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Potential for Agricultural Development in Far North Queensland

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The United Nations estimates the world's food consumption demand will grow by between 70% and 100% - that is, double, by 2050. The LNP believes Queensland should not just be part of the global solution, but a global leader in addressing food security. If the State is to grow a four-pillar economy and meet our target of doubling food production by 2040, then the soils along the Gilbert and Flinders Rivers, Upper Herbert and Cape York offer significant areas of Agricultural potential and a new frontier where agriculture can occur sustainably and in balance with the environment.

Much of the natural landscape in the far north remains intact, supporting functioning, productive and healthy ecosystems. The North's free-flowing rivers provide valuable natural infrastructure for diverse environmental, cultural and economic uses. Indigenous culture and heritage across the north is diverse and strong and economic considerations must recognise the region's significance for Indigenous people and their connectedness to land and water. But for many Indigenous people, unlocking the economic value of the land is central to the right to build an economy.

Northern Queensland is at the doorway to the Asian markets that will contribute to this region being the Australian food bowl for the future. The Australian Government 'National Food Plan' green paper 2012 also highlights our food production to not only meets our own needs, but also to help meet the growing demands of our Asian neighbours. *"By 2050, world food demand is expected to rise by 77 per cent in monetary terms. Much of this growth will occur in Asia where demand will double. Through close productive relationships with our Asian trading partners, Australia will be able to make the most of these opportunities"*.

A major component of this initiative is to raise the awareness of North Queensland as a major resource region, not only for minerals, but also for agriculture and grazing. Each sub-region within Far North Queensland has unique competitive advantages ranging from sugar, beef, dairy, maize, field crops, peanuts, horticulture, bananas, mangoes, avocados, citrus, Coffee, Tea, grass seed and hay and forestry – just to name a few.

Policy

The State Government must be applauded for taking some courageous and visionary steps in introducing two new clearing purposes for high-value agriculture and irrigated agriculture under Vegetation Management Act 1999. These changes allow an application to be made for clearing to establish, cultivate and harvest crops in both dry-land and irrigated conditions. It achieves balance between Agricultural production and protection of the Environment.

We are never going to see the large areas opened for Agriculture like the Wilderness Society or Australian Conservation Foundation claim. It will be discrete targeted areas of better soils. This mosaic style of agriculture is delivers the best economic and environmental outcomes for catchments. No mapped wetlands or watercourses can be cleared and must be buffered according to prescribed distances.

Any application for potential Agriculture would still need to be assessed under the Vegetation Management Act 1999, which considers Environment and potential degradation.

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This requires assessment for:-

- Detailed land suitability; to be mapped at scales below 1:100,000 showing land suitable for proposed cropping assessed by a suitably qualified person.
- Financial viability
- Management practices for growing & harvesting crops to ensure limitations are considered when determining land suitability i.e. irrigation method, type of cropping, soil erosion etc.
- Connectivity of vegetation across the landscape.
- soil erosion stemming from mass movement, gully erosion, rill erosion, sheet erosion, tunnel erosion, stream bank erosion, wind erosion, or scalding; and any associated loss of chemical, physical or biological fertility.
- Salinity.
- Endangered or Of Concern regional ecosystems and essential habitat (extent must be maintained).

Much Agricultural development would occur with private money as a Natural and Ordinary consequence if Red and Green tape surrounding Vegetation, Water and Land was relaxed. This fits with the federal Government vision of developing a food bowl in the North, including premium produce, which could help to double Australia's agricultural output.

“Much Agricultural development would occur with private money as a Natural and Ordinary consequence if Government relaxed Red and Green tape around Land Planning, Vegetation and Water”.



Potential new Agricultural Areas on the Gilbert River, west of Georgetown. Note the good soils and rubbervine along the River. Cropping is an opportunity to reclaim rubbervine infested areas.

Potential

Areas with potential for Agricultural Development include:-

- Land within the Gilbert River (Georgetown) and Flinders Precincts;
- Upper Herbert River alluviums south of Mt Garnet.
- Areas within Cape York (i.e. Endeavour Valley, Lakeland, the red soils around Weipa, the Hopevale-Mclvor-Starcke areas north of Cooktown and areas of red earth soils west of Laura on the Kimba plateau).
- Currently unused land within and possible further expansion of Mareeba-Dimbulah Irrigation Area.
- Upper Burdekin north of Charters Towers.
- Areas on the Cape and Campaspe Rivers around Pentland.

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These soils are suitable to a range of agricultural opportunities (sugarcane, broadscale field crops, perennial horticulture i.e. mango, citrus, annual horticulture i.e. vegetables and intensive livestock.

The Gilbert River Agricultural Precinct concept has been around in one form or another for many years. However, it is now timely given current national and global issues with food security and depleted water resources. Previous reports had demonstrated arable agricultural land between 10,000-25,000ha in a mosaic landscape along the Gilbert river. Some 88,500ha was assessed as potential agricultural land within 5km of the river. Significant areas of deep sandy red and yellow earths occur on elevated plains. The alluvial soils derived from rhyolitic and granitic parent material form broad low levees to a distance of about 2km from the river. These soils have few limitations to the production of a range of crops. Irrigation methods are likely to be restricted to spray or micro irrigation because of the high permeability of the profiles. These soils are suitable for the production of tree crops, bananas, maize, soybeans, peanuts and annual horticulture. The proposed dam could be located on a property called 'Green Hills', which is approximately 80km west of Georgetown. Current advice from DNRM infers that a dam of 300,000ML could yield an average annual yield of 100,000ML. There are crops which are currently grown along the Gilbert, like Sorghum, Maize, Grass seed, hay, peanuts and Mangoes which require limited investigation (Mason 2009). Other potential cropping options which need further market and production analysis include Cotton, Sugarcane and Guar.



Cotton growing on the Gilbert River. Photos courtesy of G. Mason, DAFF.

The Flinders River Agricultural Precinct presents tracts of the best farming soils in Queensland available for development. Possible crops include, but are not limited to, the production of cotton, rice, sugar, mung beans, soy beans, chick peas, maize, hay and sorghum (forage and grain). The Flinders River provides the security of a reliable water source; Water allocations from the Flinders River are currently underutilised, with an annual 3,800,000 ML of river flow. Soils are mainly black cracking clays with some areas of basalt (black earths) and brown, sandy clay loams of lighter texture. Land is affordable in comparison to developed irrigation areas such as Burdekin and Emerald. Currently on the upper Flinders River there is 200 to 300 ha of established commercial irrigated fodder, cotton and small grains crops, demonstrating viability.

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However, there are risks. Excessively high summer temperatures limit opportunities for agricultural production, especially in the northern and western areas. The high summer rainfall (especially the monsoon) and risks of cyclonic weather can severely limit crop production and impact on capability to operate a successful enterprise. Large numbers of native and feral animals, particularly feral pigs, makes it difficult for Landholders to protect their crops. While extensive areas of land have potential for development, the region has wide-ranging constraints (such as climatic extremes, biosecurity risks and limited infrastructure) that limit its development. As a result, we have witnessed very little land in the region used for large-scale agricultural development over the decades. Investment, both private and public, will be required for 'catalytic' infrastructure to see this 'food bowl' materialise.

Cape York

The economic potential of Cape York is yet to be realised. There is potentially good agricultural land near Hope Vale, Lockhart River, Mapoon, Napranum, Aurukun and Pormpuraaw. The region has high unemployment and a narrow economic and employment base. It is only with economic development and participation that Indigenous people will overcome disadvantage and achieve self-determination. With horticulture, many areas in the Cape have the potential to grow Mangos, Papaya, Bananas and Citrus. Some of these crops, given the environment, will come in (mature) earlier than areas further south thereby achieving market premiums. Further, proximity to South-east Asia provides opportunity to export out of Weipa. When it comes to 'potential' in Agriculture we must take into account changing economic circumstances, like commodity prices or the development of 'catalytic infrastructure'. If the Peninsula Development Road (PDF) and major community access roads were upgraded over time this would provide greater opportunity for market access and shorter delay periods.

The strengths of the region include the horticultural season is early, due to the climate. Tropical fruit market demands are not usually met by the current supply at this time, so growers have the advantage of high early season prices i.e. Papaya and passionfruit, for example, mature 3 weeks earlier than in other regions, so producers in the Cooktown and Lakeland Downs areas can supply these to southern markets approximately 1 month ahead of other Queensland producers. Banana producers have benefitted from low supply and high prices following cyclones Yasi and Larry. This has attracted large players in the industry and resulted in increased plantings in the Lakeland Downs and Hopevale areas. This area has been mapped as an Important Agricultural Land Area under the draft Cape York Strategic Plan (QDAFF 2013).

The Cape has not had the opportunity to develop, like closely-settled southern areas over decades. Past and present limitations to the possibility of establishing new crops include only basic (and limited) infrastructure for transport (road and air, no rail), distance to processing and value-adding facilities and electricity. For example, the closest sugar mill is at Mossman. Transport costs are high and quality downgrade during transit is likely. Excessively high summer temperatures limit opportunities for agricultural production, especially in the northern and western areas. Extreme weather (due to seasonal cyclones from the Coral Sea and the Gulf

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of Carpentaria as well as flooding wet season rains) impacts the ability to manage crops or livestock effectively. Roads and infrastructure are frequently disrupted during the wet season due to flooding and weight restrictions (QDAFF 2013).

There are proposals to build infrastructure, both public (like roads) and private (i.e. mills and port facilities). We are also moving into a new era where 'food security' and protein will be the 'new currency'. There is huge potential for export from this area to South-east Asia. Cape York may only have approximately 16,000 people but Government should not underestimate the capacity of the Cape, through Development (and a Peninsula Development Road upgrade to Weipa) to lift the State's economy.

Unquestionably, economic development and environmental protection must go together – we must shift from approaches that place economic development and environment at loggerheads with each other. A sustainable landscape approach, which is delivered under the Vegetation Management Act, provides protection to landscapes and allows opportunity for High-value Agriculture.

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Red Soil on Kimba Plateau, west of Laura.

The Spies and Garozzo (2014) paper used the Queensland Government's own Agricultural soils datasets through CYPLUS (Cape York Peninsula Land Use Study) and DAFF's Queensland Agriculture and Land Audit Mapping to illustrate broadscale Agricultural potential in the Cape (see Appendix A). Under the Cape York Peninsula Land Use Study (A.J.W. Biggs and S.R. Philip, QDPI, 1995), agricultural land suitability assessment indicated the following areas were suitable for:

- peanuts and sorghum, maize (243 300 ha)
- sorghum & maize (1 8 12 000 ha)

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Under DAFF Queensland Agriculture and Land Audit the following Potential areas were available in the Cape:

Queensland Land Use Mapping Program (1999)	Current land use		Potential land use*	
	Area (ha)	Percentage of region	Area (ha)	Percentage of region
Broadacre cropping	5 224	0.04	188 285	1.49
Sugarcane	0	0.00	1 545 583	12.27
Perennial horticulture	45	0.00	1 963 592	15.58
Annual horticulture	8	0.00	1 893 887	15.03
Intensive livestock	0	0.00	1 086 908	8.63
Aquaculture	249	0.00	3 617	0.03

* Potential areas include where the majority of current production occurs as well as where production could potentially occur.

This mapping is suited to broadscale planning at best, but it helps identify areas where further property-scale investigation can occur. That is 25.5% of the Cape. This means 74.5% of the Cape is unsuitable for Agriculture according to that mapping, and could be used for Environmental Purposes, Community or Cultural Purposes, Tourism, extensive grazing or National Park. Much of this area has environmental values as wetlands, floodplains, escarpments, significant habitat and a range of ecosystems and vegetation types.

New Industry

There is potential for new crops suited to climates in the Far North (some of which are major consumptive crops in China, SE Asia and Pacific islands). These include: Sweet potato, Yam bean, Yam, Taro, Cassava, lychee, rambutan, longans, Tamarind, Pataya (dragon fruit), and Australian dry land rice. Guar, a legume that produces a gum from the seeds is a crop that shows a lot of promise, requiring well-drained soils and warmer night temperatures. It is used as a food additive, but its most important use today is in hydraulic fracturing (fracking) for oil shale and gas. Cotton may have some promise on the clay soils associated with the Flinders and Gilbert Rivers.



Guar growing on the Gilbert River – Photos courtesy of G. Mason, DAFF.

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The Goat meat industry shows potential as a new livestock industry. Goat meat is the most widely consumed meat in the world. China, India and Nigeria are the largest producers and consumers of goat meat and there is substantial demand from Middle East and South-East Asia. Currently, we cannot satisfy the demand for goat meat and indicators are that the need will continue to grow. The industry has room for growth as it currently remains constrained by several aspects including inconsistent supply and quality from mainly a feral harvest. Goat farming has the potential to level out these peaks and troughs and ensure product consistency. Supply chains need to be developed to better meet the needs potential markets and add value to the industry. Goats, as browsers, can co-exist with cattle and don't compete for food. This could provide an extra income stream for Beef producers. The climate and landscape of parts of Gulf Plains and Einasleigh Uplands lend itself to Goats with potential to grow export from Karumba.

Forestry

Cape York offers the largest regional potential for Forestry. The potential high, medium and low production areas identified for native forestry expansion in Cape York are substantial—2.4 million hectares, 3.9 million hectares and 3.2 million hectares respectively. Forestry production predominantly comes from timber resource areas (native and plantation) on state-owned lands administered under the Forestry Act 1959. Most of this land is also grazed and generally managed as silvopastoral systems that combine forestry and grazing in a mutually beneficial way (QDAFF 2013).

Native forestry in Cape York, predominantly hardwood, produces a number of forest products suitable for a number of uses including sawn construction and appearance timber, poles, bridging girders, fencing timbers and craftwood. In addition, native Queensland sandalwood is harvested for its aromatic timber properties. The key commercial native forestry hardwood tree species in Cape York include Darwin Stringybark, various bloodwoods, Cooktown ironwood, Moreton Bay ash, forest red gum, Molloy red box and Queensland sandalwood, plus a broad range of other suitable tree species. It is estimated that without restrictions on volumes of harvest, the existing native forestry resource on state-owned lands in Cape York can annually yield at least 16 000 m³ of log timber, which is sufficient to support a viable timber industry and facilitate a long-term timber-related industry (QDAFF 2013).

Marketing and market development

Profitable marketing of Northern Australian produce has always been a limitation working against expansion of existing industries and development of new agricultural areas. There are many examples - beef, sorghum and rice in NT; beef and peanuts in the Peninsula; potatoes, rice, mangoes, avocados and milk on the Tablelands. Some of the difficulties are due to the boom and bust cycles of unregulated production coupled with high transport costs to far Southern markets. With this in mind, any assessment of potential agricultural expansion in the North must include investigation of potential markets and the ability to profitably transport products to those markets. With the unlikelihood of a return to regulated production, there needs

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to be better marketing intelligence and crop forecasting services to assist farmers in making informed decisions about crop choices.

Agriculture in the North needs to focus on those crops and products where the region has natural marketing advantages. Crops which cannot be grown as easily in other parts of the country are obvious choices. For products that suffer from competition in southern markets with other Australian production, the focus should be on development of new markets in countries to our north. We should have transport and marketing advantages.

Water for Agriculture

Water infrastructure for economic and social development is required in the Far North. Government needs to continue investigations into a regional approach for water security and supply.

- The proposed Nullinga Dam site, on the Walsh River south-west of Mareeba, has the capacity to relieve pressure on the Tinaroo Dam by supplying water to the western parts of the Mareeba-Dimbulah Irrigation Area (MDIA) i.e. the Mutchilba-Dimbulah localities and could also allow for further expansion of the MDIA and the moderation/upgrading of the current irrigation system for that area.
- The proposed site for the Greenhills Dam (300,000ML), on the Gilbert River, would allow for further development of the Gilbert River system.
- There is also much potential for Rivers in Northern Cape York and the river systems of the North West, like the Cloncurry River.
- There is scope to build another Dam on the Burdekin, north of Charters Towers at Hells Gate.

There are also private off-stream water storage opportunities, adjacent to the major streams that could be progressed or analysed for their contributions to long term sustainable economic development and minimise reliance on groundwater. Off-stream water storages in the Flinders and Gilbert Rivers' catchments would provide for irrigation of fodder and grain crops for feedlotting, turning off a constant supply of fat cattle enabling the establishment of an economically viable meat works.

Catalytic infrastructure for Agricultural Development

Value-adding the regions' agriculture is a natural consequence of development. This requires assistance and support for private investment in regional food processing and other value adding opportunities whether this is in horticulture (cannery) or meat processing capability. The Northern Beef industry is largely a price-taker, with the Regional price largely set through the Grinding Beef price of JBS in Townsville. The next closest abattoir of any size is Mackay. However, there has been significant Chinese interest in the North Queensland cattle Industry of late, and there is potential trade opportunities with China through Live cattle and boxed beef.

Setting aside the beef industry's current troubles, there is vast potential for the increase of and value adding to the beef cattle industry in the region. Currently,

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under the Vegetation Management Act, no further clearing for grazing can occur. Expansion and sustainability rests on enhanced access to, and use of water; improved road infrastructure which allows all weather access to markets, meatworks and ports, reform of leasehold conditions (tenure), improved pasture and meat processing capability. Value adding, underpinned by capital investment, is critical for the industry's growth. There are potential trade opportunities with the Asia Pacific through live cattle and boxed beef.



Tropical Innovation - Senepol heifers – a tropically-adapted Bos Taurus breed with high-meat quality and fertility. Naturally polled (requires no dehorning) and sleek coated.

There is huge energy inefficiencies - transmission losses for supply of power to the Far North. A base load power station to supply the future demands of the region is required. A secure power supply for new agricultural precincts e.g. the Gilbert River is needed. Three phase power is necessary to allow for value adding enterprises such as cotton gins, sugar mills, meat works and farming enterprises. Transmission infrastructure needs to be upgraded to ensure that there is an efficient interconnector to the grid and redundancy to satisfy major industry development projects. There is a need to revisit Tully-Millstream proposal (should now call "Kareeya B" to re-brand and dispose of any previous negative connotations - as there is already an existing small PowerStation "Kareeya"). The previous proposal was for a 600MW PowerStation (Barron Gorge is only 60MW). It is clean green energy, more efficient than Wind or Solar. The scheme has a small environmental footprint, involving the clearing/flooding of less than 150 Ha. This would partly address the growing massive deficit of power generation in the north and the need to unnecessarily import large amounts of electricity from south. Its avoidance of major Greenhouse gas emissions. The scheme would also allow for water to Upper Herbert and Tully Rivers.

Fuel Pricing is an issue for the North and there is no ability to use Natural Gas. There is a huge price differential in fuel to Southern Outlets yet Far North closer to Singapore's Refineries.

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Landline, internet (high speed broadband) and mobile services need to be upgraded to a standard in rural and remote areas to advance both social and economic development. This is required particularly for new cropping areas.

Transport

There is a need to upgrade the Peninsula Developmental Road (PDR) and other roads in Cape York. The Peninsula Developmental Road (PDR) runs 558 km from Lakeland to Weipa. Approximately 400 km of the road is unsealed. Some parts of the unsealed road are severely corrugated. The PDR is closed for up to four months per year due to the summer wet season causing damage to the surface and flooding over low level river crossings. Sealing of the PDR with bitumen is argued as being essential to develop a vibrant, diverse and sustainable economy in Cape York. The cost is estimated at \$750 million. A Laura to Weipa Upgrade of the PDR would cost in the order of \$300M and this could reduce waiting periods at flooded crossings from weeks to day/s or hours aiding the movement of Agricultural produce.

The upgrading of the Bruce Highway is of critical importance as is sealing the remaining section of the Hann Highway; upgrading Kuranda Range Road to cater for b-doubles and sealing of the Savannah Way, from Cairns to Broome to dual carriageway.

There is a need to extend access to the region by increasing the B double routes throughout the region. By maximising the usage of B Doubles to move produce and livestock throughout the region, we can reduce the number of trucks on the road and the associated carbon emissions, and reducing food miles through greater efficiency and timeliness of transport.

The Queensland Department of Transport and Main Roads (DTMR) have indicated that the Bruce Highway has been cut due to flooding over 400 times in the past two years. This leads to significant impacts for the North Queensland economy, and impedes the potential growth of local industry and major projects, as well as the supply of goods and services in and out of the region.

There is also a need to improve the Hann Highway for B-double access. This road provides alternative freight access for the Bruce Highway as it is sufficiently far enough inland to minimise/avoid Cyclonic and Monsoonal influences (flooding). This road follows top of catchments so requires less bridges and has a naturally harder surface. It also allows for shorter and quicker routes to southern markets. The Hann Highway Report involved a cost benefit analysis of the Kennedy Development Road between the Lynd Junction and Hughenden. The results from the analysis suggest benefits of \$136 million and costs of \$43 million, which represents a benefit cost ratio of 3.11.

Appropriate port infrastructure is also an issue for FNQ and Northern Australia more broadly. There needs to be consideration of the Cairns Shipping Development Project and consideration of regional ports including Karumba, Weipa and Mourilyan

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as playing a key role in the future growth of the region more broadly whether resulting from agriculture, tourism, mining activity, pastoralism, or energy.

Research needs and capacity

Far North Queensland requires investment centred to meet research needs of community, industry and government, within a development context. Boosted research capacity could ensure industry specific focus (agriculture, pastoralism, resources, ecosystem services etc.) as well as regulatory, planning and institutional arrangements (including tenure, governance and social) are addressed in a holistic way, leveraging our current tropical knowledge. An integrated approach to a research agenda for Northern development, driven by government, industry and community partnerships, with a commitment to the practical application and uptake of research, would maximise outcomes delivering a quadruple bottom line. Improved access to data and information has also been identified as a need to support investment decisions of industry, evidence based decision making by government and community participation in relevant processes (planning etc.).

Expanding agricultural production into new areas brings new challenges. Issues such as pest and disease control, irrigation and nutrient management, varietal suitability and selection etc. There will need to be focussed research and development programs to develop profitable production systems. The question is - who will do this research now that Government Research, Development & Extension services have been wound back?



“Senemaster” (Senepol X Droughtmaster) bull at 17 months - a new composite breed for Northern Australia developed by Pinnacle Pocket Cattle.

Extension and Community Engagement

Successive Governments have degraded the resources of DPI and DNRM over the last 15 years or more. We have witnessed a decline in work undertaken by State Government. For example, in 1998 there were 7 Land Resource Officers (and a similar number of soil conservation staff) in Central Region. Now there is only one Land Resource Officer. The last soils survey conducted in Far North Region, recalled by the author of this paper, was on the Gilbert River in approx. 2000. In particular, Soil Conservation Services were dumped.

The thinking behind this seems to be that these services would be taken up by private providers. This thinking presents a complete lack of understanding of the nature of the problems being addressed and the fact that no private business has the resources, ability or legal power to plan and implement the catchment wide initiatives which are required to effectively deal with these problems. This is an example of “market failure” where there is little or no incentive for private business to invest in providing a service. Government investment is the only feasible alternative, but this can be delivered through NRM groups.

Current NRM planning processes is changing from an asset mentality to a systems thinking approach. The importance of recognising the linkages and causes behind trends and relationships. It seems like many decision makers are not considering the whole system – Quadruple bottom line. There needs to be consideration of the economic, environmental, cultural and social values as well as the characteristics of the north and how they contribute to the system and how change will influence all components.

There is a lack of understanding of resources, i.e. Land Systems, Vegetation Identification, soils and water by many Government assessment staff. If Government staff are to conduct assessment of Applications for Agriculture and other uses there should be a level of “Currency” equivalent to that expected of Consultants. For consultants to be considered to be a suitability qualified person, to submit a Land Suitability Report for a high value or irrigated high value clearing application they must have a demonstrated and current background of experience in providing professional advice or consultancy services in relation to farming systems, for example agronomic, soil survey and testing, environmental and/or land resource management services; and hold tertiary qualifications appropriate to providing relevant advice or consultancy services; and have a minimum of 5 years’ experience in the field of soil assessment and agricultural land suitability analysis. There is an element of risk to the State Government in this in defending decisions in the planning and environment court. The weight of experience is currently with experts outside of Government Departments.

There is a need to form cohesive research, development, and extension and training partnerships for enhancing the role of agricultural in regional development. Regional NRM groups, Government and Consultants have a significant role to play in this.

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About the Author

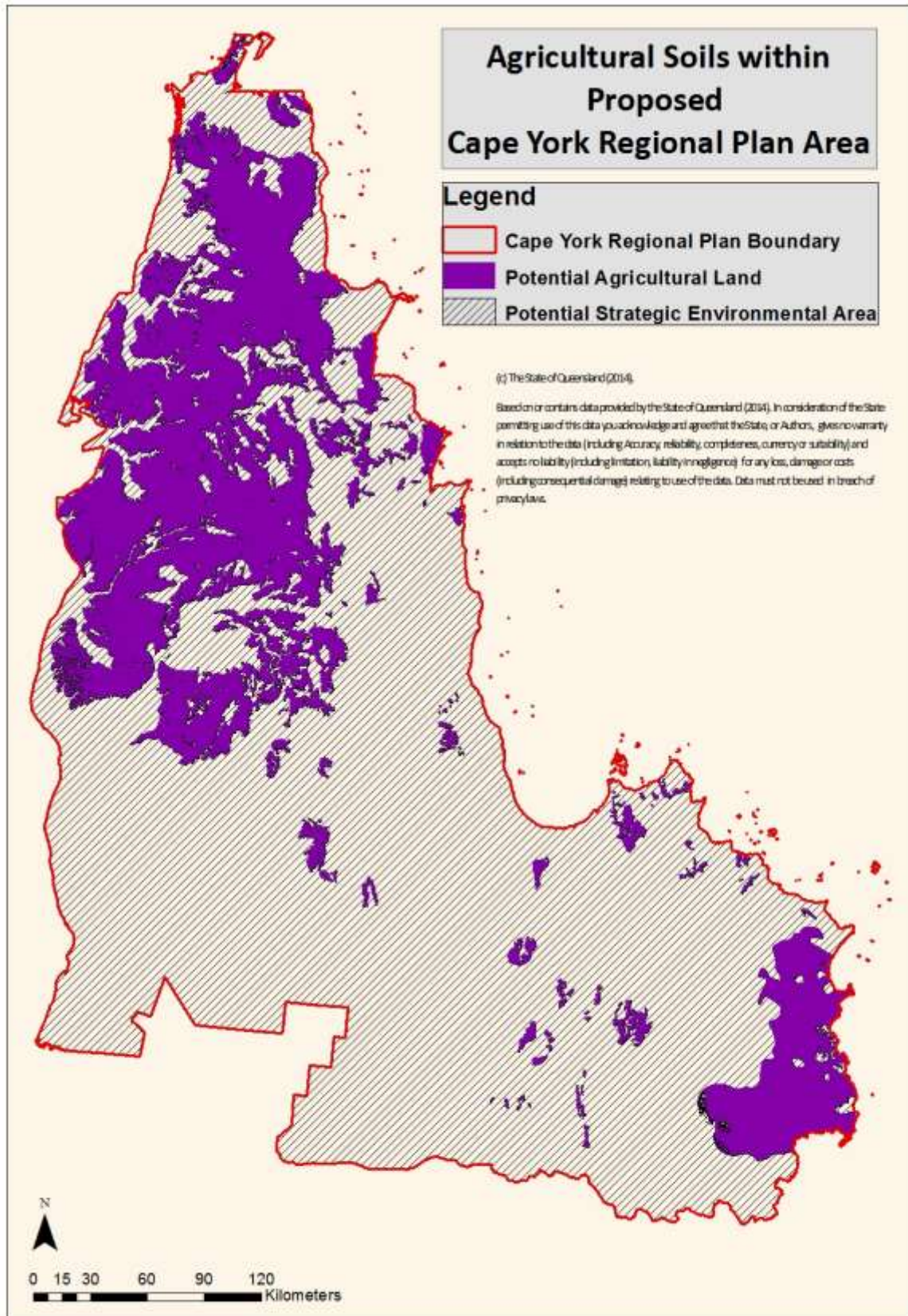
Peter Spies is an Agricultural Consultant who specialises in property-scale mapping and identification of Good Quality Agricultural Land, soils mapping, vegetation identification, cropping suitability, soil erosion and grazing land management.



He has a Bachelor of Applied Science (Honours) in Rural Technology and is a qualified Agronomist and Land Resource Officer. Peter was previously employed in State Government for over 12 years with DNRM and DPI in Land Management. He has written extension material for land managers and has been published several times including Senior Author of the National Case Studies Manual on Control of Prickly Acacia.

In his spare time Peter has a beef cattle seedstock operation, with 220 breeders, breeding Senepol and Composite bulls for the northern Industry and is involved in Agforce as its Far North delegate. Recently, Peter, through his practice – Pinnacle Consulting, was lead consultants for a large Agricultural development of 28,323Ha on the Gilbert River in Far North Queensland. This application was the first of its kind in Queensland for High-value Agriculture under the Vegetation Management Framework Amendment Act 2013.

APPENDIX A



GIS Map Courtesy of Shane Garozzo using Queensland Government DAFF and CYPLUS Datasets