstances, and/or
- represents an unfair ‘subsidy’ by the taxpayer to those who will typically benefit financially from that education in the future.

However, the costs of *not* providing access to postsecondary education are likely to undermine investment in Northern Australia. In education terms, there has developed sufficient technical knowledge and course design principles to develop alternative models. Although increased use of online technologies has been shown to have significant benefits, especially for regional and remote communities, the challenge of how to deliver the high quality post-secondary education necessary to underpin strong economic development in regional and remote communities, while also providing a sense of local community and support networks, has yet to be resolved. The challenge is further complicated by the current structure of post-secondary education that is dominated by ‘big box’ institutions in larger population centres with their

concomitant high infrastructure costs. Even if we were to invest further in such institutions, which has been a constant, if somewhat predictable, refrain from existing regional and remote education providers, we will still remove people from their communities and struggle to convince people to remain in the North or to move North with their families. Thus, we need a fundamentally new model of post-secondary education that:

- provides a high quality educational experience tailored to the needs of Northern Australian communities;
- enables us to provide the skills and experience necessary to underpin strong economic development;
- reduces the wastage and high attrition rates associated with current educational delivery modes in regional and remote Australia (e.g. in distance education mode); and
- makes use of the significant advances in online and educational technologies through a blended mode of delivery.

One way of doing this is to reimagine post-secondary education in a way that optimises the four goals listed above. As indicated previously, one way of doing this is to develop delivery modes that increasingly take the institution to the student rather than vice versa.

Recent deregulation provides a perfect opportunity to further decentralise the post-secondary education landscape and deliver high quality regional and remote education. High bandwidth Internet technologies clearly allow students to access the best national and global content but lack the social context within which much learning occurs. If this technology were to be paired with local provider services that delivered the best of traditional social support mechanisms as well, it would be possible to provide high quality education more broadly across the North of Australia.

Post-secondary education could be re-imagined, not as an expansion of single site, 'big box' providers, but rather, as the creation of a distributed network of small 'franchised' locations in regional centres all across Northern Australia. Post-

secondary education providers could partner with pre-existing organisations in regional and remote communities, e.g. companies, local government agencies (e.g. councils or libraries) and/or secondary education providers to establish small ‘branch offices’ in hundreds of locations across the North of Australia.

These small branch offices could provide pastoral care, peer support and access to virtual educational communities using specialised IT or video conferencing facilities. Such centres could utilise partner staff to provide front-of-house services and pastoral care referral services etc. Where numbers were sufficient, peer support mechanisms to underpin the social dimensions of learning could also be provided. The key benefit to such an approach is the reduction in start-up costs associated with establishing a post-secondary institutional presence, thus enabling more and smaller communities to develop a local post-secondary education provider presence in their community. For example, recent negotiations in Karratha between the Pilabara Development Corporation and the University of WA failed to establish a campus due to the perceived cost of developing a traditional ‘sandstone’ campus and the poor return on investment.

The model proposed here is much less expensive and permits a more flexible approach and co-investment in the provision of services. In addition, the provision of high quality IT and video-conferencing facilities can provide additional, leveraged benefits to communities above and beyond their educational needs (e.g. provision of cost-shared telemedicine, interaction with state and federal government agencies etc),

Examples of Benefits

The potentials for such a model are unlimited.

For example, companies operating in remote Northern Australia could partner with post-secondary providers to provide some of the infrastructure necessary to deliver vocational and tertiary education to staff and/or their families. This would assist employers to improve job skills, experience and assist in the development of peer support cohorts for current staff as well as improving their ability to provide the educational opportunities necessary to recruit and retain staff in remote regions.

Indigenous communities could partner with secondary and post-secondary providers to enable ‘wrap-around’ transition to post-secondary education for Aboriginal Australian located in remote Australia. By providing local post-secondary educational opportunities in remote Aboriginal communities, local students could participate without the need to leave their communities for larger regional or capital city locations. Similarly, the technology could provide students in non-remote settings the opportunities to interact with and contribute to remote Aboriginal communities and to reduce the educational disadvantage associated with geographic distance.

Local and State Governments could partner with post-secondary providers to develop local educational hubs to support skills acquisition and mentoring. These hubs could also be used to foster local enterprise development. High bandwidth access to post-secondary providers could provide mentoring support to small business development in a range of areas including innovation, entrepreneurship, marketing logistics, export, supply/value chain analysis etc. This type of support may be critical in providing new and exciting educational and employment opportunities for the ‘trailing spouses’ that often make it difficult to reside in communities in Northern Australia.

It may also be possible to partner with local health care providers to provide professional training and development opportunities for medicine, nursing and allied health alongside other professional development programs. A post-secondary provider with a micro-campus located within a hospital could provide significant opportunities for staff to interact with colleagues in major teaching hospitals. Similarly, hospitals and medical centres with good pre-existing telemedicine facilities could collaborate through a micro campus to provide significant additional educational opportunities for the communities within which they are embedded.

Similar examples of the proposed distributed, community-based post-secondary education models in other geographical contexts already exist. For example, Wilson and Battiste (2011) describe a model based on the provision of in-community, online and web-based distance education to remote areas, enabling students to receive an education without leaving their jobs or their home communities. As they argue, post-

secondary education programs need to be "locally owned, developed, inspired, and delivered have the greatest potential of meeting the needs of Aboriginal peoples" (p. 24). Although Wilson and Battiste's model is based on Indigenous community-based education, the principles can be applied to any community-based post-secondary context in that such a model aims to build local capacity and maximise opportunities for the transfer of knowledge and skills. The principles of the distributed education model described by Wilson and Battiste (2011, pp. 23-24), are as follows:

- Local measurement and decision-making;
- Learning is guided and directed by a vital and active community;
- Respect of the whole person who is part of family, community, and Nation is demonstrated;
- Holistic approach is used;
- Informal learning is valued over structured and formal learning;
- Exposure to culturally sensitive learning environments;
- Working with community members;
- Access to local education rather than having to leave community and home;
- Relevance to work and application;
- Flexible and community-based approaches;
- Flexibility enabling students to maintain a work schedule while learning;
- In the case of Indigenous communities, incorporating cultural knowledges and employing Aboriginal teachers to deliver culturally sensitive curricula incorporating bilingual learning experiences;
- Family and community support is valued and family members are regarded as the first teachers and the primary educators for sharing traditions and beliefs;
- Teaching and learning activities support social, economic, political and education advancement;
- Activities contribute to free choice of where to work and live.

The distributed community-based education model proposed in this position paper combines elements of the distributed education and community-based education models described by Wilson and Battiste (2011), recognising that the success of such a model is dependent on the availability of suitable technologies to the students in their communities. The distributed model also needs to be complemented by

appropriate supports within the community as well as outreach programs, which provide in-situ mentoring and other activities designed to encourage and prepare young people in remote communities "to participate in post-secondary education while they are still in the K-12 system" (p. 25). Such a model is informed by cultural-historical activity theory (Engeström, 2001; Leont'ev, 1978; Vygotsky, 1978), situated learning and cognitive apprenticeship (Brown, Collins & Duguid, 1989) and the principles of authentic learning (Herrington, Reeves and Oliver, 2010); acknowledging the need to connect students, their place of employment or future employment, their community and the curriculum.

This kind of community-based education context provides appropriate supports and opportunities for students to develop their applied skills as members of a community and current or future employees. The approach recognises the need for a flexible and adaptable curriculum that is based on the principles of authentic learning, while also maximising the opportunities for students to utilise appropriate information and communication technologies in ways that support their learning and provides them with access to the tools they need to apply in practice as future graduates.

Once we can accept the idea that a post-secondary education is no longer a choice between relocation or quality, the possibilities are endless. High quality content, sourced globally, supplemented by high value local social support and encouragement, delivered from a small campus, tightly integrated with local infrastructure and the community is a very real possibility.

Current Developments

To date, there have been some limited attempts to develop small post-secondary educational institutions in Australia. These have not been particularly successful to date. There have been several private higher education and VET sector providers that have successfully established small campuses and enrolments in highly specialised areas. However, the vast majority of these have been established in capital cities and targeted specifically to fee-paying international students, rather than regional domestic students. The quality issues associated with these developments have been well documented and a critique of this is beyond the scope of this paper. However, it

is important to note that size, in and of itself, is not always a proxy for quality and that the model proposed here could easily be adopted by large, well-established providers to meet the needs of regional domestic students using a localised regional/remote co-investment ‘franchise’ model that ensured consistency, quality and accountability.

The only major post-secondary education provider to explore this model so far has been Central Queensland University (CQU). Over recent years CQU has established a range of micro-campuses in both regional and urban Australia. This model has been relatively flexible and has involved co-investment in some sites. What has been learned from these campuses is that domestic students are attracted to micro-campuses when they come under the banner of a large, well-established post-secondary provider. Moreover, it is also clear that the combination of online content delivery and local support appears very attractive to students and families for whom travel to larger cities is undesirable. What is also clear is that for students from relatively disadvantaged backgrounds, the ‘intimacy’ of smaller campuses helps them adapt more successfully to the anonymity of large post-secondary educational environment.

If this approach were to be extended more broadly, it would be possible for larger post-secondary education providers (especially those with strong quality control systems) to provide high quality educational opportunities into regional and remote Northern Australia. The co-location and co-investment in the creation of micro-campuses with pre-existing community infrastructure would minimise the establishment maximise the level of community engagement through Local and State Government agencies and employers.

Conclusion

This position paper focusing on post-secondary education as a driver of social and economic development in Northern Australia identifies several major challenges facing industry, post-secondary education providers and communities in Northern Australia. These challenges include:

- A lack of residual development in the North;

- The reliance on fly-in-fly-out workers as the preferred solution for some industries instead of investment in building an educated workforce within the region;
- Recognition by the Australian Government of the need for further investment to ensure that rural and regional areas of Australia can lead the country in economic recovery and sustainability;
- The need for investment in the physical (particularly high speed and affordable broadband services) and social infrastructure to attract and retain a skilled local population;
- A level of resistance to encouraging young people from the community to undertake post-secondary education due to the need for them to relocate to urban centres;
- The high levels of attrition of students from these communities who are studying in distance mode;
- Continuing underrepresentation in post-secondary education and lower rates of success, retention and completion of Aboriginal and Torres Islander students.

The alternative distributed, community-based model proposed in this position paper addresses these issues by reversing the flow; the educator instead going to the community to deliver high quality education through partnering with local communities, not-for profit and government agencies. The model has been shown to be successful in other regional contexts (see Wilson & Battiste, 2011, pp. 23-24) for the following reasons:

- Decision-making occurs locally through collaboration and consultation with the community members;
- Learning is guided and directed by the community;
- Respect is given to the 'whole person' who is part of family, community, and Nation;
- A more holistic solution, which builds on a social constructivist approach to situated learning;
- Informal learning provided by the community complements formal learning provided by post-secondary educators;

- Students are exposed to culturally sensitive learning environments within places of historical significance that are imbued with cultural artefacts;
- Access is provided to local education avoiding the need for post-secondary students to leave their communities and homes;
- The situated learning model provides a more authentic context in which the relevance to work and application within the community is embedded within the curricula;
- The approach employing a blended mode of delivery is flexible and community-based;
- Such flexibility enables students to maintain a work schedule while learning within their communities;
- Family and community support is valued;
- The teaching and learning activities support social, economic, political and educational advancement;
- The approach invests into building the skills of the community within the region and thus to economic growth and sustainable futures.

This proposal argues for investment into the physical infrastructure of the North and a radical revision of traditional approaches to post-secondary distance education. The proposal also argues for dialogue with local communities, industries and Government to explore the potential of a distributed partnership model, which provides access to facilities and supports for the members of their communities undertaking post-secondary education within the region. Through such dialogue, the common focus on infrastructure required for development of health, services, industry, government agencies and local business, the inter-dependence of education with these future developments can be maximised.

References

- 2012 *Appendix 4 – Attrition, Success and Retention* (2012). Retrieved from:
<http://docs.education.gov.au/documents/2012-appendix-4-attrition-success-and-retention>
- Alloway, N., & Dalley-Trim, L. (2009). 'High and Dry' in rural Australia: Obstacles to student aspirations and expectations. *Rural Society*, 19(1), 49-59. doi: 10.5172/rsj.351.19.1.49
- Asmar, C., Page, S. & Radloff, A. (2011). Dispelling myths: Indigenous students' engagement with university. Retrieved 26 April 2013 from,
<http://research.acer.edu.au/ausse/2/>
- Australian Bureau of Statistics (ABS) (2009). *Experimental Estimates and Projections, Aboriginal and Torres Strait Islander Australians*. Canberra: Australian Bureau of Statistics.
- Australia's Skills and Workforce Development Needs: A Discussion Paper for the 2012 National Workforce Development Strategy* (2012). Canberra: Australia.
- Barab, Sasha, Evans, Michael, & Baek. (2004). Activity Theory as a Lens for Characterizing the Participatory Unit. In D. H. Jonassen (Ed.), *Handbook of Research on Educational Communications and Technology* (pp. 199-214). NJ: Lawrence Erlbaum.
- Bartholomaeus, P. (2009). *The Potential of Place-based Education to Enhance Rural Students' Educational Experience*. Paper presented at the ISFIRE 2009 International Symposium for Innovation in Rural Education, Armidale, NSW, Australia.
- Boling, E. C., Hough, M., Krinsky, H., Saleem, H., & Stevens, M. (2012). Cutting the distance in distance education: Perspectives on what promotes positive, online learning experiences. *The Internet and Higher Education*, 15(2), 118-126.
- Bradley, D., Noonan, P., Nugent, H., & Scales, B. (2008). *Review of Australian Higher Education: Final Report*. http://www.deewr.gov.au/he_review_finalreport.
- Bragg, A. B. (2014). MOOCs: Where to from here? *Training & Development*, 41(1), 20-21.
- Broadband Availability and Quality: Summary Report* (2013). Australian Government.
http://www.communications.gov.au/__data/assets/pdf_file/0016/205027/Broadband_Availability_and_Quality_Summary_Report_23_December_2013.pdf

- Brown, J. S., Collins, A. & Duguid, P. (1989). Situated Cognition and the Culture of Learning. *Educational Researcher*, 18(1), 32–42. Sage Publications.
- Cole, M. (1998). Can Cultural Psychology Help Us Think About Diversity? *Mind, Culture, and Activity*, 5(4), 291-304.
- Eadie, L., & Hayman, M. (2014). *All Boom, No Benefit? Why Queensland Needs a New Economic Strategy* (Vol. Occasional Paper 36): Centre for Policy Development.
- Elliott, A. (2010). Equity, pedagogy and inclusion. Harnessing digital technologies to support students from low socio-economic backgrounds in higher education. *Community Informatics: A Global d-Journal*, 6(3).
- Engeström, Y. (2001). Expansive Learning at Work: Toward an Activity Theoretical Reconceptualization. *Journal of Education and Work*, 14(1), 133–156.
- Garrison, D. R., & Vaughan, N. D. (2008). *Blended Learning in Higher Education: Framework, Principles, and Guidelines*. The Jossey-Bass higher and adult education series. San Francisco: Jossey-Bass.
- Gibson, W. (1999 November 30). National Public Radio: NPR: Talk of the Nation, *The Science in Science Fiction, Interview with William Gibson*.
<http://www.npr.org/templates/story/story.php?storyId=1067220>
- Gillard, J. (2009, March). *Speech. Universities Australia Conference*.
http://www.deewr.gov.au/Ministers/Gillard/Media/Speeches/Pages/Article_090304_155721.aspx
- Gruenewald, D. A., & Smith, G. A. (2014). *Place-Based Education in the Global Age: Local Diversity*. New York: Routledge.
- Hart, C. (2012). Factors associated with student persistence in an online program of study: a review of the literature. *Journal of Interactive Online Learning*, 11(1), 19-42.
- Herrington, J., Reeves, T. and Oliver, R. (2010). *A Guide to Authentic e-Learning*. New York & London: Routledge .

- James, R. & Devlin, M. (2006). *Improving Indigenous Outcomes and Enhancing Indigenous Culture and Knowledge in Australian Higher Education*. Canberra: Indigenous Higher Education Advisory Council.
- James, R., Bexley, E., Anderson, M., Devlin, M., Garnett, R., Marginson, S., & Maxwell, L. (2008). A review of the participation in higher education of people from low socioeconomic backgrounds and Indigenous people.
<http://113.192.24.155:8080/vital/access/services/Download/ngv:35491/SOURCE2?view=true>
- Jonassen, D. H., & Rohrer-Murphy, L. (1999). Activity Theory as a Framework for Designing Constructivist Learning Environments. *Educational Technology Research and Development*, 47(1), 61-79.
- Koshy, P. (2014) Student Equity Performance in Australian Higher Education: 2007 to 2012. Perth: National Centre for Student Equity in Higher Education (NCSEHE), Curtin University.
- Leont'ev, A.N. (1978). *Activity, Consciousness, and Personality*. Englewood Cliffs: Prentice-Hall.
- McLoughlin, C. (2000). Cultural Maintenance, Ownership, and Multiple Perspectives: Features of Web-based Delivery to Promote Equity. *Journal of Educational Media*, 25(3), pp. 229–241.
- Milligan, C., Littlejohn, A., & Margaryan, A. (2013). Patterns of engagement in connectivist MOOCs. *MERLOT Journal of Online Learning and Teaching*, 9(2).
- More to University Drop-Outs Than Meets the Eye* (2012). Retrieved 7th July 2014, 2014, from <http://www.hobsons.com/apac/education-trends/news-room/media-release/more-to-university-drop-outs-than-meets-the-eye/>
- NBN Empowering Australia: Education (2011)*. Department of Broadband, Communication and the Digital Economy, Australian Government.
- Nielsen, S. M. (2013). “*Half Bricks and Half Clicks*”: *Is Blended Onsite and Online Teaching and Learning the Best of Both Worlds?*
<http://digitalcommons.fiu.edu/cgi/viewcontent.cgi?article=1126&context=sferc>

- Ottmann, J., & White, N. (2010). Note from the Editors. *Ngoonjook*(34), 5-12.
- Palloff, R. M., & Pratt, K. (2013). *Lessons from the virtual classroom: The realities of online teaching*. John Wiley & Sons.
- Partridge, H., Ponting, D., & McCay, M. (2011). *Good Practice Report: Blended Learning*. Sydney: Australian Learning and Teaching Council.
- Patton, W., Lee Hong, A., Lampert, J., Burnett, B., & Anderson, J. (2012). Report into the retention and graduation of Aboriginal and Torres Strait Islander Students enrolled in initial teacher education. More Aboriginal and Torres Strait Islander Teachers Initiative, University of South Australia.
- Patterson, B., & McFadden, C. (2009). Attrition in online and campus degree programs. *Online Journal of Distance Learning Administration*, 12(2).
- Polesel, J., & Klatt, M. (2014). University deferrers in metropolitan and non-metropolitan Victoria: A longitudinal study. *Australian Journal of Education*. doi: 10.1177/0004944114523369
- Price, K. & Hughes, P. (2009). What works. The work program. Improving outcomes for indigenous students: stepping up. What works in pre-service teacher education. National Curriculum Services and the Australian Curriculum Studies Association.
- Price, K., & Hughes, P. (2009). What works. The work program. Improving outcomes for indigenous students: stepping up. What works in pre-service teacher education. [Deakin, ACT]: National Curriculum Services and the Australian Curriculum Studies Association.
- Regional Australia: Making a Difference. Commonwealth Budget 2000-2001* (2000). Canberra: Commonwealth of Australia.
- Regional Universities Network: Engaging with Regions, Building a Stronger Nation Volume One* (2013). Canberra: Regional Universities Network.
- Resourcing the Future: National Resources Sector Employment Taskforce Discussion Paper*. (2010). Canberra: Commonwealth of Australia.

- Rovai, A. P. (2003). In search of higher persistence rates in distance education online programs. *The Internet and Higher Education*, 6(1), 1-16.
- Rovai, A. P., & Wighting, M. J. (2005). Feelings of alienation and community among higher education students in a virtual classroom. *The Internet and Higher Education*, 8(2), 97-110. doi: <http://dx.doi.org/10.1016/j.iheduc.2005.03.001>
- Salmon, G. (2013). *E-tivities: The key to active online learning*. Routledge
- Sandeen, C. (2013). Assessment's Place in the New MOOC World. Research & Practice in Assessment, Summer, 2013. <http://www.rpajournal.com/dev/wp-content/uploads/2013/05/SF1.pdf>
- Siemens, G. (2005). Connectivism: A learning theory for the digital age. *International Journal of Instructional Technology and Distance Learning*, 2(1), 3-10. Retrieved from http://www.itdl.org.ezlibproxy.unisa.edu.au/Journal/Jan_05/article01.htm
- Stronger Rural and Regional Communities*. Commonwealth Budget 2010-2011 (2010). Canberra: Commonwealth of Australia.
- University Student Attrition Rates Across Australia* (2014, March 12, 2014). The Australian. Retrieved from <http://www.theaustralian.com.au/higher-education/university-rankings/table-showing-student-attrition-at-australian-universities/story-fna15id1-1226851659938>
- Vygotsky, L. S. (1978). *Mind in Society* (M. Cole, V. John-Steiner, S. Scribner, & E. Souberman, Eds.): Cambridge, MA: Harvard University Press.
- Wilks, J., & Wilson, K. (2012). Going on to uni? Access and participation in university for students from backgrounds of disadvantage. *Journal of Higher Education Policy and Management*, 34(1), 79-90. doi: 10.1080/1360080X.2012.642335
- Willems, J. (2010). The Equity Raw-Score Matrix – a multidimensional indicator of potential disadvantage in higher education. *HERDSA Journal*, 29(6), 603-621.
- Wilson, A. and Battiste, M. (2011). *Environmental Scan of Educational Models Supporting Aboriginal Post-secondary Education*. Report prepared for the Commonwealth of Australia, Canberra.

- Wood, D. and Willems, J. (2012). Responding to the widening participation agenda through improved access to and within 3D virtual learning environments. In M. J. W. Lee, B. Dalgarno & H. Farley (Eds), *Virtual worlds in tertiary education: An Australasian perspective. Australasian Journal of Educational Technology*, 28 (Special issue, 3), pp. 459-479.
- Zandvliet, R., Bertolini, L., & Dijst, M. (2008). Towards Planning for a Mobile Society: Mobile and Residential Populations and the Performance of Places. *European Planning Studies*, 16(10), 1459 -1472.

Defence in the three tropical cities:

How to sustainably seize the potential?

Riccardo Welters

1. Introduction

About 45% of the population in Tropical Australia, live in its three largest cities: Cairns (resident population: 142,000), Darwin (121,000) and Townsville (175,000). Defence is one of the major (public sector) industries in these three cities. In 2012 it employed 12,000 permanent members (20% of Australia's permanent Defence personnel) and a further 1,000 civilian personnel (4% of Australia's civilian Defence personnel) across the three tropical cities.

This discussion paper analyses what we know about the interaction between Defence and the tropical cities in which it is located. However, there is still a lot that we do not know about the interaction, as a result of data availability limitations. The paper recommends better data collection and foreshadows how better data collection can produce more targeted policy responses to the benefit of both Defence and the tropical cities.

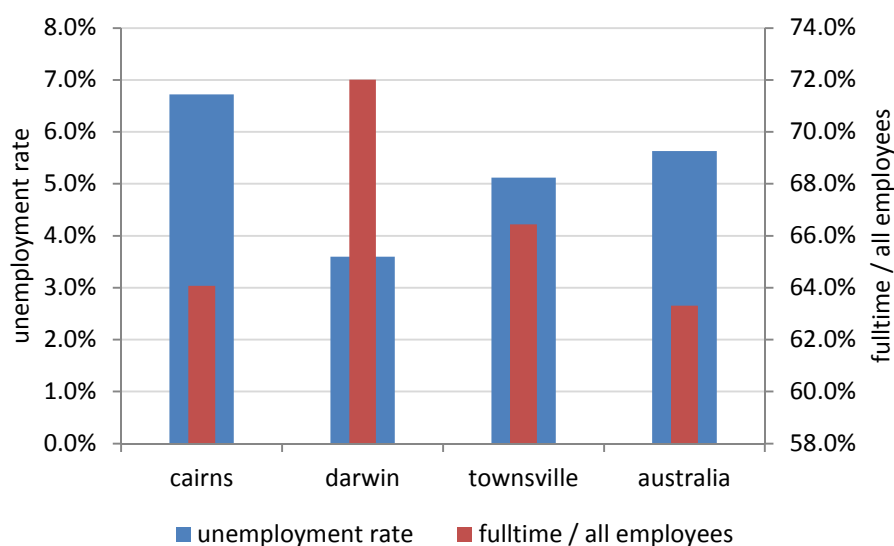
Section 2 of the paper discusses the employment and industry structure of the three tropical cities and how Defence shapes that structure. Section 3 describes the socio-economic impact of Defence on the three cities, while Section 4 provides conclusions and recommendations.

2 Employment and industry structure of tropical cities

To understand how Defence shapes the employment and industry structures of the tropical cities, we first briefly describe labour market performance in the tropical cities allowing a comparison between the three cities and benchmark their performance to the Australian average. We then progressively demonstrate the influence that Defence has on labour market performance in the three tropical cities.

We start the analysis with some key labour market outcomes for the three tropical cities and the Australian average. Figure 2.1 looks at two interrelated aspects of the labour market. The blue bar represents unemployment rates. Here we observe stark differences between the three cities. The Darwin labour market is operating close to full capacity in 2011. Whilst an unemployment rate of 3.6% suggests there is still unused labour supply available, in reality most of that supply is frictional unemployment. Also Townsville observes below nationwide average unemployment in 2011, but the same cannot be said of Cairns, where unemployment is significantly above the national average and hence clearly out of sync with the two other tropical cities.

Figure 2.1: Excess labour supply in the tropical cities, 2011

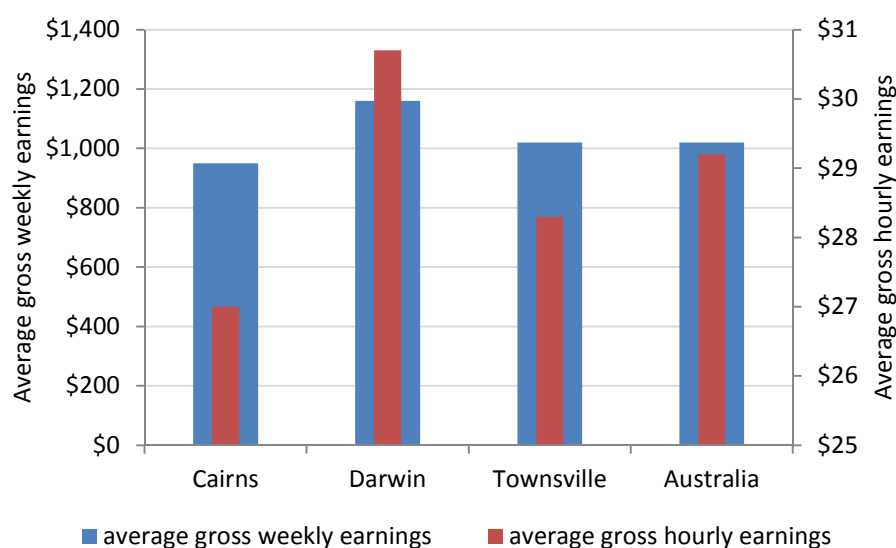


Source: ABS Census 2011

Figure 2.1 also includes the share of fulltime employees in the total pool of employees. Given the tight conditions in Darwin, one may expect that this share is driven by preferences. That is, the 28% workers who work part-time do so, because they prefer so. In more loose labour markets the share of part-timers is higher, indicating underemployment, since there are no *a priori* reasons why part-time work is more popular in Cairns, Townville or indeed nationwide.

Differences in labour market tightness also translate into earnings differences – see Figure 2.2. Average gross weekly earnings are about 140 dollars higher in Darwin than the nationwide average, whilst high unemployment in Cairns depresses weekly earnings contributing to a 70 dollars shortfall. To control for differences in working hours as noted in Figure 2.1, we also present gross hourly earnings and note considerably higher hourly wages in Darwin and lower hourly wages in Townsville and especially Cairns compared to the nationwide average for 2011.

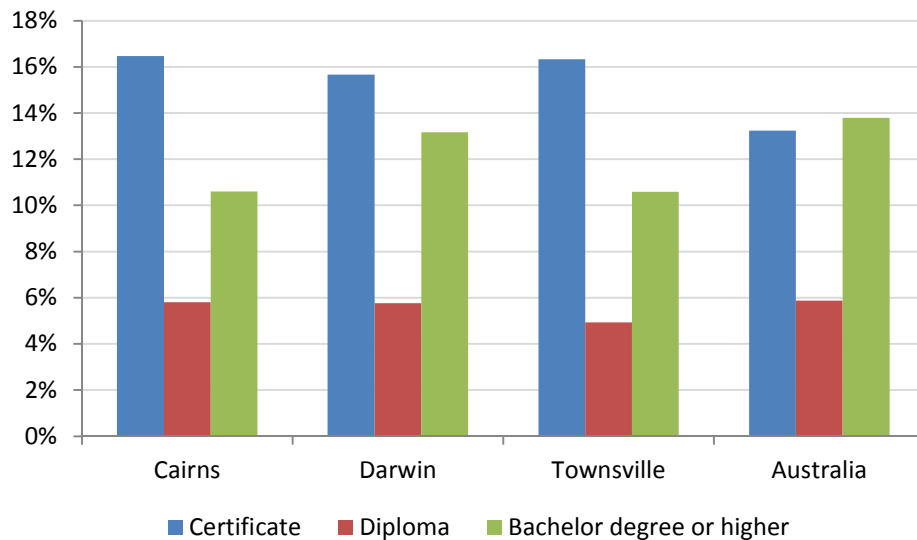
Figure 2.2: Gross weekly / hourly earnings in the tropical cities, 2011



Source: ABS Census 2011

Labour market tightness is only one contributor to regional wage differences. Qualifications and industry structure are two more contributors. Figure 2.3 presents highest post school qualifications in the three tropical cities in 2011. We note that trade certificates are the foremost qualification in all three tropical cities (around 16% across all three cities), while that is a university degree nationwide. Differences between Cairns and Townsville compared to the Australian average are more pronounced than differences between Darwin and Australia.

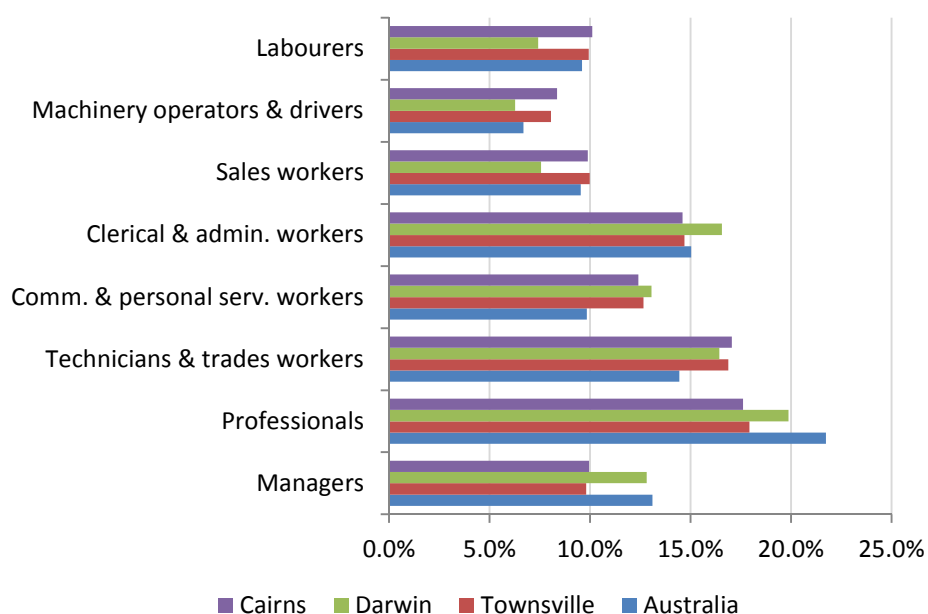
Figure 2.3: Post school qualifications in tropical cities, 2011



Source: ABS Census 2011

Whilst causation between educational and occupational distribution can be difficult to determine, correlation between the two distributions is typically strong, as is also the case for the tropical cities – compare Figures 2.3 and 2.4. We observe lower shares of high occupational categories (Managers and Professionals) in the tropical cities compared to the national average, especially in Cairns and Townsville – see Figure 2.4. Instead, the tropical cities have higher shares of low occupational categories (Labourers, Machinery operators & drivers, and Sales workers) than the nationwide average. Again Darwin’s occupational structure looks more like the Australian average. However, the three tropical cities share a higher share of Community & personal service workers than the Australian average.

Figure 2.4: Occupational structures in tropical cities, 2011

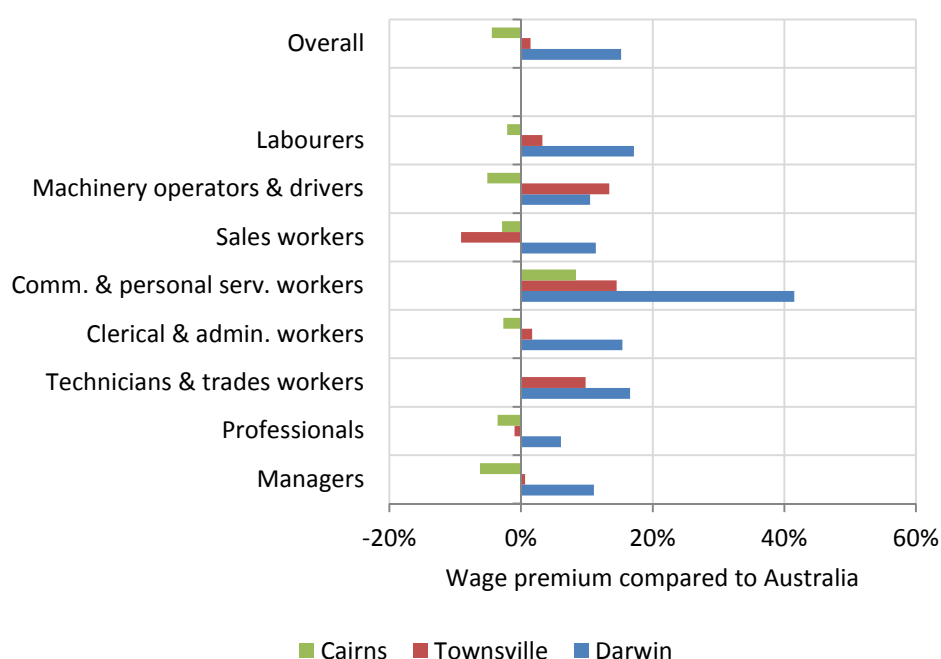


Source: ABS Census 2011

Whilst education and occupation structures in the three tropical cities indicate that weekly earnings in Darwin should be comparable to, in Townsville below and in Cairns far below the Australian average, Figure 2.2 only confirmed this finding for Cairns. Therefore we dissect weekly earnings to occupational levels to reveal occupational categories that support the tropical cities' wage structures beyond levels expected from the nationwide average.

Figure 2.5 provides this overview. The top row of Figure 2.5 provides the overall weekly gross earnings premium as shown in Figure 2.2. Not surprisingly, occupational groups that emerged from Figure 2.4 as larger than expected from the nationwide structure, also command significant earnings premiums, possibly as a result of wage competition. The most prominent occupational category is 'Community & personal services workers', which commands earnings premiums in 2011 of around 8% in Cairns, 15% in Townsville and 42% in Darwin.

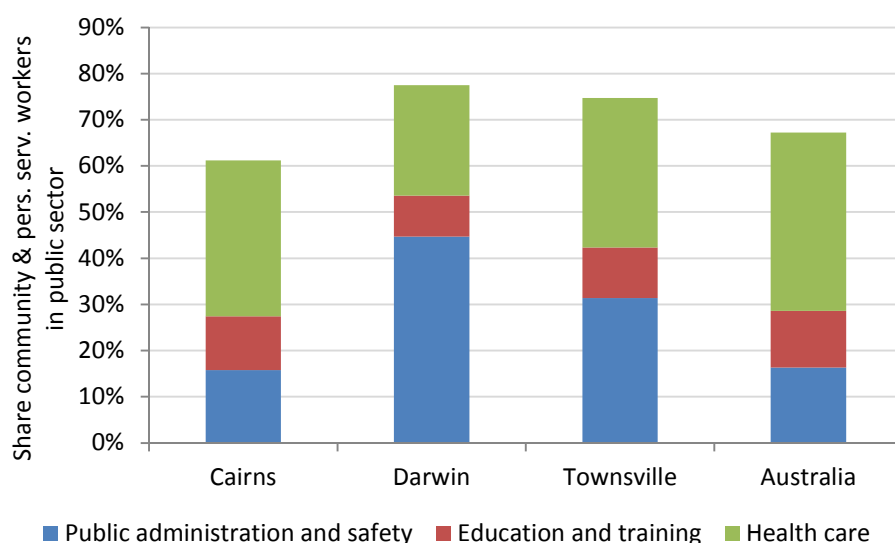
Figure 2.5: Weekly earnings premiums in tropical cities, 2011



Source: ABS Census 2011

Having established that the 'Community & personal service workers' occupational category is an important pillar under the wage structures in the three tropical cities, we explore the extent to which the public sector is providing employment for this occupational category – see Figure 2.6. We note that nationwide, the public sector is responsible for 67% of all jobs in this occupational category, but that is substantially more in Townsville (75%) and Darwin (78%) and substantially less in Cairns (61%). These city differences are driven by the 'Public administration and safety' industry.

Figure 2.6: Public sector share in 'Community & pers. serv. workers' in tropical cities, 2011

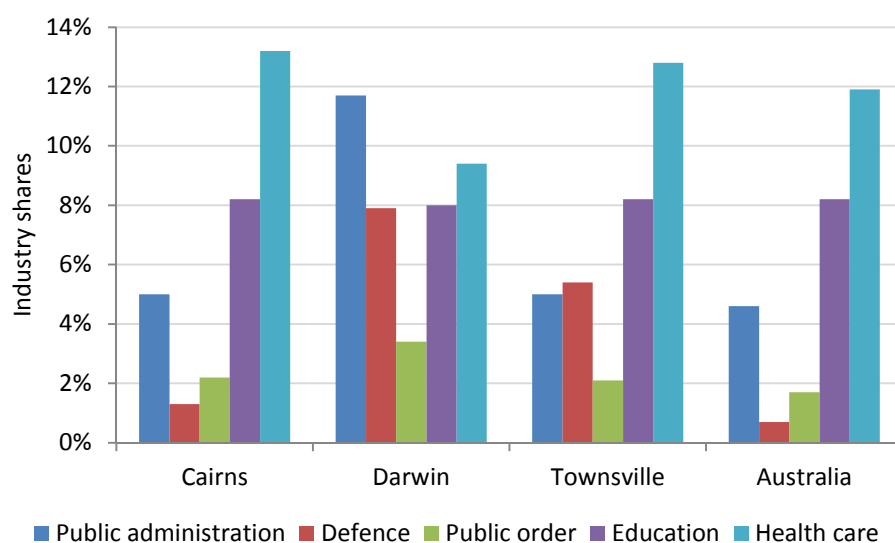


Source: ABS Census 2011

So far we have seen that the 'Community & personal service workers' occupational category is overrepresented in the three tropical cities, compared to the Australian average (Figure 2.4). We also know that workers in this occupational category command weekly earnings above and beyond what can be expected from that occupational category nationwide (Figure 2.5). We also saw that, especially in Darwin and Townsville, the public sector is an important employer in this occupational category (Figure 2.6).

Figure 2.7 shows the industry share of the public sector in the three tropical cities. This figure reveals that Defence is an important ingredient in the public sector mix in Darwin and Townsville and to a lesser degree in Cairns.

Figure 2.7: Industry shares (employment) of public sector in tropical cities, 2011.



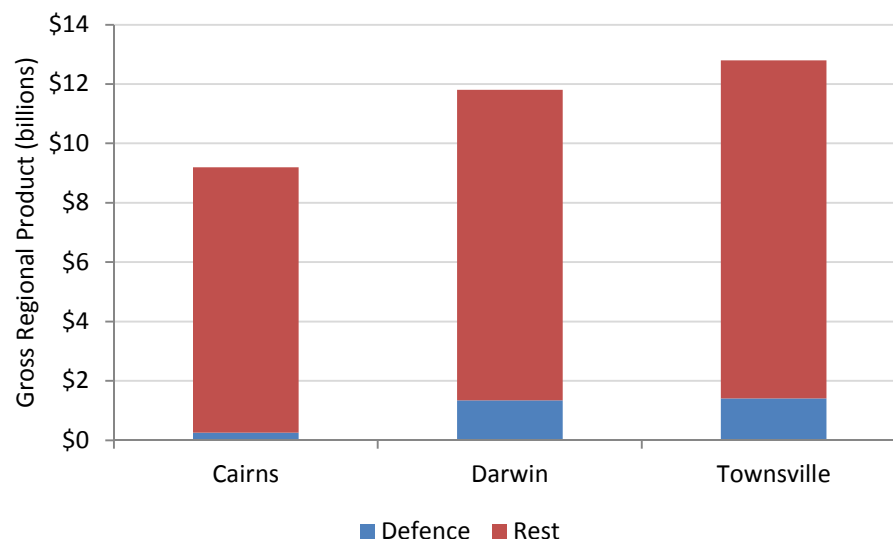
Source: ABS Census 2011

Consequently, the existence of a substantial Defence sector in Townsville pushes earnings in Townsville beyond levels that may be expected based on educational attainment structures in the city. Similarly, the presence of a substantial Defence sector in Darwin combined with a strong Public Administration sector also pushes earnings in Darwin beyond levels that may be expected based on educational attainment structures in the city. In the absence of substantial support from any high earnings sectors, earnings in Cairns are at levels that may be expected based on educational attainment structures in the city.

3. Defence's presence and impact on the tropical cities

The previous section highlighted the role that Defence plays in solidifying the labour markets in Darwin and Townsville and to a lesser degree Cairns as an employer. Before analysing the Defence demographic in the tropical cities and its socio-economic needs, we briefly highlight its economic impact on the three cities. Figure 3.1 shows gross regional product in the three cities. The Cairns economy is worth nine billion dollars in 2013, Darwin nearly twelve billion and Townsville nearly 13 billion. The direct contribution of Defence to these economies ranges from 3% in Cairns to 11% in Darwin and Townsville. As a result Defence is an important industry sector employment wise, but also dollar wise – especially in Darwin and Townsville.

Figure 3.1: Economic contribution Defence in tropical cities, 2013

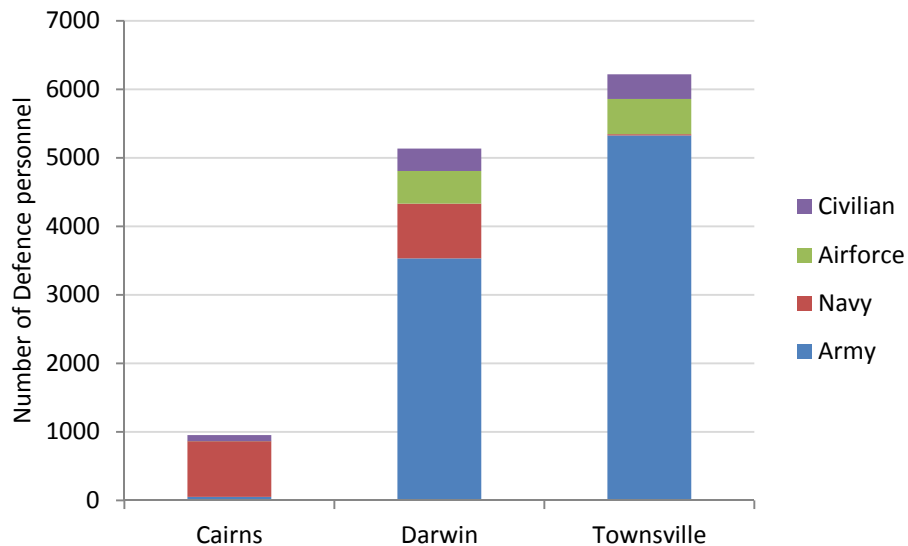


Source: Deloitte Access Economics (2011); JCU calculations

3.1 Defence demographic

As Section 2 highlighted, defence is larger in all three tropical cities compared to the Australian average but especially so in Darwin and Townsville. Figure 3.2 presents the Defence population size specified to activity. Defence Cairns is nearly exclusively navy. Darwin has a large army contingent next to smaller contingents of navy and air force personnel. Defence Townsville is predominantly army oriented, next to a much smaller air force contingent.

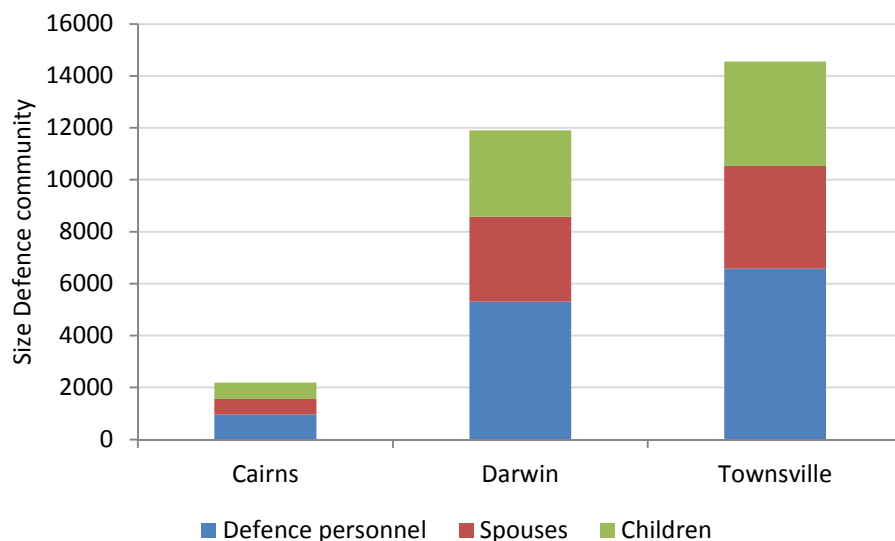
Figure 3.2: Defence personnel in the tropical cities, 2012



Source: Defence (2013)

However, the Defence community is larger than the number of Defence personnel only. Three quarters of Defence personnel either have a spouse and or dependent children. Once we include them, we see that over 14,000 people in Townsville have a (household) link to Defence, which is 8% of the Townsville population. In Darwin nearly 12,000 people have a (household) link to Defence, which constitutes 10% of the population. In Cairns the population impact is more modest: just over 2,000 people are linked to Defence, which equates to nearly 2% of the Cairns population.

Figure 3.3: Size of the Defence community in the tropical cities, 2012



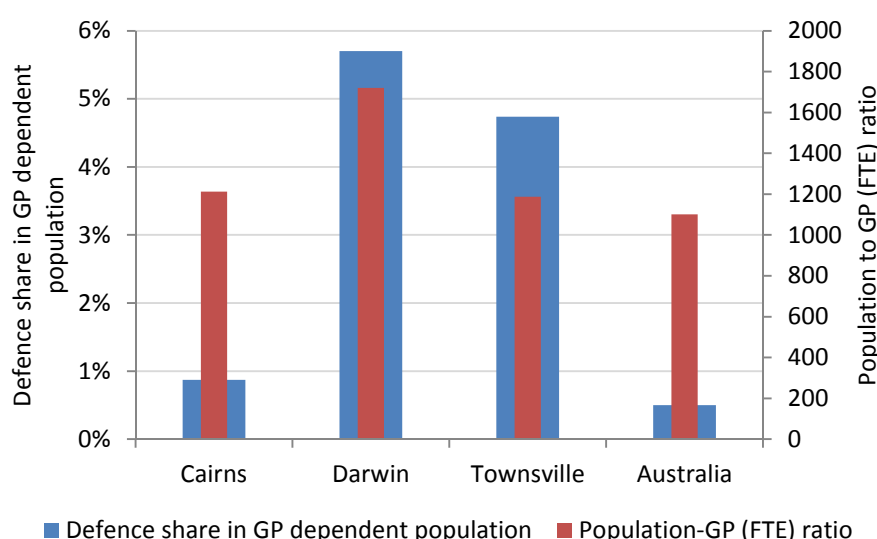
Source: Defence (2013), Australian Strategic Policy Institute (2011); Welters & Delisle (2008)

3.2 Socio-economic needs of Defence in the tropical cities

The nature of the Defence job (including long-term overseas deployments, hence long-term family break-up and frequent postings across the country, hence little attachment to any given location) puts additional pressures on Defence households, potentially leading to a stronger reliance on the social city infrastructure. It is therefore important that social city infrastructure is adequately resourced. In this paper we focus on two elements of social city infrastructure: access to general practitioner (GP) services and access primary and secondary school.

Figure 3.4 shows in blue the share of Defence in the GP dependent population.¹ In Cairns that percentage is just under 1%; in Darwin and Townsville it is higher at 5.7% and 4.7% respectively. The red bars indicate the number of people that a FTE (full time equivalent) GP services on average in the city. We observe that for all three cities that number is in excess of the Australian average, especially so in Darwin where each FTE GP services 1,700 residents (as opposed to 1,100 nationwide).

Figure 3.4: Defence and GP accessibility, 2011



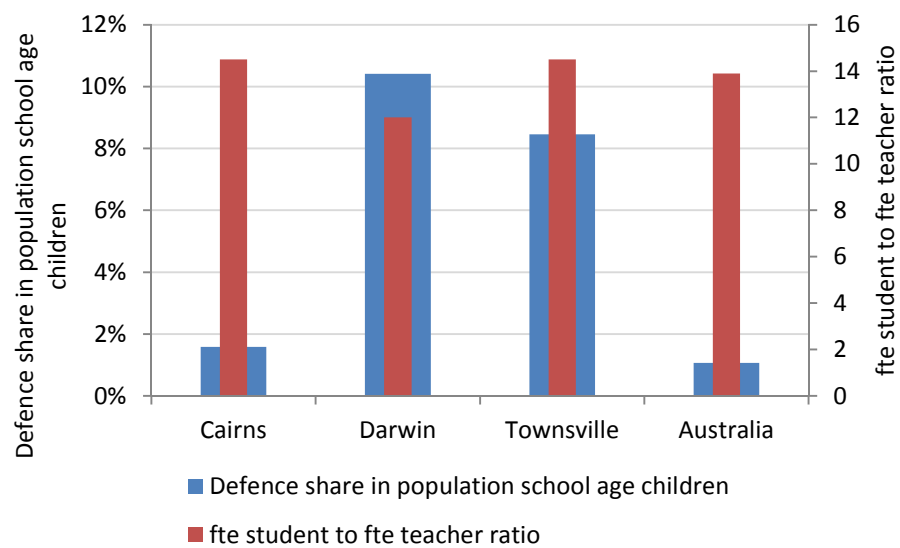
Source: ABS Census (2011); Primary Health Care Research & Information Service (2012)

Figure 3.5 presents in blue the share of Defence in the population of school age children. Whilst small in Cairns, that share is significant both in Darwin (10.4%) and Townsville (8.5%). We use the FTE student to FTE teacher ratio as an indicator of school accessibility – in red in Figure 3.5.² We observe that the student to teacher ratio in Cairns and Townsville (14.4) is above the Australian average (13.9), whilst in Darwin (12.0) it is below the average.

Figure 3.5: Defence and school accessibility, 2013

¹ The GP dependent population is net of uniformed Defence members, who have access to Defence health care.

² Student to teacher ratios are at the state level, which is the lowest aggregation level for which data are available. This figure includes primary and secondary education across all affiliations.



Source: Australian Bureau of Statistics (2013); ABS Census (2011); Defence (2013)

4. Policy recommendations

The analysis in this discussion paper describes the interaction between Defence and the three tropical cities Cairns, Darwin and Townsville. We observed that Defence is part of the economic backbone of these cities (especially in Darwin and Townsville) solidifying the city wage structure and protecting the economy to the ebbs and flows of the business cycle. At the same time we observed that the Defence community creates sizeable demand for social infrastructure in the cities, which is not necessarily well resourced in the tropical cities.

The discussion highlights what we know of the interaction between Defence and the tropical cities in which it is located. However, there is still a lot that we do not know about the interaction.

At least two areas of the interaction deserve further attention.

First, the economic interaction of Defence with other industries in a tropical city economy should be explored more deeply, *i.e.* the backward and forward linkages between Defence and other local and non-local industries. Subsequent analysis can demonstrate the potential of further strengthening the ties between Defence and local industries (replacing non-local suppliers) and its economic value to tropical cities. If that potential exists, policies targeted at exploiting that potential should be considered.

Second, the reliance of the Defence community on social city infrastructure. Whilst the author of this discussion paper is cognisant of the fact that the social infrastructure used by the Defence community stretches much further than access to GP services and schools, lack of data collected at city levels prevents a more holistic analysis for the tropical cities. Such an analysis would compare and contrast demand and supply for social infrastructure at a city level and could be used to benchmark social city infrastructure provision in garrison cities. That type of information could be exploited for targeted policy responses in cities that fail the benchmark in terms of social infrastructure. Addressing shortfalls in social infrastructures safeguards the sustainability of the relationship between Defence and the tropical cities.

5. References

Australian Bureau of Statistics. (2011). Census. Canberra, ACT: Author. Retrieved from <http://censusdata.abs.gov.au>

Australian Bureau of Statistics. (2013). Schools (No. 4221.0). Canberra, ACT: Author.

Australian Strategic Policy Institute. (2011). Australian Defence Almanac 2011–2012. Barton, ACT: Author.

Defence (2013). Email correspondence with the Department of Defence regarding Defence personnel figures in the tropics.

Deloitte Access Economics. (2011). Long term economic and demographic projections – ADF Posture review. Barton, Australia: Author. Retrieved from <http://www.defence.gov.au/oscdf/adf-posture-review/docs/interim/attachd.pdf>

Primary Health Care Research & Information Service. (2012). Key division of general practice characteristics 2010-2011, 2010-2011 Annual survey of Divisions. Flinders University, Adelaide, Australia: Author. Retrieved from: <http://www.phcris.org.au/products/asd/keycharacteristic/KeyDGPstatistics.xls>

Welters, R. & Delisle, A. (2008). A holistic analysis of the socio-economic impact of the Australian Defence Organisation and its interaction with the city of Townsville. Townsville, Australia: James Cook University. Retrieved from http://www.jcu.edu.au/business/public/groups/everyone/documents/event_description/jcuprd_052402.pdf.

What climate change and tropical cyclones mean for Northern Australia

Stephen M. Turton

Centre for Tropical and Environmental and Sustainability Science

College of Marine and Environmental Sciences

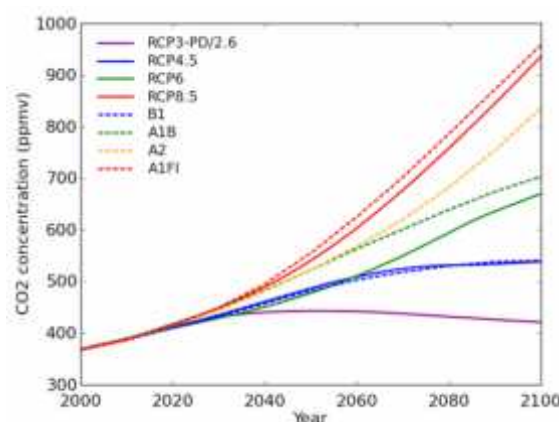
James Cook University, Cairns

Introduction

This chapter discusses the latest climate projections for key climate variables for Northern Australia, including tropical cyclones and provides a concise summary of key priorities for planning and policy. Climate change projections for the region are synthesised from numerous published sources, including the Intergovernmental Panel on Climate Change (IPCC) 4th (2007) and 5th (2013) Assessment Reports. Box 1 shows the new emission scenarios and their representative concentration pathways (RCPs), utilised in the recent *Intergovernmental Panel on Climate Change's 5th Assessment Working Group I Report* (IPCC 2013). These RCPs will play a significant role in determining future climates and the likelihood extreme weather events. On the basis of current global emissions of greenhouse gases due to human and natural processes, we are more or less following the RCP8.5 scenario trajectory and the other pathways should be considered as conservative.

Box 1: New emission scenarios: Representative concentration pathways (RCPs)

- Four RCPs describe plausible trajectories of future greenhouse gas and aerosol concentrations to the year 2100.
- These are named RCP2.6, RCP4.5, RCP6, and RCP8.5 in accordance with the range of radiative forcing values (in W/m²). Radiative forcing is a measure of the level of influence these gases have on Earth's energy balance.
- Each RCP is representative of a range of economic, technological, demographic, policy, and institutional futures.
- The intermediate scenario RCP4.5 could be considered as a trajectory with moderate mitigation, consistent with the B1 scenario of the SRES scenarios developed in 2001. The highest RCP scenario, RCP8.5, is similar to the A1FI, or highest concentrations case in the SRES scenarios. RCP4.5 and RCP8.5 concentration pathways are used for projections presented in this chapter.



Source :

Van Vuuren et al. (2011) The representative concentration pathways: an overview. *Climatic Change* 109: 5-31
IPCC (2001) Special Report on Emission Scenarios (<https://www.ipcc.ch/pdf/special-reports/spm/sres-en.pdf>)

When using these projections for planning decisions policy makers should consider that different models and RCPs generate a wide range of future climates. Tools and guidance material on the likelihood of the different projections will be offered through the *Climate Futures* software tool currently being developed by CSIRO.

Temperature

Air and sea surface temperatures and heat waves

The latest IPCC models predict that all regions of Australia will warm significantly by 2090, including Northern Australia (IPCC 2013). Lower rates of warming may be expected in coastal areas with higher rates expected further inland. Heat waves (number of days >35°C) will become more common in a warming world and will also profoundly affect parts of Northern Australia. In comparison, the number of cool days will decline. Sea surface temperatures across Northern Australia will warm in parallel with increases in air temperatures.

Average air temperatures

Since historical records began (1850s), average temperatures in Northern Australia have increased at similar rates to the Australian average (~0.9°C). Minimum temperatures have increased more than maximum temperatures during this time (BOM 2013). Year-to-year variability in temperatures is strongly driven by the El Niño Southern Oscillation (ENSO) phenomenon with warmer years generally associated with El Niño events (e.g. 1998).

Table 1 summarises projected changes in average temperatures (°C) for Northern Australia utilising the CMIP5 global models for the conservative RCP4.5 emission scenario (see Box 1). Projections are provided for the summer wet-season (December-February), the winter dry season (June-August). All the models project an increase in average air temperatures, with the greatest increases expected during the summer wet-season months.

Table 1: CMIP5 global models average temperature projections for Northern Australia for 2035 and 2065. The ranges of values are derived from 42 global models for the RCP4.5 scenario (see Box 1). Values are relative to the 1986-2005 base-line period.

Month	Year	Temperature Range (°C)
DJF (wet season)	2035	0.2 to 1.9
	2065	0.6 to 3.4
JJA (dry-season)	2035	0.4 to 1.4
	2065	0.9 to 2.3
Annual	2035	0.3 to 1.6
	2065	0.7 to 2.6

(Source: IPCC 2013)

Number of hot days

Since historical temperature records began in Australia (1850s), the average number of hot days has increased while the number of cold days has decreased. A hot day is defined here as one with a daily maximum temperature exceeding 35°C. For medium emission scenarios (RCP4.5, Box 1) Northern Australia may expect a quadrupling of the number of hot days above 35°C by late in the century (IPCC 2013). For higher emission scenarios (RCP8.5, Box 1) considerably more hot days may be expected.

Centred on 1995 (1986-2005 baseline), Cairns has experienced an average of four hot days each year. Based on the IPCC's latest projections, Cairns may expect 4-8 hot days each year by 2030, increasing to 5-28 days per year by 2070, depending on the greenhouse gas emission scenarios (IPCC 2013). For the conservative RCP4.5 emission pathway (Box 1), Townsville may expect more than 80 hot days a year by 2070, while Darwin may expect more than 180 hot days (IPCC 2013). These modest projections show a quadrupling of the number of hot days above 35°C by late in the century relative to the 1986-2005 baseline. For higher emission pathways, the number of hot days will be considerably higher.

There is likely to be regional variability in the number of hot days across Northern Australia depending on distance from the coast and elevation above sea level. Frost events in upland areas, such as the Atherton Tablelands will decline in the future.

Average sea surface temperatures

Since 1950, average sea surface temperatures have increased across the oceans adjacent to Northern Australia between 0.6-1.1°C (BOM 2013). Future ocean warming will depend on the RCP scenarios (Box 1), but it would be reasonable to assume that sea surface temperatures will closely track changes in atmospheric warming.

Changes in annual and seasonal rainfall

Climate models - based on the latest IPCC emission scenarios (Box 1) - show that future projections for rainfall changes across Australia are much less certain than for temperature. This is because - unlike temperature - the projected direction of change in rainfall in different regions is not always consistent across climate models (IPCC 2013).

For Northern Australia - while it is appropriate to consider projected changes in annual rainfall - likely changes in seasonality (intra-annual distribution) of rainfall is very important as the region experiences distinct wet and dry seasons. Rainfall variability is naturally very high across Northern Australia and this must also be considered when we examine future rainfall projections, particularly for the wet season.

Annual and seasonal rainfall

Table 2 summarises projected changes in rainfall (%) for Northern Australia utilising the CMIP5 global models for the RCP4.5 emission scenario (see Box 1). Projections are provided for the summer wet-season (December-February), the winter dry season (June-August) and annual values. Unlike temperatures that are expected to increase in all seasons, there is a very large spread in the models for rainfall across Northern Australia, with the greatest spread occurring during the winter dry-season. However, it should be noted that dry-season rainfall is very low across the vast majority of Northern Australia, with the exception of exposed areas of the central and wet tropical coasts of Queensland.

Table 2: CMIP5 global models rainfall projections for Northern Australia for 2035 and 2065. The ranges of values are derived from 42 global models for the RCP4.5 scenario (see Box 1). Values are relative to the 1986-2005 base-line period.

Month	Year	Change in rainfall (%)
DJF (wet season)	2035	-20 to +8
	2065	-18 to +12
JJA (dry-season)	2035	-48 to +15
	2065	-53 to +17
Annual	2035	-24 to +7
	2065	-21 to +11

(Source: IPCC 2013)

Overall, there is a tendency towards a decrease in annual average rainfall for Northern Australia, particularly for the dry-season months. However, the lack of agreement among models is a major source of uncertainty that will need to be appreciated by planners and policy makers.

Rainfall variability

There is a high degree of natural rainfall variability across Northern Australia, particularly during summer wet-season. Rainfall variability tends to be lower in the more northern coastal areas (e.g. Top End of the Northern Territory, Torres Strait and northern Cape York) and more variable in southern areas (e.g. western Kimberly, Gulf Country, southern Cape York, Wet Tropics and Mackay/Whitsunday districts). This variability is strongly influenced by El Niño Southern Oscillation (ENSO) events. El Niño episodes tend to produce drier wet seasons and La Niña episodes wetter wet seasons, with increased risk for more tropical cyclones and extreme rainfall events.

Extreme weather events

Extreme rainfall events

In a warming climate, rainfall extremes are expected to increase in frequency and intensity, whereas changes in atmospheric circulation patterns will result in little overall change in total annual rainfall in Northern Australia. For example, the largest annual 1-day total rainfall for Northern Australia is

projected to increase towards the end of the century with most climate models under both RCP4.5 and RCP8.5 scenarios- despite a tendency towards decrease in annual average rainfall in the region (IPCC 2013).

Tropical cyclones

Globally, climate change and associated warming is predicted to increase the intensities of tropical cyclones in the future while having largely neutral effects on cyclone frequency (Turton 2012). Walsh et al. (2004) found that under enhanced greenhouse conditions, simulated numbers (frequency) of tropical cyclones in the Northern Australian region do not change very much compared with those simulated for the current climate. However, they noted a 56% increase in the number of simulated storms with maximum winds greater than 30 m s^{-1} (alternatively, a 26% increase in the number of severe storms with central pressures less than 970 hPa). More recent research by Knutson et al. (2010) - based on theory and high-resolution dynamical models - consistently suggests that greenhouse warming will cause the globally averaged intensity of tropical cyclones to shift towards stronger storms, with intensity increases of 2–11% by 2100. However, existing modeling studies also consistently project decreases in the globally averaged frequency of tropical cyclones, by 6–34% depending on the oceanic basin under consideration (Knutson et al., 2010). Balanced against this, higher resolution modeling studies typically project substantial increases in the frequency of the most intense cyclones and increases of the order of 20% in the rainfall rate within 100 km of the storm centre (Knutson et al., 2010).

In the recent IPCC 5th Assessment Report (IPCC 2013), projected changes of tropical cyclone frequency have been assessed in the current generation of models over the Australian northeast and northwest regions, from both the large-scale environmental conditions that promote cyclones and from direct simulation of cyclone-like synoptic features. Results in both regions generally indicate a decrease in the formation of tropical cyclones. In summary - based on global and regional studies - tropical cyclones are projected to become more intense but less frequent across Northern Australia, but we cannot confidently project any further changes in their movement or frequency that may be relevant to the region. Such changes have profound implications for human communities, infrastructure, primary industries and key ecosystems in Northern Australia.

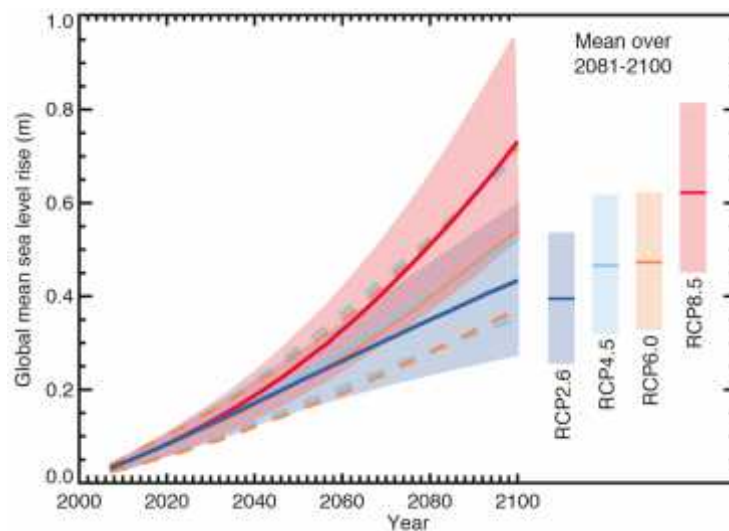
Changes in sea level

Global mean sea level has risen by 0.19 [0.17 to 0.21] m, estimated from a linear trend over the interval 1901–2010, based on tide gauge records and additionally on satellite data since 1993 (IPCC, 2013). It is very likely that the mean rate of sea level rise was $1.7 [1.5 \text{ to } 1.9] \text{ mm yr}^{-1}$ between 1901 and 2010. Between 1993 and 2010, the rate was very likely higher at $3.2 [2.8 \text{ to } 3.6] \text{ mm yr}^{-1}$; similarly high rates likely occurred between 1930 and 1950 (IPCC, 2013).

Box 2 summarises projections in global average sea level for the 21st Century for various RCP emission scenarios (IPCC 2013). It may be assumed that changes in sea level across Northern Australia will emulate global trends but there will be regional differences. In the near future (2030), the projected range of sea level rise for the Northern Australian coastline is 0.08 to 0.18 m above the 1986–2005 baseline level, with only minor differences between RCPs (see Box 1). For the far future

(2090) it ranges from 0.30 to 0.65 m for RCP 4.5 and 0.44 to 0.87m for RCP 8.5 (IPCC 2013). Taking into account the nature of extreme sea levels along the Northern Australian coastline, structures (e.g. sea walls) would need to be raised by around 0.15 m by 2030 for all RCPs and by around 0.72m by 2090 for RCP4.5 and 1.01 m for RCP8.5 to maintain the current frequency of extreme sea level events.

Box 2: Projections from process-based models of global mean sea level rise relative to 1986–2005 for the four emissions scenarios RCP2.6, RCP4.5, RCP6.0 and RCP8.5. (IPCC 2013).



Extreme sea level events

The effects of rising average sea levels will be felt more severely during extreme storm conditions when strong winds coupled with falling barometric pressure bring about temporary and localised increases in sea level known as a storm surge. According to Church et al. (2009) for every 10 cm increase in sea level, the frequency of extreme events increases by a factor of three. For many coastal locations in Northern Australia, sea level rise means that the present 1 in 100 year event could potentially occur more than once a year by 2100. In Queensland, scientists predict that storm surges will occur more frequently this century due to a combination of rising sea level and more severe tropical cyclones (OCC 2008).

McInnes et al. (2000) completed a detailed study of the impact of tropical cyclone storm surges in Cairns under the current climate (Year 2000) and around 2050 (corresponding with a doubling of pre-Industrial CO₂ levels). While this study is restricted to the greater Cairns area, it provides useful insights that have wider applicability across Northern Australia. In their study, one thousand storm surge simulations were performed representing 5000 years of cyclone occurrence. Sea level heights in the present climate (Year 2000) for return periods of 50, 100, 500 and 1000 years were determined to be 2.0m, 2.3m, 3.0m and 3.4m respectively (McInnes et al. 2000). In an enhanced greenhouse climate (around 2050), these heights increase to 2.4m, 2.8m, 3.2m, 3.8m and 4.2m

respectively. Importantly, these sea level values are now superseded by research by the IPCC (2013) indicating higher sea levels by 2100 (Box 2).

Other aspects of climate

For policy-makers, there is an interest in projections for climate variables other than temperature, rainfall, sea level rise and extreme events that also influence processes in the landscape, like plant growth and the hydrological cycle. Some of these variables are now evaluated.

Solar radiation is expected to decrease in winter (dry season) and spring (wet season build up), and increase in autumn (monsoon retreat season) across Northern Australia under the highest RCP emission scenario (Box 1); however there is a large spread of model simulations. Changes in solar radiation may impact on a range of other climatic variables, notably evapotranspiration rates and may also affect crop production rates.

Small decreases in relative humidity across Northern Australia are favoured over increases during summer and autumn periods, with little change in winter and increases more likely in spring, especially under the highest RCP scenario. Relative humidity by itself is fairly meaningless and needs to be considered in relation to projected changes in air temperature for various RCP scenarios. Higher temperature, coupled with lower relative humidity, will increase evapotranspiration rates (water loss) for native vegetation, crops and pastures.

Evapotranspiration is projected to increase in all seasons across Northern Australia. Annual potential evaporation, relative to the 1961-1990 baseline, is projected to increase by 2% by 2030 and 6-10% by 2070 (CSIRO & BOM 2007).

Wind speeds are expected to increase across northeast Australia but there is no trend for the rest of Northern Australia. Higher wind speeds have implications for a range of other climatic factors, including enhancing evapotranspiration loss from soils, water bodies and vegetation. Potentially, higher wind speeds during the dry season will also enhance the rates and spread of bushfires.

Acidification of the oceans adjacent to Northern Australia is projected to increase in line with changes in atmospheric CO₂. Oceans become more acidic as CO₂ emissions in the atmosphere dissolve in the ocean. This change is measured on the logarithmic pH scale, with lower values being more acidic. The pH of the oceans has decreased by about 0.1 pH units since 1850, which is equivalent to a 25% increase in acidity. The pH levels of the oceans is projected to decrease even more by the end of the century as CO₂ concentrations are expected to increase for decades to come (IPCC 2013).

Fire weather conditions are expected to worsen across Northern Australia. Climate change is likely to increase the frequency and intensity of extreme fire days and result in a longer fire season across the region (Lucas et al. 2009). Fire seasons may start earlier and end slightly later as well as being more intense.

Summary and conclusions

The IPCC (2013) are now 95% confident that human activities are changing Earth's climate even when allowances are made for natural variability due to solar and volcanic activity. Northern Australia may expect significant changes in its climate this century and policy makers will need to incorporate the latest climate science knowledge and data into their adaptive management and planning systems. The main findings of this section in regard to Northern Australia are:

- Air and ocean temperatures are expected to increase in response to increasing Greenhouse Gas (GHG) emissions
- We can expect more hot days and fewer cold days in the future
- There is considerable uncertainty about how climate change may affect rainfall across Northern Australia due to naturally high rainfall variability but with higher GHG emissions there is evidence that the dry season will be longer and drier while the wet season will remain similar
- Extreme rainfall intensity may increase in the future
- The intensity of tropical cyclones is likely to increase in the future while overall cyclone frequency may decrease
- Sea levels should continue to rise but may vary at the regional level
- Frequency and height of storm surges are expected to increase due a combination of rising sea levels and more intense tropical cyclones
- Fire weather conditions are expected to worsen with increased frequency or intensity of extreme fire days
- Solar radiation is expected to decrease in winter (dry season) and spring (wet season build up), and increase in autumn (monsoon retreat season) under the highest RCP emission scenario; however there is a large spread of model simulations
- Small decreases in relative humidity are favoured over increases during summer and autumn periods, with little change in winter and increases more likely in spring, especially under the highest RCP scenario
- Evapotranspiration is projected to increase in all seasons
- Average wind speeds are expected to increase across eastern areas
- Ocean acidity will increase in line with increases in atmospheric CO₂

Recommendations for Policy Makers

Adaptation to climate change across Northern Australia must engage all of society, including industry sectors, communities and individuals (Turton *et al.* 2014). Domains that are emerging as key priorities for natural resource management and community planning in Northern Australia are:

- Infrastructure, including roads, ports, coastal structures, water and energy supplies and commercial and residential buildings at risk due to rising temperatures, rising sea levels and more extreme weather events.
- Coastal zones and estuaries and all areas at risk of sea-level rise, storm surges and floods.

- Agriculture, the food supply, and other primary production, including forestry and mining that are highly sensitive to rising temperatures, greater seasonality in rainfall and saltwater intrusion in coastal aquifers due to rising sea levels.
- Other climate-dependent industries that will be negatively impacted by rising temperatures and sea levels, e.g. tourism on the Great Barrier Reef and Kakadu National Park.
- The natural environment, including all the biodiversity within them that is likely to be highly sensitive to rising temperatures, greater seasonality of rainfall and increased bush fire risk.
- Biosecurity risk, including weeds, pathogens and exotic tropical diseases that will benefit from increasing temperatures.

If we are to build 'pathways' to climate adaptation across Northern Australia we need to position our NRM sectors, regions and human communities so that they are flexible and ready to change when the need arises. This will require the knowledge and tools to build the necessary biophysical, social and institutional capacity to adapt to climate change and to inform government policy at all levels.

References

- BOM (2013) Climate Change and Variability. <http://www.bom.gov.au/climate/change>, accessed 15 December 2013.
- Church J., White N., Hunter J. et al. (2009) *Briefing: a Post-IPCC AR4 Update on Sea-Level Rise*. Antarctic Climate Ecosystem Cooperative Research Centre, Tasmania.
- CSIRO & BOM (2007) *Climate Change in Australia: Observed Changes and Projections*. Technical Report, Technical Report, CSIRO & Bureau of Meteorology, www.climatechangeinaustralia.gov.au, accessed 16 December 2013.
- Hennessy K., Webb L., Kirono D. et al. (2008). *Climate Change Projections for Five Australian Tourism Regions*. CSIRO, Melbourne, Australia
- IPCC (2001) *Special Report on Emission Scenarios* (<https://www.ipcc.ch/pdf/special-reports/spm/sres-en.pdf>)
- IPCC (2007) *Summary for Policymakers: Climate change 2007: Impacts, Adaptation and Vulnerability, Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*, Cambridge University Press, Cambridge.
- IPCC (2013) *Summary for Policymakers: Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* (eds T.F. Stocker, D. Qin, G.-K. Plattner, M. Tignor, S. K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex & P.M. Midgley). Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.
- Knutson T.R., John L. McBride J.L., Chan J. et al. (2010) Tropical cyclones and climate change. *Nature Geoscience* 3, 157-163
- Lucas C., Hennessy K., Milk K.G. et al. (2009) *Bushfire Weather in Southeast Australia: Recent Trends and Projected Climate Change Impacts*. Bushfire Cairns Regional Council, and Australian Bureau of Meteorology, CSIRO Division of Marine and Atmospheric. Consultancy Report prepared for the Climate Institute of Australia.
- McInnes K.L., Walsh K.L. & Pittock A.B. (2000) *Impacts of Sea-Level Rise and Storm Surges on Coastal Resorts. A Report for CSIRO Tourism Research*. CSIRO Atmospheric Research, Victoria.
- Office of Climate Change (OCC) (2008) *Climate Change in Queensland: What the Science is Telling Us*. Queensland Government.
- Turton S. M., Hill R. & Moran C. (2014) *Draft Adaptation Pathways and Opportunities for the Wet Tropics NRM*

Cluster Region. James Cook University, Cairns.

Turton S.M. (2012) Securing landscape resilience to tropical cyclones in Australia's wet tropics under a changing climate: Lessons from Cyclones Larry (and Yasi). *Geographical Research* 50 (1): 15-30

Van Vuuren et al. (2011) The representative concentration pathways: an overview. *Climatic Change* 109: 5-31.

Walsh K.J.E., Nguyen K.-C. & McGregor J.L. (2004) Fine-resolution regional climate model simulations of the impact of climate change on tropical cyclones near Australia. *Climate Dynamics* 22: 47–56.

Economic equity and major development

Introduction

It matters not whether one looks at labour income or non-labour income or at different measures of income/wealth concentration, inequality has been increasing within and across many countries throughout the last few decades (Jaumotte et al., 2013). Australia is no exception: indeed on some measures, this country is more 'unequal' than the majority of other OECD countries (specifically, the gap between the poorest and the richest 10% of households). Most notable, has been the recent rise in the share of total income that has gone to the richest 1% of Australians: in 1980 the richest 1% received just 5% of all income, but by 2008 the richest 1% were receiving almost 12% of income – the fourth highest of all OECD countries¹ (Hoeller et al., 2012). Thus, despite Australia's progressive tax system, and targeted cash transfers which seek to redistribute incomes, its above-average wage dispersion, and its large share of part-time/casual workers (Watson, 2013) means that household disposable incomes are unevenly distributed and are becoming even more unequal over time (Hoeller et al. 2012). Regional inequality has also risen sharply in recent times (Rodriguez-Pose, 2012)².

This recent increase in inequality is likely to have surprised earlier generations of economists, primarily because Kuznets (1955) observed that – in the United States, England and Germany – increases in inequality occurred during the early periods of urbanization and industrialization, but inequality fell once each country reached a certain level of prosperity. Yet despite the fact that early empirical tests were largely supportive of this *Kuznets Hypothesis* in a variety of different contexts (Ahluwalia, 1976; Papanek and Kyn, 1986; Campano and Salvatore, 1988), more recent studies have not found evidence of diminishing inequality beyond a given income level (e.g. Anand and Kanbur, 1993; Deninger and Squire, 1998). This is also true in Australia (Cheng, 2006). The policy implication of this, is that one cannot simply aim for economic growth, hoping that inequality will (eventually) look after itself. If one cares about inequality, one may need to take a more nuanced look at growth and development.

But should we care about inequality, or should we instead aim only for growth? A wide body of research, stemming back as far as Pigou (1920)³, suggests that it is not just the amount of money one earns that is important, but the amount one earns when compared to other people. Indeed feelings about 'fairness' are commonplace (Fehr and Schmidt, 1999; Dawes et al., 2007) – not just amongst humans, but also

¹ . In 2008, only Canada, GBR and the USA were more unequal, with the richest 1% of households receiving 13%, 14% and 18% of all income respectively (Hoeller et al., 2012).

² Albeit from a low base if using indices that have been calculated for large regions (e.g. Australia's 8 states and territories) – as per Ecuza and Rodriguez-Pose (2013a). Researchers who consider regional inequalities for a larger number of smaller regions invariably detect much larger regional inequalities since working with much less aggregated data (see, for example, Reeson et al, 2012).

³ cited in Hoeller et al., (2012, p 9) " ...a larger proportion of the satisfaction yielded by the incomes of rich people comes from their relative, rather than from their absolute, amount."

amongst monkeys (Brosnan and de Wall, 2003) and other animals⁴. As such, failure to address inequity, may generate social unrest (Wilkinson, 1996). But even those who do not have a strong sense of 'fairness' may have good cause to worry about excessive concentration of wealth. Inequality has been linked to numerous social 'ills' which include, but are not limited to: crime, violence, drug abuse, and large prison populations (Wilkinson, 1996; Wilkinson and Pickett, 2010). Prisons, lawyers, police officers and security guards are not 'free', so all of these ills impose costs upon on society (Detotto and Otranto, 2010; Cohen, 2012). Inequality has also been linked to school bullying (Elgar et al., 2013) and to poor health outcomes (in poor countries - the link between inequality and health is inconclusive in richer countries, Leigh et al, 2009), possibly impacting health expenditures and thus government budgets.

Marginalised groups also tend to be quite vulnerable, lacking resilience or adaptive capacity and may thus require more government assistance to facilitate recuperation to unexpected shocks than less marginalized groups (Jaumotte et al., 2013). Moreover, inequality of 'outcome' is often associated with inequality of 'opportunity', with long term ramifications. It has been argued, for example, that low income families are not be able to afford the same quality of education for their children as high income families (Bailey and Dynarski, 2011; Duncan and Murnane 2014). As such, today's unequal outcomes often contribute to tomorrow's unequal opportunities. This limits the growth potential of entire economies since not all members are able to fully contribute to or exploit emerging opportunities (Jaumotte et al., 2013).

Inequality is particularly profound in parts of Northern Australia – it is home to some of the country's most disadvantaged people (as shown in the Australian Bureau of Statistic's SEIFA indices⁵) and to many of the country's children who are most at risk of social exclusion (Tanton et al., 2009). Indeed at least one-quarter of Australia's northern population belongs to the country's most socioeconomically disadvantaged and vulnerable group of people: Aboriginal and Torres Strait Islanders (Carson et al., 2009). Many of these Indigenous people live in abject poverty (Hunter, 1999), despite concerted policy attempts to '*close the gap*' (a policy goal which many feel is largely unachievable within the near future - see, for example, Taylor and Hunter, 1998; Hunter and Gray 1999; Altman et al., 2008; Altman 2009; Pholi et al. 2009). And the costs of that poverty are evident, this has not just been measured in social terms (e.g. by comparing the significant differences in the life expectancy of these two groups - Australian Institute of Health and Welfare 2010), but also economic: Taylor and Stanley (2005) estimate that the opportunity cost of poverty in just one remote Aboriginal settlement in Northern Territory likely exceeds \$40m per annum (measured as the value of foregone production).

In short, being concerned about inequality is not just about having 'warm glow' feelings: inequality imposes costs upon society. The exciting corollary to this fact however, is that economic developments that help reduce inequality may generate

⁴ See, for example: <https://www.youtube.com/watch?v=IKhAd0Tyny0>

⁵ <http://www.abs.gov.au/websitedbs/censushome.nsf/home/seifa>

substantial benefits beyond those normally considered (they may, for example, result in less government taxes being spent on unemployment benefits or on crime and protection). The current focus on Northern Australia thus provides policy and other decision makers with a heady opportunity: to identify development proposals that both increase incomes and reduce inequality – two goals which are not incompatible (Koske et al., 2012).

Challenges to be addressed

Decades of work by researchers using various simple and numerous highly sophisticated techniques to analyse firm-level and country-level data has shed much light, and raised many questions, about the ‘causes’ of inequality, of which there are many. There is evidence to suggest, for example, that decentralisation may increase regional disparities (Ecuzza and Roedriguez-Pose, 2013a). Trade is thought to increase regional inequalities in low-middle income countries that are strongly integrated with the rest of the world, but trade has, in other circumstances, been associated with reduced inequality (Roedriguez-Pose, 2012, Jaumotte et al., 2013). Globalisation is also believed to have an important role to play: ‘off-shoring workers’ is a practice that tends to marginalise workers who perform routine tasks; multinational firms tend to employ higher income earners than national firms; and trade-induced innovation impacts relative wages (Harrison et al., 2010). Those points aside, the balance of research seems to suggest that recent world-wide increases in inequality are most significantly attributable to advances in technology (Jaumotte et al., 2013; Rodriguez-Pose, 2013b).

Formally, technology is believed to affect inequality because technological developments increase the demand for (and thus the incomes of) skilled workers much more than the demand for (and thus incomes of) unskilled workers. More recently, researchers have considered three groups of workers (low, middle and highly skilled) in more sophisticated models, but are in agreement that technological progress favours the highly skilled (Jaumotte et al., 2013; Rodriguez-Pose, 2012). Emerging insights suggest that technology may displace the ‘middle’ group, but not necessarily the very unskilled (Acemoglu and Autor, 2010). The key point to be made here, however, is that what happens in the labour market largely determines the equity/inequity outcome of changes throughout the world.

The story is no different in regional and northern Australia. Reeson et al. (2012), compared mining activity (a high-technology industry in this part of the world) with measures of income inequality for both males and females in 728 Australian regions. They found evidence to support *the Kuznets hypothesis* for males (i.e. low inequality with no mining, then moderate inequality with some mining, and low inequality with high levels of mining), but for females, increases in mining activity were, everywhere, associated with increases in inequality. They believe that these marked differences are linked to the labour market: males are more likely to be employed in mining or associated industries than females, and are thus in a better position to be able to capture either direct, or indirect benefits from industrial expansion.

Having no way of earning money locally (be it through the sale of labour, the hire of land and equipment, or the sale of other goods and services) is also what seems to drive the marked inequities that exist between Indigenous and Non-Indigenous people in northern Australia (Stoeckl et al., 2013a). Far fewer Indigenous people are employed within the private sector, or are the owner/operator of private businesses than would be expected on a per-capita basis (Stoeckl et al., 2007a). So when regional developments occur, far fewer Indigenous people are able to benefit from them (either directly, or indirectly) than non-Indigenous people.

Reeson et al's (2012) research suggests that the problem of not being able to benefit from regional development (in their study, mining) also appears to affect women in rural/regional areas. The problem will also apply to other individuals who are not financially connected to the rest of the economy. Simply put: those who do not have the opportunity to sell labour, goods or services to new developments or projects (either directly, or indirectly by participating further down the supply chain) have no means of benefiting from them financially.

Moreover, these financially marginalised groups (those who reap few benefits from development) may also have external costs imposed upon them – perhaps manifested as higher housing prices (Rolf et al, 2007), or reduced environmental services (Stoeckl et al, 2013b). As such, it is possible that some within the community will incur net financial benefit from new developments whilst others will unambiguously lose. This issue likely explains at least some of the community backlash and discontent associated with new development proposals in regional Queensland: Rolfe et al. (2010) found that the indirect (flow-on) benefits associated with the mining-industry⁶ were higher in Brisbane (where mining does not occur) than in the regional areas (where the impacts of mining are felt).

The key point to be made here, therefore, is that unless one can find ways of forging strong financial connections between broad sectors of the community, large-scale development projects (particularly those involving new or advanced technology) may exacerbate regional inequalities, imposing hidden costs upon the wider community.

Key policy directions

There are numerous different 'projects' that could be implemented in Northern Australia for the benefit of the region and the country as a whole. If these projects are assessed and implemented as isolated enclaves (Faal, 2007), the growth that occurs may be *uneconomic* (Daly and Farley 2004) in that the costs of achieving such growth (including those associated with increased inequality) may exceed the benefits. Alternatively, projects could be selected, not just on individual merit, and not just subject to the 'usual' factors included in environmental or social impact assessments, but on their ability to reduce inequalities (or, at the very least, not to exacerbate them) by forging strong financial links with existing residents and businesses of the north.

⁶ Formally, the multipliers

Recommendations

This suggests a primary need to use metrics that enable one to assess the extent to which large scale projects 'connect', financially, to the local economy (see Stoeckl, 2007, for one example). Such metrics should be used in conjunction with other information when assessing the desirability, or otherwise, of project proposals. They could also be used in long-term monitoring programs, perhaps setting targets for increased financial connectivity over time. Supporting policies that could be put in place to help meet those targets include, but are by no means limited to:

- Implementing institutional reforms – particularly those relating to the ownership of core assets such as land and water. This may be particularly important for Indigenous people.
- Devising community consultation processes (prior to projects being approved) that are specifically designed to identify opportunities for local residents and businesses to forge financial connections with project proponents. There will clearly be some goods (e.g. high technology pieces of capital equipment) which will need to be sourced from outside the region, but there are numerous other ways in which members of the community might 'connect' (perhaps supply food for, or even running a dining hall in cases where workers live on-site in relatively remote locations).
- Developing programs that support the development of small businesses which supply goods and services to large-scale projects. A large percentage of first-time businesses that are operating in less challenging environments (e.g. in urban areas) fail during their first year of operation (up to 70% - see Shane, 2009). Moreover, research indicates that education levels, and access to finance are highly correlated with business outcomes (Doms et al., 2010). So simply encouraging people to start small businesses, particularly people who are at socioeconomic disadvantage, without providing long-term training and support may be all but dooming them to fail. As such, one needs to develop long-term programs which might initially involve training, education and work experience, but which would evolve over time, culminating in the situation where participants took over management, and then ownership of businesses that supply the goods and/or services to the large scale developments.
- Positive Discrimination Policies for large-scale projects – specifically designed to favour 'local' or marginalised employees or suppliers. Care must be taken to ensure that such measures do not create long term incentives for economically inefficient behaviours - see Fryer and Loury, 2005 for a good overview).

Importantly, by enhancing the extent to which large scale developments 'connect' to within regional economies, one is increasing the size of local multipliers, and thus enhancing the net regional benefit of those projects. Not only will this serve a 'fairer' pie to communities in the North, but it will serve a larger pie.

References

- Acemoglu, D. and D.H. Autor (2010), "Skills, Tasks and Technologies: Implications for Employment and Earnings", *NBER Working Papers*, No. 16082, National Bureau of Economic Research.
- Ahluwalia, M.S. (1976), —Inequality, Poverty and Development , *Journal of Development Economics*, Vol. 3(4), pp. 307-342.
- Altman J (2009a) Beyond closing the gap: Valuing diversity in Indigenous Australia. Canberra: The Centre for Aboriginal Economic Policy Research
- Altman J, Biddle N, Hunter B (2008) How realistic are the prospects for 'Closing the Gaps' in socioeconomic outcomes for Indigenous Australians? Canberra: Centre for Aboriginal Economic Policy Research, The Australian National University
- Anand, S. and S.M.R. Kanbur (1993), —Inequality and Development: A Critique , *Journal of Development Economics*, Vol. 41(1), pp. 19–43.
- Australian Institute of Health and Welfare (AIHW). 2010. Australia's health 2010. Australia's health series no. 12. Cat. No. AUS 122. AIHW, Canberra, Australia
- Bailey, Martha J., and Susan M. Dynarski. 2011, "Inequality in Post-Secondary education", in Duncan, Greg J., and Richard J. Murnane (eds). *Whither opportunity?: Rising inequality, schools, and children's life chances*. Russell Sage Foundation, 2011.
- Brosnan, S., and de Waal, F. B. M., 2003, Monkeys reject unequal pay, *Nature*, 425: 297 – 299.
- Campano, F. and D. Salvatore (1988), —Economic Development, Income Inequality, and Kuznets' U-shaped Hypothesis , *Journal of Policy Modeling*, Vol. 10(2), pp. 265-280.
- Carson, D., Taylor, A. and Campbell, S. 2009. Demographic Trends and Likely Futures for Australia's Tropical Rivers. School for Social and Policy Research, Charles Darwin University for TRaCK
- Cheng, W. 2006. A new perspective on economic development and income inequality. *Economic Papers*. 25: 125 – 130.
- Cohen, Mark A. *The costs of crime and justice*. Routledge, 2012.
- Daly HE and Farley J (2004): *Ecological economics: Principles and applications*. Island Press, Washington, p231
- Dawes, C. T. , Fowler, J.H., Hohnson, T., McElreath, R., and Smirnov, O. 2007 Egalitarian motives in humans, *Nature*, 446 (2007), pp. 794–796
- Deininger, K. and L. Squire (1998), —New Ways of Looking at Old Issues: Inequality and Growth , *Journal of Development Economics*, Vol. 57(2), pp. 259-287.
- Detotto, Claudio, and Edoardo Otranto. "Does crime affect economic growth?." *Kyklos* 63.3 (2010): 330-345.
- Doms, M. A., Lewis, E., Robb, A., (2010), "Local labor force education, new business characteristics, and firm performance", *Journal of Urban Economics* 67, pp. 61–77.
- Duncan, G.J , and Murnane, R. J. 2014 Growing income inequality threatens American education *Phi Delta Kappan* March 2014 95 (6): 8-14
- Elgar, F. J., Pickett, K. E., Pickett, W., Craig, W., Molcho, M., Hurrelmann, K., and Lenzi, M., 2013 School bullying, homicide and income inequality: a cross-national pooled time series

analysis, *International Journal of Public Health*, 58: 237 – 245. DOI 10.1007/s00038-012-0380-y

Ezcurra, R., and Rodriguez-Pose, A., 2013a, "Does Economic Globalization affect Regional Inequality? A Cross-country Analysis, *World Development*, 52: 92 – 103. <http://dx.doi.org/10.1016/j.worlddev.2013.07.002>.

Ezcurra, Roberto, and Andrés Rodríguez-Pose. 2013a "Does Economic Globalization affect Regional Inequality? A Cross-country Analysis." *World Development* 52 (2013): 92-103.

Faal E (2007) Growth, investment and productivity in Papua New Guinea. *Pacific Economic Bulletin* 22(1): 16-38

Fehr, Ernst, and Klaus M. Schmidt. "A theory of fairness, competition, and cooperation." *The quarterly journal of economics* 114.3 (1999): 817-868.

Fryer, R. G., Loury, G. C., (2005), "Affirmative Action and Its Mythology", *The Journal of Economic Perspectives* 19 (3), pp. 147-162.

Harrison, A., J. McLaren and M.S. McMillan, (2010), "Recent Findings on Trade and Inequality", *NBER Working Papers*, No. 16425, National Bureau of Economic Research.

Hoeller, P., Joumard, I., Pisu, M., and Bloch, D. (2012), "Less Income Inequality and More Growth – Are They Compatible?: Part 1. Mapping Income Inequality Across the OECD", OECD Economics Department Working Papers, No. 924, OECD Publishing. <http://dx.doi.org/10.1787/5k9h297wxbnr-en>

Hunter B (1999) Three nations, not one: Indigenous and other Australian poverty. Canberra: Centre for Aboriginal Economic Policy Research, The Australian National University.

Hunter B, Gray M (1999) Income fluctuations over the lifecycle: A cohort analysis of Indigenous and non-Indigenous Australians, 1986–96. Canberra: Centre for Aboriginal Economic Policy Research, The Australian National University

Jaumotte, F., Lall, S., and Papageorgiou, C., 2013 "Rising income inequality: Technology, or Trade and Financial Globalization?", *IMF Economic Review*, 61: 271-309. doi:10.1057/imfer.2013.7; published online 30 April 2013

Koske, I., J. Fournier and I. Wanner (2012), "Less Income Inequality and More Growth – Are They Compatible? Part 2. The Distribution of Labour Income", OECD Economics Department Working Papers, No. 925, OECD Publishing. <http://dx.doi.org/10.1787/5k9h2975rhfh-en>

Kuznets, S. 1955, Economic Growth and Income Inequality, *The American Economic Review*, 45(1): 1-30.

Leigh, A., C. Jencks and T.M. Smeeding (2009), —Health and Economic Inequality , in W. Salverda, B. Nolan, and T. Smeeding (eds.), *The Oxford Handbook of Economic Inequality*, Oxford University Press, Oxford.

Papanek, G. and O. Kyn (1986), —The Effect on Income Distribution of Development, the Growth Rate and Economic Strategy , *Journal of Development Economics*, Vol. 23(1).

Pholi K, Black D, Richards C (2009) Is 'Close the Gap' a useful approach to improving the health and wellbeing of Indigenous Australians? *Australian Review of Public Affairs* 9(2): 1-13.

Reeson, A. f., Measham, T. G., and Hosking, K., 2012, "Mining activity, income inequality and gender in regional Australia", *Australian Journal of Agricultural and Resource Economics*, 56: 302-313.

- Rodriguez-Pose, A., 2012, Trade and Regional Inequality, *Economic Geography*, 88(2):109-136.
- Rolfe, J., Lawrence, R., Gregg, D., Morrish, F. and Ivanova, G. (2010). impacts of the mining boom in the Bowen Basin 2004–2006, *Australasian Journal of Regional Minerals and Energy Studies* 13, 134–153
- Rolfe, J., Miles, B., Lockie, S. and Ivanova, G. (2007). Lessons from the social and economic Resources Sector in Queensland Economic Impact Study. The Eidos Institute, Brisbane.
- Shane, S. (2009), “Why encouraging more people to become entrepreneurs is bad public policy”, *Small Business Economics*, 33, pp. 141–149.
- Stoeckl, N. (2007), “Using Surveys of Business Expenditure to Draw Inferences about the size of Regional Multipliers: A Case-study of Tourism in Northern Australia”, *Regional Studies*, 41(7): 917-931
- Stoeckl, N., (2010), “Bridging the great divide: Background to and strategies for bridging the divide between Indigenous and Non-Indigenous economies in Northern Australia”, in Gerritsen (editor), *Northern Australia Political Economy*, CDU Press
- Stoeckl, N., Esparon, M., Stanley, O., Farr, M., Delisle, A., and Altai, Z. (2013a) “The great asymmetric divide: An empirical investigation of the link between Indigenous and non-Indigenous economic systems in Northern Australia”, *Papers in Regional Science*. doi:10.1111/pirs.12028
- Stoeckl, N., Jackson, S., Pantus, F., Finn, M., Kennard, M., Pusey, B., (2013b) “An integrated assessment of some of the financial, hydrological, ecological and social impacts of ‘development’ on Indigenous and non-Indigenous people in northern Australia.” *Biological Conservation*, 159: 214-221
- Stoeckl, N., Stanley, O., Brown, V., and Stoeckl, W., (2007a), *Regional Economic Multipliers in Australia's Tropical Savanna*, TS CRC Project Report, October 2007, James Cook University, Townsville, 113 pages, available at: http://savanna.cdu.edu.au/savanna_web/publications/downloads/Regional-Economic-Multipliers-in-the-Tropical-Savannas.pdf
- Tanton, R., Harding, A., Daly, A., McNamara, J., and Yap, M., 2009 “Australian Children at Risk of Social Exclusion: A spatial Index for Gauging Relative Disadvantage”, *Population, Space and Place*, 16: 135 – 150.
- Taylor J and Hunter B (1998) The job still ahead: Economic costs of continuing Indigenous employment disparity. Canberra: Centre for Aboriginal Economic Policy Research.
- Taylor, J., and Stanley, O. (2005) The Opportunity Costs of the Status Quo in the Thamarrur Region, Working paper no 18/2005, Centre for Aboriginal Economic Policy Research, Canberra.
- Watson, Ian. "Bridges or traps? Casualisation and labour market transitions in Australia." *Journal of Industrial Relations* 55.1 (2013): 6-37.
- Wilkinson, R. 1996. Unhealthy societies. The afflictions of inequality. London: Routledge.
- Wilkinson, R. and K. Pickett (2010), *The Spirit Level: Why Equality is Better for Everyone*, Penguin Books Ltd.

Land tenure and development in northern Australia

Allan Dale (The Cairns Institute, JCU) and Bruce Taylor (CSIRO).

Land tenure issues are often considered as one of the significant barriers to encouraging development and investment in northern Australia. While tenure plays an important part in development, it is a contributing rather than the driving factor leading to uncertainty for investors. Indeed, resolving land tenure issues often depends on the resolution of higher level policy and land use conflicts. This contribution, based substantively on the work of JCU and CSIRO (2013)¹, synthesises some of the most critical issues that have previously been identified by the Northern Australian Ministerial Forum with respect to tenure and northern development issues.

While the general principles of land ownership (predominantly freehold) under “common law” have been relatively stable in large parts of southern Australia, in the north, there is limited freehold title, and it is often clustered around major centres. Across the wider north, concepts of ownership on lands previously held by the crown have also changed significantly in the last 30 years, with pre-existing Indigenous rights (e.g. native title) now having been recognised in law, and new statutory forms of land rights having been established. A perhaps more contentious reality has been that, in recent times Commonwealth, State and Territory regulation has also placed increasing restrictions on many of the tenure-based rights which would otherwise have accrued with land and natural resource ownership. Debates about land tenure in the north have been increasingly driven by economic development, and in particular, control of important resources such as minerals, prime agricultural land and conservation assets.

The characteristics of land tenure in northern Australia

One often forgotten reality of the north is that the historical foundations of tenure are, to a large extent, fundamentally different to those in the south of Australia. The original northern Australian system of land tenure was designed to expedite land settlement, secure investment in traditional agricultural development and reserve land for Indigenous and later conservation purposes (Holmes, 2000). The landscape scale consequences of this approach is that the vast majority of land (75.4%) is Crown-owned, two thirds of which is pastoral leasehold. Another 18.5% is Indigenous land. Privately owned land accounts for only some 6.1% (Fig. 1). The proportions of Indigenous land and leasehold land are significantly higher than in southern Australia. Native title claims and mining and gas exploration permits also cover significant parts of the landscape. There are a number of features of land tenure and its administration in northern Australia that make it both complex and unique (JCU and CSIRO, 2013):

- There are multiple and often overlapping tenure types for the same area of land;
- Administrative arrangements for land tenure and classifications of similar tenure types vary across State and Territory jurisdictions;
- For potential investors, multiple interactions are often required with government to gather the tenure-related information to assess sovereign risk and implement tenure change;
- There are new and emergent tenures or changes to rights related to assets such as water, carbon and biodiversity. Tenure regimes related to these assets are uncertain and evolving; and

¹ JCU and CSIRO (2013) Land Tenure in Northern Australia: Opportunities and Challenges for Investment. James Cook University and CSIRO. Contributing authors: Allan Dale (JCU), Marcus Lane, Bruce Taylor, Ryan McAllister, Oswald Marinoni, Sonja Heyenga, Anthea Coggan, Sean Pascoe, John Ward and Tom Measham (CSIRO). Access full report at: <http://www.regional.gov.au/regional/ona/land-tenure/land-tenure-in-northern-australia.aspx>

- Some of these tenures co-exist with other tenures, creating circumstances in which there are multiple, overlapping and possibly contested entitlements.

There are efforts to improve tenure management arrangements underway in each of the north's jurisdictions (see JCU and CSIRO 2013). For instance, each of the State and Territory jurisdictions have recently or are currently undertaking reviews of their own tenure arrangements, particularly with respect to pastoral leasehold lands. These recent and proposed changes aim to enable more diverse uses within tenures and to clarify access and use rights in circumstances where there are multiple entitlement holders. In addition to proposed pastoral land reforms, other recent work has focused on improving the secure allocation of water entitlements and clarifying Indigenous interests in land and water.

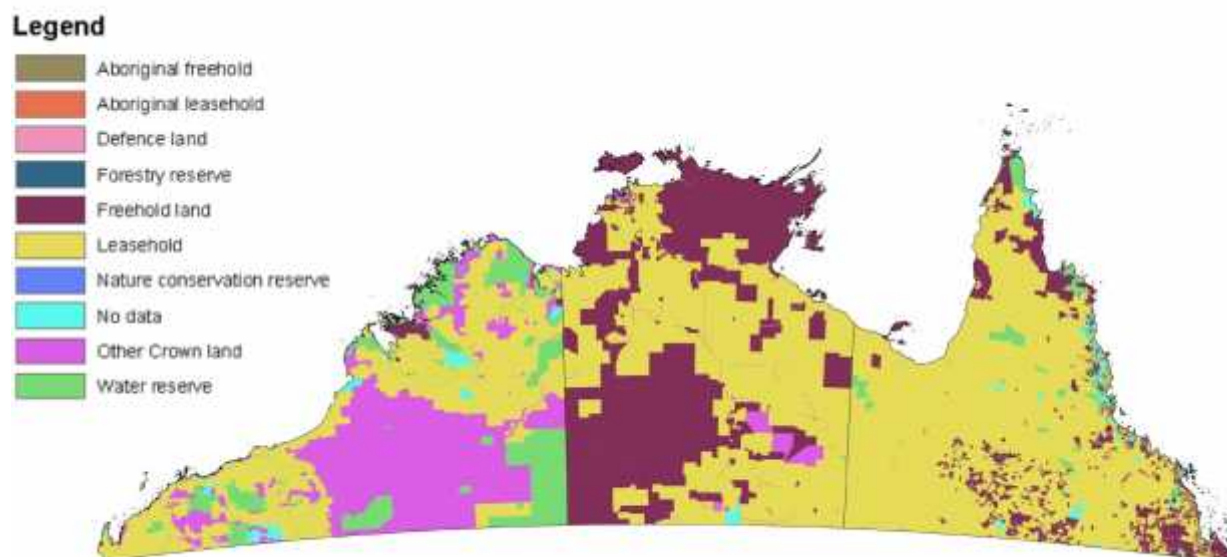


Figure 1 Extent of major land tenure types in northern Australia

Source: Published in JCU and CSIRO (2013) based on data originally compiled from PSMA 2013 & cadastral dataset of Australia, February 2013.

Opportunities for tenure and barriers for progression

The opportunity for reform in land tenure to drive diverse investment in the sustainable development of northern Australia is significant. Such changes could reduce conflict and encourage more optimal use and management of the north's natural resources, while also protecting the rights of interests of traditional owners. Potential new reforms could also enable land owners to sequester and manage vital ecosystem services such as water, biodiversity and carbon while providing additional economic development opportunities. The recent report to the NAMF proposed three broad areas of focus for realising these opportunities in the short, medium and long terms. Table 1 provides a summary of the individual opportunity that might be actioned as well as the feasibility and benefit likely to be derived over time.

Table 1. Key opportunities for improving land tenure arrangements in the north.

Opportunity	Feasibility	Benefit	Time Scale		
		1 year	2-5yr	>5	
TENURE IMPROVEMENTS					
Harmonise key tenure related practices across jurisdictions	H	H		✓	

Provide a single “whole of government” point of contact for tenure resolution	M	M	✓
Adopt consistent principles to improve flexibility and diversify land use especially on pastoral and Indigenous lands	H	H	✓
Complete roll-out of NWI principles and statutory water plans across the north	H	H	✓
Develop and implement a consistent approach to indigenous water including rights to water for commercial purposes	H	H	✓
Ensuring consistency of tenure arrangements for carbon/biodiversity in the landscape	H	M	✓
Continuous improvement in progressing native title / statutory claims	M	H	✓
INFORMATION, PLANNING AND MAJOR PROJECT ASSESSMENT			
Develop a nationally-consistent and spatially explicit tenure (and registered interests) data system	H	M	✓
Reduce project delays by improving development assessment practice	M	H	✓
Initiate stable, regionally-scaled, strategic land and resource use planning	M	M	✓

Source: JCU and CSIRO (2013).

While different sectors and interests across northern Australia face distinct investment issues, the report to the NAMF in 2013 identified common and significant tenure-related barriers to investment (Table 2). These include the underlying complexity of tenures and entitlements on a given area of land; the capacity for investors to manage across multiple tenures and jurisdictions and resolve disputes efficiently; and the limits of some types of tenure to allow owners to leverage land assets for capital and development purposes, such as on some Indigenous tenures. It is also important to understand that while tenure is an important consideration, it is only one of a number of factors that may impede investment. Infrastructure, distance to market, land values and terms of trade all have significant weight in investment decisions.

Table 2: Tenure related impediments to investment as they relate to different sectors and interests.

Impediments		Frequency	Impact
Mining	Delays converting and establishing extraction permits	H	M
	Negotiation of native title agreements & access	H	M
	Inconsistent water pricing regimes and securing water access	H	M
	Negotiating single projects across complex multiple tenures	M	M
	The non-tax-exempt status of native title payments	M	M
Pastoral and agriculture	Poor flexibility to diversify and realign boundaries	H	H
	Uncertainty with lease renewal processes/term security	H	H

	Lease rental policy not aligned to land productivity	M	H
	“Future Act” triggers are unclear / third-party respondent funding	H	H
	Multiple tenures and limitations on who can hold a lease	M	M
	Insecurity due to exploration and mining rights	M	M
	Limited system of vendor disclosure of government land interests	L	L
Conservation & ecosystem services	Some pastoral lease conditions inhibit conservation	H	M
	Costs, restrictions and uncertainties to change lease conditions	M	M
	Legislative inconsistency on carbon rights between jurisdictions	L	M
	Resumption of rights and issuing of third-party rights on Nature Refuges	L	H
Water	Nascent status of NWI-compliant water plans	H	L
	Unresolved Indigenous rights with respect to water	M	L
	Cross-basin trading can be inconsistent with Indigenous values	L	L
	Inadequate water data and mapping	M	M
Traditional owners & Indigenous home ownership	Unresolved native title and ALRA claims	H	H
	Lack of finance leveraging capacity on tenures	H	H
	Lack of guarantee for mortgaging associated with inalienability	H	H
	Uncertain process for government-leasing of native title lands	M	H
	Insufficient or crude registration of Indigenous tenures	L	L

Source: JCU and CSIRO (2013).

New directions in tenure management

The case for improving tenure arrangements in northern Australia is compelling, but the challenge in doing so is substantial, requiring significant cross-jurisdictional cooperation and national investment in R&D. It will not happen quickly. The report to the NAMF proposed that efforts to reduce impediments to investment and development in northern Australia might be pursued in three distinct ways. The first is attending to tenure complexity through administrative or legislative reform. This could involve supporting collaborative research and policy development partnerships on critical issues of investment and financing on Indigenous tenures; developing consistent principles to guide tenure reviews in the different jurisdictions; and, improving the quality and accessibility of tenure-related data for northern regions. The second main pathway involves improving the efficiency of development assessment and regulation, including: clarifying major project assessment responsibilities between jurisdictions; better resourced negotiation and streamlined administration of assessment processes; and, resources to assist with tenure-resolution processes that arise following project approval. The third main pathway could focus on actions to improve the effectiveness of land and resource planning so that broader ‘regional’ or ‘landscape’ level signals exist about the preferred infrastructure and resource use futures for different northern regions. Such planning would provide the broader context in which local level conflicts over tenure can be resolved.

Tenure reform in the north, however, must essentially preserve the rights of, and create opportunities for the north’s traditional owners. Tenure is implicated in the ongoing social and economic disadvantage suffered by Indigenous people. Indigenous-led tenure reform on Indigenous tenures, therefore, has a role to play in ameliorating this situation. Finding the means by which traditional owners can leverage their land assets to raise capital for social and economic development offers great national and local benefit. This

needs, however, to be able to accommodate informed consent and the underlying inalienability of title. In considering these issues (see also NAILSMA 2013), support is required to progress policy options which will have general applicability to traditional owners across northern Australia. Such work could focus on:

- Progressively resolving ongoing native title/land claim issues;
- Supporting and resourcing the capacity of traditional owners to develop country-based / land use planning across their estate, township-based land use planning, and wealth generation strategies;
- Exploring further the most appropriate tenure and financial mechanisms for facilitating investment leverage (within Indigenous land estates);
- Supporting traditional owners to explore new and innovative governance models for managing aspirational/country-based planning and “wealth funds” emerging from economic development;
- Exploring some form of northern Australian “guarantee or trust fund” to support traditional owners with sound business investment projects to secure commercial finance, funded either from amendment to existing or new government funds, private sector investment or innovative investment of local traditional owner-based sovereign wealth funds at local scale; and
- Pan-northern partnering with lending institutions to build investment confidence.

Given the complexity and diversity that exists within land tenure arrangements in northern Australia described above, it would be understandable to presume the goals of efficiency and consistency are paramount in the quest for improving opportunities for investment. However, many of the most significant gains in terms of improving investor certainty, and improving development outcomes for northern enterprises and communities, will come from engaging with this complexity in constructive and more informed ways that recognise the unique mix of land uses, resources, rights and interests in northern lands.

References

Holmes, J. (2000). Land tenure and administration in northern Australia: needed future directions. In Tropical Savannas CRC, *Land Administration and Management in the Tropical Savannas: A Better Way*, Proceedings of the TS-CRC Forum, 21-22 February 2000, Darwin.

James Cook University and CSIRO. 2013, *Land tenure in Northern Australia: Opportunities and challenges for investment*. CSIRO, Brisbane.

NAILSMA (2013b). *Indigenous futures and sustainable development in north Australia: Towards a framework for full indigenous participation in economic development*. Policy Paper 018/2013. NAILSMA Indigenous Expert Panel, Darwin.

Aboriginal Local Government and Community Sector Partnerships - Sustainable Employment in Northern Development

A submission to the Northern Australia Taskforce, Northern Australia Advisory Group, Department of Prime Minister and Cabinet.

August 2014

**Patrick Sullivan
Associate Professor, Nulungu Research Institute, University of Notre Dame Australia,
Broome.**

Introduction

Development of the north is an enterprise of the south. Ninety eight per cent of Australians live in major cities or inner and outer regional areas,ⁱ mostly in the southeast and along the coastal fringe of the continent. It is these Australians who must fund and support northern development. So far they have been reluctant to do so, leaving the field largely to foreign investment in large-scale mineral extraction and vast open range cattle enterprises. This has left the north vulnerable and unbalanced, both economically and demographically. The native population is socially marginal both in towns and in the bush, and the non-native population still rotates through the north for a tour of duty, or an economic boost during their peak productive age. Adolescents are still educated in the south, and the family as whole refers to themselves as being 'up here', semi-permanent ex-pats from 'down there'. The north as a whole is a satellite outpost of the south.

Many southern Australians may be happy for it to remain so, though improved and augmented: they believe there should be more and bigger mines delivering a greater variety of minerals, low-tech pastoralism should give way to intensive plantation agriculture, and industrial fisheries should be developed along the substantial coastline. This vision assumes enough spin-off of cash through local service industries to sustain resident populations and the businesses needed to service them in turn. This vision may self-perpetuate in the medium term, but it is not worthy of greater Australia, and it is not sustainable and just in the long term because:

- it offers residents only a second class citizenship experience lacking governmental services enjoyed elsewhere, though tempered with the promise of greater cash-in-hand;
- it neglects the development needs of the long-term land-owning Aboriginal population;
- and it does nothing to normalise the north in readiness for Australia's Asia-focused future.

These challenging needs call for rejection of northern Australia as the hip-pocket of the south, and recognition of northern social development as an essential step in Australia's unfinished nation-building. To make this transition it is important to build on the capability already here.

This submission to the Northern Australia Advisory Group is a response to the interim report of the Joint Select Committee on Northern Australia and the Commonwealth's Green Paper on Developing Northern Australia. It acknowledges that the government:

Seeks to advance low or no cost solutions given the current very tight fiscal environment, and facilitate private sector funding wherever possible.ⁱⁱ

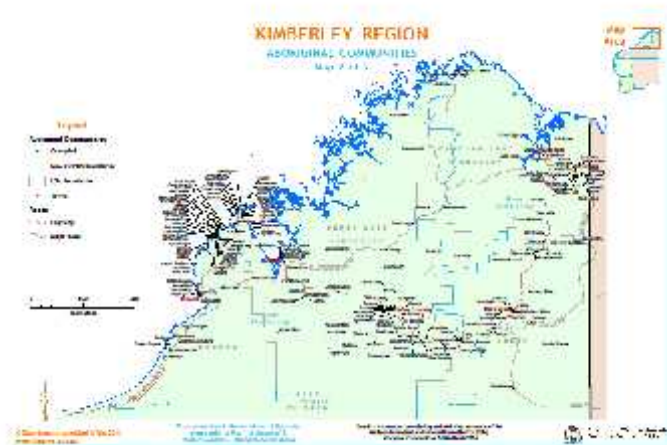
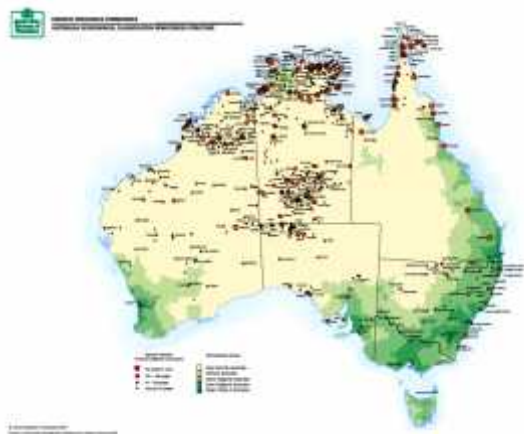
- It suggests that sustainable northern development requires redistribution of existing resources, particularly to local governments in the north
- It argues that Aboriginal community-controlled organisations already form a network for delivery of a range of services throughout the remote regions and they should be supported in collaboration with local government
- It observes that there is large unmet need for public services and a large under-employed Aboriginal population, and proposes that bringing these together in local government and community organisations is an important function for governments in the northⁱⁱⁱ

Aboriginal Occupation – the long term basis of northern development

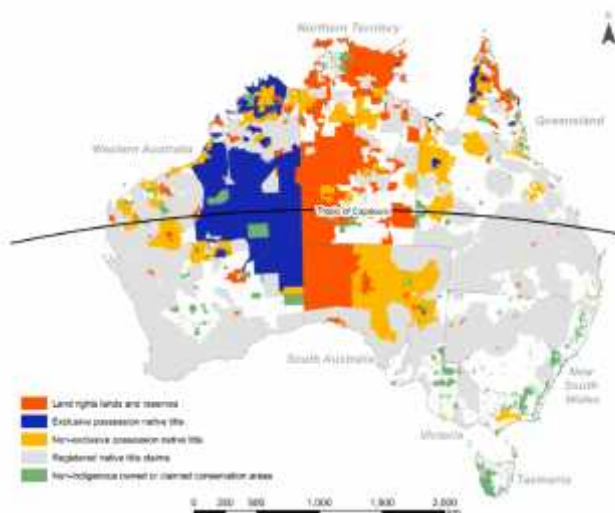
The north is not as empty as most conventional maps suggest, populated only by a few coastal towns and fewer inland settlements.



The landscape is, in fact, occupied by at least one thousand Aboriginal hamlets, villages and towns. Here they comprise close to one hundred percent of the population, and even in the mainstream towns they are often between 30% to 70%.



They are further distinguished from the non-native population in both the north and the south by largely providing their own services through their own voluntary or statutory associations and, in some areas, their control of local government. In addition, they own a substantial proportion of the land of the north, and, on their own lands, they are the majority, permanent and growing population.



Source: Altman and Markham submission to Joint Select Committee on Inquiry into Development of Northern Australia, March 2014

This population is the neglected resource for the social development of the north that will underpin sustainable economic development.

Admittedly, the Aboriginal population faces considerable challenges. There is widespread poverty and associated social dislocation, they are woefully under-served by government compared to settled Australia, there is currently hardly any commercial activity to underwrite employment, and they have educational and capacity constraints in areas valued by the mainstream, while their existing skills and capacities are under-utilised and largely unrecognised.

Addressing these challenges is not beyond the power of governments. It depends upon innovative use of three existing features of northern political economy: Aboriginal community-owned service organisations; Local Government; and employment in provision of governmental type services through these bodies to fill this social need and increase incomes, thereby encouraging local commerce.

Aboriginal community-owned organisations

There are at least 1400 Aboriginal organisations incorporated under the Corporations (Aboriginal and Torres Strait Islander) Act (CATSI Act) north of the tropic of Capricorn.^{iv} Not all of these organisations will be active, though all are formally functional since the Registrar of Aboriginal and Torres Strait Islander Corporations requires annual reports, and currently has 96% compliance with this reporting. This figure does not include Aboriginal organisations operating in the north that are incorporated under state association laws, mainstream corporations statutes, and as trusts. There may be as many as 3000 Aboriginal organisations when these are added to the count. Aboriginal corporations are often 'nested', so that small family or locality operations are also members of regional service organisations and umbrella representative bodies. The network of Aboriginal community service organisations has evolved to fulfil almost every aspect of Aboriginal services with, in many cases, up to three or four decades of experience in the field.

As arid region service centres are remote, and typically lack the depth of government agencies and other not-for-profit service providers found in more settled areas, Aboriginal organisations are likely to be the source of the large majority of available services. The sector comprises several distinct service domains. Among them:

- Community Controlled Aboriginal Health Services
- Aboriginal Legal Services

- multi-purpose 'resource agencies' and outreach services targeting dispossessed town fringe groups and homeland communities
- arts and media centres, radio and television broadcasting stations, musicians' cooperatives and dance companies
- community-controlled schools and education advisory or lobby groups
- communal councils, which hold and administer Aboriginal land, and provide municipal type services
- land councils (sometimes as statutory bodies, in other cases as voluntary advocacy organisations)
- language research and maintenance centres
- sports associations
- environmental 'caring for country' collectives, such as ranger programs
- communally owned pastoral and farm industry organisations
- housing cooperatives, tenancy and management organisations.

These sub-categories of the Indigenous sector themselves harbour considerable diversity. Organisations are largely established on the model of a voluntary association where a membership elects a governing council to administer benefits for members and wider constituents. Some organisations cross-fund their social aims with commercial activities. For example, an Aboriginal Medical Service may pay for its doctors by bulk-billing Medicare. The Commonwealth and state governments rely heavily on Aboriginal community organisations for service delivery in remote areas. The Indigenous sector is an important but unacknowledged part of the wider not-for-profit sector.^v Plans to develop the north must recognise the importance of Aboriginal not-for-profit organisations as expressions of Aboriginal political identity as well as the critical ingredient for their material security. The personal development of Aboriginal individuals and the social development of their communities are intimately tied to the health of the Indigenous sector. Indigenous sector organisations offer an important antidote to social malaise in Aboriginal settlements. They are the institutional framework of Aboriginal civil society and, at the same time, the principle means of Aboriginal civic engagement with the wider world.

As the direct suppliers of services to Aboriginal people the organisations in the Indigenous sector have been neglected as an essential component of any plan for improved services. All facets of existence in remote communities are affected by at least one, and often many, Aboriginal not-for-profit organisations. Yet they receive little attention in the current policy environment.

The Aboriginal community service sector emerged in the early 1970s largely due to the prescience of CD Rowley and his influence with the Council for Aboriginal Development and its Chair 'Nuggett' Coombs:

[Rowley] argued that a more effective way of governing Aboriginals would be through the creation of what he termed 'Aboriginal companies'. He suggested that the state should provide the framework through which these companies could be established and directly subsidised. He also proposed that the government should 'hand over to them [such] special welfare activities as they agree to operate'.^{vi}

The policy environment of the early 1970s was in a similar state of uncertainty to the one we see today. The 1967 referendum empowering the Commonwealth to act in Aboriginal affairs was followed by the policy of self-determination. Decades of stable relations between Aboriginal people and the Australian state, mediated through missions and state native welfare departments, were ripped up, seemingly overnight. Even the responsible minister declared that he did not understand what the new policy of self-determination was all about.^{vii} The members of the newly established Aboriginal Advisory Council, particularly the great facilitator HC 'Nugget' Coombs, seized upon

Rowley's suggestions as a way forward. Although some Aboriginal organisations can trace their origins to the Aboriginal advancement associations of the early twentieth century, formed in response to discriminatory legislation, after the referendum of 1967 the Aboriginal services sector as a nationwide phenomenon really began to develop. The Commonwealth, through its Council for Aboriginal Affairs, encouraged Aboriginal groups to incorporate explicitly to circumvent state governments and began to directly fund the delivery of community development programs.^{viii} At the same time, and as part of the same generally progressive trend, the Woodward Aboriginal Land Rights Commission (1974) recommended that the Commonwealth create a statute for simple incorporation of Aboriginal groups to administer land held in trust. This indirectly gave rise to the *Aboriginal Councils and Associations Act 1976* (Cth), though by the time the legislation had passed through Parliament it was far from simple. The late 1970s and 1980s saw a rapid expansion of Aboriginal self-help organisations, many of which incorporated under the Act. The Act was superseded by the *Corporations (Aboriginal and Torres Strait Islander) Act 2006* (CATSI Act), which, in aiming to be more adaptable and accessible, is considerably longer and more complex than the original.

Following the introduction of the *Native Title Act 1993*, some existing organisations were transformed, and others brought into existence, as statutory Native Title Representative Bodies to advance members' recognition of common law title. Unlike other Aboriginal organisations, groups recognised as holding Native Title must incorporate under the CATSI Act, which is an arbitrary limitation of their choice that many have got around by setting up a management organisation under mainstream corporations law. The Registered Native Title Bodies Corporate are an increasing feature of the Aboriginal corporate landscape. Their statutory functions under the Act are limited, but their responsibilities as land holders are vast. Currently, there is no stable funding provision to ensure that they can carry out either their statutory functions or their landholder responsibilities.

Arguably, statutory organisations are not part of the community sector, since they are established by legislation, but in Aboriginal affairs we need to stretch this definition, since statutory organisations can have many of the characteristics of community organisations. For example, they often have boards of directors elected by their membership. Their functions, also, can include provision of services and advocacy similar to community voluntary associations. Statutory organisations, though established by government, are relatively independent. This is, after all, their rationale. Governments intend that, by establishing them in legislation, they will perform a quasi-governmental function in an area that requires substantial independence for good public administration. This is tempered by the fact that, unlike other community sector organisations, statutory authorities have functions, powers and reporting requirements imposed upon them by their legislation, and exist ultimately at the discretion of the government. This can lead to an uneasy relationship where independence is informally compromised by ever-present threat of changes to the legislation or dismissal of the board.

Local government is a particular form of statutory authority. Its importance as the de facto third tier of Australian government is generally recognised, although this has no constitutional basis and local governments are established by state legislation. As outlined below in this submission, some form of Aboriginal or Torres Strait Islander control of local government exists across the north, though it is limited in Western Australia. Although the recent transition in the Northern Territory from statutory community councils to local government authorities has been surrounded by controversy, in principle Aboriginal and Torres Strait Islander people may gain both greater control of their own affairs and greater protection from arbitrary governmental interference by transitioning from the community association model to a form of local government. This suggestion is explored in more depth in a later section of this submission.

There are at least three reasons that Aboriginal policy making should recognise the importance of Indigenous sector organisations. They are the critical ingredient in Aboriginal people's material security, an expression of Aboriginal political identity and an appropriate modernisation strategy

with the evolution of an Aboriginal civil society. The political dimension of Aboriginal-controlled organisations has received more public attention than their service delivery functions. This may be one of the reasons that their contribution to the Australian not-for-profit sector has been ignored, though it is also true that they are not a direct counterpart. They are service providers, frequently a form of communal or local-level governance, and also the major expression of Aboriginal civil society. They are both drivers of positive social change and manifestations of such social change. This last point is important for the improved effectiveness of government policy goals. As public attention focuses on the 'dysfunction' of Aboriginal communities, and government programs are increasingly delivered by mainstream processes, Aboriginal civil society institutions need support and encouragement as the foundation of Aboriginal modernisation. Instead, they are in danger of increasing neglect.

Aboriginal community-controlled organisations are the hidden ingredient for the success of government Aboriginal development objectives. In rural and remote communities, in particular, few services are delivered directly by government. Even the core cadre of street-level bureaucrats — teachers, nurses and police — are provided by, or supplemented in partnership with, community-owned schools, community-controlled health services, and local night and dawn patrols or wardens. In most Aboriginal areas municipal services (water, sewerage, electricity, roads), housing and maintenance, and welfare payments are handled entirely by Indigenous sector organisations. The strategic importance of the sector as a whole is unrecognised in the government policy process, and the individual services that comprise the sector are undervalued. It is a complex sector, and with more support could make a wider contribution to the public good. The clearest path for secure development of Aboriginal community controlled service delivery lies in partnership with local government.

Local government and the Aboriginal population

Aboriginal development can be pursued through greater involvement with local governments and changes to the fiscal arrangements that disadvantage Aboriginal and Torres Strait Islander people. For development of the north, two federal fiscal systems are essential, and yet fatally limiting in the way that they are currently delivered — horizontal fiscal equalisation and Commonwealth Grants Commission disbursements to local government through state and territory mechanisms.

A review by Fitzgerald and Garnaut of Commonwealth/state funding in 2002 was scathing of the current horizontal fiscal equalisation system administered by the Commonwealth Grants Commission:

the system reflects what appears to be a particular Australian genius for almost infinite bureaucratic elaboration, usually in pursuit of a perceived concept of equity...Overall, the current system of HFE [Horizontal Fiscal Equalisation] implemented by the CGC [Commonwealth Grants Commission] is a mystery to almost the entire Australian community.^{ix}

This 'mysterious' system must be unravelled before it suggestions can be made to fortify it to meet the needs of northern development.

There are five major governmental sources of funding for Aboriginal and Torres Strait Islander development in the north. There is Commonwealth own-revenue expenditure (usually in Indigenous-specific programs) and state/territory own-revenue expenditure (usually buried in mainstream programs). Third, there are specific purpose grants to the states and territories from the Commonwealth. These may be targeted specifically at Indigenous people or may have Indigenous development objectives embedded in wider objectives and they may be bundled into one of the five specific purpose payments allocated under the *Federal Financial Relations Act 2009* or into National Partnership payments. Fourth and fifth, and of most concern to this submission, there are funds collected by the Commonwealth and distributed to the states through the Commonwealth Grants

Commission. These take two forms: funds raised by the *Goods and Services Tax* (GST) and local government funding under the *Local Government (Financial Assistance) Act 1995*. This is gaining importance as Aboriginal people of the north increasingly control or influence statutory local government. The CGC recommends distribution of GST payments using a formula that ensures all states can provide the same level of service to citizens regardless of local circumstances (horizontal fiscal equalisation).^x It uses a similar system to recommend to the Commonwealth how it should disburse its assistance under the Local Government Act.

As Dillon and Westbury have pointed out,^{xi} one major problem with Commonwealth Grants Commission allocations is that they do not take into account the lack of infrastructure in remote areas to be able to achieve equalisation of services.

The formula for determining the amount of money the Australian Government transfers to the states takes into account indicators of social disadvantage. Large Aboriginal populations affect this considerably, but the states are under no obligation to spend their allocations to redress this disadvantage. In fact they are under a perverse incentive to maintain remote area disadvantage, since the supplement funding it attracts goes to subsidise metropolitan development. The states argue that this is their right, since Commonwealth transfers simply recognise the voluntary surrender of states' revenue-raising powers since federation. If they were to reassert their sovereign rights they could raise and spend revenue freely without Commonwealth direction.

The Yu report summarises the constitutional basis of fiscal equalisation like this: 'The intention is that, if there are differences in fiscal **outcomes** (service levels per person, or tax burdens per person), they reflect outcomes of the democratic processes in states and territories not the consequences of differences in their capacity to afford to deliver services'.^{xii} So we can assume that the citizens of the states and territories, through their governments, have decided not to adequately support development in remote areas, and it is time we owned up to this and commenced debate over the national values this imbalanced redistribution reflects. It has historically left the Commonwealth with a disproportionate responsibility for Aboriginal development.^{xiii} The NPs are the only means for the Commonwealth to direct how the states spend its money, and to leverage adequate state contributions. This is because the major means of providing fiscal equity throughout the nation, the specific purpose allocations of the Federal Financial Relations Act, fail the regions, and fail Aboriginal and Torres Strait Islanders particularly. The disadvantage that Aboriginal populations suffer among themselves is also a peculiar advantage that they provide to the states and territories. They skew funding towards the states where they predominate, but their disadvantage is not addressed, nor is it legally necessary to address it, once that cash is distributed.

As well as recommending formulas for distribution of GST collections to the states, the Commonwealth Grants Commission provides recommendations for distribution of money from the Commonwealth to the states for funding of local government and local roads, on a per capita basis under a separate funding regime, the *Local Government (Financial Assistance) Act 1995*. This also is unfairly distributed. Before signing off on the distribution of this funding through state-based Grants Commissions, the Commonwealth requires that the states agree to distribute it according to specific national principles. One of the national principles laid down by the Commonwealth for local government grants is that 'financial assistance shall be allocated to councils in a way which recognises the needs of Aboriginal and Torres Strait Islanders within their boundaries'. This is a fine aspiration that has been whittled down to nothing in practice. The principle is deemed to be met if the funding is allocated by the states to local governments only by reference to the proportion of Aboriginal people in a local government area and 'it remains a decision for each council how the grant will be spent and what services will be provided for its Indigenous residents'.^{xiv} So the greater needs of Aboriginal residents are not recognised, only their relative numbers in relation to other residents, and even on this limited basis local governments are under no obligation to spend the money in Aboriginal areas.

Clearly the intention of the Act in relation to Aboriginal people has not been met. The needs of Aboriginal people in remote parts of Australia under local government are not a function of their proportions in the population but their distance from services, lack of infrastructure, low educational and employment levels, ill health, inadequate housing, and a host of other unique conditions – conditions that governments are well aware of. To fulfil its aims the Act needs to provide appropriate mechanisms. Since its inception in 1995 the Act has not worked to fulfil its object of providing services to Aboriginal and Torres Strait Islander communities, nor has it met the national principle of recognising the needs of these communities. If a Commonwealth act so clearly fails over such a long period, it is the responsibility of the Parliament to address it. Giving substance to this national principle in the Local Government (Financial Assistance) Act would go a long way to providing the necessary social infrastructure in remote communities for northern development.

The social development of the north that is necessary for long-term economic development can be addressed by reviewing current CGC funding formulas, both for the GST and local government assistance. In addition, direct Commonwealth grants to local government also need to be clarified. Attempts by Labor governments to amend the Constitution in order to fund local government directly have failed twice in the past.^{xv} More recently the Gillard Labor government proposed a referendum to clarify the Commonwealth's ability to directly fund local government, but the proposal was withdrawn due to lack of firm bi-partisan support. With the change of government in 2013 an opportunity has arisen. The present opposition has already made a commitment to this principle when in government. If the incumbent government reviewed its position, bi-partisan support could be achieved.

Of all the mechanisms the Commonwealth uses to ensure that there is equality of fiscal outcomes across the country, the only ones not capable of diversion by the states away from remote Aboriginal areas are the NPs. The Commonwealth uses these to enforce state and territory co-contributions with the contractual insistence that the states will not receive money unless they put up agreed amounts of their own. This system has had mixed success since the introduction of the Federal Financial Relations Act in 2008. It would be more efficient to withhold the states' contribution in the first place from money due to them under the GST and Commonwealth discretionary allocations, then add to this the Commonwealth's share and direct it to regions where it is most needed. This could be done without changing CGC formulas recommended above. It could be an addition to, rather than an amendment of, existing funding under the Local Government (Financial Assistance) Act based on realistic formulas of remote area need while still distributing it through state government statutory arrangements such as the state Local Government Grants Commissions. It would make sense to direct funding to regional alliances of Aboriginal organisations and networks and existing local government authorities. This approach would recognise state government concerns with 'states' rights', since local government is a subsidiary of state government. It would take advantage of local knowledge and experience, and it would be cost effective by cutting red tape.

Local governments cover most of Australia, though parts of South Australia remain unincorporated. Within the bounds of their responsibilities they can spend their allocations how they like. Their responsibilities are broad. According to a report on the operation of the Local Government (Financial Assistance) Act, they can include:

- administration (of aerodromes, quarries, cemeteries, parking stations and street parking)
- building (inspection, licensing, certification and enforcement)
- community services (child care, aged care and accommodation, refuge facilities, meals on wheels, counselling and welfare)
- cultural/educational (libraries, art galleries and museums)
- engineering (public works design, construction and maintenance of roads,

- bridges, footpaths, drainage, cleaning, waste collection and management)
- health (water sampling, food sampling, immunisation, toilets, noise control, meat inspection and animal control)
- planning and development approval
- recreation (golf courses, swimming pools, sports courts, recreation centres, halls, kiosks, camping grounds and caravan parks)
- water and sewerage (in some states)
- other (abattoirs, sale-yards, markets and group purchasing schemes).^{xvi}

Local governments add other forms of revenue such as property taxes and income from sales of goods and services to the Commonwealth funds that are directed through the states, leading to considerable disparities both within the various states and between local councils within each state (DITRD LG 2010:12). Although it is universally recognised that many local government areas are under-funded relative to need and responsibilities, and have chronic liabilities looming because there are no reserves to renew decaying infrastructure,^{xvii} local government does offer an opportunity to Aboriginal people to take more effective control of their own development. Indeed, Aboriginal people already have substantial control of local government in outer regional and remote Australia, especially in the Northern Territory and Queensland, where there have been recent reforms. Aboriginal control of local government has different outcomes in each state. In WA for instance Aboriginal electoral numbers can ensure their predominance on local council boards throughout the Kimberley, but without much purpose because local governments do not provide services on Aboriginal land (except for the shire of Ngaanyatjaraku). In Queensland their influence is limited also, but in this case because Aboriginal controlled local governments only administer Aboriginal settlements and associated lands.

In the Northern Territory local government services^{xviii} in most Aboriginal settlements were, until 2008, delivered by councils established as voluntary associations. They covered only a defined settlement. In addition to the 55 community governance councils, there were four special purpose towns that qualified for local government assistance grants. On 1 July 2008, after a period of consultation and negotiation, the Northern Territory Parliament passed the *Local Government Act 2008*, abolishing 51 of the community councils and amalgamating them into eight shires, which were geographically much larger and contiguous.^{xix} In most of these shires the vast majority of voters are Aboriginal, but any advantage this gives them will come slowly because the process of transition has been badly mismanaged.

Despite a reasonably thorough and lengthy period of community consultation,^{xx} the planners underestimated the emotional attachment of communities to their existing organisations, which Rowley so perceptively predicted in the 1970s. They feel they have been robbed of a part of their corporate identity, which has not been adequately compensated by shire councils, which in many cases are situated at great distances from their homes. This is only slowly being rectified by the establishment of local board subsidiaries of the councils, a move that could have been built in from the start. More recently, the Northern Territory government has recognised the discontent caused by the 'super shires' and is in the process of sub-dividing them.

In time, and with amendments to the electoral system, these changes are likely to be a big step forward for Aboriginal people in the Territory. In the long run the creation of the shires will be a positive move because it gives to Aboriginal governance the credibility and stability of the recognised third tier of mainstream Australian political life. It will also, with time and resources, provide the necessary oversight and support that Aboriginal governance requires. It ties Aboriginal governance into secure funding regimes, though these need improvement. It provides a robust mediating environment between traditional non-incorporated governance systems and the wider Australian polity.

Similar reforms have been pursued in Queensland, though with the significant difference that the conferral of equal local government powers to Aboriginal Shire Councils has been limited only to the environs of large settlements. These previously had a limited form of self-government under the *Community Services (Aborigines) Act 1984* (Qld). In 2009 the *Local Government Act 2009* (Qld) brought these settlements into the mainstream as far as their powers and regulation are concerned, though they remain limited to settlement governance.^{xxi}

In South Australia many Aboriginal communities lie within mainstream local government shires, though they are separately administered. This is the case with all Western Australia Aboriginal communities. South Australia has begun to trial service agreements between the shires and communities within their boundaries, while Western Australia still finds this difficult to implement, despite releasing a discussion paper to help bring the shires on board with this necessary change in 2007.^{xxii} South Australia is also distinctive in that a large part of the state is not incorporated as a local government area but administered by the Outback Areas Authority. There are four large Aboriginal communities that have local government status under separate legislative arrangements.

In Western Australia municipal and essential services have been provided in settlements by cooperative councils not formally recognised by the state government and entirely funded by the Commonwealth under Aboriginal grant programs not connected to the *Local Government Act 1995* (WA).^{xxiii} Western Australia does not have the municipal governance of Aboriginal settlements that Queensland has introduced, though since 1979 they have had the option of adopting the provisions of the *Aboriginal Communities Act 1979* (WA), which would give them the power to make by-laws enforceable by the courts, but few have taken this up. Under pressure from the Commonwealth to take responsibility for municipal and essential services, the state government circulated a discussion paper on how this might be achieved and in May 2010 announced a three-year program in which existing shires would formulate business plans for how they might take on responsibility for the Aboriginal communities within their boundaries. Although Aboriginal majorities in many northern shires give them the ability to control its administration, as they do in the Northern Territory, there is not the same advantage to them to do so, since the settlements that most concern them are effectively quarantined from local government services.

Control of local government, and the powers conferred by this control, is highly variable across the country and even in remote areas where Aboriginal people are the majority population there is little effective regional governance at this scale. There is, nevertheless, great potential here for local alliances to be strengthened with adequate funding and capacity-building support from the Commonwealth. There are conditions that must be met for Aboriginal people to benefit from development programs derived and delivered in association with local government:

- local government must deliver services to Aboriginal communities commensurate with towns within the local government area
- Commonwealth Grant Commission funding formulas and acquittal regimes should be reviewed
- additional funding should be provided to local governments servicing remote areas (separated from existing funding formulas) based on objective assessment of remote area need
- local government services should be contracted out to Aboriginal community-controlled service organisations where practicable
- where Aboriginal people do not form a majority across an entire shire (mainly because of non-Aboriginal predominance in the towns), a ward system should ensure that they are properly represented
- in such circumstances bicameral arrangements should be pursued where Aboriginal people meet in caucus to sort out their views on purely Aboriginal issues, and local governments should commit to normally accepting the views that they arrive at

- sub-local representative and administrative arrangements should be in place in very large shires, and these should be linked by statute or regulation to the local government

Creating employment in developed local economies

This submission has argued so far that the necessary foundation for social, economic and cultural development in the north lies in Aboriginal communities, and that these should receive the necessary services to bring them to acceptable levels of development. This should be done by better financing of northern local government and state/territory services. This should support Aboriginal community organisations, either operating as local governments or in contractual arrangement with local governments. The third element of this argument is that this can increase Aboriginal employment, and therefore income, leading to the necessary conditions for sustainable local economies, particularly small-scale commercial enterprises.

The Indigenous sector has great potential for meeting priority development goals through the personal development, training and employment of Aboriginal and Torres Strait Islander individuals. Over the past 30 years many individuals, most with only rudimentary formal educational achievements, have come up through the ranks of Indigenous sector organisations. This has been an organic development, but it requires greater formal recognition and encouragement. The contribution of this sector to Aboriginal skills has two broad dimensions: increasing understanding of governance issues through participation as members and on directors' boards, and fundamental job skills through employment at all levels from field workers to management.

Indigenous sector organisations are major employers of Aboriginal people. Some in specialist areas, such as Native Title or health, typically have Aboriginal employment mainly at the top and bottom of the organisation — the senior management or executive and the clerical staff. Others are much more inclusive across all levels. Although already significant, there is considerable room for improvement in employment and training opportunities. This is dependent both on levels of government funding and on employment conditions. Delivering government programs through Indigenous sector organisations increases employment opportunities, and should be coupled with encouragement of Aboriginal employment and training strategies across the sector. The Indigenous sector offers career paths for people of ability who have little formal training and who may transition to employment, often initially through CDEP, and work their way to managerial levels and influence in national forums. This contributes to the self-esteem and prestige of Aboriginal and Torres Strait Islander people and has intangible role model benefits for youth, while contributing to the social health of the nation as a whole. It is also an important source of income for Aboriginal families,^{xxiv} even though salaries and service conditions in Indigenous sector organisations are lower than the public service and commercial organisations.^{xxv}

These conditions act as a brake on the positive effects of Indigenous sector employment. Employees do not enjoy comparable opportunities for off-the-job training and skills development either, because of the lack of funds and the day-to-day urgency of the problems they deal with. Not surprisingly, the public service at both state and Commonwealth levels finds a fertile recruiting ground among those who have gained their skills either as directors or as employees (and often both at different times, or in different organisations). Governments siphon off valuable individuals who seek greater security and remuneration, often because of their obligations to their families. Tertiary educational institutions, and the Aboriginal public they wish to serve, also suffer. The poverty associated with long periods in tertiary education and the low salaries available to junior academics and research staff combine to trap highly competent individuals either in their not-for-profit sector organisations or their public service positions. For the benefit of their communities, governments should commit themselves to funding community sector positions at comparable levels to their own personnel. They should provide greater support for training within organisations and salary continuity during tertiary studies. Flexible arrangements for secondment in both directions, from

public service positions to community organisations and the reverse, should be increased. Legislation to ensure the portability of employment entitlements, such as superannuation, leave and salary increments, should also be explored.

The Indigenous sector functions well in the context of the challenging needs of its member/client base and its relative lack of material resources. Its development in the past three decades is testimony to the resilience and capacity of Aboriginal and Torres Strait Islander people in their communities. It has acquired a unique position as both a provider of governmental services and an expression of cultural identity within Australian society. Both these aspects require support. Government approaches to the sector should go beyond its treatment as simply a subcontractor for the implementation of policy, recognising that one of its important 'services' is its ability to constitute a uniquely Indigenous component of the nation as a whole, particularly at the local and regional levels. Because of its importance in providing fundamental life-sustaining services, it requires greater levels of funding than it presently receives, and higher levels of support for professional employment and training, in order to meet its heavy responsibilities.

Apart from material support, one way that the effectiveness of the sector can be increased with little cost is by more appropriate approaches to regulation, greater devolution of policy implementation to the sector (which would cut out some of the supply line barriers) and streamlined standardised reporting procedures. This requires an intangible change in relations between the sector and government, and the nurturing of an environment of trust between them. Trust is the foundation of relational contracting, which is a particular form of mutual accountability.

Aboriginal organisations and local governments are already important employers of Aboriginal people in the north. This can be enhanced through appropriate employment programmes. A successful example of employment generation through an alliance of community organisations, governments, and local non-indigenous bodies is the Working on Country Programme. Working on Country offers standard employment under Award rates (including superannuation) for full-time, part-time and some casual employees. Training and mentoring are offered 'on the job' and standard OH&S conditions apply. This programme provides the wider Australian public with the service of environmental rehabilitation and management. It should be used as a model for the provision of other public goods. Some examples could be: children's services, aged care, community safety, school support, municipal and essential services, media and communications. are some examples. These are services that all communities expect. They are not delivered at an acceptable standard in remote Australia. Yet there is a large unemployed population in place that is capable, with appropriate support, of delivering these services. The Working on Country Programme has demonstrated the viability of this approach.

An assessment of the economic and employment outcomes of the Working on Country program was conducted by Allen Consulting Group in late 2011. The report delivered a comprehensive economic analysis of the programme and found that its 'true cost is significantly lower than its budget 'book' cost. Allen Consulting concludes that the true cost of delivery of program is 'at least 17 to 23 per cent lower than the book cost', and this calculation does not take into account the national benefit of the programme, since this is more difficult to quantify.^{xxvi} This is attributed to savings found through decreased welfare costs and increased tax revenue. Other cost savings, such as reduced incarceration and improved health, could not be quantified and were not used in this calculation. The results are driven by the high unemployment and low labour force participation rate in the areas in which the program operates. While the economic outputs of the program are higher rates of employment, saving (through superannuation), and standard incomes, the economic outcomes of the program are positive impacts on the environment, community wellbeing, and local and broader economies. Whilst difficult to quantify, socio-economic and environmental values are derived from the program, with the greatest savings likely to be found in reduced public health and incarceration costs, alongside the environmental benefits from conservation and land management. Additionally

there is a recognisable benefit to social capital through improved levels of empowerment, wellbeing and quality of life – however the subjective nature of these benefits make this an especially difficult value to quantify.

While the Allen Groups' estimates are undoubtedly conservative the benefit to northern Australia with the adoption of this model includes improved services, lower social service costs, higher taxation receipts, and greater local circulation of disposal income. Seen in this light, money spent on this model of program is not 'expenditure' but 'investment'. Indeed, this is how Australian settlement has generally developed – not through the entrepreneurship of frontier pioneers alone, but much more significantly, quietly and unacknowledged, through governmental employment in services such as roads, rail, post and telephone, electricity, and public administration more generally. The rediscovery of this model of development is essential if the north is to develop as anything more than a southern dominion channelling resources overseas through metropolitan-based enterprises that have neither knowledge of nor sympathy for the restitution of Aboriginal societies.

Conclusion and Recommendations

This submission has argued that there is great opportunity to support the long-term permanent population of the north through:

- Reform of formulas and funding mechanisms for local government
- Alliances between local governments, state/territory governments, and Aboriginal-controlled service organisations
- New models for public service employment in Aboriginal towns, villages and settlements

These measures do not require substantial new funding sources, rather they require a rebalancing of national commitments, recognising the rising importance of the north to Australian national aspirations.

ⁱ Australian Institute of Family Studies, 2011, *Families in Rural Regional and Remote Australia*, p. 2.

ⁱⁱ Green Paper on Developing Northern Australia, p.x.

ⁱⁱⁱ The arguments, suggestions and proposals in this submission are based on the author's research from 2002 with the Australian Institute of Aboriginal and Torres Strait Islander Studies (AIATSIS), and from 2013 with the Nulungu Research Institute, University of Notre Dame Australia. It largely refines research presented in two chapters of the book *Belonging Together: Dealing with the Politics of Disenchantment in Australian Indigenous Policy*, Aboriginal Studies Press, Canberra, 2011.

^{iv} This figure was arrived at by searching the number of registered organisations in each of the major towns north of the tropic of Capricorn on the database of Office of the Registrar of Aboriginal and Torres Strait Islander corporations. Some towns may have escaped attention so the number may be larger.

^v This submission adopts the term 'Indigenous sector' from Rowse, T. 2005b, 'The Indigenous sector', in D Austin-Broos & G McDonald (eds), *Culture, Economy and Governance in Aboriginal Australia*, University of Sydney Press, Sydney, pp. 207–23.

^{vi} Batty, P 2009, 'A Record of Confusion, Failures and New Beginnings: (De)Constructing Aboriginal Community-controlled Organisations', paper delivered to the AIATSIS Conference 'Perspectives on Urban Life', Canberra, 29 September–1 October.

^{vii} *ibid*

^{viii} Coombs, HC 1984, *The Role of National Aboriginal Conference*, Australian Government Publishing Service, Canberra, pp. 25–8.

^{ix} Committee for the Review of Commonwealth–State Funding, 2002, *Review of Commonwealth–State Funding: Final report*, Melbourne, p. 179.

^x The Yu report provides a lucid outline of the national Aboriginal funding environment in Yu, P, Duncan, M and Gray, B 2008, *Report of the Northern Territory Emergency Response Review Board*, Attorney General's Department, Canberra, pp. 50–51. In 2001 the Commonwealth Grants

Commission reported on an inquiry into Aboriginal affairs funding relative to need. While it produced useful information about Aboriginal needs, it cautioned against a redistributive funding formula because it would take resources away from established areas, Commonwealth Grants Commission, 2001, *Report on Indigenous Funding*, Commonwealth of Australia, Canberra, p. xvii.

^{xi} Dillon, MC and Westbury, ND 2007, *Beyond Humbug: Transforming Government Engagement with Indigenous Australia*, Seaview Press, West Lakes, SA, pp. 185–9.

^{xii} Yu, P, Duncan, M and Gray, B 2008, *Report of the Northern Territory Emergency Response Review Board*, Attorney General's Department, Canberra, p. 51, emphasis in the original.

^{xiii} see also Dillon, MC and Westbury, ND 2007, *Beyond Humbug: Transforming Government Engagement with Indigenous Australia*, Seaview Press, West Lakes, SA, pp. 185–9.

^{xiv} Department of Infrastructure, Transport, Regional Development and Local Government) 2010, *Local Government National Report 2007–08: Report on the Operation of the Local Government (Financial Assistance) Act 1995*, DITRD LG, Commonwealth of Australia, Canberra, pp. 69–70.

^{xv} Megarrity, L 2011 *Local Government and the Commonwealth: an Evolving Relationship*, Parliamentary Library Research Paper no 10, Department of Parliamentary Services, Canberra.

^{xvi} Department of Infrastructure, Transport, Regional Development and Local Government) 2010, *Local Government National Report 2007–08: Report on the Operation of the Local Government (Financial Assistance) Act 1995*, DITRD LG, Commonwealth of Australia, Canberra, p. 3.

^{xvii} Op cit p. 50.

^{xviii} Local government services is a 'catch all' term used to avoid drowning in detail. It covers mainly municipal and essential services, but local government responsibility for these differs from state to state. For example, the provision of safe drinking water is governed by different arrangements in each state.

^{xix} For a more detailed and nuanced description of the Northern Territory situation, see Michel, T, Gerritsen, R and Thynne, I 2010, *Northern Territory Scoping Study*, Australian Centre of Excellence for Local Government, Rural-Remote and Indigenous Local Government Programme, Charles Darwin University, Darwin.

^{xx} Smith, D 2008, 'Cultures of Governance and the Governance of Culture: Transforming and Containing Indigenous Institutions in West Arnhemland', in J Hunt, D Smith, S Garling & W Sanders (eds), *Contested Governance: Culture, Power and Institutions in Indigenous Australia*, CAEPR Monograph No. 29, Australian National University, ANU E Press, Canberra, pp. 75-111.

^{xxi} Greater detail and depth of analysis are provided in Limerick, M 2010 *Indigenous Council Capacity-Building in Queensland*, Scoping Paper, Australian Centre of Excellence for Local Government.

^{xxii} The Bilateral Agreement on Indigenous Affairs, Issues for Local Government: Discussion Paper, Sustainable Environmental Health and Infrastructure Senior Officer Group [WA], September 2007.

^{xxiii} With the exception of the Shire of Ngaanyatjaraku.

^{xxiv} Altman and Taylor cited in Rowse, T 2005, 'The Indigenous sector', in D Austin-Broos & G McDonald (eds), *Culture, Economy and Governance in Aboriginal Australia*, University of Sydney Press, Sydney, p. 207.

^{xxv} Dwyer, J, O'Donnell, K, Lavoie, J, Marlina, U and Sullivan, P 2009, *The Overburden Report: Contracting for Indigenous Health Services*, Cooperative Research Centre for Aboriginal Health, Casuarina, NT, pp. 41–2.

^{xxvi} Allens Consulting Group, 2011. *Assessment of the economic and employment outcomes of the Working on Country Program*, report to the Department of Sustainability, Environment, Water, Population and Communities, Canberra, p.30.