

Sharing Stories of Success from Kimberley to Cape

The Kimberley to Cape initiative is working to identify **common ground** and **align messages** around a **prosperous and sustainable future for Northern Australia**. This discussion paper is one of a series that aims to **synthesise, simplify** and **share** the **views** of **diverse** organisations and experts around

what success might look like for specific sectors and topics such as agriculture, grazing, conservation, mining, planning and tourism in the North. As well as attempting to **draw out** what most parties might **agree on**, we **raise questions** for discussion in an effort to expand common ground and help **increase policy certainty**. The narratives are drafted through reviewing literature and through conversations and feedback, and are dynamic - **please let us know your views!** The idea is that in **collaboratively developing** and **refining** these shared stories we will generate **clearer and more consistent narratives** to help shape a successful future for the North...

Agriculture in Northern Australia in 2030 – a discussion

What might success look like for plant focused agriculture across the North? ¹

(note grazing will have its own paper)

Agriculture in Northern Australia in 2030 is **progressive, diverse** and **resilient**, supplying high quality product to local and international markets. It has grown from the expansion of existing successful enterprises, incorporating innovative practices and technology, and has diversified away from traditional bulk, undifferentiated cropping to now encompass multiple models and scales of production. It is guided and **driven by shared goals** of strong regional communities, a diversified regional economy and an environmentally sustainable production base. It is a significant employer, and contributes to Australia's export earnings, local and national food security, and regional vitality.

Pre-existing irrigation areas (eg Ord, Burdekin, Daly, Mareeba) **have increased their economic, social, cultural and environmental value** through a range of agreed measures and produce crops such as peanuts, chickpeas, cucurbits, chia, hemp, sandalwood, aromatic rice and tropical fruits. **Three 5,000-25,000ha new mosaic irrigation regions have been collaboratively planned and developed** across the North (eg in the Kimberley, Gulf/Cape and the Top End), and two to four more may be developed before reaching economic, water allocation and/or cumulative clearing limits. Across other **pastoral country 5-500ha areas of irrigated or dryland forage crops** are grown to finish cattle. **Near towns, protected horticultural cropping** is generating high returns relative to inputs and providing quality local produce.

More diversified agricultural enterprises such as aquaculture, crocodile farming, niche crops, bioprospecting and wild harvest products for the

What's this about and why should I read it?

We want to paint a picture of agriculture in Northern Australia in 2030 that's supported by multiple sectors. The picture here is based on many conversations, the references listed, and feedback to date. **Your input is important** in helping us identify what people agree on and what they don't - a shared picture will generate stronger community and investor confidence. For more information please see www.kimberleytocape.net.au.

pharmaceutical, cosmetic and food industries are succeeding due to comparative advantages in markets, climate adaptation and social licence. These don't need large areas of cleared land and/or large water allocations.

Diversification is also evident within individual agricultural enterprises with many businesses integrated with for example aquaculture, beef, honey, carbon, tourism, renewable energy, wild harvests and/or seed industries. Most draw on the North's new innovative R&D institutions and some are part of this knowledge economy, providing training to people across the Tropics.

Indigenous agricultural enterprises and support services are taking advantage of new markets and niches linked to their strengths. The 'Centrefarm' model and four pillar framework is expanding and Indigenous communities benefit from nearby developments as part of an industry-wide commitment to co-benefits.

Biosecurity is now to agribusiness what safety is to the mining industry - routine wash downs, inspections, reporting of incidents etc are mitigating the high risk of breaches due to increased movement of products and people, free trade agreements and more cropping. Effective monitoring and out-break procedures limit new pests, weeds and diseases, and precinct design, and new technology such as lasers, curb damage from geese, wallabies etc.

Supply chains are vertically integrated, efficient, traceable and nimble in responding to fluctuations in markets, biosecurity needs, costs and natural events. They are diverse, innovative and well aligned with Asian markets and are supported by a strategic transport network, harmonised government regulations and research and extension service hubs that work with individual growers. **Waste is minimal** and most energy is renewably sourced. Climate change mitigation and adaptation strategies are routinely included in decisions across the chain.

Agriculture in the North supports and is supported by a **local, vibrant agribusiness sector** (e.g. in machinery, engineering, seeds, safe chemicals, consultants, mechanics etc). Enterprises harness a **skilled workforce**, and are **less reliant on seasonal workforces** due to diversification, some automation, more double cropping, counter seasonal products and strategic processing facilities. They use local contractors including Indigenous businesses.

BOX 1 What do agricultural industry groups and government submissions²⁻⁵ say about:

Planning - Industry and government bodies call for improved regional planning to identify and agree on agricultural growth precincts, and for more consistent policies. They believe that development decisions need to be made with community participation, informed by the best available science and include social and environmental impacts².

Water - Industry and government bodies strongly support the NWI and appear to be moving away from (or are at least being more cautious about) large dams towards more viable, considered water sources such as off stream dams³.

Biosecurity - Industry and government bodies acknowledge the new biosecurity risks that increased agriculture in the North will bring to Australia and the importance of managing these. They call for increased biosecurity effort to accompany Northern development⁴.

Climate change – most didn't comment on climate change, perhaps implying this is something they tackle every day, that they're still assessing this issue, or that, in their view, it's not currently an important factor⁵.

Water use efficiency has increased significantly since 2015 through advanced technologies, trading and new crop varieties. All irrigated areas use a '**closed system**' where excess water is recycled. Water is sourced from **groundwater** and **small, off-stream dams** typically in upper catchments. Major instream dams have not stacked up due to poor cost-benefit ratios, a lack of good sites, high evaporation rates and impacts on fisheries and natural and cultural

values. Water is allocated according to agreed **plans** that meet National Water Initiative criteria and include reserves for future development by Traditional Owners.

A key success factor in the growth of the North's agriculture industry has been the promotion of Northern Australia as a reliable supplier of **safe, green, clean quality products** through the use of leading practices, branding, marketing, accreditations and collaborations – these have been critical in securing our market advantage and have driven efficiencies in soil, water and nutrient management, lowering input costs and reducing environmental impacts. Many growers **proactively** contribute (beyond duty-of-care) to the **protection** of the North's natural values to help ensure longterm productivity, competitive advantage and a positive legacy.



The development model

Most players in the agricultural sector believe that the right development model is one that builds on existing successes, typically starting small and expanding if successful⁶. It's one that emphasises diversification, works with the regional community and builds on the North's clean, green credentials. This model is strategic, learns from the past and has less exposure to the multiple challenges that affect the North.

This development model fits with the need for the North to focus on particular products and market windows^{eg7,8} - unlike for beef and dairy, there is no easy Asian market for Northern Australian horticultural products since many Asian countries are themselves major producers and have significantly lower production costs. Northern producers will therefore focus on comparative advantages including: 1. **High quality agricultural products with strong, traceable credentials** (many companies, especially Asian ones, are increasingly looking for quality and accountability, and the North is well placed to build on its reputation for clean, safe produce). 2. **Counter-seasonal products** (the North can meet and create demand for products during traditional off seasons, taking care to avoid oversupply⁹). 3. **Niche products not grown**



in Asia, including organic products. 4. Fodder crops to add value to beef production.

The right development model needs to account for the cost of learning through crop failures in some years (profitable products need gross returns of over ~\$4000 per ha and low freight costs relative to sale price). It also needs to be able to differentiate products, for example through using leading practices and creating social, cultural and environmental benefits.

BOX 2 Benefits and risks of agricultural development
 Agricultural development across Northern Australia can bring many benefits to individuals, communities and regions such as income, enhanced community services, employment, expanded social networks, better infrastructure and access to local produce. It can be an important contributor to the long term viability and vitality of northern communities, and to biodiversity through soil, weed and pest management. Agricultural development in the North can also bring broader benefits to Australia as a whole such as via increased export earnings, the ability to export more skills and technology, and improved food security.

In thinking about the scale and style of agricultural best suited to the North, these benefits need to be weighed against unwanted consequences. E.g. water extraction or diversion for irrigation can impact existing users such as fishing, prawning, tourism, the environment, grazing, and other ecosystem service users. Agricultural intensification often increases pesticide and fertiliser use which can pollute soil and water and affect food webs and nutrient balances. Runoff and flood water can carry sediment, seeds or other unwanted material. Weeds, pests and diseases can spread due to increased movement of people, vehicles and products. The cumulative effect of such impacts may impair the long-term sustainability of the development and negatively impact the values of surrounding and downstream areas. It could also tarnish Northern Australia's clean, green image, one of our strongest market advantages.

The proposed model of development – a) building up from existing successes, b) emphasising diversification and moving away from large scale monocultures, and c) capitalising on the North's clean, green credentials – has fewer risks and more benefits than an 'infrastructure heavy' model of development that uses relatively large water allocations, relies on low value or bulk commodities and is vulnerable to pests and disease. It also fits more closely with maintaining the outstanding natural and cultural values of Northern Australia, as long as collaborative robust, place-based planning is undertaken to ensure new agricultural developments are well placed, well designed and within agreed cumulative limits.

Identifying Common Ground

We are keen to understand and expand the common ground between sectors around what success looks like for agricultural development in the North. For example, views range from 'is the north the right place to pursue (irrigated) agriculture?' and 'let's clarify the real purpose of developing agriculture in the North before investing further' to 'major agricultural developments are the best chance we have for real involvement of aboriginal people in the economy' and 'we need agriculture in the North to feed the world'. We would therefore love your feedback, either in general or in response to the following questions, to progress the conversation and build greater consensus.

1. To what extent do you support the draft picture of success and model of agricultural development for the North? (ie a) builds on existing successes, typically starting small, b) emphasises diversification and c) uses and protects the North's clean, green credentials)
 - Fully support
 - Somewhat support
 - Don't support
 - Please explain [pls use more paper as needed]:

2. Many groups are calling for policy certainty through collaborative place-based planning where local communities are involved in identifying desired futures and land uses etc for their region – do you support this?
 - Strongly support
 - Somewhat support
 - Don't support
 - Please explain:

3. How can we best ensure agriculture in the North benefits regional communities?
 - It always benefits communities anyway
 - Promote social licences to operate
 - Ensure it's tied to policy, incentives etc
 - Ensure it's a legal requirement
 - Don't need to benefit communities
 - Please explain why and/or how:

4. How important is Northern Australia's clean green image to you or your enterprise/ industry / sector and, if it is important, how can we maintain it in the face of major development?
 - Very important
 - Somewhat important
 - Not important
 - How can we maintain it (eg accreditations, BMPs, conservation efforts)?:



In summary - Is success...

- more about diverse income streams than single commodity income streams?
- more about water innovation than water infrastructure?
- more about clever horticulture and fodder mosaics than vast cropping areas?
- more about boosting the North's clean, green reputation than compromising it?
- more about better using existing large irrigation schemes than overcapitalising on new ones?
- more about ensuring biosecurity safeguards than risking biosecurity breaches?

5. What should be the extent of (irrigated) cropping in the North? For example, are up to 7 new 5,000-25,000 ha irrigation regions across the North insufficient or excessive? Should there be a regional land clearing limit(s) to keep below or do land/water/economics adequately limit development? Should there be 'no go' areas for cropping in addition to current conservation reserves, areas of Indigenous significance and matters protected under law?

Are up to 7 x 5,000-25,000 ha new irrigation precincts across the North insufficient / sufficient / excessive? (please circle)

Should be minimal clearing limits

Should be clearing limits to protect ecosystem services and other natural values

Should be improved off-reserve protection of high conservation value ecosystems

Please add detail:

6. Do you think it makes more sense for us to invest in existing irrigation areas (eg Burdekin, Ord), in opening up new irrigation regions or in small scale systems for pastoral properties?

Best to invest in existing schemes

Best to invest in greenfield schemes

Best to invest in small pastoral scale

It's not that simple

Please explain:

7. What other agricultural-related issues do you feel are important to address to increase the common ground between different sectors and build a shared picture of a prosperous and sustainable future for Northern Australia?

Please outline:

How we might contribute to achieving success in agricultural development across the North:

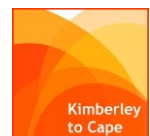
Once we have a shared picture of success, or at least have agreed on some parts of the picture, what actions do we need to take to move towards it? For example:

1. Increase information exchange and collaboration among agricultural bodies, other sectors and regional communities to better understand community and investor aspirations etc, e.g. via forums such as the Food Futures road shows.
2. Ensure the CRC for Developing the North assists in diversification and innovation to create a resourceful, sustainable and adaptable sector.
3. Investigate a 'Northern Australia' brand that serves multiple sectors including agriculture, and complements Australia-wide branding.
4. [please add your comments]
- 5.



Many thanks for your input. This will be used to build a more informed and cohesive picture of success and be anonymous unless requested. Please provide comments to:

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Please see the website page for references, and contact me for more information or to discuss!

Kimberley to Cape is a philanthropically funded initiative that works to support development and conservation that strengthens communities and enhances natural and cultural values from the Kimberley to Cape York. It is guided by a multisector Advisory Group, administered by the Environment Centre NT and hosted by RIEL at Charles Darwin University.

1. Key references used for the 2030 picture include:

- i. ACOLA 2015 Australia's Agricultural Future
- ii. Queensland's Agricultural Strategy 2013 A 2040 vision for doubling production
- iii. Kimberley Development Commission 2014 An overview of the agricultural & pastoral sectors in the Kimberley
- iv. NT Gov 2014 Submission to Agriculture Competitiveness White Paper, NT Gov 2014 Submission to Parliamentary Inquiry on Developing Northern Australia, NT Gov 2015 Economic Development Strategy & NT Farmers Assoc information
- v. CSIRO 2014 Submission to Parliamentary Inquiry on Developing Northern Australia and associated references
- vi. ABARES 2013 What Asia Wants
- vii. ANZ 2014 Molehill to Mountain- Agriculture in Northern Australia
- viii. Centrefarm Aboriginal Horticulture website

2. Planning References:

- i. 'Improved regional and rural planning processes and instruments will be required to support harmonious co-existence of agricultural, industrial and urban development in northern Australia' (Grocom 2014 Submission to Parliamentary Inquiry on Developing Northern Australia)
- ii. '...Development impact decisions are made using the best available scientific knowledge and oversight. It is important that governments engage with the various stakeholders in finding an acceptable and sustainable land use solution. The government should prioritise in their policy settings the appropriate consultation and negotiation with landholders around proposed resource development' (AgForce 2014 Submission to Parliamentary Inquiry on Developing Northern Australia)
- iii. 'Provide farmers with long-term policy certainty across all areas including ...access of natural resources including land and water' (NFF58)
- iv. 'Regional assessments for land and water use planning will be completed to harmonise policy and regulation across state and territory boundaries and ensure that Northern Australia's unique environment, biodiversity and cultural values are protected' (GrowNorth 2014 CRC bid)
- v. 'Further development of agriculture in northern Australia will also need to be supported by integrated and collaborative planning' (Aust Gov Dept of Agriculture 2014 Submission to Parliamentary Inquiry on Developing Northern Australia)

3. Water related references:

- i. 'Seek opportunities to utilise off river water catchment, capturing large wet season rainfall in geographically suitable pockets rather than developing stream dams' (NT Farmers Assoc 2014 Submission to Parliamentary Inquiry on Developing Northern Australia)
- ii. 'The Territory is exploring opportunities for strategic dams, off-stream storage facilities and managed aquifer recharge to meet domestic water supply demand, provide more water for irrigated agriculture and support developing industries' (NT Gov 2014 Submission to Parliamentary Inquiry on Developing Northern Australia)
- iii. 'Key considerations for investment in new water infrastructure development should be: the long-term environmental sustainability of the works – established through sound water planning processes based on robust scientific information; compliance with the principles of the National Water Initiative, including

those relating to the specification of water access entitlements and the establishment of water markets, and: based on a sound business case, to ensure the long term financial sustainability of the scheme or dam for water users' (NFF 2014 Submission to Parliamentary Inquiry on Developing Northern Australia)

- iv. 'NFF supports a risk-based approach to planning that recognises the complexity of the water resources, their conservation values, and the threats to them' (NFF 2014 Submission to Parliamentary Inquiry on Developing Northern Australia)
- v. 'Water resources need to be sustainably utilised through infrastructure development.. that deliver further opportunity while ensuring adverse impacts on existing users or the environment are avoided' (AgForce 2014 Submission to Parliamentary Inquiry on Developing Northern Australia)
- vi. Water for Food approach, 2014 WA Gov
- vii. [need] 'Research into safe extraction levels for northern Australian aquifers; research into flood harvest, off-stream storage and conjunctive use of surface water and groundwater' (NT Gov 2014 Submission to Parliamentary Inquiry on Developing Northern Australia)
- viii. 'Potential for 20,000-40,000 hectares of new irrigation, probably groundwater-based, distributed in 'mosaic' irrigation systems' (North Australia Land & Water Task Force 2009)
- ix. 'Significant water use would, in the downstream environment, amplify the environmental and social challenges associated with dry years and would have impacts on commercial and recreational fishing catches that have not been quantified' CSIRO 2014 Submission to Parliamentary Inquiry on Developing Northern Australia

4. Biosecurity References:

- i. 'There is a need for long term vision and investment – consequences of failure are high ...This is a very high priority to protect existing international market access and the delivery of future opportunity and elevated product valuation' (AgForce 2014 Submission to Parliamentary Inquiry on Developing Northern Australia)
- ii. 'Movement of produce can increase the threat of biosecurity incursions, threatening the clean and green image of Australian horticulture. Biosecurity risks are very different for horticultural enterprises in the north and management strategies that apply in southern states may not be transferable. Climate change and other factors can also increase biosecurity risks. Biosecurity risk identification and management is likely to require significant investigation and ongoing investment as is a more effective system for the registration of crop protection products for the horticultural industry' (Grocom 2014 Submission to Parliamentary Inquiry on Developing Northern Australia)
- iii. 'Northern Australia's remoteness and relative lack of development have provided a natural barrier to exotic pests and diseases. An increase in economic activities and movement of people and materials in northern Australia will increase the risk of unwanted pests and diseases being introduced and spreading throughout Australia. These risks could constrain the sustainable development of new and existing industries in northern Australia. Biosecurity assessments should be a key component of any planning for economic development of northern Australia. Increased biosecurity efforts will

- be required, involving collaboration across governments, industry and communities ...this could provide increased employment opportunities in northern Australian communities... Dedicated and targeted surveillance is therefore key to ensuring pests and diseases do not enter and/or establish, and maintaining access for Australia's agricultural produce to international markets' (Aust Gov Dept of Agriculture 2014 Submission to Parliamentary Inquiry on Developing Northern Australia).
- iv. 'Improve preparedness and response mechanisms to enhance resilience to natural disasters and biosecurity threats, including becoming the most prepared state in Australia for incursions such as foot-and-mouth disease; continue to improve biosecurity systems, surveillance and detection to protect agriculture production and the environment, utilising state-of-the-art, purpose-built facilities that maximise efficiencies' (Qld Agricultural Strategy 2014)
 - v. 'Need to coordinate funding, surveillance, awareness as well as response to events. Provide incentives (taxation, social or other) to retain people in remote areas such as northern Australia as the front line in the identification and response to risks. Commit and adequately resource ongoing biosecurity risk assessment processes and implement actions (AgForce 2014 Submission to Parliamentary Inquiry on Developing Northern Australia)
 - vi. 'Growth of agricultural industries in northern Australia could generate biosecurity risks through direct exposure to local or exotic pests and diseases impacting on the productivity and sustainability of the new and existing primary industries and by providing a new bridging environment to support exotic organisms with consequences in established agricultural systems in southern Australia. Both these risks can be anticipated and mitigated through an integrated biosecurity strategy comprising technologies and social approaches' (CSIRO 2014 Submission to Parliamentary Inquiry on Developing Northern Australia)
5. Climate Change References
- i. 'Climatic shifts that are already apparent and projected changes to rainfall and temperature patterns in northern Australia pose ever greater challenges to maintaining successful production of existing crops and establishing production on new horticulture lines in the north. This is an extremely important consideration for the horticulture industry, as it is particularly susceptible to temperature changes. Climate change scenarios and their impact on agricultural production potential in northern regions require detailed investigation' (Grocom 2014 Submission to Parliamentary Inquiry on Developing Northern Australia)
6. References to support proposed development model:
- i. 'Lessons for the past – too big too quickly – has changed the focus of development across northern Australia. A sustainable agricultural precinct approach is being developed on the back of lessons learned in the Kimberley (Ord), Katherine and Douglas Daly regions' (NT Gov submission to Ag Competitiveness Green Paper 2014)
 - ii. 'The focus should be on removing barriers and constraints to existing enterprises and growing new markets, rather than opening up new areas for horticulture production... Drastically increasing production with no regard to market development will simply exacerbate existing problems with farm profitability' and 'sound a strong note of caution regarding promoting large green field sites' (GroCom 2014 Submission to Parliamentary Inquiry on Developing Northern Australia)
 - iii. 'Staged and sustainable development to allow for diversification and localised, targeted intensification' (AgForce 2014 Submission to Parliamentary Inquiry on Developing Northern Australia)
 - iv. 'There are significant opportunities to ... facilitate the careful strategic expansion of agriculture in Northern Australia. However... development ... which created over supply of product in the domestic market could not be supported' (Qld Farmers Federation 2014 Submission to Parliamentary Inquiry on Developing Northern Australia)
 - v. 'Smaller scale and more sparsely concentrated 'mosaic' irrigated agriculture may be more viable than irrigation concentrated in a smaller number of larger contiguous areas, because groundwater reserves are often too small or too sensitive to support widespread irrigation' (Aust Gov Dept of Agriculture 2014 Submission to Parliamentary Inquiry on Developing Northern Australia)
 - vi. 'The greatest opportunity for expanded irrigated agriculture in the Territory will be around developing small pockets of arable soil that overlie potable aquifers. This will deliver a mosaic of irrigation developments' (NT Gov, 2014 Submission to Parliamentary Inquiry on Developing Northern Aust)
 - vii. 'In many commodities there has been a natural process for production to be consolidated into large, corporate units often to the detriment of the smaller family farm and other social impacts. This could be an unavoidable consequence of the drive for increased efficiency but it is also a major social change that may not be welcomed by the community or government' (NT Gov 2014 submission to Ag Competitiveness paper)
 - iv. 'Large numbers of enterprises have implemented small scale irrigation systems that have carefully combined arable land with available water. These new 'mosaic systems' have allowed landholders to increase overall unit productivity and better manage risk' (Northern Aust Land & Water Taskforce 2009)
7. ABARES 2013 What Asia Wants
8. KPMG 2013 Demystifying Chinese Investment in Australian Agribusiness
9. GroCom 2014 Submission to Parliamentary Inquiry on Developing Northern Australia (eg 'many North Queensland vegetable producers had difficulties obtaining prices that covered the cost of production in 2013').