



Charles Darwin University

Submission to the

White Paper on Developing

Northern Australia

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1. INTRODUCTION

The *Green Paper on Developing Northern Australia* highlights many opportunities to drive further growth in the north for the benefit of all Australians. As a comprehensive research university and an innovative provider of online education and training situated in the north, Charles Darwin University (CDU) will be a key participant across the spectrum of the opportunities identified.

The University welcomes the Green Paper's acknowledgement of the existing expertise in the north in tertiary education, research & development (R&D), and training. As the Green Paper points out, there are many opportunities to build on the existing expertise through increased linkages with other institutions and industries, expanding the skills base of the local workforce, and growing international student numbers. A networked education hub of world-class vocational and higher education facilities delivering economic benefits to urban and remote areas equips the north with an excellent foundation for development.

History and geography suggest that the Green Paper arguably offers a rather narrow view of the role of government in developing the north: "to create a regulatory and economic environment that fosters viable private sector investment". This approach tacitly places its faith in market mechanisms for development, in contrast with alternative approaches that would emphasise strategic, economic interventions by government. Paradoxically, the appearance of a gulf between these two approaches hides the reality that *both* rely on the idea that top-down policies can be applied universally¹. If this idea is incorrect then neither approach to northern development will meet expectations. Accordingly the University encourages the articulation in the White Paper of a more enduring, strategic view of government roles that are centred on bottom-up mobilisation of broadly defined regional potentials: fostering and funding from a distance the situated associations, relationships, perspectives and knowledges that will define the economic and social fabric of the developing north. Articulating and delivering on such a new and sophisticated approach to government roles in northern development will challenge Australia's appetite for innovation. However, it may well open the door to international investors and potential migrants whose experience and capacity to invest are so important to northern development, and who have well-tuned techniques for discovering emerging "hot regions."

Section D of the Green Paper identifies and teases out six policy directions to develop northern Australia. CDU supports this coherent framing of the policy environment. There is an opportunity to provide even greater coherence to the frame through a stronger focus on the management of *risk* in northern development. Addressing issues such as reducing the premium that investors place on uncertainty, the urgent need for improved biosecurity, health and human mobility, and the need for enhanced resilience against natural hazards, a risk-management perspective would offer strong criteria for making policy and investment choices. In this context, the education and R&D services of CDU provide a strong platform for understanding and addressing risks in the north, as well as building the skill base required to sustain risk mitigation practices.

2. EDUCATION, RESEARCH AND INNOVATION

Introduction

Founded in 2003, Charles Darwin University is systematically developing its education and research capabilities on foundations laid by its antecedent institutions. CDU is a dual-sector higher education

¹ These ideas are expanded in an influential 1999 paper originally commissioned by the Territorial Development Service Unit of the Organisation for Economic Co-operation and Development (OECD): *An Institutionalist Perspective on Regional Economic Development* by Professor Ash Amin.

provider offering vocational and higher education opportunities in the trades, vocations and professions of direct relevance to the northern Australia workforce. Students study at qualification levels from Certificate 1 (often within high school settings to enhance transitions to the workforce) to PhD (often with supervisors and on interdisciplinary projects that draw on established partner institutions within Australia and overseas).

CDU has invested strongly in the human and technological factors required to provide outstanding on-line learning as a means for reaching students spread across Australia's north, and as a means for enlarging its catchment beyond the relatively small population of its region. The investment has been rewarded with international recognition for the quality of its achievement, as well as a more rapid expansion of its revenue base than would have been possible from the local area.

CDU has a reputation for world-class research resting on selective investment in three broad fields that are of global scholarly interest, as well as being of critical importance to the north of Australia and its Asian neighbourhood. The fields are Environment and Livelihoods, Human Health and Wellbeing and the emerging strength in Social and Public Policy. Indigenous knowledges are integral across these research themes. CDU is systematically developing additional selected fields characterised by (1) self-evident importance to the region and (2) strong place-based dimensions that inhibit translation and application of knowledge from other institutions. These are, Education at the interface with Health, and Energy. The University has a strong reputation for its respectful, effective links with Indigenous people in the north. CDU's expertise in Indigenous knowledges and cross-cultural practices and issues is a valuable resource for northern development projects.

Research & Development (R&D) capability at CDU

The University notes and enthusiastically endorses the Green Paper's advice that the White Paper will consider the establishment of a Cooperative Research Centre (CRC) responsible for informing the development of northern Australia. A large amount of work has been done by CDU and its partners to conceptualise the AgNorth CRC which will mobilise powerful R&D capabilities to provide supply chain solutions, policy architecture and investment models for northern agriculture, horticulture and aquaculture industries servicing growing Asian markets. The proposed AgNorth CRC provides a sharp and much needed focus on R&D challenges in agribusiness many of which are noted in this submission.

The University recognises that there are pressing needs for systematic, focussed R&D in other areas of importance to northern economic development, most notably the extractive industries. CDU is eager to explore new approaches to ensuring effective coordination of the R&D base for all aspects of northern development, including new forms of high level, region-based coordination of the multiplicity of R&D programs that are required to address the most urgent opportunities.

A well-documented feature of public-sector R&D capability in regional institutions in Australia is the tension between (1) the importance of the application and integration of knowledge to address specific societal problems in the region and (2) scholarly evaluative processes that valorise abstraction and global production of knowledge. As implemented at CDU the Northern Futures Collaborative Research Network (NF-CRN) resolves this tension, linking the socio-economic R&D requirements of the north through CDU and James Cook University (JCU) to researchers supported by better-endowed and extensively networked institutions such as the Australian National University and the Australian Institute of Marine Sciences. The program provides many examples of effective translation of valuable but abstract, global knowledge to the local context. CDU encourages the White Paper to support the continuation beyond 2015 of the Northern Futures Collaborative Research Network in view of its outstanding achievements in coordinating and strengthening the pursuit of northern R&D agendas.

The University supports the establishment of a Research Precinct at Charles Darwin University which will increase the value of national and regional research investment by co-locating research capacity and capability at CDU. The Research Precinct would be established in partnership with the Northern Territory Government and will build the critical mass of researchers with expertise in, and a deep understanding of, northern Australian contexts, institutions and industries relevant to northern development.

CDU has and continues to play a leadership role in collaborative innovation through research and development, training, brokerage and management across northern Australia. Examples of these partnerships and the contribution to key issues in northern Australian and the region's development are outlined here.

The Global and Tropical Health Division at the Menzies School of Health Research coordinates the Asia-Pacific Malaria Elimination Network (APMEN), which aims to grow research capacity in countries across our region, conduct targeted research and translate findings to prevent malaria, a disease which threatens one-third of the world's population. Funded by the Department of Foreign Affairs and established in 2009, the network has brought attention and support to the work of malaria elimination in Asia Pacific. APMEN is composed of fifteen Asia-Pacific countries that are pursuing malaria elimination, as well as leaders and experts from key international multilateral and academic agencies. Menzies also leads, in partnership with the Mahidol Oxford Research Unit in Bangkok, the IMPROV/OPRA research program. In this research, Menzies coordinates and manages the delivery of clinical trials at field sites in Afghanistan, Pakistan, Ethiopia, Bangladesh, Vietnam and Indonesia with the aim to identify a radical cure for Plasmodium vivax malaria.

TRaCK (Tropical Rivers and Coastal Knowledge) is a research consortium initiated and hosted by CDU that has drawn together more than 80 of Australia's leading freshwater researchers from a range of disciplines and 16 partner institutions. The \$40 million investment has built an evidence base that informs governments, communities and industries about sustainable use of Australia's tropical rivers and estuaries from Cape York to Broome.

The Northern Australia Biodiversity Hub hosted by CDU focuses on terrestrial, freshwater and estuarine ecosystems. The 16 research partners have invested over \$30 million to investigate issues and develop solutions within an adaptive "catchment to coast" planning and management framework. The Hub addresses gaps in understanding of biodiversity patterns; supports adaptive planning to respond to current and emerging threats; develops effective methods for monitoring and reporting on biodiversity and ecosystem health; determines the benefits derived from community-based natural resource management; and identifies opportunities to support Indigenous livelihoods.

The Northern Research Futures Collaborative Research network is a \$5million investment, which has supported multi-disciplinary collaboration to establish the essential research architecture to meet the national challenges associated with living sustainably in the remote tropic zone and also the interfaces between community and environment. The project has enhanced partnerships between CDU, ANU, JCU and AIMS to raise the quality and recognition of northern Australian research nationally and internationally through increased publication outputs; increased numbers of Higher Degree by Research students; higher levels of collaboration with research providers, businesses and end-users as well as a substantial increase in critical social and environmental research capacity in northern Australia.

The University notes that the report of the National Commission of Audit (CoA) recommends consolidating existing research programmes aimed at fostering collaboration, and consequently the termination of the CRN program. The University has closely examined the reasoning behind the recommendations of the Commission of Audit. The CoA draws on the Productivity Commission's two rationales for public support of science and innovation: the R&D requirements of government itself, and the potential for positive spill-over. The CoA agrees that universities generally focus on basic research which tends to have greater potential for spill-over and which is less likely to be privately funded. The CoA also agrees that "Australia's research system generally performs well relative to other nations." In the light of these points, the recommendation to abolish the CRN program must be seen in terms of the efficiency of program delivery, and not in terms of withdrawal of program funding. CDU has already advised the review of the CRN program that there are significant opportunities for constraining the program delivery cost.

Micro-economic reform of higher education and the May 2014 budget

The Green Paper was released soon after the presentation of the Commonwealth Government's 13 May 2014 budget proposals. Naturally it presents no analysis of the implications of specific budget measures for the possible policy directions and actions sketched in the Paper.

As has been widely discussed, the proposed budget measures in relation to Higher Education have far-reaching implications for Australia's universities in general, for regional universities and for Charles Darwin University and its prospective students in particular. CDU acknowledges the many benefits that can flow to students and universities from further micro-economic reform in Australian higher education. The University's position on the May 2014 budget measures encourages the White Paper to develop policy options that reduce the uncertainty and risk that jeopardises the contribution that CDU can make to the development of northern Australia.

In relation to the proposed changes to FEE-HELP, the University is concerned by the possibility that both the real and the perceived cost of higher education will deter students in the demographic of particular interest to CDU. These are generally mature Australians, including Indigenous Australians, who are seeking to enhance their qualifications or to change their career trajectories. The implementation of either of the alternatives suggested in a recent paper by Bruce Chapman and Timothy Higgins² would reassure these students. The surcharge model (or an up-front fee discount model) in particular provides certainty for student borrowers about the negligible real cost (to them) of their borrowing.

In relation to the proposed changes in the provision of the Commonwealth Grants component of higher education funding, an opportunity arises to revisit the serious market distortions produced by the provision of Commonwealth support on a per-place basis. The distortion is easily described: insofar as universities incur a uniform level of fixed costs, per-place funding means that smaller institutions must expend a larger proportion of Commonwealth support on those fixed costs. Small universities will then struggle to provide the same student experiences and research performance as large universities provide and there is an imperative for each institution to grow the *quantity* of education and research services that are delivered. Whether this will lead to an optimal higher education market for Australia is a moot point. The US higher education market is characterised by a smaller median and greater dispersion in the size of providers, and there are small, sustainable, elite providers of a kind that seems difficult to establish and operate in Australia.

In Australia's higher education market the Commonwealth is not just a purchaser of per-place provision. It shapes entry, exit and minimum standards by overseeing the regulatory environment, and shapes the economic behaviour of constituent institutions through the choices it makes when

² *HELP Interest Rate Options: Equity and Costs* by Bruce Chapman and Timothy Higgins (July 2014).

providing Commonwealth support. To illustrate how this occurs, consider two different ways of allocating a *given level* of Commonwealth support: (1) all funding on a per-place basis, versus (2) full funding for fixed costs with the residual applied on a per-place basis. In the former case, small institutions will face a difficult operating environment compared with large institutions irrespective of the performance of their management, whereas in the latter case there is a level playing field in respect of institutional size. Regional universities which tend to be small will be less disadvantaged by the second approach to allocation. Note further that the provision of Commonwealth support for fixed costs provides a sound rationale for differential rates of Commonwealth support to for-profit providers, since it would be inappropriate for the Commonwealth to fund the fixed costs of a for-profit business.

CDU urges the White Paper to open the opportunity for further exploration of new approaches to the provision of Commonwealth support that break away from simple per-place allocations and that adopt alternative measures to increasing the burden of debt that students incur.

Economic and social investment in northern Australia

Charles Darwin University investment in the Northern Territory aligns with the goals of the White Paper, as an educational and research institution and a large northern Australian enterprise that attracts expertise to the region. CDU contributed \$559 million of benefits to the Northern Territory economy in the 2013 calendar year, including \$394 million in direct impacts. This accounts for around 4% of the Northern Territory's gross state product (GSP), an increase from 2.4% in 2011. In 2013, CDU employed 1,393 Full Time Equivalent (FTE) staff and spent \$160.2 million in wages/salaries net of superannuation payments, \$120 million on other goods and services and invested \$95.5 million on capital expenditure. The university's employment model and investment in the region generates employment equivalent to 2,610 FTEs in the Northern Territory alone.

An independent economic analysis conducted by Consulting & Implementation Services Pty Ltd (CIS)³(2014) outlined CDU's economic contribution to the region. CDU's graduates contribute to an estimated increased economic value to the Northern Territory of around \$440 million, due to their improved skills that will command higher income over graduates' working lives. CDU produced 3,373 graduates in 2013. International students attributable to CDU are estimated to spend \$17.2 million in the regional economy. CDU's research income in 2013 was \$35.1 million in areas of importance for the development of northern Australia and the region. The impact of research is evident in specific areas of research. For example, for every \$1 the Menzies School of Health spends, it creates \$3 in savings to the public health purse and increased economic participation above the average for the Australia health research sector (Deloitte Access Economics 2012)⁴.

As a key part of priorities for northern Australia development, the University is investing to increase the attractiveness and competitiveness of northern and central Australia as locations for investment. CDU's strategic investment continues to raise Darwin and regional towns' capability beyond their population scale, provides capacity to solve problems that are distinctive to the region in addition to opening and sustaining Asian networks through longstanding educational business and alumni networks. CDU's strategy ensures provision of tailored education and training of the employees in existing and future workforces as well as access to national and international professional and academic networks and research that address emergent issues. This approach has resulted in an

³ Consulting & Implementation Services Pty Ltd (2014) Charles Darwin University: Regional Benefit Modelling.

⁴ Deloitte Access Economics (2012) Economic and Social Contribution of contribution of Menzies School of Health Research to the NT, Australia and the Asia Pacific.

agreement with the Defence, Science and Technology Organisation of the Department of Defence built on training and research partnerships that can be utilised in the White Paper's implementation.

CDU advances Indigenous achievement through increased participation and awareness of key issues in Indigenous policy and business, contract research and consultancy for Indigenous organisations, provision of education and training opportunities tailored to the needs of Indigenous people, creating and maintaining culturally enriched spaces, maximising engagement by and with Indigenous people and businesses, and Indigenous staffing, recruitment and retention strategies. CDU is a key in engaging communities through generating new knowledge through research and outreach activities that is focused primarily on the distinctive economic, environmental, social and cultural assets and challenges of northern Australia. CDU's track record in contributing to public debate on important issues of community concern and utilisation of University facilities for community uses are resources for implementing the White Paper's objectives.

International education and research

CDU's international development strategy reflects an ongoing commitment to the development of the region, through the provision of high quality teaching and world-class research to support communities and economies in transition. CDU has established collaborative teaching and research relationships in the Asia Pacific that support sustainable development and positive social change, building on commonalities arising from a shared regional location and based on mutually beneficial partnerships, underpinned by formal agreements that are sustained over long periods of engagement. The ongoing development of CDU's research role is closely aligned with the University's international engagement and recruitment strategies.

Across Australian universities, international student enrolments tend to be concentrated in a small number of fields of education. For CDU, the top five higher education broad fields of education in 2013 were "Health" (23.2%), "Management and Commerce" (16.1%), "Education" (9.3%), "Engineering and Related Technologies" (8.0%) and Society and Culture (7.7%). The top two fields of education for international students commencements in VET at CDU were "Food, Hospitality and Personal Services" (51.5%) and "Management and Commerce" (40.4%).

CDU is focussed on development through strategies including:

- Promoting opportunities for CDU students and staff to engage in the Asian region through joint programs and cultural exchanges, including participation in the New Colombo Plan;
- Leveraging NT Government (NTG) and CDU relationships in Asia through participation in NTG country delegations as appropriate and through cooperation with government initiatives;
- Consolidating relationships with prioritised Asian and sub-regional universities and governments through strategic partnerships in research and teaching;
- Building on established research partnerships with leading international institutions in the University's areas of research strength such as environmental science and public and Indigenous health and social policy;
- Providing scholarships in prioritised fields to attract students in targeted coursework and research programs, and encouraging pathway articulations, teaching and research collaborations and mobility opportunities with existing partners;
- Offering short-term study programs that attract students from the region and beyond.

Priorities for future development

The Green Paper points to opportunities in education, research and innovation that the University is positioned to exploit. With targeted support from the Commonwealth, CDU can:

- Lead networked research programs that address key issues in northern development through an extension of the Northern Futures Collaborative Research Network;
- Intensify research that improves Indigenous and tropical health outcomes for northern Australia and the nearby Asia Pacific region through a capital fund of \$30 million to support the Menzies School of Health Research⁵;
- Funding the proposed AgNorth Cooperative Research Centre (CRC) as the R&D arm of a systemic program to solve problems of agriculture, energy, health, Indigenous engagement and governance and continue to inform the development of high value-add agribusiness in the north;
- A northern Australian hub funded through the new National Environmental Science Program (NESP), focusing on management of aquatic systems in the north and their associated natural and cultural values, complementing land and water research through AgNorth and continuing research with Indigenous people started through the Tropical Rivers and Coastal Knowledge (TRaCK) consortium;

In addition, CDU can develop existing support to:

- Lead the northern node of the Bushfires and Natural Hazards CRC, developing specialist capacity in northern Australia in disaster risk reduction and natural hazards planning and response that underlines Australia's leading role within a geologically active region where natural disasters are frequent and often catastrophic;
- Contribute to and capitalise on investments in regionally based networks supporting government, industry and communities to meet the challenges of northern Australian development;
- Grow the number of international students studying at CDU through well-developed partnerships, particularly in eastern Indonesia and Timor Leste, renewed focus on promoting the benefits to students of north Australia as an education hub, and consideration of the extension of post-study, region-specific work rights for international students on 485 Visas.

3. INFRASTRUCTURE

Infrastructure for northern Australian development

Northern Australia faces decades of transformation as it shapes its roles in the Asian region. The leading aspect of these roles comprises large-scale resource development projects already underway or being planned in Australia's north. CDU research can answer important social, environmental, and economic questions regarding the impacts of these projects, providing a strong platform for public policy design. CDU brings specialised, regionally informed knowledge to questions concerned with understanding the unique biophysical, social and cultural infrastructure of northern Australia, the

⁵ This funding request is detailed in the Menzies School of Health Research and Charles Darwin University submission to the Joint Select Committee on Northern Australia *Driving the North Australia Agenda: Engagement with Asia and Developing Indigenous Leadership* Submission 55 Attachment A

remote, regional, and urban contexts and the roles of people and institutions to support change through high quality research and strong, productive connections with community, business and government stakeholders.

CDU has worked with government and industry partners to develop the infrastructure to provide vocational education, higher education and research services required to support opportunities for growth. As the north grows, ongoing systematic development of CDU will occur. CDU's business is highly reliant on information and communications technology (ICT), a feature that characterises a large and growing number of other businesses in the north. There is a pressing need to maintain a focus on ubiquitous ICT, recognising that the spill-over and non-proprietary benefits of ICT imply a major role for government in both regulation and infrastructure investments.

Priorities for future development

The Green Paper makes strong and important points about the transformational potential of technology and innovation in northern development. Two components must be delivered to release this potential:

- Installation of and support for essentially ubiquitous broad-band services in the north; and
- Conduct of targeted multidisciplinary research to improve understanding of the potential for and barriers to uptake at the social/physical infrastructure interface in northern Australia contexts.

4. LAND AND WATER

Expertise in land and water management across northern Australia

The Green Paper correctly identifies the central importance of land and water for northern Australia. The region has distinctive landscapes, ecosystems, seasonal and climatic conditions, demography, cultures and legal and regulatory dimensions: the north is different. While prudence demands that lessons learned in other places are understood and exploited, there is no substitute for local knowledge based in the practical realities of working in northern Australia. CDU's researchers have been working on land and water issues with northern industries and communities over the arc from the Kimberley to Cape York for 25 years. This has built a capacity to propose solutions to problems relevant to the development agenda set out in the Green Paper including:

- Land tenure, in particular around native title and flexible tenure, and water property rights, water allocation principles and water management tools, including cultural flow requirements;
- Coping with the distinctive ecology of tropical river systems and connectivity between surface water and groundwater, between rivers and floodplains, and between upper catchments and in-shore marine receiving waters;
- Opportunities for fisheries and aquaculture that respect water management constraints;
- Enterprise diversification strategies for pastoralists, as well as ways for managing fire, pests and weeds in partnership with Traditional Owners;
- Working with Indigenous land managers across fire management, weed and feral animal control, carbon emissions abatement strategies, enterprise development including buffalo, crocodile egg harvesting, aquaculture, horticulture and native rice species.

Priorities for development

The Green Paper acknowledges, as has been long recognised, that land and water problems are significant barriers to northern development. Solutions to these problems are being found. CDU recommends ongoing investment in organisations and networks undertaking R&D on problems that remain crucial to de-risking investment, lowering barriers to investment and realising opportunities identified in the Green Paper. Investment opportunities include:

- A Threatened Species hub through NESP, based around a collaboration between CDU and the Universities of Queensland, Melbourne and the ANU, and implementing large-scale landscape experiments in conjunction with the Northern Australia NESP Hub and regional landholders;
- Ensure that the R&D groundwork is done to position Australia for large-scale Asian investments in renewable energy with a direct focus on remote, off-grid applications such as resources projects, pastoral enterprises and remote communities (e.g. on solar-diesel hybrid systems), that exploit Australia's comparative advantage in solar insolation through a national R&D collaboration centred on CDU;
- Resource the enhancement of longstanding research and teaching partnerships with universities and government agencies through the proposed GT- TIA around land and water issues, including projects for watershed management, food security, livelihoods and governance;
- Consolidate investment in sophisticated risk management tools and approaches (from emergency services through energy, resources and agribusiness) through the northern node of CRC programs as natural hazards (floods, fire and extreme weather) dominate northern Australia (and the countries to our north which also suffer from volcanos, earthquakes and tsunamis) and thus present significant risks for long-term investment in resources projects, infrastructure and supply chains; and
- Better align and coordinate national research investments with Australian Government programs to improve land management and land-based infrastructure, including the National Landcare Program, the Green Army, Working on Country (Indigenous Rangers) and the Emissions Reduction Fund. Areas of potential impact include effective management of fire, weeds and feral animals.

5. BUSINESS, TRADE AND INVESTMENT

Building strong business expertise in northern Australia and the region

The Green Paper reminds readers of the costly failures and unforgiving nature of the north, as well as the valuable lessons that can be learned from these experiences. The University has recognised that a common feature of development in the north and the Asian sub-region will be potential multinational investment that can operate along whole supply chains as in the resources sector, the formation of small and medium size enterprises (SMEs) at local levels and the operation of branch offices that fulfil economic, social and cultural needs in the region. Participation by the owners and employees of these enterprises in educational programs that attend to the particular characteristics of the north and the Asian neighbourhood will be an important way for experience to be passed on, rather than being re-learned through costly mistakes.

The University has embarked on a journey to enhance capacity to strengthen specialised business development and analysis. The University is coordinating its existing capacity to provide an

integrated research resource that focuses on issues of economic development in northern Australia and the region by drawing on enterprise in health, resource and regional development economics.

These strategies will ensure the University is:

- An enabler of sustainable business growth for northern Australia and for businesses located in the Asia Pacific;
- Providing integrated training and professional development solutions for workers and the families of their workers when they are located in the region;
- Able to support investment and enterprise development in the Northern Territory, Indonesia and the region ensuring business owners in the region are highly skilled and able to take advantage of opportunities in the region over the long term.

Priorities for development

There is an opportunity to accelerate the rate of development beyond that which the University can sustain by co-investment in critical projects. The key area of investment is to establish a regional business hub that draws on CDU's research and training expertise in Indigenous economic development including resource management, governance structures and workforce development to build the capacity of institutions and people in the region to successfully partner with international companies, SMEs and Indigenous business and engage in trilateral and bilateral business arrangements across northern Australia, Indonesia and Timor Leste to participate in northern development.

6. GOVERNANCE

Leadership and governance in northern Australia

The Green Paper presents a compelling analysis of the challenges of leading and governing development in settings that are geographically dispersed and characterised by distinctive communities and populations. It correctly concludes that institutional capacity and capability is stretched even now. We need human resources with regionally-relevant leadership and governance skills to realise the promise of northern development. A modest level of investment can build the skill sets and evidentiary knowledge base needed to improve the leadership and governance of development in the formidable climatic, physical and economic environment in northern Australia.

Northern Australia development depends on balancing the expectations and commitments of public and private institutions to invest, to contribute to change management and to support quality systems that can reduce the risk of failure and mitigate effects when it occurs. As befits a university located in Darwin, CDU has a strong tradition of successfully partnering with other institutions and centres to contribute to the enhancement of leadership and governance in the region. CDU's educators and researchers offer decades of expertise arising from their work linking their northern location to global knowledge networks, their focus on place-based approaches, and a successful track record of collaboration with government, industry and communities, in particular northern Australian Indigenous communities. This work has contributed to improving methods for place based planning, implementation and policy evaluation and Indigenous enterprise development for regional and remote areas. Utilisation of this knowledge increases capacity in both western, Indigenous and SE Asian governance to manage community development, infrastructure and agricultural development.

CDU has well established links with international neighbours to the north that facilitate bi and tri-lateral cooperation on issues of shared concern. These are central to building the strong economic

and social relationships across the Timor-Arafura seas that must be a central feature in the next phases of northern development. CDU is currently building on existing trilateral engagement between Australia, Indonesia and Timor-Leste to identify practical opportunities and strategies for future trilateral cooperation to support economic development in the region through the TIA-GT.

Priorities for development

The priorities for development of leadership and governance skills to support development of northern Australia are clear:

- Extend training opportunities to Indigenous people for enhancing leadership and governance skills that are relevant for communities and to the cross-cultural issues that will arise as development unfolds. This will build capacity and whole of government processes in Indigenous governance for northern Australia and the region;
- Promulgate analysis of governance and evaluation processes that optimise investment and engage Indigenous and non-Indigenous people in northern Australian development through the award of funding for the proposed AgNorth CRC; and
- Increase support for the Leadership Centre in the Australian Centre for Indigenous Knowledge and Education and its partnership with the Australian Council of Indigenous Leadership to develop programs to support Indigenous leadership at senior levels.

7. CONCLUSION

As outlined above there is arguably no part of Australia that demands strategic, evidence-based, rather than opportunistic, development to the degree evidenced by northern Australia. This need for strategic development is driven by proximity to Asia, a wealth of nationally and globally important resources, fragile land and maritime environments, a sub-optimal population and the country's most remote and disadvantaged Indigenous communities who are facing the nation's most complex health, education and governance challenges. These contextual issues demand nuanced government engagement, informed government policy, investment for sustained development and innovation based on contextualised research tested and enhanced through nationally and globally connected networks.

The development of northern Australia can be a site for established policy, business practice, governance and the application of existing knowledge, which history tells us have not served the north well, or it can be a site for innovation befitting Australia's increasing integration with its region — a site of rapid change, increasing economic prosperity, population mobility and innovation. It is on this basis that Australia's north will develop into a region that our Asian neighbours will increasingly wish to reach out to and partner with, rather than simply extract from. Sustained engagement and partnership will in turn ensure the security of Australia's northern region. Charles Darwin University is an exemplar of an engaged northern institution whose *modus operandi* is premised on innovation, place, partnership and local and regional engagement — a University whose graduates have the experience, knowledge and capacity to shape northern futures and whose research teams have the capacity to inform and sustain an emergent northern Australian 'Smart Region'.