

# Independent Site Selection

Review of Research, Development, Extension and  
Education and Training Needs for the  
Atherton Tablelands

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October 2008

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## Executive Summary

The Minister for Primary Industries and Fisheries, the Honourable Tim Mulherin MP outlined his vision for Queensland's primary industries in an address to a forum of the Committee for Economic Development of Australia (CEDA) on 24 June 2008. Central to the Minister's plan is a purpose built facility on the Atherton Tablelands, which capitalises on its uniqueness and the potential for economic growth.

Three independent consultants were appointed to assess suitable locations for establishing a fit for purpose facility on the Tablelands. The consultancy team has undertaken an extensive consultation process with staff of the Department of Primary Industries and Fisheries (DPI&F) and Australian Agricultural College Corporation (AACC), industry, training providers, local government, and other interested parties. This process was supported by formal peak body and scientific committees.

A wide range of views was presented to the consultancy team. The key issues identified were the potential for agricultural opportunities in the future, land availability, the diversity of industries due to soil and climate variability on the Tablelands, ability of producers to adapt to new market opportunities and to climate change, and the services provided by the department outside of the Tablelands.

The consultancy team found that there are currently four markets which the Atherton Tablelands services: domestic/local, niche, opportunistic and international. Whilst there is a diversified agricultural base across a number of industries, there are some limitations to market growth primarily due to the location and distance to markets and processing infrastructure for many perishable items. Expansion of export markets will remain limited unless issues such as market access, biosecurity restrictions and freight are addressed.

The *Vegetation Management Act 1999*, draft FNQ 2025 Regional Plan, topography and soils each limit the land available for future cultivation. Therefore growth will be primarily through increased utilisation of the existing available land. Significant expansion of any crop/ industry will be at the expense of another.

A farming systems approach is considered the most effective way to maximise sustainable industry growth and profitability on the Tablelands. This should be a priority for DPI&F on the Atherton Tablelands and a fit for purpose facility should be located and designed to facilitate it as the model for the future. Industry development strategies should be developed that bring industry, DPI&F and other service providers together to address the key issues and opportunities. These could be combined with processes for developing effective R&D partnerships with industry.

A number of trial sites are required to cover the climatic and soil differences on the Atherton Tablelands, whereas activities such as screening, soil borne disease work and the use of unregistered chemicals are best undertaken on state controlled facilities.

The key requirements for training and education identified included: providing greater links between education, extension and research and development (R&D); delivering career pathways for the agricultural sector; and establishing a foundation for further educational opportunities.

The consultancy team determined that to establish a flexible platform for future research, a fit for purpose facility must have or link to functional sites in higher rainfall, red soil areas as well as the drier areas. The primary function for each of these is to test for and develop food and fibre products in these environments recognising the range of pest, disease and agronomic requirements for the crops and industries under consideration.

In addition to the research requirements, the consultancy team developed criteria important for ensuring that the site recommended for the fit for purpose facility is suitable for providing educational, agribusiness and extension services.

While the consultancy team evaluated a number of possibilities on the Tablelands, taking account of the above, two options stand out. These are:

1. Build a fit for purpose facility at Peters Street, retain part of Kairi, retain all or part of Walkamin and transition out of Southedge.
2. Build a fit for purpose facility on the Forestry Plantation Queensland (FPQ) block adjacent to Walkamin, retain part of Kairi, retain all or part of Walkamin, and transition out of Southedge.

Option 1 meets the requirements for R&D to be conducted on both the high rainfall red soil and the drier areas of the Tablelands. Peters Streets provides DPI&F the best synergies to co-locate functions such as agribusiness services and training which will best meet industry needs into the future. Peters Street offers a base to concentrate the department's intellectual 'horsepower' whilst off-site capacity is maintained at Kairi and Walkamin. This option also allows DPI&F to maximise the use of its facilities in ways that will benefit both industry and AACC students.

Similarly, Option 2 satisfies the research requirements for the high rainfall, red soil areas and for the drier areas through the retention of land at Kairi and Walkamin. Constructing a fit for purpose facility on the FPQ block adjacent to Walkamin would provide a visible DPI&F presence and facilitates direct on-farm student access. Option 2 provides fewer synergies than those gained by Option 1 through co-location and use of common resources.

### **Recommendation**

The consultancy team recommends Option 1: Build a fit for purpose facility at Peters Street, retain part of Kairi, retain all or part of Walkamin and transition out of Southedge.

If issues not considered in this report prevent implementing this option, then Option 2 (i.e. build a fit for purpose facility at Walkamin and retaining the other sites as in option 1) is a viable solution.

## **1.0 Introduction**

### **1.1 Project background**

The Department of Primary Industries and Fisheries (DPI&F) is currently undergoing a major review so it can better serve its client's needs and to provide the structure required to improve service delivery. The consultancy team has been given a brief to provide independent advice on the preferred location for a suitable fit for purpose facility on the Atherton Tablelands.

### **1.2 Context of the project**

The Minister for Primary Industries and Fisheries, the Honourable Tim Mulherin MP announced a fresh approach to growing Queensland's primary industries in a speech to a Committee for Economic Development of Australia (CEDA) forum in Townsville on 24 June 2008.

The fresh approach initiative refocuses the way DPI&F works to achieve the vision of a \$34 billion industry by 2020 – almost three times today's value.

The fresh approach is based around three pillars:

1. Building skills for our future.
2. Delivering innovative research partnerships to grow investment.
3. Networking and modernising services.

The Minister used his CEDA address to outline his vision for the Atherton Tablelands. Central to plans is to have one purpose built facility on the Tablelands, which capitalises on the uniqueness of the Tablelands and its potential for economic growth.

The facility would replace the Australian Agricultural College Corporation's (AACC) Mareeba campus and the aging facilities of DPI&F's Kairi, Walkamin and Southedge Research Stations, which are all within approximately 50 kilometers (km) of each other. To this end, the Minister committed to an independent review to assess a location for a purpose built facility and its functionality. This review will include detailed consultation with staff, industry and the community. As the Minister stated in his address to CEDA, the facility on the Tablelands could be at an existing or a new site.

### **1.3 Project scope**

The scope of this review is to provide independent advice on the preferred location on the Atherton Tablelands for a suitable fit for purpose facility consistent with the Minister's vision outlined in his address to CEDA on 24 June 2008.

In undertaking this review, the department has specified the following considerations be taken into account:

- current activities at each site;

- future opportunities for Research Development and Extension (RD&E) (need to consider not just expanding current industries on the Tablelands but also emerging industry opportunities);
- potential private and public partnerships (in particular vocational and research providers);
- training needs;
- capacity to build skills;
- cost-effectiveness;
- investment attraction; and
- fit for purpose.

#### **1.4 Review structure**

The review was designed to ensure that the best information possible was obtained to develop options for a location to establish a fit for purpose facility on the Tablelands. The DPI&F Regional Director (North) provided a list of suitable participants (both staff and industry) to be part of the review process. Industry participants were encouraged to nominate other interested parties that wished to be involved.

The consultancy team also ensured that stakeholders, staff and industry were given a fair opportunity to input into the review process. This took the form of workshops, private meetings and written submissions. Workshops were held at the Walkamin Research Station and the AACC Mareeba campus.

The consultancy team also inspected the Walkamin, Southedge, and Kairi Research Stations, the Peters Street District Office and the AACC Mareeba Campus.

The review was structured to ensure:

- current DPI&F science staff on the Tablelands were represented;
- AACC staff participation;
- inclusion of key industries and training providers based on the Tablelands; and
- representation from the Department's various business groups.

Industry sectors included in the consultation were:

- specialists, large and leading agribusinesses, and companies identified as significant and reflecting the industry diversity of the Tablelands;
- companies/businesses involved in emerging industries; and
- industry organisations.

DPI&F staff participation in the consultation involved a cross-section of science staff positions and study areas and from the various site locations.

## 2.0 Consultation Process

The consultation process undertaken has been extensive. A total of eight (8) days was spent on the Tablelands engaging with DPI&F and AACC staff, industry, training providers, local government, and other interested parties through organised workshops and private meetings.

The consultation process was conducted in two parts –

1. the first visit provided the consultancy team with a chance to familiarise themselves with and discuss the opportunities for agriculture on the Atherton Tablelands and the subsequent RD&E, Education and Training needs for the future; and
2. the second visit verified the information gathered from the first visit with staff and industry and assisted with the development of the final site options for a fit for purpose facility.

Formal consultation bodies were also established to assist the consultants to access both stakeholders and scientific expertise. The bodies and their purpose were:

Steering Committee – established to oversee the consultancy and provide strategic advice. The Steering Committee was chaired by the DPI&F Director-General (Acting) with membership drawn from industry, universities and the banking sector.

Science Advisory Group - established to provide technical and expert advice; members with RD&E expertise from both the university sector and DPI&F.

Staff Science Working Group – established to provide advice on current and future R&D needs to be delivered from a future facility on the Tablelands.

(See Attachment 1 for the Terms of Reference of each of these bodies).

## **3.0 Profile of the Atherton Tablelands**

### **3.1 Geographic Profile**

The Atherton Tablelands is an elevated plateau comprised of the Atherton and Evelyn Tablelands with an average altitude above sea level of 750 metres (m) and varying from about 1100 m on the Ranges in the east to 450 m at Mareeba. Climate, including rainfall and temperature, varies across the Tablelands as a result of the change in altitude. Frosts are experienced in some areas in winter.

The Tableland sub-region encompasses the western fringe of the Wet Tropics bioregion and the northern aspects of the Einasleigh bioregion. The extensive plateau area with fertile soils derived from basalt supports both eucalypt and rainforest vegetation. A mosaic of closed forest communities originally dominated the region on the basaltic soils of high rainfall, and open eucalypt forests and woodlands occurred in the drier sections. Areas of the rainforest are now protected through their inclusion in the Wet Tropics World Heritage Area. These include National Parks, State Forests, other crown land and freehold land. The World Heritage Area covers about 10% of the Tablelands, much of this area being State Forest Reserve of which about 5000 hectares (ha) are protected areas.

Permanent freshwater systems of crater lakes and swamps occur on the Atherton Tableland. The major wetland areas of national significance are the crater lakes of Barrine and Eacham comprising about 160 ha. The man-made Lake Tinaroo provides for a variety of recreational activities and complements the ecological values of the area.

Soil types reflect the underlying geology and range from fertile clay ferrosols to coarse granitic sands (DPI&F, 2008).

### **3.2 Agricultural Profile**

The well structured, high clay red soils (ferrosols) near Atherton are very fertile and versatile soils on which a variety of crops are grown. (See Map 1 and Map 2 in Attachment 2). Historically, these soils have produced rain-grown maize, peanuts, navy beans and potatoes, often in rotation. Some areas have small supplies of groundwater for supplementary irrigation. More recently, high value horticultural crops such as avocados and bananas have been grown where temperatures are suitable and supplementary irrigation is available. The grain crops have been almost fully utilised within the dairy and beef industries.

The sandy loams derived from granite grow a range of field and horticultural crops. Tropical pasture seed and hay are produced in the region. Restructuring in the tobacco, dairy and tea tree industries have posed significant challenges for the region both in the past and currently.

The Mareeba Dimbulah Irrigation Area (MDIA) comprises 41,500 ha of which 22,150 ha is supplied by water from Lake Tinaroo. Lake Tinaroo has an annual yield of 205,000 Megalitres

(ML) available for irrigation. There are about 402 farms supplied by channel system and another 395 take water by private diversion from supplemented streams.

The MDIA was originally developed for the production of tobacco and pastures during the 1960s. The average farm size of 40 ha is relatively small in the historic tobacco growing regions and provided subsequent difficulties in maintaining viability when the tobacco industry ceased in 2002. Many farmers diversified into horticulture, especially mangoes and lychees, and 'lifestyle' horticulture was also undertaken. Most of these crops are spray, micro spray or trickle irrigated. The area is identified as being suitable for coffee production with 4 plantations established.

Properties on the clay soils of the Arriga flats, which are about 200 ha in size, once produced rice and are now used for sugar cane. These crops are flood irrigated but there is an increase in low pressure irrigation systems (DPI&F, 2008). The Tablelands Sugar Mill crushes the cane to syrup standard before the syrup is railed to Babinda and South Johnstone for crystalline sugar production.

On the hilly and high rainfall areas near Malanda and Ravenshoe, dairying is an established industry with a processing plant based at Malanda. About 80 dairy farms supply the factory.

Timber production has been a traditional land use and State soft wood plantations exist on the Tablelands especially in the Atherton – Herberton areas (DPI&F, 2008).

### **3.3 Economic Profile**

The Atherton Tablelands encompasses the Tablelands Regional Council which comprises the former shires of Atherton, Eacham, Herberton and Mareeba. The area identified as the Atherton Tablelands is about 8,000 km<sup>2</sup>, which is the equivalent of 0.5% of the State's area. The Tablelands region returns a gross value of production at the farm gate of about \$350 million and an additional processing value of about \$105 million in the region.

Table 1 provides an economic profile of the major agricultural industries on the Atherton Tablelands. Apart from the major agricultural industries listed, there are a number of smaller industries on the Tablelands, which have a combined revenue of approximately \$7.85 million. These industries include: macadamia, cashews, tea-tree, table grapes, pineapples, small crops, flowers, aquaculture, hydroponics, nurseries and amenity horticulture.

Gross returns vary from over \$45,100 per ha for bananas; through to about \$21,500 for both mangoes and potatoes; \$2,300 for sugar; and \$580 per ha for beef. These differences are important when considering the agricultural future of the Atherton Tablelands.

Products from the Tablelands are primarily sold to local, regional and national markets. Commodities such as mangoes, avocados and peanuts, for example, contribute to 40%, 25% and 25% respectively of the total national production. The local dairy industry services not only

the Far North Queensland region but the Northern Territory and as far south as Mackay and is the largest employer in the region (Mason, 2008).

The Tablelands also provides opportunities for finishing beef cattle bred in areas such as Cape York Peninsula and the southern gulf. The links with areas such as these are important for Tablelands economics.

Table 1 - Economic profile of the major agricultural industries on the Atherton Tablelands 2007-08.

<b>Agricultural activity</b>	<b>Area (ha)</b>	<b>Measurement</b>	<b>Volume sold</b>	<b>Gross Revenue (\$)</b>
Avocado	749	Tonnes	6,744	22,929,600
Banana	735	Tonnes	19,767	33,195,462
Cattle industry	40,000	Head	21,700	23,173,496
Citrus	310	Tonnes	5,649	7,388,335
Coffee	220	Tonnes	330	1,815,000
Dairy	12,480	Litres	75,160,800	37,580,400
Grass/legume seed	3,917	Tonnes	2,356	12,959,650
Hay	3,000	bales	150,000	3,000,000
Longans	135	Tonnes	1,042	5,211,456
Lychee	323	Tonnes	1,887	9,437,494
Maize	5,000	Tonnes	35,000	9,398,550
Mango	2,492	Tonnes	26,171	53,200,970
Papaya	162	Tonnes	17,059	22,307,400
Peanuts	1,500	Tonnes	7,050	5,781,000
Potatoes	2,348	Tonnes	82,180	50,746,150
Pork	20	head sold	13,638	3,685,762
Poultry	40	head	8,000,000	4,456,000
Pumpkins	180	Tonnes	5,400	4,050,000
Sugar	7,400	Tonnes	666,000	19,086,228
Tea	750	Tonnes	2,625	2,625,000
Watermelon	80	Tonnes	3,000	2,400,000
<b>Total</b>	<b>81,841</b>			<b>334,427,953</b>

Source: Mason, 2008 (NB: Figures contained in Table 1 were sourced direct from producers covering the new Tablelands Regional Council, that includes the old local governments areas of Herberton, Atherton, Mareeba and Eacham).

### 3.4 DPI&F Site Profile

DPI&F has had a significant presence on the Atherton Tablelands since the early 1900s. This presence has been at Kairi, Southedge, and Walkamin research stations, Peters Street Mareeba Office and more recently the Mareeba college campus site through the partnership with DPI&F and the AACC.

In addition, DPI&F has a small number of staff operating from an office at Malanda that is shared with the Departments of Health and Communities. DPI&F provides veterinary, land protection and inspectoral services from this site. This facility is not part of the consideration for this independent review.

### 3.4.1 Southedge Research Station

#### *History*

The 125 ha Southedge Research Station lies 7 km north west of Mareeba and 45 km west of Cairns. Southedge was established as a tobacco research station in 1969 and was integral to the development of the industry until its demise in 2002. Southedge replaced Parada Research Station which had been established a little to the west in 1952. Both Parada and Southedge undertook tobacco plant and farm management research together with legumes and animal husbandry research.

In the mid 1980s, Southedge fostered the expansion of new horticultural crops in the area including coffee, citrus, mangoes, lychees, navy beans, sweet potatoes and pumpkins.

In the early 1990s, a review of mango breeding options for the Australian mango industry determined that the major hybridisation could occur at a number of sites where germplasm collections were held. An evaluation of these hybrids indicated they would be best placed within the Mareeba area to ensure early flowering. In 1994, the decision was made that this work would be undertaken on the sandy soils of Southedge Research Station as irrigation and nutrition could be easily manipulated at this site. The advantages for performing this research at Southedge were that the highly valuable germplasm and any new material would be secure (Kerr, 2008).

#### *Current Activities*

There is a quarantine zone on Southedge that has been used to build up soil borne diseases for scientific testing purposes such as bacterial wilt and *phytophthora* spp. in Queensland.

Some other examples of recent RD&E include:

- Bio-industrial crops: trials and crop studies.
- Industrial hemp: evaluation of fibre crops.
- Kenaf: evaluation of fibre crops.
- Mango industry: germplasm bank, disease and pest management options.
- Papaya: breeding and genomics programs.
- Peanuts: evaluation of new varieties.
- Stevia: trials and evaluation.
- Sugar cane: development and supply of new varieties.
- Tropical fruit trees: maintenance of gene pools.
- An official Bureau of Meteorology (BOM) weather station is located on the site.

### 3.4.2 Kairi Research Station

#### *History*

Kairi Research Station was founded in 1911 as a State Farm. Following World War One, 200 ha were surrendered for settlement of returned soldiers. The farm's dairy and pig herd provided

foundation stock for the new settlers. The farm was closed in 1929 but continued to be used for maize trials and farm schools until abandoned due to weed infestations.

During World War Two, Kairi was occupied by the Australian Army to produce eggs and vegetables for troops based in North Queensland. The station was reopened in 1946 and a dairy research program to study animal husbandry, management and calf rearing was begun.

Controlled breeding of maize commenced in 1957 and in the 1960s the composition of primary industries served by the Kairi research station diversified into other industries such as potatoes, pigs, peanuts, sorghum and poultry. By the 1970s, a decision was made by an industry consultative committee to concentrate the dairy activities at Kairi research station and for a new station to be established in southern Queensland.

By the 1980s, the research strategy was focussed around the development of feeding systems which promoted milk production.

In early 2008, the leadership for the maize breeding program was transferred to Hermitage Research Station at Warwick (Kerr, 2008).

#### *Current Activities*

Kairi occupies 244 hectares on the shores of Lake Tinaroo on the Atherton Tablelands. This facility includes an aging but fully functional dairy with a herd of milking cows that supplies milk to the processing factory in Malanda.

Some examples of recent RD&E include:

- Agroforestry: timber production, shade in cattle trials for liveweight gain.
- Beef: fire projects, carrying capacity, marketing, grazing management, land care and part of the Value in Beef project.
- Cropping systems: evaluating crop rotations and reduced tillage.
- Dairy: pasture improvement (e.g. pinto peanut pastures) and stocking rates.
- Maize: hybrid breeding.
- Sugarcane: Future Cane project.
- Peanuts: breeding, better natural oil composition.
- Sweetcorn: virus resistance, hybrid breeding.
- Sweet Potato: pathogen tested planting material trials.
- An official BOM weather station is located on the site.

#### *3.4.3 Walkamin Research Station*

##### *History*

Walkamin Research Station was established in 1959 in conjunction with the Queensland Water Resources Commission. Its main purpose was to evaluate the economic use of irrigation water from Tinaroo Dam on the non-tobacco soils of the Mareeba-Dimbulah Irrigation Area.

Walkamin is a 259 ha site located 12 km south of Mareeba. It is situated on Mareeba granites and Hodgkinson metamorphic and level to undulating basalt soils (DPI&F, 2008).

In 1973 the first fresh water aquaculture ponds were constructed. A program was established, and later discontinued, to investigate introducing Nile perch. The aquaculture facility was also used for hatchery production and grow-out of barramundi and other native fish species. The research station was also responsible for stocking Lake Tinaroo and other dams with fingerlings. In 1987, research commenced into the production of freshwater crayfish (red claw). A research program also enabled the Lake Eacham Rainbow Fish to be grown and to re-establish itself in the lake, having been previously close to extinction.

In addition, research into a large number of summer crops has been undertaken at Walkamin. Sugar cane research took place in the early 1980s but a portion of this was displaced to expand the freshwater aquaculture facility.

Walkamin research station has undertaken extensive work on tropical seed production. Since 1978 when the Beerburrum seed experimental work finished, Walkamin expanded its seed research work which continues today (Kerr, 2008).

#### *Current Activities*

Examples of recent RD&E activities include:

- Beef: seed production R&D; and the development of native grasses, the regeneration of forage germplasm and the application of forage plants.
- Cattle grazing: agistment only.
- Coffee: gene pool of ten coffee varieties.
- Entomology: research on fruit fly, fruit spotting bug and the fruit piercing moth on tropical orchard crops.
- Fisheries: sustainable aquaculture using minimal water and eliminating discharge to the environment along with the development of sustainable subsistence aquaculture in Papua New Guinea.
- Forestry: dry land forestry trials on sandalwood, *Corymbia* spp hybrids and African mahogany.
- Walkamin Research Station is also an official BOM weather station.

#### *3.4.4 Mareeba District Office*

Mareeba DPI&F District Office is located at Peters Street and is currently undergoing refurbishment. The facility is owned by the Department of Public Works (DPW) and other tenants on the site include the Department of Natural Resources and Water (NRW), Environmental Protection Agency (EPA) and Australian Quarantine Inspection Service (AQIS). The site covers 3.5 ha and is fully fenced. The Mareeba Office provides a collegiate environment for RD&E staff delivering services to the Tablelands, Gulf, and Cape communities.

Technical facilities at the site include PC2 laboratories for plant pathology, entomology, soils and biotechnology, a GIS unit, botanical herbarium, post-harvest and glasshouse facilities. A library and meeting rooms are also available. Some of these facilities are shared with the other agencies (DPI&F, 2004).

Some examples of recent RD&E activities include:

- Soil borne and foliar diseases of peanuts
- Chemical and non-chemical control of banana corm rot
- Leaf diseases and diagnostics for Bananas
- Control of fruit piercing moth
- Mango seed weevil research and control
- Bio-based products; molecular farming and bio-fuels
- Emerging technology: DNA techniques on native sandalwood, African mahogany and lychee growth
- Coffee processing project
- Alternative oil crops to tea tree
- Tea nutrition
- Avocado oil profiling

#### 3.4.5 *Mareeba AACC Campus*

The 47 ha Mareeba campus is located near the town of Mareeba, 70 km southwest of Cairns in Far North Queensland. It was formally a CSIRO tobacco research station. It has tropical surroundings including natural waterways, native gardens and lawns. This environment attracts native wildlife such as kangaroos, possums, echidnas and abundant tropical bird life.

In line with its environmental focus, the Mareeba campus has an alliance with Australia Tropical Zoo in which the campus cultivates a three hectare eucalypt plantation. This plantation is one of a number of partners that provides the zoo with the necessary food source for koalas to survive in captivity.

Students attend classes on campus benefit from field excursions throughout the region and live in private accommodation in Mareeba and nearby towns such as Atherton, Kuranda and Cairns.

The Mareeba campus is a leader in conservation and land management training (AACC, 2008). Additional training for industry includes:

- production horticulture;
- agriculture;
- automotive;
- sustainable land management; and
- rural business management.

## 4.0 Consultation Findings

This chapter provides a summation of the results of consultation. The key areas are addressed separately.

### 4.1 Strengths of the Tablelands

The consultancy team was advised of a number of strengths which supports current, and potentially new, agricultural pursuits on the Atherton Tablelands. These strengths included:

- diversity of industries driven largely by the variety of soils, temperature and rainfall gradients;
- well placed to cope with the significant impact of climate change and water availability compared with south eastern parts of Australia;
- great expertise and a willingness to share;
- willingness of farmers to quickly adopt ideas/capitalise on opportunities;
- its capacity to be a training and research hub, i.e. for overseas students and scientists;
- an agricultural hub in a tropical environment which can support research that has benefits for developing countries in the equatorial belt;
- the region's proximity to a high growth centre, e.g. Cairns and North Queensland; and
- relatively secure water.

The Atherton Tablelands tropical climate coupled with its elevation provides opportunities for the production of certain commodities not able to be grown in other areas of Far North Queensland. The environmental conditions also enables specific supply windows on the domestic and export market.

There was a strong view amongst DPI&F staff and industry that there is likely to be an increased demand for agricultural development and growth in the region. This is due to the region's predicted stable outlook despite climate change, which will attract southern farmers (e.g. from the Murray Darling Basin) to invest on the Tablelands.

The Tablelands' possibly unique elevated tropical environment in a developed country presents an opportunity to be a future research and training hub with relevance to equatorial regions around the world. The increasing emphasis for research to understand climate change and adaptation could mean that post graduate students use the Tablelands as a base to undertake their studies in Northern Australia. Indeed, such studies are already being undertaken nearby (Stokes *et al* 2008).

Predicted population increases will also result in increased demand for agricultural products. The Tablelands may be able to fill this market need whereas farming areas in south eastern Australia may find it difficult to meet this demand due to climate change. Whilst there is relatively secure water due to few long-term droughts, growth in population in Far North Queensland will increase water competition between urban and agricultural needs. This will be further exacerbated as climate change influences stream flows and reliability of water across the region.

## 4.2 Constraints to Growth

During the consultation process a number of constraints to agricultural expansion on the Atherton Tablelands were discussed. These included:

- limited land availability due to government regulatory regimes, including the *Vegetation Management Act 1999*, and Draft Far North Queensland (FNQ) Regional Plan 2025;
- cost of land;
- market access;
- increasing costs for transport, fuel, power, water, fertiliser, and sourcing skilled labour;
- the region's current infrastructure, e.g. road, rail, etc;
- water infrastructure to meet future demands;
- limited opportunities for increased water use efficiencies; and
- limited accommodation, especially for students and seasonal workers.

The consultancy team assessed numerous claims that there is significant land available for future agricultural expansion. Whilst it is acknowledged there are some ex-tobacco farms that are either lying fallow or unproductive at the moment, the consultancy team considers that expansion of agriculture in this area will be limited until another high value crop is identified. DPI&F advised opportunities for expansion in nearby areas such as the Herbert/Burdekin and southern Cape York Peninsula are similarly limited and in total are probably less than 20,000 ha.

It has also been determined that about 40% (or 300,000 ha) of the gross area of the Tablelands is conserved via state tenures such as National Parks and Wet Tropics Heritage area. Cleared land is about 25% or 200,000 ha of the gross area with arable cultivated land occupying about 50,000 ha. The total area cropped on the Tablelands is about 47,000 ha and about 80,000 ha are utilised for grazing and hay production (for either beef or dairying) (DPI&F; undated).

The consultancy team has concluded, in consultation with NRW, that due to soil constraints and restrictions prescribed under the *Vegetation Management Act 1999*, there is no large area of land available for agriculture that has not already been cultivated on the Tablelands (see Map 3 in Attachment 2).

A limited freight rail service exists between Mareeba and Cairns but connections to other centres are for tourist purposes only. The lack of a freight rail system places further emphasis on the road system which is suffering its own limitations due to fuel costs and condition.

The Tablelands is close to an international airport but the limited number of destinations for outgoing flights and the restricted number of flights per week constrains capacity for freight to meet international markets. The capacity of the Tablelands to consistently supply commodities in significant and marketable quantity is limited. This further constrains the development of major national and international markets (DPI&F; undated).

There is expected to be a demographic change on the Tablelands as the aging population looks at lifestyle changes and undertaking hobby farming. Water is also becoming a limiting factor as Cairns population increases and requires water from Lake Tinaroo. Water trading is in place on the Tablelands and this may influence agriculture production and systems.

#### **4.3 Future Opportunities**

A large range of opportunities for agricultural expansion on the Tablelands were identified through the consultation process. The most frequently mentioned included:

- grain for livestock;
- growth in tree crops;
- reinstatement of dairy production to previous high levels;
- diversity in small crop farming;
- plantation (corporate) farming;
- grass-fed finishing of beef; and
- plant bio-factory crops.

The Tablelands is a resource rich environment due to its physical environment, but because of this and its proximity to a coastal location (Cairns), the region suffers from very high land prices that challenge the prospect of good economic return on investment. This is a major deterrent for corporate farming investors.

As outlined in section 4.2 there are considerable constraints that will limit the expansion of these industries and therefore, the growth of any of these industries will be at the expense of another (see section 5.2 for a more detailed analysis of this concept).

#### **4.4 RD&E Needs**

Review participants were asked to identify the RD&E needs for the future of the Tablelands and surrounding areas. The most frequently mentioned areas included the following:

- breeding programs for maize;
- selection and evaluation of tropical pasture;
- maintaining seed banks of tropical and adapted species;
- barramundi, redclaw and other freshwater aquaculture species;
- development of commercial crops;
- tropical disease and pest research;
- on-farm trials are an important step in the adoption of technology;
- focus on value-adding and supply chain efficiencies;
- better targeted extension services;
- RD&E to focus on developing efficient farm / production systems; and
- current research facilities do not fully reflect the relative diversity of the Tablelands.

There was no outstanding research need identified during the consultation process. Each industry had a few comments concerning research but did not articulate pressing requirements that differed from current research themes. The consultancy team formed the opinion that the

major needs in RD&E were related to plant breeding and selection in mango, maize and pasture plant species, and these needs were further related to disease and pest minimisation. In addition, the role of farming systems was considered critical to the future profitability of agriculture on the Tablelands. This is detailed in section 5.3.

#### **4.5 Training and Skills Development Needs**

Review participants were asked to identify training and skills development needs for the future of the Tablelands and surrounding areas. The most frequently mentioned areas included the following:

- training to be attached to an appropriately located R&D facility;
- industry want training partnerships that have 'real world' application;
- training facility needs to be in a location that is accessible to students;
- to increase students, accommodation and transport will be an issue;
- opportunity to strengthen training in production agriculture and livestock;
- the new centre should be a precinct that focuses on tropical training and skills development that will create a career pathway; and
- a hub that allows for professional development training of scientists, not only from the Tablelands but from interstate and internationally.

## 5.0 Key Messages Determined from the Consultation Process

This chapter outlines the key messages the consultancy team determined were integral factors to be considered in the development of site options for a fit for purpose facility.

### 5.1 Markets

The consultancy team determined that there are currently four markets which the Atherton Tablelands services. These include:

- **Domestic / Local** – demand will increase as population increases;
- **Niche** – different varieties, seasonal opportunities and high profit per hectare;
- **Opportunistic** – producers capitalising on crop/industry failure elsewhere; and
- **International** – relatively small at the moment; expansion will need to consider infrastructure/market limitations.

The Tablelands has a diversified agricultural base with relatively significant production across a number of industries, notably fruit, beef, lifestyle horticulture, other crops, dairy, vegetables and poultry. The current climatic conditions enable a range of crops to meet niche markets or supply discrete windows on the Australian domestic market. Many of the industries are inter-related to enable value adding across the region and add value to other regions of Queensland (e.g. maize and pasture work as inputs to the dairy and beef industries).

However, there are some limitations to market growth primarily due to the location and distance to markets and processing infrastructure for many perishable commodities. This matter is exacerbated by rising fuel prices. Large-scale processing plants are unlikely to be attracted to the area because production capacity will not provide the volumes required to make it a viable investment.

There are also limitations in expanding into international markets that would need to be overcome if there was to be significant growth in the future. These include existing market barriers, biosecurity restrictions, freight issues and a reliable produce supply.

### 5.2 Growth on the Atherton Tablelands

Considering the constraints and opportunities, the consultancy team considers growth on the Atherton Tablelands will be through:

- **increased utilisation of the available land; and/or**
- **significant expansion of any crop/ industry will be at the expense of another.**

Throughout the consultancy process, there was a wide range of views on the areas of land suitable for agricultural purposes on the Atherton Tablelands. However, the consultancy team was able to determine through discussions with NRW that, due to the *Vegetation Management Act 1999*, draft FNQ 2025 Regional Plan, topography and soils, suitable land availability is limited. (See Map 1 and 3 in Appendix 2).

The greatest scope for growth of agriculture on the Tablelands will be through greater utilisation of the existing land by introducing improved management practices and the uptake of new technology.

Competition from peri-urban lifestyle residents will put pressure on land available for commercial agricultural production. For example, the small lots left behind following the collapse of the tobacco industry (some of which is now vacant or non-cropped land) may be appealing to lifestyle residents in the future. Whilst this land may be lost for agriculture, it could be argued the land would not contribute significantly to the future economic growth of the Tablelands unless a high-value crop to replace tobacco is identified.

A number of industry and DPI&F staff representatives agreed that there will be a 'change of deckchairs' within the industries on the Tablelands as pressures such as fuel prices, competition for water availability, transport infrastructure and market access set to continue. Consequently, there appears to be greater scope for expansion of perennial horticulture systems (dominated by tree cropping, e.g. mangoes and avocados); field crops (dominated by grains) in support of animals industries, notably the growth in dairying; and bio-industry based cropping systems. There also appears to be potential for dairy to expand due to improved milk prices. Tropical horticultural fruits are also likely to be a major commodity on the Tablelands.

### **5.3 Farming systems**

Based on the diversity of crops/industries on the Tablelands, and the fact that DPI&F can not be everything for everyone, the consultancy team has determined the following:

***A farming systems approach is the most effective way to maximise sustainable industry growth and profitability on the Tablelands.***

During the first round of consultation it became obvious that a farming systems approach is presently absent from agricultural pursuits on the Atherton Tablelands, and indeed is poorly understood by farmers. At the farm business level, a farming systems approach is about improving business practices and assisting farmers to identify and manage risks and opportunities arising from their farming activity. Management attention is focused on implementing recommended practices to address identified risks and then reviewing progress made against plans and desired outcomes (QFF, 2008). At the farming operations level, farming systems can be described as "using farming practices and systems that will maintain and enhance the viability (often defined in economic terms) of agricultural production, and conserve or enhance the natural resource base and other ecosystems that are influenced by agricultural activities". (Holden *et al*, 2006)

A report prepared by DPI&F found that "adopting a holistic farming systems approach to the Atherton Tablelands [would] ensure profitability and sustainability of these systems into the future. This will require universal commitment to strategic alliances that can combine scientific

and practical knowledge in addressing identified critical success factors...within an environment characterised by a diverse mosaic of natural and agricultural landscapes.” (Holden *et al*, 2006) The consultancy team received industry and staff support when they tested the concept of a farming systems approach in the second round of consultation. Industry suggested that it should be termed ‘wet tropics farming systems’ to ensure it is relevant for industries on the Tablelands. Some industry participants considered the following agronomic factors should be incorporated into a farming system framework:

- nutrient management;
- sediment and nutrient runoff;
- water use efficiency; and
- soil health, including carbon management.

The implementation of flexible farming systems will help overcome many difficulties in farming afforded by the wide range of farming options available to landholders, and in maintaining fertile and structurally sound soils. This will help ensure opportunities in crop rotations are maintained, advantages can be taken with changes in markets, provide a focus for niche crops, and successfully exploit market opportunities afforded by crop diversity and flexibility. Further, a farming systems approach will clearly demonstrate the commitment of Tablelands farmers to producing clean and green products, and whose farming does not impact deleteriously on the Great Barrier Reef or Southern Gulf from runoff waters containing chemicals and nutrients.

Additionally, the trend of rising input costs, such as fuel and fertiliser is set to continue. An advantage of a farming systems approach is that it looks at how a producer can minimise inputs, maximizing the use of an asset through more intensive use of the land but still maintain the health of the soil and demonstrate water use efficiency. A farming systems approach is the most effective way to maximise sustainable industry growth and profitability on the Tablelands through optimising the land asset more efficiently.

The consultancy team believes that a farming systems approach should be a priority for DPI&F on the Atherton Tablelands, and consequently, the necessary elements required to support this as the model for the future has been factored in the consideration of the location for the fit for purpose facility.

#### 5.4 RD&E requirements

By consolidating research efforts, there will be a greater emphasis/reliance on performing trials off-site. For this to work effectively, the consultancy team identified that:

- ***DPI&F needs to better establish R&D partnerships with industry (this may require investment of time and effort in creating a regional engagement process);***
- ***a diversity of trial plots are needed to cover climatic or soil differences on the Tablelands;***
- ***most screening work needs to be done on highly secured land; and***
- ***work on soil borne disease and use of unregistered chemicals needs to be done on State controlled facilities.***

Industry and staff acknowledge that a range of RD&E work needs to be undertaken, and that each research project/program should include consideration of the most appropriate site/location/facility to conduct this work. For example, all participants were unequivocal about the fact that secure land is required for use of unregistered chemicals and soil borne disease research.

There was general agreement that some RD&E can be performed on-farm through a partnering arrangement with industry. This already occurs to some extent on the Tableland however, some producers have stated that if this is a model for the future, there must be scope to recompense for use of the land and the potential inconvenience to their farm operations. Furthermore, both staff and industry concur that a key component for the success of such a model is the provision of more extension services. It was recognised that on farm trials can provide an excellent basis for extension activities such as field days.

### 5.5 Training and education requirements

The consultancy team assessed the training and education requirements that need to be taken into account in the consideration of developing site options for a fit for purpose facility. The key requirements identified by industry, DPI&F and AACC staff include:

- ***providing greater links between education, extension and R&D;***
- ***delivering career pathways for the agricultural sector; and***
- ***establishing a foundation for further educational opportunities.***

Industry is of the view that the AACC campus at Mareeba does not provide courses that train/skill industry and students in agricultural production. The synergies of integrating DPI&F and AACC to make greater connections between RD&E and how the AACC delivers a relevant curriculum are also recognised. Industry also wants greater practical training that focuses on delivering farm labour skills. However, DPI&F also sees a role in the AACC network providing academic courses which elicits a “pre-voc to PhD” career pathway.

### 5.6 Implementation considerations for DPI&F

Both staff and industry raised a number of logistical issues that should be taken into account when considering site options for a fit for purpose facility and research platform on the Atherton Tablelands. While the consultancy team acknowledges this is outside the terms of reference of the project, it is important to capture these matters for DPI&F’s consideration.

The consultancy team believes a number of these issues should be considered during the site development process or as part of the implementation of the report recommendation. These include:

- the availability of effective access to IT Systems;
- providing staff facilities (including ‘hot desking’) if field sites were to be established;

- appropriate machinery management protocols to reduce duplication of machinery and ensure their effective utilisation;
- risk management protocols for staff, students, clients, contractors and customers at all sites;
- managing disruptions to existing staff, caused by the move to changed accommodation;
- the need to consider staff reassignments and retraining;
- investigating mechanisms to attract and retain staff;
- considering the type of land tenure which best fits the research, development, education and extension needs of all sites, e.g. lease vs ownership;
- provision of space for visiting scientists, partners and collaborators;
- dealing with the BOM weather stations at Kairi, Southedge and Walkamin Research Stations;
- consider facilitating the establishment of a Regional Advisory Group that would provide a more coordinated approach to representing the industry needs on the Tablelands, and could have valued input to, and suggestions on, new RD&E programs;
- exploring and establishing greater industry partnerships which would facilitate on farm research;
- developing a transition plan for the three hectare eucalypt plantation at the AACCC campus for the continued supply of leaf material to the zoo.

## 6.0 Goal and Objectives

The overall goal of this consultancy was to determine the best location to build a fit for purpose facility on the Atherton Tablelands which meets current and future RD&E and Training needs.

To achieve this goal, a number of objectives have been formulated which take into consideration:

- the Ministers vision for the Atherton Tablelands as articulated in his address to CEDA;
- the consultancy team's Terms of Reference;
- DPI&F public policy and investment priorities for R&D; and
- the results of consultation, including the key messages determined by the consultancy team (section 5.0).

Based on the above, the consultancy team has developed the following objectives, which will frame the preferred site options for a fit for purpose facility:

- 1. Establish a flexible platform for DPI&F to conduct future research taking into account the variations in physical and climatic environment in a context of not knowing precisely which agricultural enterprises are likely to dominate the future landscape.**
- 2. Establish a fit for purpose centre that supports the agribusiness and extension other RDE&E providers.**  
  
cooperative and collaborative environment and to benefit from partnerships and interaction with others in associated disciplines.
- 4. Establish a flexible platform for AACC to become more relevant to industry on the expertise of DPI&F and encourages DPI&F and industry to contribute towards achieving the objectives of the AACC.**
- 5. Establish a fit for purpose centre that minimises the overhead costs associated with facilities of DPI&F on the Tablelands.**
- 6. Establish a fit for purpose centre that optimises the efficiency and effectiveness of departmental activities and responsibilities.**
- 7. Optimise DPI&F asset utilisation in the region.**

## 7.0 Requirements for a Fit for Purpose Facility

This chapter outlines the considerations taken into account in determining site options for the fit for purpose facility on the Atherton Tablelands.

### 7.1 Establishing a flexible platform for future research

To satisfy the opportunities and needs expressed in 4.3 and 4.4, the minimum requirements for a flexible platform for future research are functional sites located in:

- the higher rainfall, red soil area; and
- the drier areas.

The primary function for each of these is to test for and develop products and services for these environments, recognising the range of pest, disease and agronomic requirements for the crops and industries under consideration.

Requirements for the red soil areas are:

- area for screening and trialing of tropical maize, sweet corn and other grain varieties developed at Hermitage and elsewhere;
- areas for screening and trialing of other crop options;
- adequate supply of water;
- secure site for unregistered chemical work;
- a relatively secure site with land for appropriate buildings to house equipment and provide workspace on site; and
- a minimum of 8 ha of land.

Requirements for the drier areas are:

- area for maintenance and development of tree crop, forestry and tropical pasture genetic material;
- areas for screening and trialing of tree crop, forestry and tropical pasture accessions;
- areas for screening and trialing of other crop options;
- adequate supply of water;
- secure site for unregistered chemical work;
- a relatively secure site with land for appropriate buildings to house equipment and provide workspace on site; and
- a minimum of 40 ha of land, of which 25-30 ha is good quality arable land.

Non-site specific research requirements are:

- the opportunity to continue aquaculture programs provided there is adequate industry support and economic justification;
- potential to explore bio-crop opportunities;
- opportunity to investigate carbon sequestration from tropical pastures and landscapes;
- secure site for soil pathogens; and
- suitable site for AACC training.

## 7.2 Education and Training requirements

The education and training requirements to be considered in the design and site selection of a fit for purpose training facility are:

- capacity to support on-line delivery;
- capacity to support off-site and on-farm training;
- provide a flexible capacity to deliver training services;
- access to expertise to deliver training programs, e.g. co-location opportunities;
- access to resource material, e.g. library and on-line/internet;
- room for up to 14 staff;
- 3-4 teaching spaces with internet access;
- accessibility for students;
- dedicated transport for practical work; and
- student facilities.

## 7.3 Agribusiness and extension service requirements

The consultancy team was briefed by DPI&F about its Industry Development strategy which will provide the future platform for enhanced service delivery to its clients. The consultants consider the farming systems approach supports the intent of the strategy which is to accelerate growth by providing appropriate service delivery platforms.

The type of services need for supporting and implementing a farming systems approach on the Tablelands would require more extension expertise and resources.

With respect to the physical needs that would need to be considered in the design and site selection of a fit for purpose facility on the Atherton Tablelands, the consultancy team has determined the following requirements for agribusiness and extension services include:

- capacity to support on-line delivery;
- easy access to research and development information and staff;
- access to resource material;
- access for DPI&F clients and customers; and
- functional rooms and meeting facilities.

## 7.4 Future fit for purpose facility

The following section critiques the suitability of each site to meet the needs prescribed in sections 7.1, 7.2 and 7.3.

### 7.4.1 Southedge

Table 2 evaluates the strengths and limitations of Southedge Research Station as the site for the fit for purpose RD&E, education and training facility for the Atherton Tablelands.

Table 2 – Strengths and limitations of Southedge Research Station as the site for a fit for purpose facility.

Strengths	Limitations
<ul style="list-style-type: none"> <li>• Sound location for mango breeding and other tree crop (e.g. cashews) work due to soils, climate, irrigation and security</li> <li>• Suitable for papaya disease research as diseases have established naturally due to proximity to commercial crops</li> <li>• Designated quarantine zone for soil borne disease research, which is secure and not close to commercial crops</li> <li>• Has adequate water allocation from the MDIA</li> </ul>	<ul style="list-style-type: none"> <li>• Facilities are aged and underutilized (no alternative use for tobacco infrastructure)</li> <li>• Land not fully utilized for research purposes</li> <li>• Research only suitable to industries located on the northern end of the Tablelands</li> <li>• Physical attributes of the site do not represent the diversity of the Tablelands</li> <li>• The site is remote and would limit student attraction as a training facility</li> <li>• Site is remote and not appropriate as a site for agribusiness services</li> <li>• Distant from other key government agencies, e.g. NRW, EPA, etc.</li> </ul>

At Southedge Research Station there is important genetic material stored in the mango nursery. This genetic material needs to be retained for the future either at this site or another one with suitable agronomic characteristics. A five-year lead time would be required for any relocation.

Other tree crops such as cashew and macadamia are not considered high R&D investment priorities by DPI&F. The existing germplasm could be relocated in to an alternative site in a similar process to mangoes.

There is limited value in retaining the quarantine zone at Southedge (Map 4 in Attachment 2) for soil borne disease research. If a future R&D requirement was defined, a similar quarantine zone could be established elsewhere.

The physical and environmental conditions of Southedge do not represent the diversity of crops/industries presently located on the Tablelands and therefore the R&D that can be performed on this research station is primarily for tree crops.

Furthermore, Southedge is unsuitable as a training and agribusiness services (including extension) facility given its location and poor student access.

**These limitations do not justify investment in a fit for purpose facility at this location, so Southedge has been excluded as an option for a new facility.**

#### 7.4.2 Walkamin Research Station

Table 3 evaluates the strengths and limitations of Walkamin Research Station as the site for a fit for purpose RD&E, education and training facility for the Atherton Tablelands.

Walkamin has the greatest diversity of research activities on the Tablelands. It accommodates a freshwater aquaculture research facility; has established forestry germplasm plantings and

tree crop orchards for experimental and teaching purposes; has pasture and legume trial plots; and has facilities to harvest and store seed.

Table 3 – Strengths and limitations of Walkamin Research Station as the site for a fit for purpose facility.

Strengths	Limitations
<ul style="list-style-type: none"> <li>• Adequate water and suitable irrigation infrastructure</li> <li>• Has soils (ferrosols and granite sands) suitable for a variety of crops (both tree and annuals)</li> <li>• Land is available for future research and building expansion</li> <li>• Variety of crops already established on the site, e.g. mangoes, cashews, macadamia</li> <li>• Seed bank and seed production facilities including a cold storage facility for seed</li> <li>• Location – central Tablelands, located on a main road and has a visual presence.</li> <li>• Flat topography ideal for cropping</li> <li>• An established freshwater tropical aquaculture facility</li> <li>• Land and some livestock facilities exist that could be used as part of AACC curriculum.</li> </ul>	<ul style="list-style-type: none"> <li>• Aging and expensive to maintain facilities</li> <li>• Physical attributes of the site do not represent the diversity of the Tablelands</li> <li>• Aquaculture facilities are largely underutilized and costly to maintain</li> <li>• The site is outside of a large town and would limit student attraction as a training facility</li> <li>• Distant from other key government agencies, e.g. NRW, EPA, etc.</li> <li>• Most of the current buildings are on good quality arable land.</li> </ul>

Industry argued that the aquaculture capacity should be maintained. Their concern is that wild harvest stocks are continuing to decline and consequently aquaculture would be a more attractive investment in the future. Bribie Island satisfies the marine aquaculture requirements. However, there remains considerable uncertainty with respect to the potential of freshwater aquaculture research.

There are significant established facilities supporting freshwater research activity at Walkamin, but these are costly to maintain and, at present, there is no identifiable research program. There is a possibility that, in time, a barramundi genetics and fingerling production initiative could eventuate but is still to be determined.

Maintaining a freshwater aquaculture facility under these conditions adds to the overhead costs of the department without contributing to economic growth in the industry.

There appears to be little justification for maintaining the aquaculture facility in its current size. It will be difficult to justify maintaining the facility at all if an active and ongoing research program is not developed in the near term.

The pasture selection, varietal maintenance, pre-basic seed production and seed bank facilities located at Walkamin are seen as important to the industry. The work has relevance not only for Queensland, but also for Northern Australia and internationally. DPI&F science leaders consider that the maintenance of seed banks is essential for ensuring diversity and future

genetic plant improvement. Under the National R&D Framework, Queensland is the lead State for beef tropical pasture R&D.

Historically, Walkamin has been involved in the research of a variety of crops including, mangoes, cashews, avocado, lychees, longan, peanuts and even rice. Consequently, there are already established orchards on the property.

There is also a forestry plantation plot on site, some of which has value in hardwood tree improvements and sandalwood programs.

A significant portion of Walkamin has been protected under the State's *Vegetation Management Act 1999* (See Map 4 in Attachment 2). This, and the general quality of the soils in the undeveloped areas, will constrain further expansion of field crop research activities; however, these areas could be used for grazing and training purposes. Staff at the AACC Mareeba campus are already investigating expansion of the curriculum to include livestock management practices.

Walkamin's central location would be convenient for staff and industry, but it is not serviced by reliable public transport and therefore poses a disadvantage as a education and training centre.

### **Walkamin has the potential to play an ongoing role in RDE&E for the Atherton Tablelands.**

#### *7.4.3 Kairi Research Station*

Table 4 evaluates the strengths and limitations of Kairi Research Station as the site for a fit for purpose RD&E, education and training facility for the Atherton Tablelands.

Table 4 – Strengths and limitations of Kairi Research Station as the site for a fit for purpose facility.

<b>Strengths</b>	<b>Limitations</b>
<ul style="list-style-type: none"> <li>• Good soils and reliable rainfall</li> <li>• Main building is in good condition; other buildings appear to be in sound condition</li> <li>• Access to water and irrigation infrastructure</li> <li>• Location provides for secure screening of new hybrids</li> <li>• Has a low temperature seed storage unit</li> <li>• The geography and physical environment provides ideal conditions to trial new maize hybrids and parent lines for disease resistance</li> </ul>	<ul style="list-style-type: none"> <li>• The dairy is aging and requires major upgrading</li> <li>• Its access and distance from a major centre is not conducive to being a training site</li> <li>• Physical attributes of the site do not represent the diversity of the Tablelands</li> <li>• The topography limits cropping</li> <li>• Overall site is underutilised for R&amp;D</li> </ul>

Kairi research station has a commercial dairy of approximately 200 milking cows that produces 1 million litres of milk per annum. The dairy was originally established to demonstrate milk production practices. The dairy is aging and will require a major upgrade.

In line with the National R&D Framework, Victoria is the lead State for dairy R&D in Australia. A high proportion of the current dairy projects around Queensland are extension related. DPI&F, in partnership with the University of Queensland has recently opened the Centre for Advanced Animal Science at Gatton that will be extended to cover the dairy research. The consultancy team has been advised by DPI&F that from an investment perspective on the Atherton Tablelands, the extension and adaptation from elsewhere of dairy research and practices applicable to a tropical setting will remain a priority. However, the department does not consider there is a need to continue operating a commercial dairy at Kairi.

Kairi does not reflect the full climatic and soil diversity of the area but it is typical of the conditions of the southern end of the Tablelands (see Map 5 in Attachment 2). Kairi is characterised by high rainfall, frequent showery conditions, prevailing south easterly winds and has productive ferrosol soils. These characteristics coupled with its remote location make it suitable for trialing maize/corn and screening lines and hybrids for disease resistance. Much of the site is presently underutilized for R&D.

Kairi also contains a low temperature seed storage facility which is currently used for storing maize seed. However, this facility is aging and requires upgrading.

The original purpose for establishing Kairi as a State farm does not fit with future R&D priorities for Queensland. Its location does not lend itself to being established as a new Tablelands training hub. The high rainfall also limits the types of crops that can be grown in that environment, e.g. tree crops such as mangoes.

**These limitations do not justify investment in a fit for purpose facility at this location, so Kairi has been excluded as an option for a new facility.**

#### 7.4.4 Mareeba District Office at Peters Street

Table 5 evaluates the strengths and limitations of the Mareeba District Office at Peters Street as the site for a fit for purpose RD&E, education and training facility for the Atherton Tablelands.

Table 5 – Strengths and limitations of 'Peters Street' as the site for a fit for purpose facility.

Strengths	Limitations
<ul style="list-style-type: none"> <li>• Located within Mareeba CBD and proximity to Cairns</li> <li>• Upgraded laboratories</li> <li>• Co-location with EPA and NRW</li> <li>• Glasshouse facilities on site</li> <li>• Easily accessible</li> <li>• Potential for new buildings</li> <li>• From a training perspective, provides some existing resource base, e.g. library, meeting rooms, labs, greenhouses, etc.</li> </ul>	<ul style="list-style-type: none"> <li>• No field research possible at this site</li> <li>• Any expansion of buildings reduces the available green space</li> <li>• Not a central location on the Tablelands</li> <li>• DPW and other government agencies expectations about the future of the site</li> <li>• Proximity to residential areas</li> </ul>

The Peters Street complex is a shared Department of Public Works facility which DPI&F currently leases. Other tenants at the site include NRW, EPA and AQIS. There are two main buildings on the site – A and B Block. B Block is currently being refurbished to accommodate fit for purpose office space for DPI&F staff and state of the art PC2 laboratories. It is also planned to refurbish A Block in the near future, which will accommodate EPA, NRW and AQIS staff.

This site also has a number of smaller buildings that accommodate multipurpose laboratories and glasshouses. All of these facilities are aging.

Co-location of DPI&F staff and service delivery and the AACC staff and students at Peters Street has a number of advantages. Not only does it result in all of the ‘intellectual horsepower’ being located in the one strategic hub, it also means resources can be concentrated and ancillary roles streamlined.

Additionally, the Peters Street complex is located within a major town, which makes it very accessible for students. Peters Street also has existing resources beneficial for student. These include a relatively fast and reliable internet connection, a library, glasshouses and meeting rooms which could also be utilised as classrooms.

It appears that there is enough space available to construct an additional block that could accommodate DPI&F and AACC staff and students on the site. This may entail either the relocation or removal of existing facilities. Any such proposal would be subject to negotiations with DPW. The other agencies located at the site would need to be consulted also. Additionally, if Peters Street was to be redeveloped to accommodate a fit for purpose facility, on site security will have to be a consideration.

**The Peters Street complex has the potential to play an ongoing role in RD&E and Training for the Atherton Tablelands.**

#### 7.4.5 AACC Mareeba Campus

Table 6 evaluates the strengths and limitations of the Mareeba AACC Campus as the site for a fit for purpose RD&E, education and training facility for the Atherton Tablelands.

Table 6 – Strengths and limitations of AACC Mareeba Campus as the site for a fit for purpose facility.

Strengths	Limitations
<ul style="list-style-type: none"> <li>• Proximity to Mareeba CBD and Cairns</li> <li>• Water available</li> <li>• Established orchard suitable for training purposes</li> </ul>	<ul style="list-style-type: none"> <li>• Limited field research possible at this site apart from some tree cropping</li> <li>• Buildings are poorly designed and constructed for training purposes</li> <li>• Asbestos and lead paint present in buildings</li> <li>• Small site with poor soils</li> </ul>

The Mareeba AACC campus currently focuses on conservation and land management training courses. At the present time it does not have a diverse curriculum that will meet the future skill development needs of the industries located on the Tablelands. Integration with DPI&F's RD&E activities will provide a more effective platform to develop training courses based around industry needs.

The buildings are in reasonable condition but contain asbestos and lead paint. Whilst the site has an established mango orchard used for training purposes and some irrigation capacity, the soil is poor and the site small.

**These limitations do not justify investment in a fit for purpose facility at this location, so the AACC campus has been excluded as a site option for a new fit for purpose facility.**

#### *7.4.5 Greenfield Site*

Purchasing a greenfield site to establish the new fit for purpose facility is limited by a number of factors. These include:

- the high cost of land on the Atherton Tablelands;
- locating a site that meets the objectives in Section 6.0, in particular 4, 5, 6 and 7;
- impossible to locate a site that replicates the diversity of the Tablelands; and
- a couple of current sites were considered suitable.

**Consequently, the consultancy team did not pursue this option further as it does not meet the objectives compared to Peters Street or Walkamin.**

#### *7.4.6 Conclusions*

**Based on the above analysis of the sites, the sites that have the greatest strengths and minimal limitations for a fit-for-purpose facility, and therefore best fit the objectives, are Peters Street and Walkamin.**

## 8.0 Options for the Future

### 8.1 Current site suitability to meet research requirements

The requirements for the higher rainfall, red soil area could be satisfied by either:

1. retaining a portion of Kairi Research Station; or
2. a new site in the 'golden triangle' area around Kairi.

The requirements for the drier area could be satisfied by one of the following:

1. retaining part or all of Walkamin Research Station and the current tree crop research area at Southedge Research Station;
2. retaining part or all of Walkamin Research Station and transferring the tree crop research area at Southedge Research Station to an appropriate part of Walkamin Research Station; or
3. a new site in the MDIA.

### 8.2 Optimising the utilisation of present DPI&F assets to benefit Research, Development, Extension, Education and Training

As discussed in section 7.4, Southedge, Kairi and the AACC Mareeba Campus were excluded as sites for a new fit for purpose facility. The reasons for excluding these sites were their significant limitations, which meant the objectives set out in section 6.0 could not be achieved. It is recognised that if the Kairi dairy site is not retained, it is important to retain on the Tablelands the milking capacity represented by the herd at Kairi in order to maintain the viability of the Malanda processing plant. Similarly, it is recognised if the Southedge research station is not retained, the current research programs must be given sufficient time (five years) to establish alternative tree crops for research purposes.

A greenfield site was not considered to be a practical alternative, as without vacating the existing Peters Street site, any greenfield site was likely to have disadvantages similar to the existing research stations and thus not be able to satisfy the objectives outlined in section 6.0. In addition, there were likely to be greater transaction costs in establishing a greenfield site and the acquisition price is likely to be high given the price of vacant land on the Tablelands.

The Peters Street site and the Walkamin Research Station provide the opportunity to establish a fit for purpose facility capable of meeting objectives 2, 3, 4, 5 and 6. The question was, therefore, whether either or both of these sites, together with a mixture of additional land and buildings on suitable field sites, could provide a flexible platform for future research (objective 1) which also allows the integration of the activities undertaken by DPI&F on the Tablelands? These activities will include R&D, agribusiness and extension services, and education and training programs.

Two options stand out as having the potential to optimise the utilisation of assets (objective 7) and meet each of the other objectives. These are:

1. Build a fit for purpose facility at Peters Street, retain part of Kairi (24.6ha), retain all or part of Walkamin, and transition out of Southedge.
2. Build a fit for purpose facility at Walkamin, retain part of Kairi (24.6 ha), retain all or part of Walkamin, and transition out of Southedge. The fit for purpose building would ideally be situated on the FPQ land adjacent to the Walkamin site.

### 8.3 Option 1

***Build a fit for purpose facility at Peters Street, retain part of Kairi, retain all or part of Walkamin, and transition out of Southedge.***

- Retain the 24.6 ha parcel of land on a separate title at the Kairi Research Station. This would meet all the requirements for a high rainfall red soil research area, large enough to accommodate all existing research programs and allow for considerable expansion in the future.
- Retention of all or part of the Walkamin Research Station satisfies the drier area research requirements. It enables all the current research undertaken at Walkamin to be retained. Additionally, a suitable and cleared unused block on Walkamin provides the opportunity to transfer, over time, the tree crop research currently being undertaken at Southedge.
- Building a fit for purpose facility at Peters Street would enable the Department to capture significant synergies from co-locating the agribusiness (extension) services and training programs with the R&D sections of the Department. This also enhances the probability of interaction and cooperation among DPI&F, AACC, NRW, AQIS and other potential partners. Further, it enables the department to more fully utilize existing resource bases such as the library, meeting rooms, teaching areas, labs, glasshouses and IT infrastructure.
- The Mareeba location should help minimize transport problems for students needing to attend the AACC. It should be noted that an increasing proportion of training in the future is likely to be through on-line studies or off site.
- Preliminary discussions with DPW indicate that there is space available to build a fit for purpose building on the present Peters Street site.

### 8.4 Option 2

***Build a fit for purpose facility at Walkamin, retain part of Kairi, retain all or part of Walkamin and transition out of Southedge. The fit for purpose building would ideally be situated on the Forestry Plantation Queensland (FPQ) land adjacent to the Walkamin site.***

- The land at Kairi and Walkamin satisfies the research requirements for the high rainfall, red soil area and for the drier areas. To this extent, Option 2 provides similar benefits to Option 1.
- Building a fit for purpose facility on the FPQ land adjacent to the Walkamin Research Station provides a visible DPI&F presence on the Tablelands as it is situated on the main highway connecting Mareeba and Atherton. It captures some of the benefits from co-locating the agribusiness and extension services and the AACC in the same facility. It would provide students with easier access to certain farming aspects of an agricultural education. The more central location between Mareeba and Atherton may provide some benefit for the delivery of agribusiness and extension services.
- Option 2 limits the ability to gain synergies from the co-location with the activities of the other research and development aspects of DPI&F and through interaction with cognate departments (i.e., NRW, EPA, AQIS etc.). It also limits the ability to capture efficiencies from the use of common resources such as the library, multi-purpose laboratories meeting rooms/lecture theatres, glasshouses and IT infrastructure.
- Walkamin is distant from a major centre such as Mareeba. This will increase the transport problems facing students enrolled in the AACC and attending training/lectures at the facility. Again, it should be noted that training in the future is likely to be through on-line studies or off site.

## 9.0 Recommendations

The independent consultants believe that DPI&F has the opportunity to sustain all current research programs on the Tablelands, establish a flexible platform for future R&D programs and provide a new facility that will service the Tablelands' education, training, agribusiness and extension services requirements. This would be through the judicious use of existing DPI&F facilities on the Tablelands and by reinvesting resources obtained by disposal of assets that are surplus to requirements and/or which will be superseded by the new fit for purpose facility,

To achieve this outcome, the independent consultancy team recommends that Peters Street be the site selected to locate a fit for purpose facility. In addition, to support a flexible RD&E and training platform and to represent the diversity of soils and climate on the Tablelands, the department also:

- retain part of Kairi;
- retain all or part of Walkamin; and
- transition out of Southedge.

The retention of 24.6 ha at Kairi and all or part of Walkamin meets all the requirements for a high rainfall red soil research area and a drier research area respectively.

The Peters Street site fulfills all requisite needs to deliver a central RD&E, education and training hub for the Atherton Tablelands. The benefits of concentrating DPI&F and AACC staff and resources at one centre include:

- a collegiate, multi-disciplinary team environment that will promote the cross sharing of ideas and partnerships that in turn, will drive innovation and sustainability;
- a dynamic environment that will attract the best and brightest staff and students;
- a mechanism to establish better linkages between RD&E programs with AACC curriculum to make training more relevant to the agricultural sector on the Tablelands and create an education and career pathway into agriculture;
- the ability to attract private investment; and
- a central hub for industry to access training, agribusiness and extension services.

Another benefit of relocating to Peters Street is the ability to capture efficiencies from the use of common resources such as the library, multi-purpose laboratories meeting rooms/lecture theatres, glasshouses and IT infrastructure.

However, if issues not considered in this report prevents implementing this option, then Option 2 (i.e. build a fit for purpose facility at Walkamin and retaining the other sites as in option 1) is a viable option.

Each of the options discussed above provide the Department with a viable future course of action. However, it is the recommendation of the consultancy team that Option 1 provides the better alternative for maximising the use of DPI&F assets on the Tablelands and provides a greater opportunity for deriving benefits to both DPI&F and AACC staff and industry from sharing the available infrastructure on the Peters Street site.

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## Abbreviations

AACC – Australian Agricultural College Corporation

AQIS – Australian Quarantine Inspection Service

BOM – Bureau of Meteorology

CEDA – Committee for Economic Development of Australia

DPI&F – Department of Primary Industries and Fisheries

EPA – Environmental Protection Agency

FNQ – Far North Queensland

FPQ – Forestry Plantations Queensland

Ha – Hectares

Km – Kilometres

MDIA – Mareeba Dimbulah Irrigation Area

ML – Megalitres

NRW – Department of Natural Resources and Water

R&D – Research and Development

RD&E – Research, Development and Extension

## **Attachment 1 – Terms of Reference of the Formal Consultancy Bodies**

## **INDEPENDENT REVIEW FOR THE ATHERTON TABLELANDS**

### **Terms of Reference**

#### **BACKGROUND**

The Minister for Primary Industries and Fisheries, the Honourable Tim Mulherin MP announced a fresh approach to growing Queensland's primary industries in a speech to a Committee for Economic Development of Australia (CEDA) forum in Townsville on 24 June 2008.

The fresh approach initiative refocuses the way DPI&F works to achieve the vision of a \$34 billion industry by 2020 – almost three times today's value.

The fresh approach is based around three pillars:

1. Building skills for our future
2. Delivering innovative research partnerships to grow investment
3. Networking and modernising services

The Minister used his CEDA address to outline his vision for the Atherton Tablelands. Central to plans is to have one purpose built facility on the Tablelands, which capitalises on the uniqueness of the Tablelands and its potential for economic growth and potential opportunities such as molecular bio-pharming, value added food products and tropical products.

The facility would replace the Australian Agricultural College Corporation's (AACC) Mareeba campus and the aging facilities of Kairi, Walkamin and Southedge. To this end, the Minister has committed to an independent review to assess a location for a purpose built facility and its functionality. This review will include detailed consultation with staff, industry and the community. As the Minister stated in his address to CEDA, the facility on the Tablelands could be at a new or one of the above existing sites.

#### **SCOPE**

The scope of this review is to provide independent advice on the preferred location on the Atherton Tablelands for a suitable fit for purpose facility consistent with the Minister's vision outlined in his address to CEDA on 24 June 2008.

In undertaking this review, the following considerations need to be taken into account:

- Current activities
- Future opportunities for RD&E (need to consider not just expanding current industries on the Tablelands but also emerging industry opportunities)
- Potential private and public partnerships (in particular vocational and research providers)
- Training needs
- Capacity to build skills

- Cost-effectiveness
- Investment attraction
- Fit for purpose

## **ROLE**

- Consult with DPI&F staff, future partners, local government, State and Federal MPs and industry on RD&E needs into the future and potential site location
- Consult with the Atherton Tablelands Steering Committee
- Provide an analysis of the attributes of each site considered
- Develop options
- Consider advice provided by key stakeholders
- Provide a final recommendation to the Director-General on the preferred location of a fit for purpose facility on the Tablelands

## **REPORTING**

The independent consultancy team is required to provide fortnightly progress reports to the Director-General of DPI&F. The Steering Committee for the Atherton Tablelands will oversee the consultancy.

The independent consultancy team will also provide a final report to the Director-General of the Department of Primary Industries and Fisheries (DPI&F) which outlines:

- the views of staff and industry
- the considerations that have been taken into account in making the final recommendation
- a final recommendation on the best site to establish an RD&E fit for purpose facility on the Atherton Tablelands

The Director-General will submit the final independent report to the Minister for Primary Industries and Fisheries for his consideration.

## **TIMEFRAME**

The consultancy is to commence on Monday 18 August 2008 and conclude at the end of September 2008 with the submission of the final report to the Director-General of DPI&F.

## **STEERING COMMITTEE FOR THE ATHERTON TABLELANDS**

### **Terms of Reference**

#### **BACKGROUND**

The Minister for Primary Industries and Fisheries, the Honourable Tim Mulherin MP announced a fresh approach to growing Queensland's primary industries in a speech to a Committee for Economic Development of Australia (CEDA) forum in Townsville on 24 June 2008.

The fresh approach initiative refocuses the way DPI&F works to achieve the vision of a \$34 billion industry by 2020 – almost three times today's value.

The fresh approach is based around three pillars:

4. Building skills for our future
5. Delivering innovative research partnerships to grow investment
6. Networking and modernising services

The Minister used his CEDA address to outline his vision for the Atherton Tablelands. Central to plans is to have one purpose built facility on the Tablelands, which capitalises on the uniqueness of the Tablelands and its potential for economic growth and potential opportunities such as molecular bio-pharming, value added food products and tropical products.

The facility would replace the Australian Agricultural College Corporation's (AACC) Mareeba campus and the aging facilities of Kairi, Walkamin and Southedge. To this end, the Minister has committed to an independent review to assess a location for a purpose built facility and its functionality. This review will include detailed consultation with staff, industry and the community. As the Minister stated in his address to CEDA, the facility on the Tablelands could be at a new or one of the above existing sites.

#### **ROLE OF THE STEERING COMMITTEE**

The role of the Steering Committee is as follows:

- ensure effective and inclusive consultation processes are established to maximise industry engagement at a regional level
- report back issues of concern raised by regional constituents
- identify any potential opportunities for future partnerships and investment
- input into and oversee the independent review on the site selection for a purpose built facility on the Tablelands
- provide strategic advice on potential locations for one facility on the Atherton Tablelands to the Tablelands independent review consultancy team

## **MEMBERSHIP**

The Steering Committee will be chaired by the Director-General of the Department of Primary Industries and Fisheries and comprise members from Industry, R&D providers and financial institutions.

## **MEETINGS**

The steering committee will meet at least 3 times over the duration of the Tablelands Review. Committee members will be provided with an agenda prior to each meeting. Committee members will also be provided with minutes of proceedings and decisions of each meeting as soon as practicable after each meeting.

Secretariat support will be provided by DPI&F.

## **TIMEFRAME**

The consultancy will begin on 18 August 2008 and will provide a final report by end of September.

## **SCIENTIFIC ADVISORY GROUP (SAG) FOR THE ATHERTON TABLELANDS**

Terms of Reference 2008

### **BACKGROUND**

The Minister for Primary Industries and Fisheries, the Honourable Tim Mulherin MP announced a fresh approach to growing Queensland's primary industries in a speech to a Committee for Economic Development of Australia (CEDA) forum in Townsville on 24 June 2008.

The fresh approach initiative refocuses the way DPI&F works to achieve the vision of a \$34 billion industry by 2020 – almost three times today's value.

The fresh approach is based around three pillars:

7. Building skills for our future
8. Delivering innovative research partnerships to grow investment
9. Networking and modernising services

The Minister used his CEDA address to outline his vision for the Atherton Tablelands. Central to plans is to have one purpose built facility on the Tablelands, which capitalises on the uniqueness of the Tablelands and its potential for economic growth and potential opportunities such as molecular bio-pharming, value added food products and tropical products.

The facility would replace the Australian Agricultural College Corporation's (AACC) Mareeba campus and the aging facilities of Kairi, Walkamin and Southedge. To this end, the Minister has committed to an independent review to assess a location for a purpose built facility and its functionality. This review will include detailed consultation with staff, industry and the community. As the Minister stated in his address to CEDA, the facility on the Tablelands could be at a new or one of the above existing sites.

### **ROLE**

As part of the overall review, a Scientific Advisory Group (SAG) will also be established for approximately a three month period. The role of the Scientific Advisory Group (SAG) will include:

- Providing technical/ expert advice to the independent consultancy team as required
- Providing science based advice on industry, staff or stakeholder submissions as requested by the independent consultancy team
- Advising the independent consultancy team on the current and future R&D needs on the Atherton Tablelands
- Providing scientific advice to the Tablelands Staff Working Group if necessary
- Co-ordinating input into the review from the wider science-community if required by the independent consultancy team

- Providing advice to the independent consultancy team on the attributes/facility needs at a site located on the Atherton Tablelands to facilitate current and future research needs.

### **COMPOSITION**

The composition of the SAG will comprise a mix of university R&D expertise and Department of Primary Industries and Fisheries R,D&E scientists RD&E program investors with expertise primarily relating to plant and animal science and the National R&D Framework.

### **MEETINGS**

The SAG will meet on an as needs basis as requested by the independent consultancy team. The independent consultancy team may also seek specific scientific/technical advice from individual members of the SAG as required.

### **REPORTING**

Advice provided by the SAG will be reported directly to the independent consultancy team.

## **STAFF SCIENCE GROUP (SSG) FOR THE ATHERTON TABLELANDS**

Terms of Reference 2008

### **BACKGROUND**

The Minister for Primary Industries and Fisheries, the Honourable Tim Mulherin MP announced a fresh approach to growing Queensland's primary industries in a speech to a Committee for Economic Development of Australia (CEDA) forum in Townsville on 24 June 2008.

The fresh approach initiative refocuses the way DPI&F works to achieve the vision of a \$34 billion industry by 2020 – almost three times today's value.

The fresh approach is based around three pillars:

10. Building skills for our future
11. Delivering innovative research partnerships to grow investment
12. Networking and modernising services

The Minister used his CEDA address to outline his vision for the Atherton Tablelands. Central to plans is to have one purpose built facility on the Tablelands, which capitalises on the uniqueness of the Tablelands and its potential for economic growth and potential opportunities such as molecular bio-pharming, value added food products and tropical products.

The facility would replace the Australian Agricultural College Corporation's (AACC) Mareeba campus and the aging facilities of Kairi, Walkamin and Southedge. To this end, the Minister has committed to an independent review to assess a location for a purpose built facility and its functionality. This review will include detailed consultation with staff, industry and the community. As the Minister stated in his address to CEDA, the facility on the Tablelands could be at a new or one of the above existing sites.

### **ROLE**

As part of the overall review, a Staff Science Group (SSG) will also be established for approximately a three month period. The role of the SSG will include:

- Providing technical/ expert advice to the independent consultancy team as required
- Advising the independent consultancy team on the current and future R&D needs on the Atherton Tablelands with reference to the National R&D Framework
- Coordinating input into the review by engaging with their business unit to present a consistent view of future research opportunities
- Providing advice to the independent consultancy team on the attributes/facility needs at a site located on the Atherton Tablelands to facilitate current and future research needs.

## **COMPOSITION**

The composition of the SSG will comprise DPI&F Research and Development staff with expertise primarily relating to plant and animal science as identified by the Regional Director, North and General Managers, Delivery.

## **MEETINGS**

The SSG will meet on with the consultants during their first visit to the Tablelands. Dates for future meetings will be confirmed at the first meeting.

## **REPORTING**

Advice provided by the SSG will be reported directly to the independent consultancy team.

## **Attachment 2 – Maps**