

# Country Noosa

PROMOTING A SUSTAINABLE RURAL FUTURE



## Rural Enterprise Program

### Final Report

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Prepared by



and



Country Noosa is supported by Noosa Council and our partners in the Rural Enterprise Program include:



University of the  
Sunshine Coast



noosa<sup>®</sup>  
biosphere

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## *Executive Summary*

The Rural Enterprise Program (REP) set about to understand and address the knowledge gaps, challenges and opportunities of landowners and community members in the Noosa Shire Hinterland with the overarching aim of enhancing sustainable progress and rural enterprises in the area. This project was run by collaborative partners Country Noosa, University of Sunshine Coast (USC) and Noosa and District Landcare.

Over a twelve month period a series of community workshops were held along with surveys on land use activity and food purchase behaviours. The workshops provided a platform for the community to discuss opportunities and needs that would help improve rural enterprises in the area. Workshop discussions were corroborated with survey results and together, formed ideas for the development of concept papers that would assist greater Rural Enterprise activity and increase knowledge sharing, and in part function as 'how-to' guides for future enterprise. Concept papers were developed for the following; Carbon Farming, Eco-tourism, recreation and farm-based tourism, Mixed Farming and Holistic Management, Small Scale Agriculture and Niche Produce, Sustainable Grazing, Permaculture, Pest and Weed Control, Marketing, Distribution, Collaboration and Networks and History of Agriculture.

Of the 154 respondents to the land use survey, approximately one third had lived on their properties for five years or less. The predominant land use was cattle grazing (25%), with horses, horticulture and chickens also being frequent land uses. Survey responses were also successfully geocoded allowing land use mapping from 2015 to be updated with an addition of 84 new land parcels, an increase of 22%. The updated mapping confirmed existing land clusters and new instances of land use activities and related land owner characteristics. Maps of land use activities around the rural centres of Cooroy, Kin Kin and Pomona have been developed.

Respondents to the food purchase survey were all aged 25 years and over. The majority (26 out of 29) of the respondents indicated that they intended to shop locally. Of the factors that most influenced them purchasing local were, in order: supporting local community, healthiness of food, familiarity, and environmental sustainability. Even though the majority of shopping was carried out at major supermarket chains, a high proportion sourced fruit and vegetables from local markets. Respondents were aware that fruit and vegetables are produced locally but were unable to specify which and identified local produce with markets and certain local stores, however local store owners indicated that their stock is not necessarily locally sourced. Most respondents travelled less than 3km to purchase food. To help improve the purchase of local produce, Country Noosa can help in the development of Noosa hinterland food labelling including a form of eco-labelling. Country Noosa can also facilitate in the development of distribution networks between local producers and local stores.

All nine concept papers have been developed as stand-alone documents available as information guides for the community. With cattle grazing as the predominant land use in the area, the sustainable grazing paper offers valuable information, from a highly knowledgeable local cattle grazer, on what works best for raising beef in the Noosa hinterland. All the basic choices for beef



production are considered including rotational grazing, breed choice, pasture grasses, legumes and weeds and product. A detailed financial model is also provided as a guideline for beef farmers. Opportunities for value-adding are presented including a local yearling beef feasibility study and opportunities for group farming to improve on economies of scale, including a local group farming example across a large area with six farmers using a variety of co-operation techniques. This paper is a must for those considering beef production or already involved in this enterprise.

Land use practices for managing soil, water, vegetation and animals to increase carbon sequestration (carbon storage and capture) and to reduce greenhouse gas emissions are discussed in the carbon farming concept paper. This paper provides an overview of the Australian Government's Emissions Reduction Fund, a scheme offering financial incentives to organisations and individuals to adopt new practices and methods to reduce greenhouse gas emissions. Information on local programs that can assist landowners with environmental management, creating wildlife corridors, protecting habitat are also provided. There are opportunities to carry out research on carbon farming in the Noosa hinterland specifically with the aim of establishing a possible carbon credit revenue stream. For example, the recycling of green waste as a possible carbon sequestration method could be trialled on land that is not currently being used.

For residents of rural Noosa considering an eco-tourism or farm-based tourism business venture, the Eco-tourism concept paper outlines ideas and opportunities. As tourism statistics demonstrate a steady increase in visitor numbers and spending habits, this improves the potential for more eco-and farm-based tourism in the Noosa region, especially combined with existing tourism assets, such as the Noosa Trail Network and Noosa Country Drive. Eco-tourism is generally characterised as low-impact, small scale and ecologically sustainable, with a focus on high-quality experiences that build awareness and appreciation of natural, environmental and cultural assets, and provide socio-economic benefits to local people. With the upgrade of the Noosa Trail Network and the promotion of Noosa Country Drive, visitors that want to experience Noosa away from the typical coastal experience will look for businesses and services that cater for their specific tastes and interests. This may include niche accommodation, food, beverage and cooking, environmental, educational, farm experiences, as well as services catering for the trail network experience, such as bike rental, baggage transport and horse agistment. Complementary businesses include art studios, workshop spaces, day spa and wellness centres. The revitalisation of the Noosa Trail Network also provides specific opportunities to the residents of properties located along the trail networks to cater to the needs of horse riders, mountain bikers and hikers. Many of the trails are long enough to warrant overnight stays, therefore accommodation for hikers and riders, as well as their horses or bikes adjacent to the trail, may increase use of the trails and attract even more 'adventure tourists'. There are currently very few hosts offering short-term horse agistment and farm stays targeted at multi-day walkers, bike or horse riders, therefore there may be an opportunity to diversify into this market. Considerations for short term horse agistment may also include sufficiently large fenced properties with secure shelter; adequate water and feed; and pest-free pasture. Other opportunities for those considering eco-tourism are farm-gate businesses, bike rental and baggage transportation. Success of local farm-gate and trail-based businesses is demonstrated in case studies provided for Cooloola Berries and the Cooloola Farm Trail and Otago Central Rail Trail in New Zealand.

Mixed farming and holistic farm management, small crop farming and the production of niche goods are all an integral part of the region. At Bunya Grove Produce just 57km north of Noosa, mixed farming and holistic farm management practices go hand in hand. A wide variety of products are sold by Bunya Grove Produce at Noosa Farmer markets, Cooroy butchers, Amamoor and Kin Kin



local general stores. The small land size of properties in the region can be seen as a constraint for growing crops. Both Banyan View Farm and Noosa Black are excellent examples of successful cultivation from small areas of land in the Noosa hinterland. The Banyan View Farm case study demonstrates productivity in market garden crops from small land size. Noosa Black produces a niche product of coffee on just under three hectares at Kin Kin. The concept papers also outline emerging opportunities, existing constraints along with useful information links.

The pest and weed control concept paper provides a guide on how to identify, treat, and manage the impact of the primary plant and animal pests in the Noosa region in the short and long term. Resource links are provided from Noosa and District Landcare and Noosa Council on how to manage waste, and case studies detailing examples of common pests and treatment programs in place to manage them are also provided. Noosa Landcare offer land management programs which include education and training on identifying weeds, and other related land maintenance. With a three-year gold membership, Landcare also offers property inspection and pest management plans, and can provide factsheets and information on weeds and how they can be managed on properties. Their services can also be procured to treat and help manage weeds.

Permaculture is also recognized as an important enabler for rural enterprises in region. Local Permaculture case studies are documented the concept paper along with an overview of permaculture definition, concepts and design parameters. For everything on Permaculture, Permaculture Noosa has been formed to encourage and promote permaculture within the Noosa area of the Sunshine Coast of Australia. At monthly meetings, members have stalls of produce and plants for sale. A seed saving bank is available to donate to and to access. There is a library for members to borrow books that relate to permaculture. Every month there is a guest speaker sharing knowledge with the community.

One of the key challenges highlighted by the community was the need to improve marketing and distribution of produce in the region. This specific concept paper provides a number of opportunities and avenues to connect land owners, growers, customers and distributors in the region. Mary Valley Country Harvest is a case study of a local growers cooperative. The cooperative supports a network of small growers, allowing profitability by finding markets for niche products, collaborating to meet production needs, providing training, support and mentoring, coordinating bulk purchase of farming material such as mulch, and facilitating the sharing of processing and storing facilities. Growers share information and work together practically, organising joint educational activities to share new ideas and innovation, administering shared accreditation and organising bulk purchase and sharing materials and services. In this way, small-scale producers can alleviate some of the difficulties that come with their deficit in the economies of scale.

Another case study is The Food and Agribusiness Network (FAN) a member-based not-for-profit that exists to help the industry connect, collaborate, and grow and spans from Moreton Bay, up the Sunshine Coast to Noosa and out to Gympie. It was recently awarded the best small business social enterprise at the Sunshine Coast Small Business Awards. FAN has a vision to double the region's food and agriculture industry by 2030. They aim to do this by actively facilitating collaboration, promoting innovation, and promoting trade in South East Queensland and across the globe. FAN develops strategic partnerships to further the growth and success of their network, and hosts events that connect businesses, distributors, exporters, and consumers across the entire food chain. FAN also offers business development workshops and a six month mentoring program which links FAN



members at different stages of business development. It also features an intensive three month food start up accelerator for high-potential businesses, funded by Advance Queensland. FAN is a powerful advocate for the development of food and agriculture in the region, hoping to raise the profile of the Sunshine Coast to the highest reputation of quality, innovation, and sustainability.

## Summary of Recommendations

Going forward it is recommended that Country Noosa continue to strengthen community collaboration. Community workshop discussions identified that alliances are particularly sought after in the areas of group farming, land sharing, sustainable grazing, equipment sharing, labour sharing, land regeneration, distribution and marketing and carbon farming research. Collaboration in the form of networks of local businesses in the region was also suggested, in an attempt to leverage strength in numbers, to provide both quality tourism experiences year-round, across seasonal changes. Similarly, opportunities for collaboration between farms and hospitality businesses combining paddock to plate ventures were recognised. Country Noosa can build on the existing Cooloola Farm Trail which already attracts approximately 1,200 visitors per year.

For community collaboration, the development of a register of landowners who are interested in resource sharing is recommended. The register would be used as a starting point to determine what type of collaboration might be feasible. Further steps would be the formation of focus groups where landowners volunteer to drive initiatives. An online centralised information hub would be useful for Country Noosa members. The centralised information hub would provide links to the register, focus groups, updates on collaboration initiatives and relevant project funding opportunities. For example

Another key outcome of the REP was the request for further learning to ensure the sustainable progress of rural enterprises in the region. Further education is needed for small crop farming and horticulture, permaculture, pest and weed control, marketing and distribution and business planning (including financial planning). For further learning, knowledge sharing workshops could be held where experienced landowners speaking with newcomers. Country Noosa should continue to organise site visits and farm tours demonstrating successful small scale agriculture, sustainable grazing, mixed farming and niche produce in the region.

To improve Marketing and Distribution challenges, keynote speaker sessions can include members of Food Agribusiness Network, Mary Valley Country Harvest and Food Connect. The Country Noosa website can host an e-learning hub. Along with the concept papers, resource links to local industry groups, training courses, Country Noosa keynote speaker presentations and include ways for newcomers to connect with existing landowners that have volunteered for one on one mentoring in specific areas.

The REP was successful in demonstrating that landowners are well-positioned to build on the Noosa Biosphere Reserve values of conservation, sustainable development and learning.

## ***Introduction***

The Rural Enterprise Program (REP) is an initiative of Country Noosa, which seeks to promote sustainable agriculture, horticulture and other rural enterprises in the Noosa hinterland through field days, workshops, and social events to support and strengthen community cohesion.

The program was delivered over a twelve month period from April 2018 to April 2019 and encompassed the following activities:

- Workshops to engage with the community to uncover rural enterprise opportunities,
- A comprehensive survey designed to understand current and future land use in the Noosa Hinterland area,
- Digital mapping of land use through a GIS mapping system to enable analysis of the current land use and identification of future economic opportunities,
- Consumer behaviour study to identify prevalence of and motivators for local food use and consumption,
- The development of nine concept papers, guided by community input to explore areas of opportunity, enablers and provide information. These papers are to assist greater Rural Enterprise activity and increase knowledge sharing about rural land use in Noosa, and in part function as 'how-to' guides for future enterprise.
- Networking and collaboration opportunities to discuss rural enterprise opportunities and partnerships.

## ***Background***

Historically, Noosa Shire's economy was founded on agriculture, with timber, beef cattle and dairying comprising major industries in the area, followed by significant fruit and vegetable production. There has been a decline in large grazing properties in Noosa Shire with many subdivisions into smaller lots, typically 20 to 60 hectares. A significant proportion of this land has been cleared in the past for grazing. Although there are reforestation opportunities, they are unlikely to cover a large part of the cleared land for economic reasons. Only a few of the big cattle runs of early years remain.

Many of these smaller properties are now owned by new 'lifestyle' farmers who have decided to live in the Hinterland for the quality of life. Typically, they are looking to generate income from the property but supplement the costs with other income. This is necessary as land costs are high due to the popularity, natural environment, and convenience of the Noosa Shire. These contribute to the lifestyle quality we cherish.

Today, contemporary Noosa is a diverse community that maintains some historical industries and land uses, while exploring new ones. More recent history has seen less traditional avenues of agriculture emerge, with ginger, horticulture, macadamias and nurseries thriving across the region. In addition smaller, niche farms producing salad greens, herbs, garlic, native foods and tree nuts now supply the local markets and restaurant industry. Regenerative farming and permaculture practices are popular among a new breed of growers and producers in the region.



The Rural Enterprise Program (REP) is a collaboration between partners: Country Noosa, the University of the Sunshine Coast (USC), and Noosa and District Landcare. The program was funded by Noosa Biosphere Reserve Foundation (NBRF) and project managed by The Social Deck (since August 2018). Advisory services were provided by SOSJ Consulting.

The Noosa Biosphere Reserve Foundation seeks to support a variety of environmentally and economically sustainable rural initiatives and enterprise opportunities to build a positive future for the Noosa hinterland. A biosphere reserve is an area declared by UNESCO as having achieved a notable balance between environment and sustainable development. Biosphere reserves objectives are namely conservation, sustainable development and learning.

In keeping with Noosa Biosphere objectives, the REP aims to address knowledge gaps of the region's current land use and future capacity, and to identify the challenges, opportunities and next steps for sustainable progress.

## ***Approach***

### **Noosa Hinterland Land Use Survey**

A land use activity survey was developed by Dr Claudia Baldwin (USC) and Dr Jeff Hamerlinck (UWYO) in collaboration with an advisory group from Noosa Council, NBR, and Noosa Landcare. Firstly a draft developed using Survey Monkey was piloted, refined, and circulated to the advisory group and other rural circulation lists. It was available online from 19 April to 30 September 2018. USC Urban Design and Town Planning Program students (Georgina Schramm and Jessica Swann) attended the workshops and other country events to encourage survey completion. Paper copies were also made available at four local convenience stores in Cooroy and Pomona. The survey commenced with an explanation of ethical components including confidentiality and de-identification of data.

The target survey respondents were those who live on or manage a rural property in the Noosa shire hinterland (greater than 1 ha in size), or those whose business services rural industry and is located in Noosa shire. Questions generally asked for the following information:

- Current rural land use activities, volume of production, for example, to understand how many people were full-time producers, what they are producing, and those who have common business interests and could collaborate in some way;
- Interest in future opportunities, barriers and constraints
- Identification of the property to determine if collaboration with others in the same vicinity is feasible
- Length of time on the property, age group, internet and mobile phone access.

### **Land Use GIS Mapping**

The purpose of the land use mapping component was to explore the spatial nature of current land use activity patterns in the Noosa shire hinterland, with the goal of identifying patterns and trends beneficial to future economic development and diversification strategies. The primary product of this aspect of the overall study was development of an up-to-date version of Noosa Council's agricultural land use activities GIS data layer. This map had been enhanced by Noosa Shire Council planning staff in 2016, partly based on paper maps annotated in workshops run by Country Noosa in 2015 – those maps were discarded after data entry, and so could not be cross-checked for additional detail in this study.

The approach was to:

- Build on past work completed by Country Noosa and Noosa Council planning staff
- 2015 agricultural lands mapping
- 2016 agricultural land background report
- Collect new land use activity data via online survey and workshop participant and local expert input

The mapping built on Noosa Council's hinterland agricultural lands GIS layer, maintained as a component of the Noosa Council's ArcGIS Enterprise GIS system. Country Noosa contributed data to Noosa Council's mapping system in 2015 using local expert knowledge of the hinterland, captured by annotation of large-scale paper copy maps which were then digitized in 2016 by Noosa Council planning staff into a shapefile format GIS data layer using ArcMap GIS. The data layer was further enhanced through heads-up aerial imagery interpretation and on-screen digitizing. The layer identified the primary land use activities occurring on 373 rural and rural settlement freehold parcels greater than one hectare in size in the Hinterland. Four major agricultural activities were defined: beef cattle; horses; horticulture; other agriculture. Secondary attribute fields provided additional details for each use when available. For instance, several subcategories of horticulture were identified, including macadamia, and citrus. Examples of this mapping are found in the Agriculture and Agricultural Land in Noosa Shire 2016 (Noosa Council 2016).

As part of the current scope of work, data from both the land use survey responses and in-person input from workshop participants and Country Noosa staff were used to develop an updated agricultural land use GIS layer with a refined classification scheme to update and more accurately portray categories of major land use activities. Parcel-specific survey data concerning land use activities were mapped using respondent-provided address information and the geocoding utility in ArcMap 10.4. Additional land use activity information was provided by workshop participants and Country Noosa staff by annotating paper maps and carrying out on-screen attribute editing in one-on-one and small group settings.

The workflow followed for creating the updated hinterland agricultural land use entailed the following primary steps: (a) current Noosa Shire LGA cadastral layer attributed with most up-to-date address information (available from QSpatial geospatial data warehouse); (b) freehold properties selected for hinterland portion of Noosa LGA and a spatial join performed to append 2015/2016 agricultural land use information to parcel polygons; (c) agricultural land use information updated with 2018 workshop and local expert input results; (d) parcel specific survey results geocoded and plotted against land use parcels to verify correct land use activity attribution.

## Round 1 Workshops

Community engagement activities delivered in the previous reporting period included:

- Launch of the program via an information session on Country Noosa projects on 18 April 2018, with 18 people attending.
- An initial round of four workshops in May 2018 with a total of 33 people providing quality discussion and dialogue about rural futures in the Noosa Hinterland. Discussion included current land uses, opportunities for future land use, collaboration opportunities, constraints and needs, and potential topics for concept papers. The workshops were held in Kin Kin, Cooroy, Tewantin and Pomona.

Please see USC's *Rural Enterprise Plan Research Study Final Report* for detailed information on the Survey, GIS mapping and first round of workshops.

## Concept Papers

Following the initial round of workshops, concept paper topics were developed to cover the key priorities and possible opportunities that were identified from the community, stakeholders and project partners. Nine topics were established and approved by the Country Noosa committee and included:

- Carbon farming;
- Eco-tourism, recreation and farm-based tourism;
- Mixed farming and holistic management;
- Small crop agriculture and niche produce;
- Sustainable grazing
- Permaculture;
- Pest and weed control;
- Marketing, distribution, collaboration and networks; and
- History of Agriculture.

## Round 2 Workshops

The second round of workshops were held in Cooroy and Kin Kin from October to November 2018. The first two, on 15 and 22 November at Cooroy Memorial Hall, covered topics of sustainable agriculture, the first under the theme of new products and markets, and the second; collaboration and resource sharing. The third workshop was held at Kin Kin School of Arts Hall and featured a panel discussion on ecotourism, with representatives from Tourism Noosa and Noosa Council.

Invitations were sent to Country Noosa members, individuals and organisations involved in the concept paper research process. The workshop events were also promoted and shared effectively on Facebook via the Country Noosa page. A media release also promoted articles in the Cooroy rag, Noosa News and Noosa Today. Interested community members were guided to an Eventbrite registration page, where numbers were monitored, primarily for catering purposes.

At each of the workshops, presentations were given by experts and usually those who had authored the concept papers. The presentations were followed by a world café group activity in which participants gathered around four separate tables and discussed key actions and next steps for each topic area. These groups were facilitated by people with expertise and/or experience in the topics. Ideas, opportunities and key points were noted by the facilitators on butchers paper as they rotated around each table, spending approximately ten minutes with each group, so that all participants had the chance to contribute to the topics. Participants then 'voted' (using sticky dots) on their top four priorities across the four topics.

## Purchase Intercept Survey

Noosa Council's Local Economic Plan 2015 identified rural enterprise as a priority sector which would 'benefit from leveraging the clean, green credentials of the strong Noosa brand, the emerging Biosphere brand, and the sustainability aspirations of the region. There is also a global trend towards healthy eating, understanding the origins of local food and minimising food miles' for sustainability



reasons (Noosa Council 2015, p.20). Currently the demand for local foods outstrips local supply. There is an opportunity to replace some goods from outside the region with locally produced food. The aim of the overall food miles study was to identify local food use, networks, calculate food miles, and issues regarding food wastage. Undergraduate nutrition students undertook an Intercept survey of shoppers at supermarkets and outdoor markets: Noosa Outlook IGA, Belmondos Organic Market, the Noosa Farmer's Markets and Woolworths Tewantin. Further work is being done to determine food grown at school gardens and school farms and how it is distributed; investigate local sources of food used at local restaurants and restaurants' interest in purchasing local food; and determine if locally produced food is used by local Food banks.

The aim of the intercept study was to:

- gain insight into the purchasing behaviours of Noosa residents in regards to local food,
- identify sources of food people buy at local supermarkets and outdoor markets in Noosa, and
- calculate associated food miles (please note that for the purpose of this project, 'food miles' refers to the distance travelled by the respondents to purchase food).

The survey design was developed by the students using Survey Monkey, with advice from their supervisor. It was pilot tested, refined, and the 5 minute survey was conducted face to face with shoppers at local supermarkets and outdoor markets in the Noosa Shire. The maps were used to provide an indication of respondents' place of residency to calculate food miles. The survey included 14 questions (9 closed and 5 open-ended) asking respondents if they intentionally purchase local goods; whether they were aware of locally produced food; and where do they usually purchase fruit and vegetables. Data was downloaded into an Excel spreadsheet. Quantitative data was produced using Survey Monkey statistics, and qualitative data was coded. A ruler and compass was used to calculate the distances travelled by respondents.

## Results

### Noosa Hinterland Land Use Survey

By close of the online survey on 30 September 2018, 154 responses were received. The following is an outline of results.

#### Property location

Of the 154 responses, 91.5% (141) provided suburb and/or postcode information for their property. Of the 141, 82.5% (116) responses were from locations inside the boundaries of Noosa Shire hinterland study area. The main locations of respondents within Noosa Shire were Cooroy (30%); Pomona (15.5%); Kin Kin (14.8%); and Cooran (8.5%). Of the 116 responses identified as Noosa hinterland rural landowners, 58% (67) included sufficient information (combination of street/road number and/or name, suburb, post code) suitable for geocoding in the GIS.

#### Properties and land uses

The property size of survey respondents ranged from 1 hectares to 200 hectares, with 22 respondents indicating their properties were greater than 40 hectares. The predominant land use (25%) was grazing cattle, with horses, tree crops and chickens also frequent land uses. A number of properties provide some food for the family. A large proportion of respondents reported less intrusive forms of land use: 66% indicated retention of vegetation; 38% revegetation; and 40% have land that has been cleared but is not being used. In particular the 40% with unused cleared land identified this land to be between 8 hectares to 32 hectares.

#### Commercial production

Seventy-six (51%) properties generated sales from cattle, fruit, house rental, sales of chickens or eggs, and wool. Thirteen of the properties were full-time primary producers, 25 were part-time primary producers, and the majority, 106 (70%) described property activities as lifestyle/conservation. Four derived 100% of their income from the property, 14 respondents derived 50% or over of their income from the property.

### Land Use GIS Mapping

An updated Noosa hinterland agriculture land use data layer was created by combining the 2015/2016 map results with the updated (new and/or confirmed) parcel-specific land use information provided by workshop participants and local experts (123 parcels) and the parcel specific attribute data attained from the sixty-seven (67) survey responses that were successfully geocoded and properly matched to Noosa LGA parcel addresses.

Figure 1 shows the original 378 parcels mapped in 2015/2016 (shown in beige) combined with those parcels for which new information was obtained from the workshops (depicted in red) and locations where address specific survey data could also be assessed (black dot symbols).



Table 1 Number of parcels according to primary use.

Land Use Activity	# of Parcels
Beef cattle	272
Horses	69
Horticulture	54
Other animals	11
Forestry	9
Permaculture	8
Dairy cattle	7
Non production rural business e.g. tourism	15
Non production other	17
<b>Total parcels</b>	<b>462</b>

Detail maps have been created for Cooroy, Pomona, and Kin Kin respectively. In the maps below, beef cattle is shown in light red, while horticulture is depicted in yellow, and rural accommodation/tourism in orange (Figure 2, Figure 3 and Figure 4). The Kin Kin detail also includes some forestry parcels (dark green) to the northeast and southeast of town, as well as a concentration of parcels west of Kin Kin devoted to permaculture activities (light green) (Figure 5).

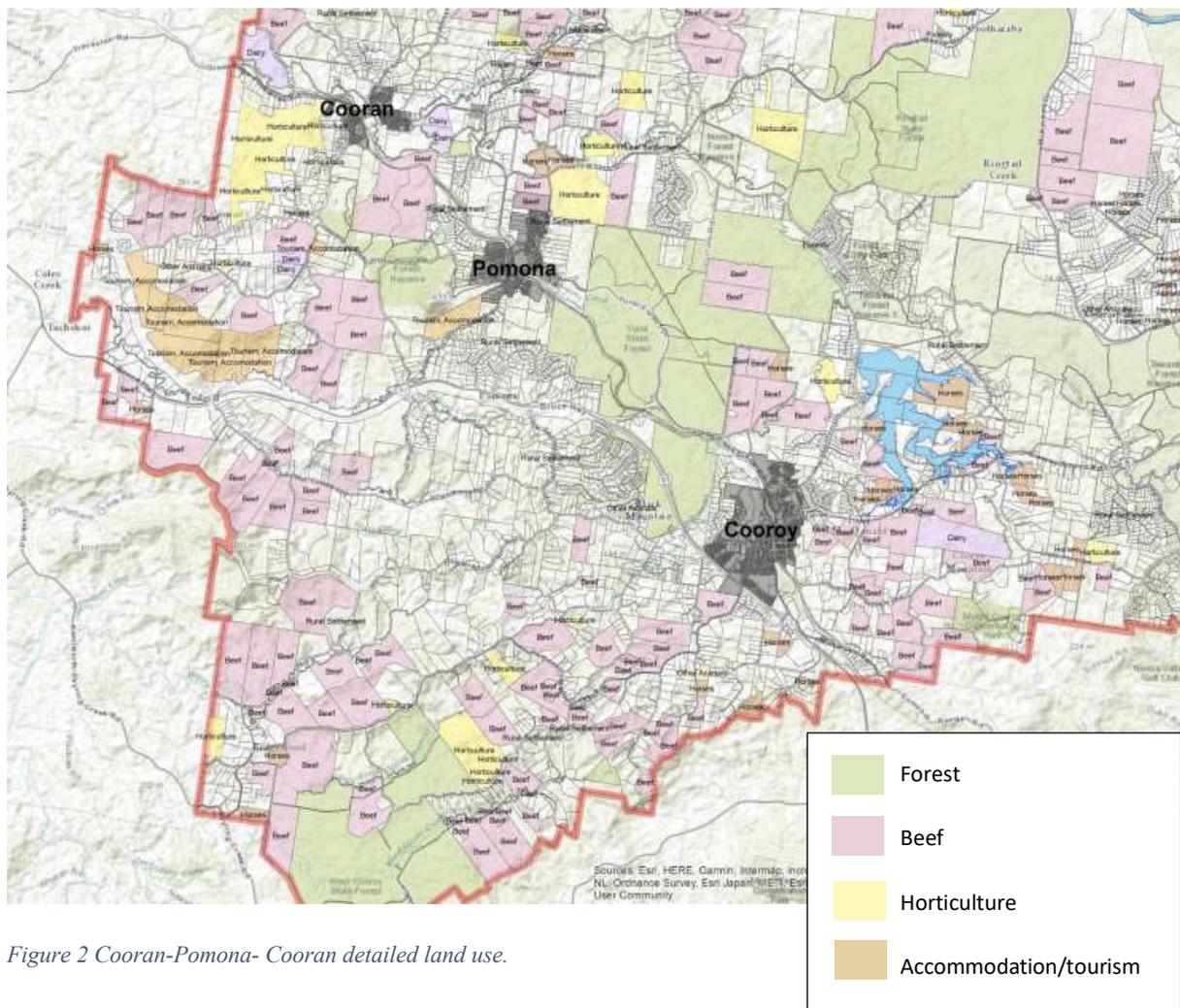


Figure 2 Cooran-Pomona- Cooroy detailed land use.

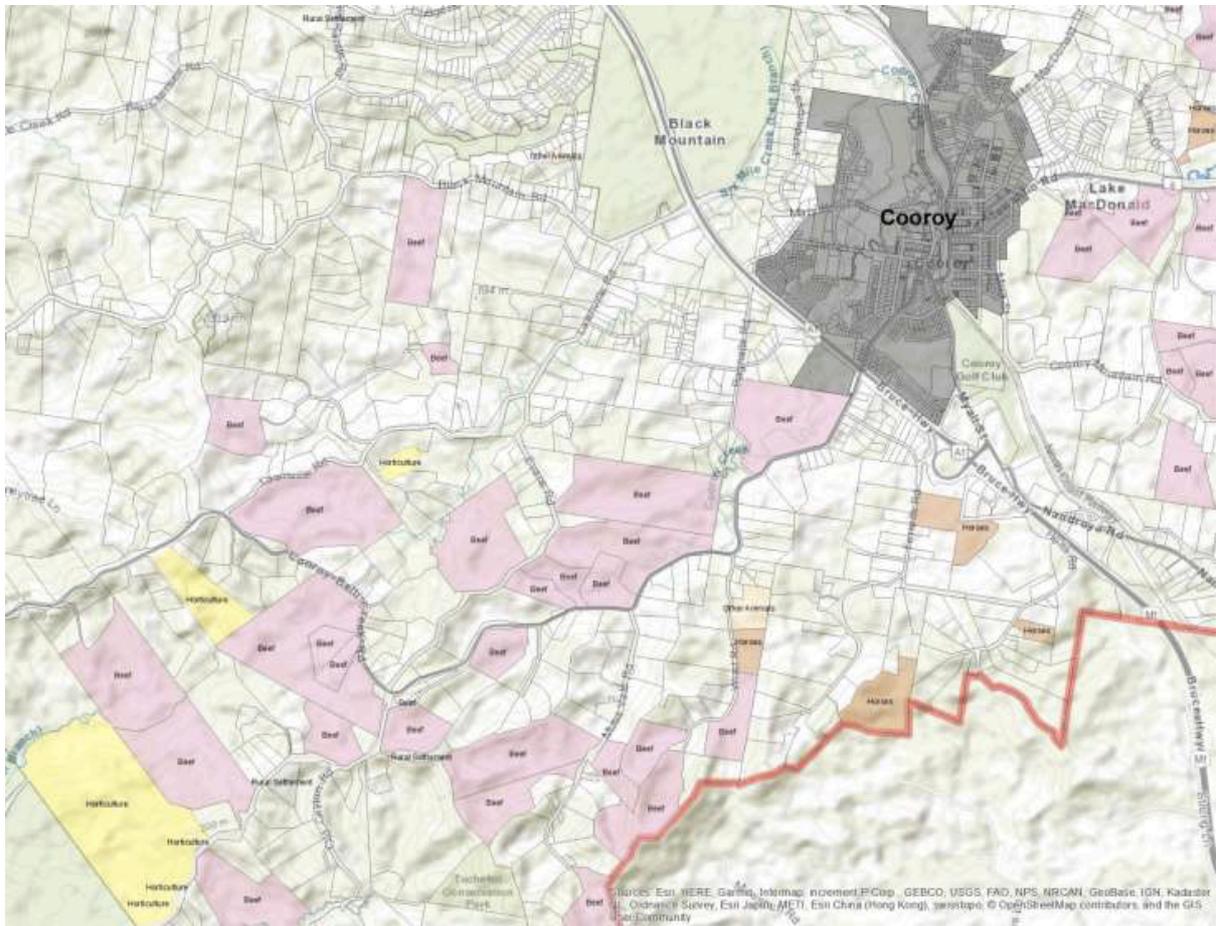
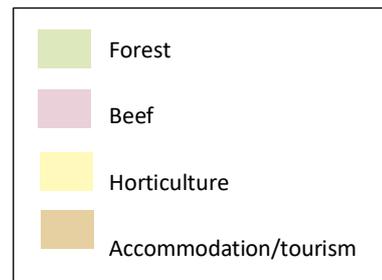


Figure 3 Cooroy Southwest detailed land use.



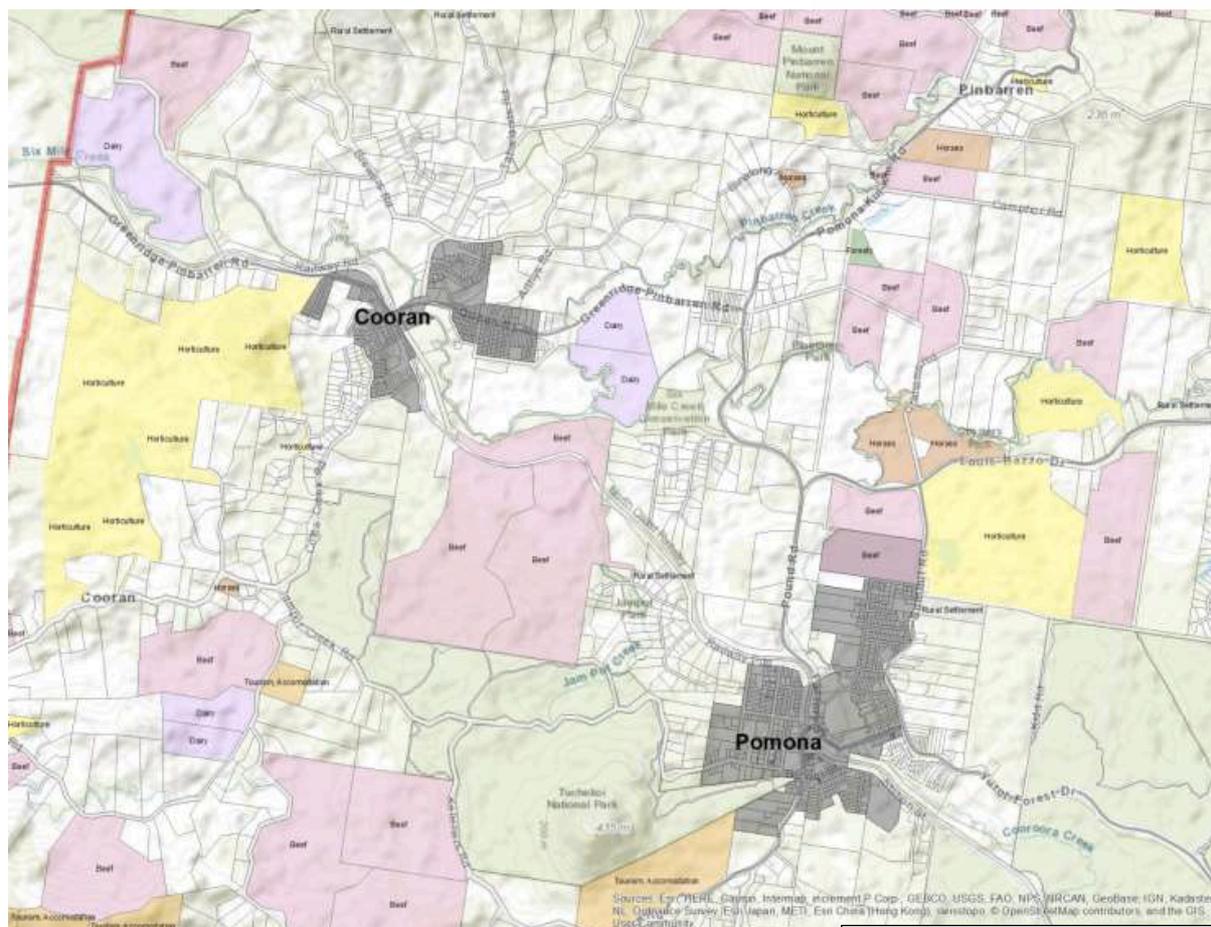
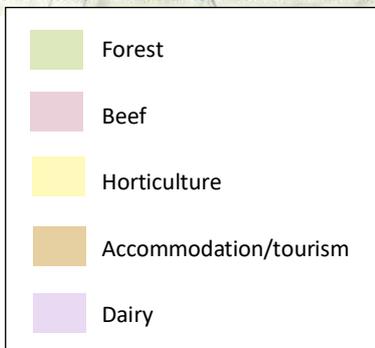


Figure 4 Pomona- Cooran detailed land use.



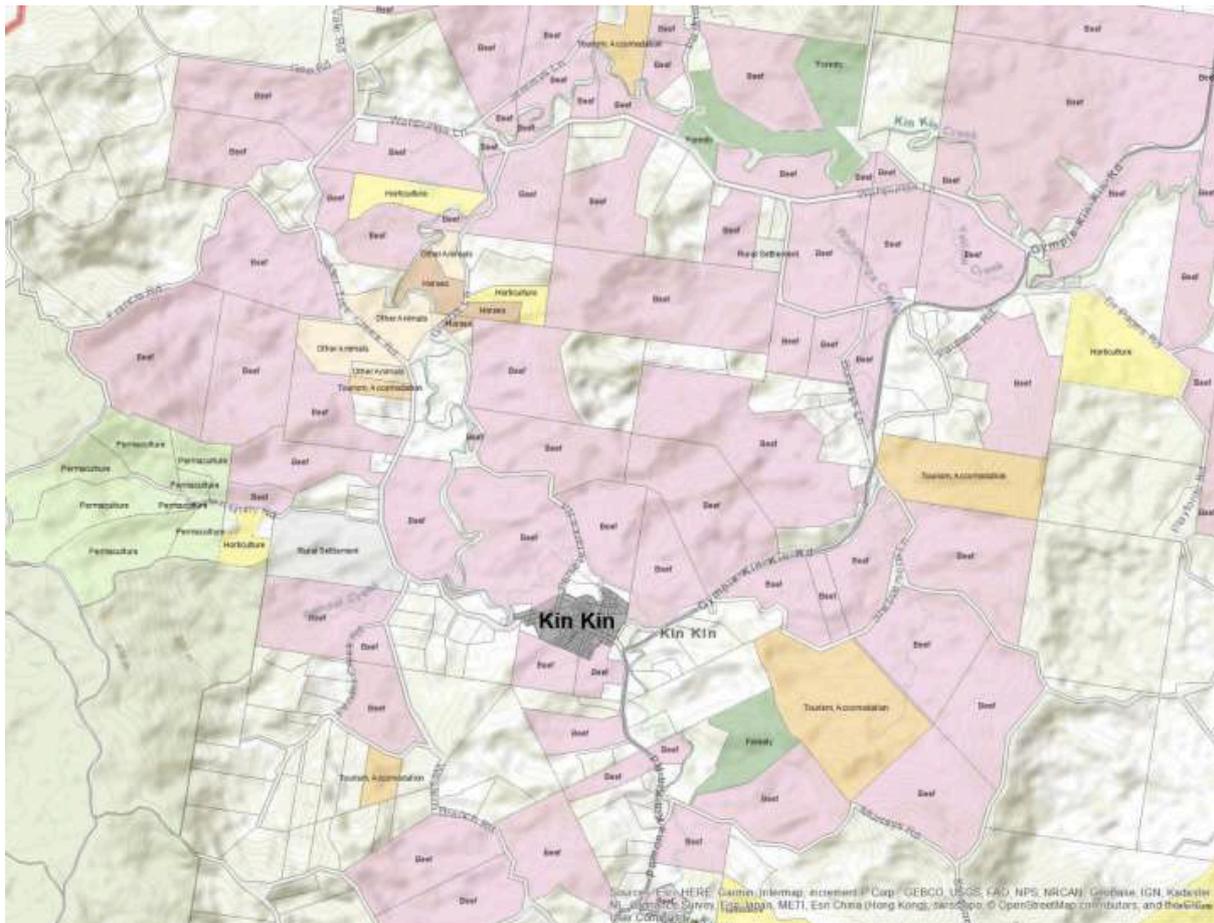


Figure 5 Kin Kin detailed land use.

Certain limitations of the mapping should be recognised, firstly the mapping only focused on the agriculture-oriented activity defined for a particular property and only the primary activity. Similarly intensity was not mapped, for example two parcels may have been mapped as ‘horses’, one property may only have one horse while the other may have 15 head, both are represented in the same way on the map.



Please see USC’s *Rural Enterprise Plan Research Study Final Report* for detailed information on the Survey, GIS mapping and first round of workshops.

## Round 1 Workshops

In early May 2018, a series of four community workshops were held at Kin Kin, Cooroy, Tewantin and Pomona. A total of 33 people attended these workshops.

### Current Land Use

The workshops indicated that current land uses involved a range of farming activities. Not only raising and selling beef cattle and other livestock such as pork (weaners), lambs, goats, and horses, but a range of tree crops (nut and fruit) and small crops (vegetable, herbs for culinary and medicinal use). Other types of activities include beehives for pollination and honey; forestry for timber, accommodation (Bed and Breakfast accommodation, wellness retreats) and home businesses. Many workshop attendees were interested in operating in a sustainable way, being self-sufficient by growing food for their own or neighbours' use, reducing food miles, 'keeping it local'. Some were focussed on improving soil quality for productive purposes 'growing healthy foods from healthy soils' or using permaculture. Others are revegetating habitat with native species for wildlife habitat e.g. blue gums for koala corridor; Nature Refuge, VCA property, conservation, animal release, some on land formerly used as plantations, cattle grazing or horticulture.

### Opportunities regarding future land use

The workshops specified the following opportunities for future land use:

- Livestock: goats, sheep farming (issue of wild animals and foot rot because of damp soil, but could use alpacas for protection); rotation of land for cattle grazing; animal breeding, resting of animals (horses, cattle) on properties – consider share farming to allow resting and rotation of land/animals; agistment while people on holidays or walking Noosa Trail.
- Tree crops such as lychees, mangoes, bananas, feijoa but focus on current market demands
- Increase local produce at local markets
- High demand for herbs and for local food from restaurants and 'foodies'; 'Paddock-Plate' Cooloola concept; need greater branding of local produce. Consider lemon myrtle and lemon grass; essential oils; micro-herbs; native Indigenous violets.
- Consider use of aquaponics/ hydroponics
- Medicinal cannabis plantation
- Native bees, Jelly bush honey, Leptospermum
- Ma-ring-ga tree (food protein, native to Himalayans); potential cooperative drying facility
- Cut flowers –they are seasonal so there is an issue of reliability; need types of flowers that will withstand conditions (drought/wet; access to water); link to supermarkets and Rocklea

### Ecotourism/Heritage/Health and well-ness tourism

The following suggestions were provided for overall tourism and ecotourism ventures:

- Build on Noosa Trail Network by providing different levels of rural accommodation including farm stays, AirBnBs, wellness retreats, cafes, also for horse agistment for users of the trail.



- Offer 3 day Noosa Trail connect where luggage is carried in between locations, special events can be staged (riding, cycling)
- Improve tracks to avoid user clashes e.g. Mountain bike trails wellness clinics and retreats
- Provide better history interpretation around rural towns such as Kin Kin by developing a heritage trail
- Improved land use and regeneration
- Revegetation including plantations for koalas; carbon farming, maintaining positive Carbon Footprint
- Land for research purposes
- Combined multi-use and production systems such as agro-forestry and agro-ecology e.g. mature trees with vegetables underneath, or solar panels with farming or grazing underneath/alongside.

## Collaboration opportunities

Participants identified a number of collaborative ideas that could improve outcomes for landholders, including farm production, marketing and distribution, and revegetation.

- Farm production. Rotational grazing and share farming to allow land to rest, improve production and share workload
- Share knowledge from experience about what crops grow well; make better use of permaculture Group
- Develop a Co-op (e.g. culinary and medicinal herbs) to provide regular supply share food processing
- Distribution cooperative to share and reduce time and cost of transport, but also places (e.g. online forum) where people can share excess produce Interaction with consumers/tourism
- Build links between Noosa Trail Network and farm produce and small businesses that can support each other e.g. a map showing where products/produce is located
- Build links with businesses outside of Shire – Mary Valley Cooperative; other food trails
- Market Kin Kin as a health and nutrition, trail/drive tour destination.
- Improving/revegetation the land
- Share ideas and knowledge regarding land care practices such as animal and plant pest control and greater use of human waste and building soil quality
- Coordinate small holdings for carbon farming initiatives
- Local expertise to help with rural finance, marketing and risk assessment
- Incubator start-ups (“Grow Coastal”), using Peregian hub or the University of the Sunshine Coast Innovation Centre

## Constraints and Needs

The following needs/ constraints were raised:

- Need a cooperative approach among neighbours regarding animal and plant pest control
- Need more education/information about appropriate crops consistent with soil quality, weather
- Need to link producers to processors, marketers or consumers. e.g. where to sell, branding
- Need for forums to get together, share ideas and information, share produce, foster local collaboration and resilience

- Need to improve understanding about Noosa Council zoning/land classification and infrastructure needs; need info before buying land; need commitment by Council for forestry/carbon zone
- Need a way to manage potential conflicts
- noise, odours; implications of Vegetation Act changes
- Need to hire labourers/workers collaboratively
- Investigate sharing equipment to reduce costs
- Better understanding of produce profitability
- Better understanding of certification/accreditation
- Some areas need better mobile/internet coverage

Please see USC's *Rural Enterprise Plan Research Study Final Report* for detailed information on the Survey, GIS mapping and first round of workshops.

## Round 2 Workshops

### Workshop 1 - Sustainable agriculture: new products and markets

Thirty-eight attendees gathered at Cooroy Memorial Hall on 15 November 2018 for the first of three workshops (Figure 6), marking the start of the second round of community engagement for the REP. This workshop featured information from research and discussions on the concept paper topics of **small-crop farming, permaculture, carbon farming and holistic farm management**. The workshop included presentations about opportunities and enablers across these topics for the community/region in new and emerging products and markets. Presentations were given on carbon farming, holistic management and small-crop farming by Dr Sandra O'Sullivan (SOSJ Consulting), in addition to a survey and purchase intercept survey update by Professor Claudia Baldwin (USC). This was followed by a world café group activity in which participants gathered around four separate tables and discussed key actions and next steps for each topic area.



*Figure 6. Workshop 1 - Sustainable agriculture - New products and markets*

## Workshop Analysis

The most highly prioritised opportunities or needs identified by workshop participants included:

- New method proposed for measuring increased soil carbon from planned grazing, dry matter measurement. This was identified as a missing approved methodology under the Australian Government’s Emissions Reduction Fund (5 points - Carbon farming)
- Possibility for landowners to apply for carbon credits under the Emissions Reduction Fund as an ‘Aggregate’, small holdings grouping together (4 points – Carbon Farming)
- Mentor services (6 points - small farms/niche produce)
- Business training for small crop farmers: Horticulture training services (6 points - small farms/niche produce)
- Soil testing and monitoring for real evidence, hard evidence (9 points - Holistic management)
- Co-op markets for selling produce. Where are they? Need a list directory (or Permaculture Noosa starts one?) (8 points - Permaculture)
- Need introductory permaculture workshops with Country Noosa (8 points - Permaculture).

In the case of carbon farming, a number of participants were interested in particular facets of carbon farming, specifically the ability to measure carbon content of soil, which appears to be missing in support given under the Australian Government’s Emission Reduction Fund (ERF). Similarly, the highest priority interest in holistic farming was more support and resources for soil testing and monitoring to provide evidence to inform holistic management practices and their impact on soil and plant nutrition.

Training for horticulture business was identified as a high priority, alongside the need for mentoring services to support growing sustainable agriculture enterprise. Similarly, participants called for introductory courses to permaculture with Country Noosa. Participants also recognised a need for increased awareness and information on co-operatives and markets. The group recognised a number of markets in the region, but suggested the value of having them brought together in a list, with Permaculture Noosa proposed as the local group potentially responsible for its development.

*Please see Workshop 2 Final Report for more detailed (World Café) outcomes.*

## Workshop 2: Sustainable agriculture: collaboration and resource sharing

Twenty three participants attended the second workshop at Cooroy Memoria Hall on 22nd November 2018 (Figure 7) to discuss key points across the topics of: **local networks, shared marketing and distribution, circular economy and sustainable grazing**. After introductions and information about the project, there were presentations from Dick Barnes (Treasurer of Country Noosa) on sustainable grazing, and Helen Andrews on some opportunities for collaboration and sharing resources. In particular, Helen spoke about the Food and Agribusiness Network (FAN) and her social enterprise, Spare Harvest – a local online food and garden resource-sharing marketplace. Local experts again assisted with the facilitation (Martin Duncan, Jason Virtue, Helen Andrew and Dick Barnes, respectively). The final portion of the workshop was again dedicated to the world café activity, in which participants gathered around three topics: collaboration, culture & history, and ecotourism/recreational tourism. As in the previous workshops, participants ‘voted’ on their top four priorities across the topics.



Figure 7. Workshop 2 -collaboration and resource sharing

### Workshop Analysis

The most highly prioritised opportunities or needs identified by workshop participants included:

- Distribution Network/Centre - missing link, we need this to move forward (15 votes - Local Networks)
- Commercial kitchen available for community use (i.e. Kandanga Kitchen, Kin Kin State School, Cooran Hall) (Local Networks)
- A person who coordinates between producers and super market buyers (private or co-op business) (8 votes – marketing and distribution)
- Training, marketing, customer identification (8 votes – marketing and distribution)
- Commercial community kitchen allied to community gardens (8 votes – marketing and distribution)
- Register of landholders wanting to share land: with a de-risk process, with a facilitator, appropriate insurance and land-share template (8 votes – circular economy).

Low prioritisation overall of sustainable grazing points may be due to the specificity of the topic, which would draw interest mostly from those with particular interest in animal farming, whereas the other topics are applicable to more general farming interest. The most highly prioritised idea was a centralised hub for information and support on marketing, distribution, equipment and other links for sustainable grazing.

A desire for collaboration and tools to facilitate community and industry connections for better/easier distribution, marketing, processing and land-sharing is a consistent theme across the key ideas raised and prioritised by the workshop group. This may be due to the region's transition from traditional agricultural structures to greater fragmentation into smaller parcels of land, and changing farming practices and communities. For example, one popular point was the usefulness of a community kitchen, in which niche products and produce from small farms could be properly and legally processed for sale. Overall participants demonstrated interest in a variety of sustainable

agricultural practices, most of which support small land holdings and polyculture systems and also promote collaboration of enterprises.

### Workshop 3: Eco-tourism

This workshop was also well attended, with twenty-eight participants engaged in discussion at Kin Kin Hall on 3rd December 2018 (Figure 8). Again, an introduction to the project was provided, followed by a presentation by Claudia Baldwin (USC) on the food miles and land survey projects and some planning information from council.



*Figure 8. Workshop 2 - Ecotourism*

A panel discussion featured Jodie Williams (Kin Kin General Store), Juanita Bloomfield (Tourism Noosa), Martin Duncan (Country Noosa, FAN) and Claudia Baldwin (USC). This discussion was opened up to the whole group, who were able to ask questions of panel members, followed by morning tea. The final portion of the workshop was again dedicated to the world café activity, in which participants gathered around three topics: **collaboration, culture & history, and ecotourism/recreational tourism**. As in the previous workshops, participants ‘voted’ on their top four priorities across the topics.

#### *Workshop analysis*

The most highly prioritised opportunities or needs identified by workshop participants included:

- Network of local businesses (product and seasonality) (3 points - Collaboration)
- Engage Indigenous: Economic/tourism advantages, dance, place, explanation, story, experience, bush food, mountains. Authenticity - organised by Indigenous. (7 points, history/culture)
- Use State Plan (section 46 application) to show that to a certain point can acknowledge self-assessment rights (not expensive dev applications) (7 points - Eco/recreational tourism)
- Noosa Plan and TN - how and where to put tiny houses on trails - self seeding model (6 points - eco/recreational tourism)
- Paddock to plate tourism - cluster of small businesses - café, bakery, farm shop (5 points - eco/recreational tourism).



The proposed idea for a network of local businesses was most highly prioritised. It aligns with the themes that are in previous workshops around developing tools to support and build community collaboration. This network of local business in the region leverages strength in numbers to provide quality tourism experiences year-round, across seasonal changes. This is particularly relevant for the recreational activities such as those linked to the trails network, as they depend upon seasonal weather fluctuation. Similarly, participants noted the value of collaboration between farms and hospitality business combining in paddock to plate ventures.

Involving the local Aboriginal community in tourism opportunities and promoting Indigenous heritage, culture and connection with the land, was a recurring theme throughout the workshop. This would not only help to guide ecotourism in the region in healthy ways that recognise and preserve indigenous history, but also leverage tourist interest in Aboriginal culture and history of the region that could have commercial potential. It was noted that an authentic approach is needed, ensuring Aboriginal people are able to lead these opportunities.

Jodie Williams from Kin Kin general store and black ant catering provided insight into her journey in business and implored those interested in business ventures to start small and grow in phases, follow a business plan and bring customers on the journey with you. Tourism Noosa's community and sustainability officer, Juanita Bloomfield, explained the challenge of diverting tourism inland from Noosa, as a hugely popular beach and coastal destination. Juanita also reiterated Tourism Noosa's capacity to support events that would attract visitors to the region. Martin Duncan of Country Noosa, Slow Food Noosa and the Food and advocate for the food and Agribusiness network (FAN) emphasises the recent good work coming out of the Noosa Country Drive initiative and the opportunity there for new rural enterprise to be involved. USC's Claudia Baldwin noted the need for improved disability access across the region, and the potential economic value of this market, who may be more likely to travel in the off-season and bring family and carers.

## Purchase Intercept Survey

Survey respondents were all aged 25 years and over with the majority (75%) over 45 years. The results of the purchase intercept survey were based on 29 respondents, 12 were male, 17 female and all aged 25 years and above, as shown in Figure 9. More than half indicated that it was important for them to shop locally with 89% indicating that they intend to shop locally. (Figure 10 & Figure 11). Reasons respondents gave for intentionally purchasing local produce were

- More likely organic/spray free
- Better quality/ fresher
- Support the environment
- Support the local farmers/ community
- Prefer to spend more money on better quality produce
- Waste reduction

Reason respondents gave for not intentionally purchasing local were:

- Local is generally more expensive as majority of food is also organic or 'spray-free'.
- Not as convenient as shopping at the supermarket.

Age of Respondents

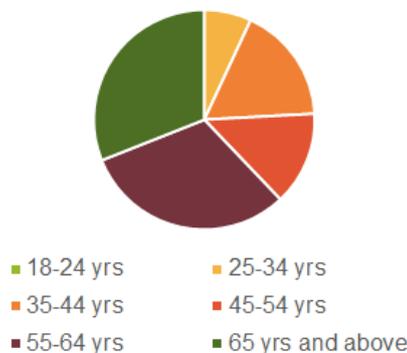


Figure 9 Age of Respondents.

Many respondent were aware that fruit and vegetables are grown locally but many were unable to specify which (Figure 12). Respondents identified produce from farmers markets and organic stores such as Belmondos Organic Market and Organika as 'local'.

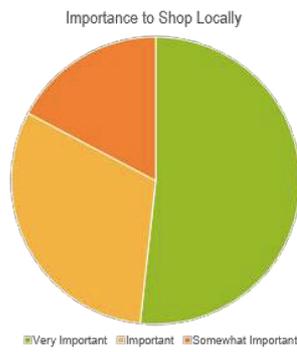


Figure 10 Importance to shop locally.

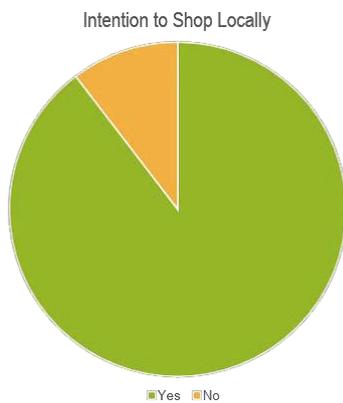


Figure 11 Intention to shop locally.

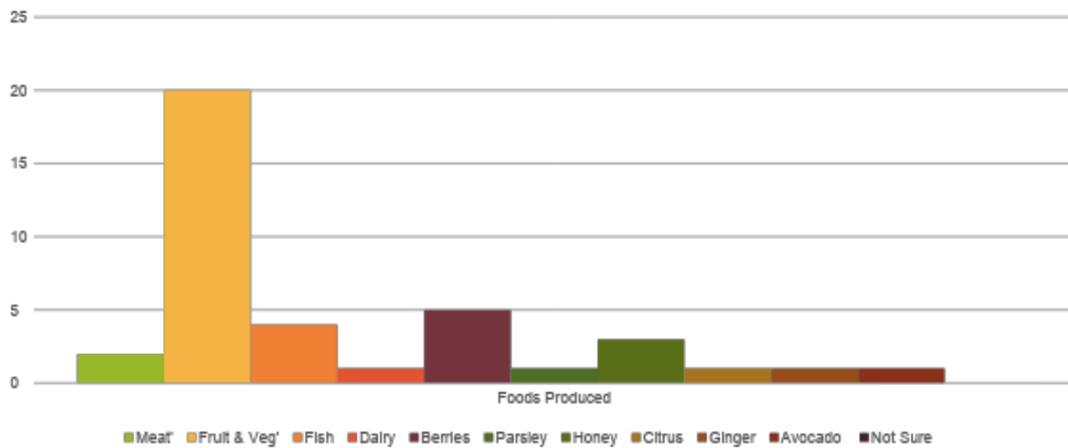


Figure 12 Awareness of locally produced food.

Of the factors that most influenced them purchasing local were, in order, supporting local communities, healthiness of food, familiarity and environmentally sustainability. Factors such as customer convenience, price, social norms and culture were less important (Figure 13). While most

food shopping was at the major supermarkets, the majority of fruit and vegetable purchases were made at local markets (Figure 14). Figure 15 shows the distance travelled (food miles) by survey respondents. The majority of respondents travelled less than 3km to purchase food.

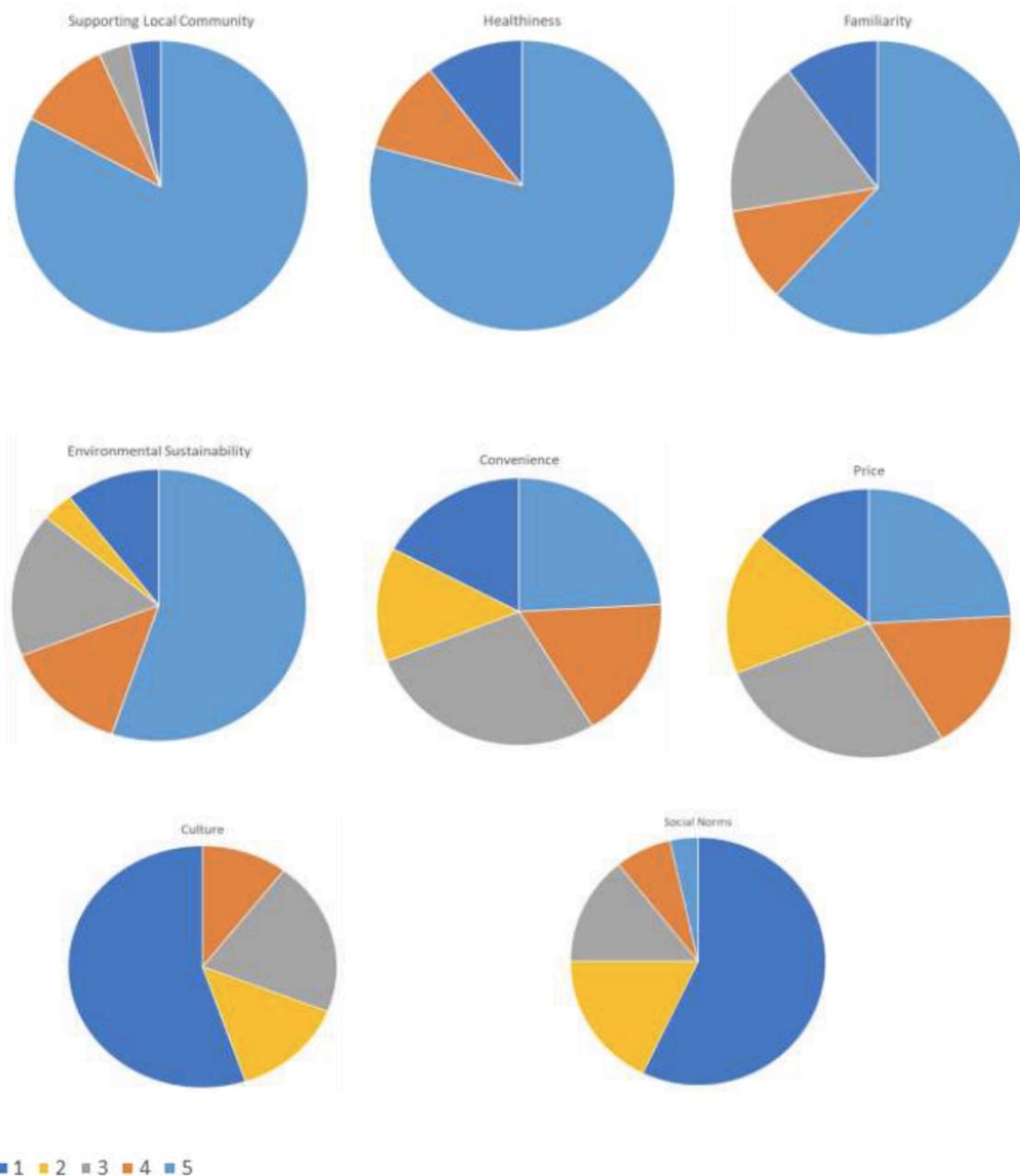


Figure 13 Factors influencing local purchase. 1= not very influential, 5 = very influential.

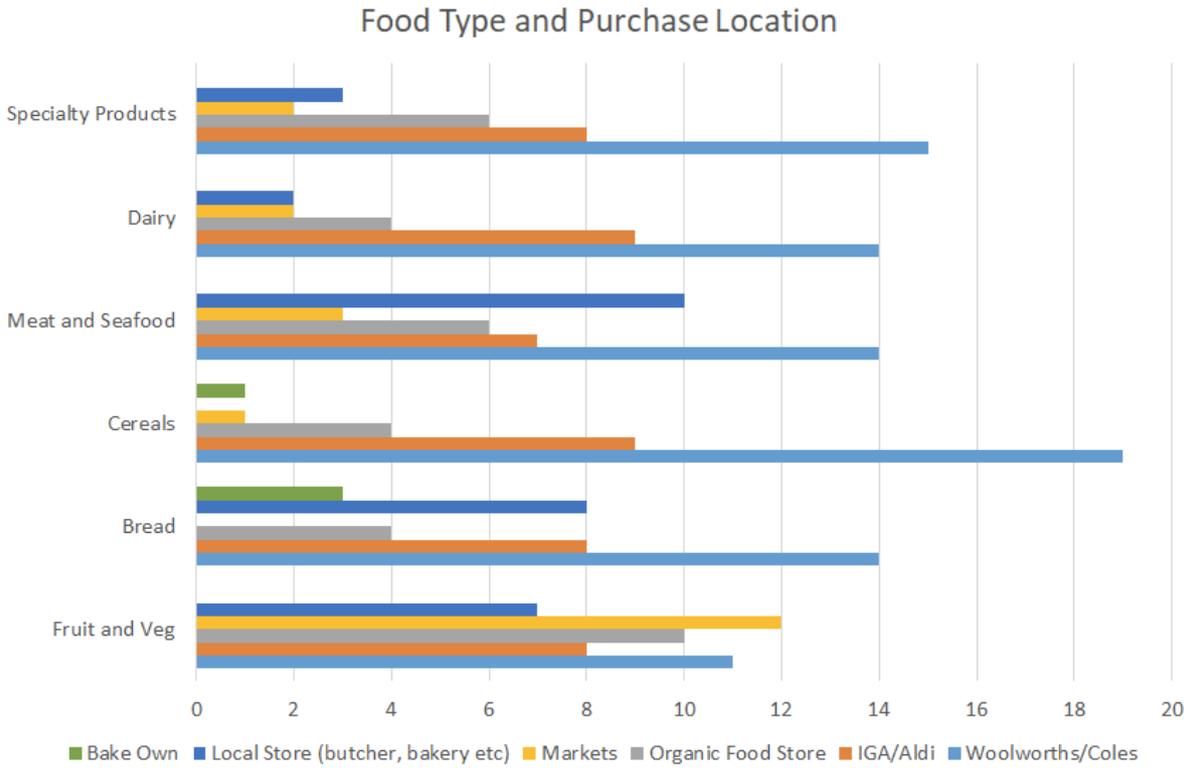


Figure 14 Location of food purchases.

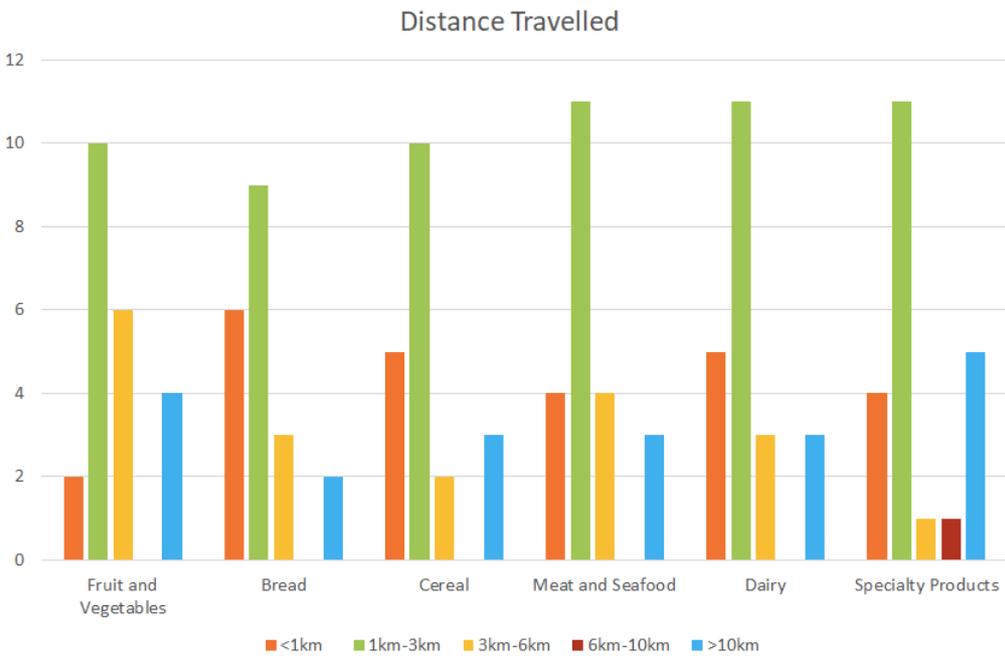


Figure 15 Distance travelled by survey respondents to purchase food.

## Concept Papers

Concept papers topics can be considered as opportunities and/or enablers. **Opportunities** can be defined as new prospects or openings for landowners living in the Noosa hinterland for example Sustainable Grazing, Carbon Farming, Ecotourism, Holistic Management, Small scale farming and niche products. **Enablers** can be defined as important in assisting, facilitating and empowering current and existing activities and land use practices for example Permaculture, Pest and weed control and Marketing and distribution. The concept paper on History of Agriculture provides a well-documented description of past agricultural practices in the Noosa Shire and possible influences on today's opportunities.

### Carbon Farming

Carbon Farming is the process of managing soil, water, vegetation and animals to increase carbon sequestration (carbon storage and capture) and to reduce greenhouse gas emissions. Increasing carbon in the soils leads to improved soil quality, soil fertility and more productive land. Carbon Farming can range from changing or introducing a single land use practice or incorporating several land use practices together that are designed to reduce greenhouse gas emissions. Some common agricultural practices such as tilling and overgrazing can remove carbon from the soil and return carbon to the atmosphere (Figure 16).

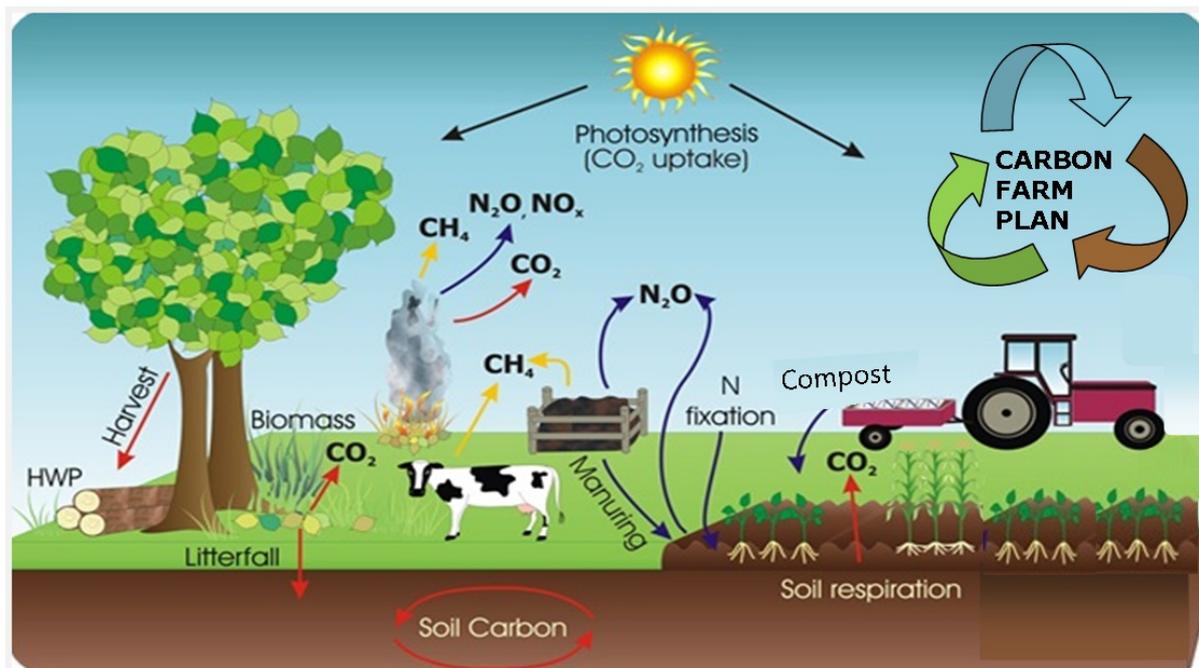


Figure 16 Source: Intergovernmental Panel for Climate Change (IPCC)

The Australian Government's Emissions Reduction Fund (ERF) has been established to help reduce Australia's greenhouse gas emissions and promotes carbon farming practices. The ERF allows projects to generate carbon credits for revenue, however economic viability is based on economies of scale. With the existence of smaller land parcels in the Noosa hinterland current ERF



opportunities are limiting. However there is an avenue for smaller holdings to aggregate together and apply as a single platform to earn carbon credits. There are also opportunities for landholders to voluntarily increase carbon in the soil. Noosa Council and Noosa Landcare run voluntary programs such as Land for Wildlife. Further research is much needed in Carbon Farming specifically around creating new carbon markets and soil carbon testing methods.

For further information please see Appendix 3 *Concept Paper Carbon Farming* by Dr Sandra O' Sullivan (SOSJ Consulting) Appendix 3.

## Eco-tourism, Recreation and Farm-based tourism

For residents of rural Noosa considering an eco-tourism or farm-based tourism business venture, this paper outlines ideas and opportunities in the Noosa hinterland region. It includes short stay visitor accommodation, either in a home-stay or bed and breakfast, businesses promoting local produce, such as farm-gate sales, pick-your-own businesses, and cafés and associated agribusinesses. This paper discusses the planning and zoning requirements and constraints associated with rural and rural settlement areas in the Noosa hinterland region to inform new development. Two case studies, one local, the other international, are used to inspire new businesses and provide insight into viability of farm-gate and trail-based opportunities. Finally, resources and links are included for those seeking further information.

For further information please see Appendix 3 *Concept Paper Eco-tourism, recreation and farm-based tourism*

## Mixed Farming and Holistic Management

This concept paper aims to provide high-level information on mixed farming and holistic management to existing or potential new landowners in the Noosa Shire Hinterland as part of the Noosa Rural Enterprise Plan. Information links to holistic management training are also provided. Case studies are documented including Bunya Grove Produce (pictured below), just 57 kilometres from Noosa. This farm runs farm tours, supplies to local markets and has been successful in increasing capacity through holistic management.

For further information please see Appendix 3 *Concept Paper Mixed Farming and Holistic Management* by Dr Sandra O' Sullivan (SOSJ Consulting) and Jason Virtue.



### Small scale agriculture and niche products

The Noosa hinterland is mainly comprised of smaller lots particularly suitable for various types of small scale agriculture and creation of niche products. Banyan View Farm Case Study provides an excellent example of cultivation on a small area of land for market garden crops. The second case study is of a niche product, Noosa Black coffee grown at Kin Kin, in the Noosa hinterland on just under three hectares. The paper also summarises new opportunities, constraints and includes useful information links for grower advice, industry associations, certifying bodies and marketing co-operatives.

For further information please see Appendix 3 *Concept Paper Small Scale Agriculture and Niche Produce* by Dr Sandra O' Sullivan (SOSJ Consulting) with Nina Saxton

### Sustainable Grazing

This concept paper authored by local expert Dick Barnes describes what works best for raising beef in the Noosa hinterland. The discussion highlights the significance of rotational grazing of cattle, breed type and pasture requirements. The concept paper provides invaluable information on further opportunities and feasibility studies being currently conducted by Country Noosa such as Yearling Beef which is funded by Noosa Council. The idea of group farming is also raised.

For further information please see Appendix 3 *Concept Paper Sustainable Grazing in the Noosa hinterland and surrounding areas* by Dick Barnes.

### Permaculture

This concept outlines the key methods and basics of Permaculture but more importantly provides information links to local associations that have been established to promote and support those



interesting in Permaculture. For example Permaculture Noosa holds monthly meetings, has a library, holds a market and also has a seed bank available.

For further information please see Appendix 3 *Concept Paper Permaculture* by Bill Berry (Permaculture Noosa), Tom and Zaia Kendall (Kendall Permaculture, Permaculture Research Institute Sunshine Coast).

## Pest & Weed Control

This information piece covers the topics of pest and weed control and waste management. It outlines some of the primary plant and animal pests of the region, and provide links to resources on how to identify, treat, and manage their impact in the short and long term. It also provide links to important information from Noosa Council on how to manage waste, and case studies detailing examples of common pests and treatment programs in place to manage them.

For further information please see Appendix 3 *Concept Paper Pest & Weed Control* by The Social Deck with support from Phil Moran (Noosa District Landcare) and Ken English (Noosa Council)

## Marketing, Distribution, Collaboration and Networks.

Discussions and outcomes from initial REP workshops uncovered the need to improve on collaboration and resource sharing. A number of opportunities and avenues to connection between land owners, growers, customers and distributors in the region are documented.

*For further information please see Appendix 3 Concept Paper Marketing, Distribution, Collaboration and Networks by The Social Deck.*

## Information: History of agriculture

The concept paper on the history of agriculture in the Noosa Shire gives a detailed account of when different types of agriculture were introduced to the region. It provides a well-documented description of indigenous agriculture practices followed by attempts carried out by the first European settlers. The concept paper provides industry snapshots for the Noosa area including information on timber logging with the first sawmill operating from 1871 to 1892, followed by commercial dairy in the late 1890s, cattle grazing, bananas, and lastly pasture seed production peaking in the mid-1960's to 1970s.

*For further information please see Appendix 3 Concept Paper History of Agriculture by Brian O' Connor and John News.*



## Discussion

Through community engagement and research, the Rural Enterprise Program has been successful in building a more informed picture of current land use activities, challenges and opportunities for landowners in the Noosa hinterland.

## Collaboration

**Community collaboration** was a recurring theme of all the community workshops. This desire for improved local community resilience was called for particularly in the areas of resource sharing, group farming, equipment and labour sharing, carbon farming research, marketing and distribution and in general the spreading of best practices throughout the community. Stronger alliances were called for between local businesses to form networks, in an attempt to leverage strength in numbers, to provide both quality tourism experiences year-round and also to reduce costs for distribution of produce. There was discussion around collaboration between farms and hospitality businesses to form paddock to plate ventures which could form an additional revenue stream in the Noosa hinterland.

Country Noosa is perfectly poised to improve community collaboration and help build resilience. An initial approach would be the development of a register of landowners that are interested in resource sharing. The register would allow landowners to convey interest in resource sharing and also specify interest area whether it be group farming, land sharing, sustainable grazing, equipment sharing, labour sharing, land regeneration, ecotourism network (recreational trails and paddock to plate ventures), distribution network and participation in carbon farming research. Country Noosa could use this register to determine what type of collaboration might be feasible. Focus groups could then be established to drive a range of initiatives. For improving Marketing and Distribution a Noosa Hinterland Product Brand could be considered. For example food miles and eco-labelling could further leverage Noosa Biosphere values with carbon footprint of farm activities considered along with distance travelled by produce to market or local store.

A key finding of the land use surveys are that landowners are well-positioned to build on Noosa Biosphere Reserve values. The vast majority are interested in sustainable production, land regeneration and conservation. Compared to the past, Noosa hinterland is mainly comprised of smaller parcels of land mainly 20 to 60 hectares in size. The REP land use survey results and GIS mapping spatial tool are both particularly useful in identifying clusters of land activity. This spatial tool could be used in conjunction with landowner register for targeted project planning. For example areas identified as tourism and horticulture could be grouped together for forming networks for paddock to plate ventures.

An additional outcome of Round 2 Workshops was an interest for further research into new sustainable revenue streams for the Noosa hinterland. For example discussions around Carbon Farming highlighted the need for the development of a repeatable carbon soil testing method. To execute this in the Noosa hinterland, a pilot study could be conducted on existing parcels of cleared and unused land, several of which have already been identified in the REP Noosa Hinterland Land Use Survey. An aggregation approach would assist with the economic viability of such a study. The



research could lead to a carbon credit revenue stream under the Australian Government's Emissions Reduction Fund (ERF).

## Further Learning

**Further learning** was another area that was highly prioritised at the community workshops. There is an opportunity for Country Noosa to take the lead in holding training events, speaker sessions and facilitating one on one mentoring. The Country Noosa website can include an e-learning hub with links to concept papers, links to local industry groups, training courses, keynote speaker presentations and include ways for newcomers to connect with existing landowners that have volunteered for one on one mentoring in specific areas.

The REP identified knowledge gaps and the need for training in the following areas:

- Small Crop Farming (Horticulture, grower information and economics);
- Permaculture;
- Pest and Weed Control;
- Marketing and Distribution (accreditation, product branding, where to sell) and
- Business Mentoring and Business Planning including financial planning.

Further learning events could involve keynote speakers, examples could be Noosa and District Landcare, Noosa Council, Food and Agribusiness Network, Sunfresh, Mary Valley Co-operative and Food Connect. An additional benefit of these activities would be to help build links with those outside of the Noosa hinterland area.

The REP has been successful in understanding current land use activities, challenges and the appetite of landowners for future sustainable development in the Noosa hinterland. Overall there is a strong desire for community collaboration and further learning in all areas of conservation, and sustainable development, all in keeping with Noosa Biosphere values.

## Recommendations

### Collaboration

To help improve community collaboration, it is recommended:

- that Country Noosa develop a **register** of landowners who are interested in being involved in opportunities for **resource sharing**;
- that the register clearly outline interest in the following **resource sharing** opportunities: group farming, land sharing, sustainable grazing, equipment sharing, labour sharing, land regeneration, ecotourism network (recreational trails and paddock to plate ventures), distribution network and participation in carbon farming research;
- that information collated in the register be used to form **focus groups** aimed at driving these opportunities and tasked with developing specific action plans;
- that REP **land use GIS mapping** be used in conjunction with the register for **specific project planning workshops**;
- that a pilot study be conducted to investigate the use of **green waste** (compost) to improve soil quality and enhance carbon sequestration, while also developing robust carbon soil testing methodology. The overall aim would be to develop a viable carbon market opportunity under the Emissions Reduction Fund;
- that ways of improving **distribution and marketing** of produce be investigated. One such improvement could be development of branding for Noosa hinterland produce, a type of eco-labelling including calculation of food miles (carbon footprint) and another option would be the development of a produce distribution network; and
- that a **centralised information hub** be developed as part of Country Noosa website which would provide information links to the register, focus groups, collaboration initiatives and relevant funding opportunities in local government, state and federal.

### Further Learning

Further learning is needed for:

- Small Crop Farming;
- Permaculture;
- Pest and Weed Control;
- Marketing and Distribution and
- Business Mentoring and Business Planning including financial planning.

Further learning can be promoted through:

- **knowledge sharing workshop** allowing experienced landowners to connect with newcomers;
- **site visits** and farm tours building on existing Cooloola Trail;
- Permaculture training in partnership with Permaculture Noosa;



- **information sessions** involving keynote speakers from Country Noosa, Noosa & District Landcare, FAN, Mary Valley Country Harvest and Sunfresh, Organic certification bodies;
- **providing links** to business planning, Financial planning course information including Holistic Management training information; and
- collation of all further learning information as an **e-learning hub** as part of the Country Noosa website. The e-learning hub would provide links to concept papers, links to local industry groups, training courses, Country Noosa keynote speaker presentations and ways for newcomers to connect with existing landowners that have volunteered for one on one mentoring in specific areas.

## Appendix 1: Media and communications

Communication	Responsibility	Description	Distribution
<b>Communications Strategic Plan</b>	Deb Caruso and CN committee members, Alison Jane and Nicole	Deb Caruso from Glue PR was engaged to develop a communications plan for Country Noosa including the Rural Enterprise Program. The workshop was held on Friday 13 April 2018 (9-1 pm) and the report is attached. Significant stakeholder analysis was undertaken in the workshop to assist in the roll out of the REP	Draft submitted to Country Noosa Committee 1 June 2018
<b>Press Release</b>	Alison Jane Consulting and Nicole	A press release was developed for the REP by Alison and distributed to various news outlets including Noosa News, Noosa Today and Cooroy Rag	The article was run by Noosa News (2 May 2018) and Cooroy Rag (25 April 2018)  See link below for article
<b>Press Release</b>	The Social Deck	A press release was developed to promote the second round of workshops and distributed to various news outlets including Noosa News, Noosa Today and Cooroy Rag	The article was run by Noosa News (1 December 2018), Cooroy Rag (29 November 2018) and Noosa Today (29 November 2018).
<b>ABC Radio interview</b>	Nicole	Nicole completed an interview with Jennifer Nicholls from ABC radio	Went to air 26/04/18
<b>CN Facebook</b>	Martin Duncan	Martin regularly updates Facebook with articles/blogs to promote REP	12 posts promoting the workshops were posted.
<b>Website</b>	Maureen, Nicole, The Social Deck	The CN website was updated with a REP page and links to the survey and workshops.	Emails have been sent to all CN membership informing them of the REP workshops and survey.  Follow up emails have been sent to CN membership reminding them of the survey.
<b>Key partners</b>	Maureen and Nicole	Key partners including Landcare, Noosa Biosphere, FAN, Kin Kin Community group were all provided information about the workshops and survey.	Follow up information has been sent to partners reminding them about the survey.

Communication	Responsibility	Description	Distribution
<b>Cooroy Fusion Festival 12 May 2018</b>	Country Noosa committee and Nicole	Students from USC attended the festival to promote the survey.	REP survey flyers were distributed at the festival.
<b>Newsletter</b>	Nicole	Edition 1 - June 2018	Distributed to CN members and key partners data base
<b>Newsletter</b>	The Social Deck	Edition 2 - August 2018. Edition 3 – December 2018	Distributed to CN members and key partners data base
<b>Eventbrite</b>	Maureen Nicole	Invitations to the workshops were sent out by the Secretary of CN via Eventbrite.	
<b>Press release: Open Day</b>	Maureen Nicole	Press release promoting the Country Noosa Open Day.	Noosa News, Noosa Today, Cooroy Rag
<b>Press release: USC</b>	Claudia Baldwin	Press release	USC website, My Sunshine Coast
<b>Eventbrite</b>	Maureen	Tickets for the Country Noosa Open day  Invitations to the second round of workshops were sent out by the Secretary of CN via Eventbrite. Information supplied by The Social Deck	<a href="https://www.eventbrite.com.au/e/country-noosa-farm-machinery-segment-open-day-tickets-47706854486">https://www.eventbrite.com.au/e/country-noosa-farm-machinery-segment-open-day-tickets-47706854486</a>  Emails have been sent to all CN membership informing them of the second round of REP workshops.

## Appendix 2: Budget

Organisation	Description of expenditure	Cash Contribution From NBR	In-kind Contribution	Total
<b>Country Noosa</b>	Project manager	\$30,000		\$30,000
	Project support	-	\$24,000	\$24,000
	Expert help	\$10,000	\$20,000	\$30,000
<b>USC</b>	Research Assistance	\$20,000	\$30,000(GIS)	\$50,000
<b>Healthy Land and Water</b>	Access to GIS database	\$5,000	\$200,000	\$205,000
<b>Total</b>		<b>\$65,000</b>	<b>\$274,000</b>	<b>\$339,000</b>

\*As at 28/06/19, final USC, project management and Final report invoices yet to be paid

\*See full budget for details.



## *References*

Noosa Council 2015, Noosa Shire Local Economic Plan. Tewantin: Noosa Council.

Noosa Council 2016, Agriculture and Agricultural Land in Noosa Shire 2016. Tewantin: Noosa Council.

Baldwin C and Hamerlinck J. 2018, Noosa Shire Hinterland Rural Enterprise Plan Research Study. Final Report. University of Sunshine Coast.



## ***Appendix 3: Concept Papers***



# Country Noosa

PROMOTING A SUSTAINABLE RURAL FUTURE



**Rural Enterprise Project**

## CONCEPT PAPER

# Carbon farming

Author: Dr Sandra O'Sullivan with support from Graham Ashford (USC)

## Introduction

Carbon Farming is the process of managing soil, water, vegetation and animals to increase carbon sequestration (carbon storage and capture) and to reduce greenhouse gas emissions. Carbon Farming can range from changing or introducing a single land use practice or incorporating several land use practices together that are designed to reduce greenhouse gas emissions.

This paper provides an overview of carbon farming practices and the current status of government policies within Australia. It also informs of local programs that can assist landowners with environmental management, creating wildlife corridors, protecting habitat while also creating financial revenue opportunities.

## Why choose carbon farming?

The main environmental benefits of Carbon Farming include:

- increased carbon storage in the soil and vegetation
- improved soil quality through reduced soil salinity and increased soil fertility
- improved water infiltration of rainfall into the soil resulting in better soil hydration and lessening the effect of drought
- reduced soil and creek erosion
- more productive land
- improved wildlife habitat.

## Concepts and ideas to get you started

Agricultural production depends on plant photosynthesis, whereby plants remove carbon from the atmosphere through biological processes converting it to carbohydrate for plant growth, while also building the quality of the soil around them. Some common agricultural practices such as tilling and overgrazing can remove carbon from the soil and return carbon to the atmosphere (see Figure 1).

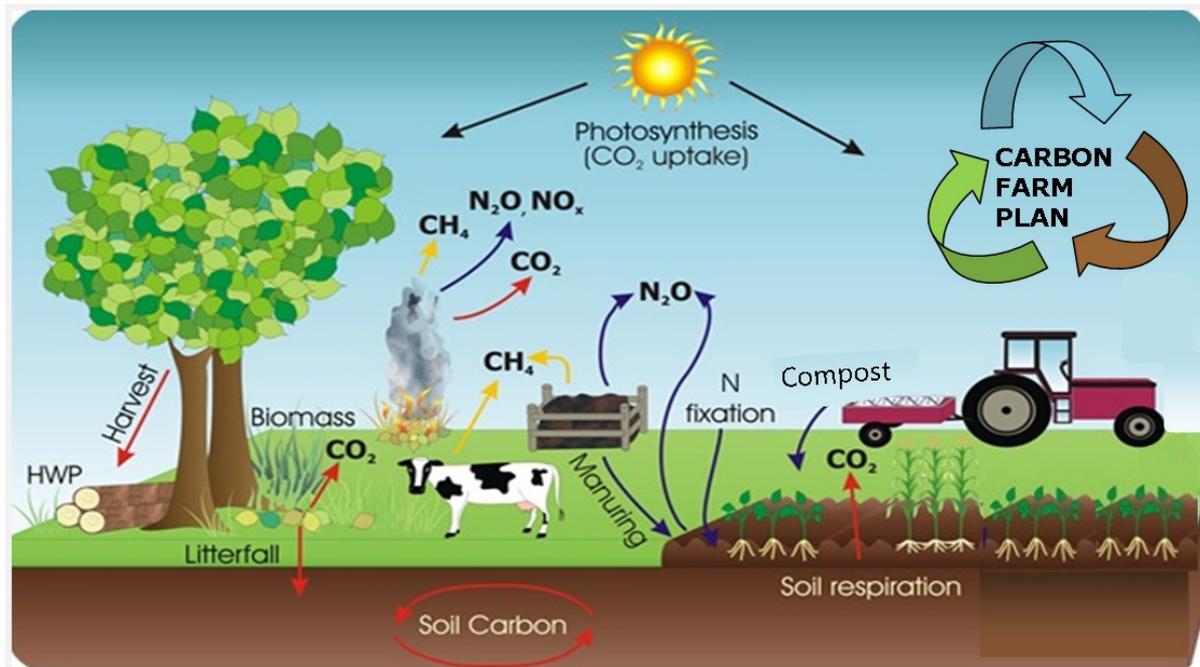


Figure 1 Source: Intergovernmental Panel for Climate Change (IPCC)

On the other hand, there are many agricultural practices that can help enhance carbon sequestration, such as:

- maximum groundcover (reducing bare soil)
- no crop tilling
- cover cropping
- natural fertilizers
- 'green manure'
- mulching
- composting
- soil stimulants
- soil inoculants (probiotics)
- biodynamics
- permaculture
- water spreading.

## Opportunities and constraints

In 2015, a global agreement on climate change was reached under the United Nations Framework Convention on Climate Change (UNFCCC) in Paris. The Paris Agreement aims to 'strengthen the global response to the threat of climate change' and to limit average global temperature rise to 2°C while pursuing efforts to keep warming below 1.5°C. It is based on voluntary emissions reduction agreements signed by individual countries. Under the Paris Agreement, Australia has committed to reduced greenhouse gas emissions by 26 to 28 per cent on 2005 levels by 2030.

The Emissions Reduction Fund (ERF) has been established by the Australian Government with the aim of reducing Australia's greenhouse gas emissions. The ERF is a voluntary scheme that provides financial incentives to organisations and individuals to adopt new practices and methods to reduce greenhouse gas emissions. The Department of Energy and

Environment and the Clean Energy Regulator are the two government agencies that manage the ERF. The Clean Energy Regulator administers the ERF, this includes project assessments through to the issuing of carbon credits.

Participants in the scheme can earn Australian carbon credit units (ACCU). One ACCU is earned for every tonne of carbon dioxide equivalent stored or avoided. ACCU's can then be sold to generate income. The price at which the carbon is traded is determined by supply and demand. Applications for the ERF need to be made through the Clean Energy Regulator. To be successful in participating in the ERF, an approved methodology needs to be followed. Some examples of the approved methodologies under the ERF are:

- Vegetation
  - regenerating forest on previously cleared land
  - planting trees to grow carbon stocks
  - protecting native forest by avoiding land clearing.
- Agriculture
  - sequestering soil carbon in agricultural systems
  - sequestering soil carbon through grazing systems
  - capturing methane waste from piggeries.

A sequestration decision tree is available to assist in choosing a project type and lists the approved methodologies (see Figure 2, p 7). Eligibility criteria also need to be considered such as 'newness'. For example, the project must not have commenced prior to being registered with the Clean Energy Regulator.

For carbon farming projects to be economically viable, economies of scale need to be considered. Economies of scale vary with geographical region and the impacts that climate has on growth rates of vegetation. For small farmers, there is an option to 'aggregate' or join together with other farmers to participate under the ERF as a single project. Carbon Service Providers are available to investigate project feasibility and help navigate the aggregation rules and guidelines. Carbon Service Providers are private companies that can assist landowners and individuals also with the possibility of creating carbon credits for the secondary or voluntary carbon markets.

Outside of generating carbon credits under the ERF scheme, carbon farming projects can also generate ACCUs for sale into secondary and voluntary Australian carbon markets. For example, the Aviation sector purchases carbon credits for their passenger flight offset programs.

Outside of the carbon market, there are opportunities for landowners to receive support on a local level for environmental management on their property which also helps with reduction of greenhouse gas emissions.

## Local support

### **Noosa Council can offer assistance with the Land for Wildlife Program and Voluntary Conservation Agreement Program.**

The [Land for Wildlife Program](#) is a free, voluntary program that can assist landowners in managing environmental aspects of their property. The activities of the program have broader environmental benefits of connecting areas of bushland to create wildlife corridors, improvement of habitat, soil quality and creek quality. Noosa Council can provide free onsite

management advice and members receive access to information and resources. Currently in south-east Queensland there are over 3,900 landowners managing 50,000 hectares of wildlife habitat.

The program welcomes landowners that:

- a property of at least 1 hectare of native vegetation,
- are interested in integrating environmental conservation with other land uses, and
- manage a part or all of their property as habitat for native plant and animals.

Another environmental protection program is Noosa Council's Voluntary Conservation Agreement (VCA), funded by Noosa Council's Environment Levy. This involves the permanent protection of environmentally significant areas of private land. A statutory protection can be placed on the land through a conservation covenant. A conservation covenant places conditions on the title of the land, these conditions permanently protect vegetation and wildlife and remain on the title of the land. Council can assist landowners with determining the area and can provide financial assistance with initial set-up and the management of the Environmental Management Plan for an initial five-year period.

Currently the highest level of protection on private land is administered by the State Government and is the Nature Refuge program. A nature refuge is a class of protected area under the Nature Conservation Act 1992. At times a grant program is offered to Nature Refuge land holders.

[Noosa and District Landcare](#), established in 1990, is a highly awarded not-for-profit organisation based in Noosa Shire Queensland. Noosa Landcare works with landholders, industry and government to promote sustainable natural resource management and conservation through education and implementation of best practice environmental restoration. Currently Noosa Landcare is offering up to 1,000 native trees for Land for Wildlife members for financial year 2018/19. Property owners can receive up to 50 trees per property.

The Noosa Landcare 'Trees for Tourism' Program commenced in 2017 as a means for Noosa's local tourism industry to make contribution to protecting and enhancing the local environment and to contribute towards carbon sequestration activities. To date Peppers Noosa Resort, Ironman Noosa Triathlon and the Tourism Noosa-supported 'Noosa Food and Wine Festival' have joined the program – all providing financial contributions to undertake work at chosen sites in the Noosa Shire. In 2017, Peppers Noosa Resort chose to support creek line revegetation activities within Kin Kin Entrance Bushland Reserve. Whilst the chosen sites by contributors to date have been within Council reserve, the option to include private property exists and private property sites have included in the sites available for investment. Noosa Landcare can assist private landowners with further information on how to participate.

## New funding opportunities

The Queensland Government's \$500 million Land Restoration Fund aims to expand carbon farming in the state by supporting land-sector projects that deliver clear environmental and economic co-benefits. Co-benefits are direct positive outcomes associated with carbon farming projects. These benefits are in addition to the carbon emissions avoided or carbon stored.

The Land Restoration Fund will support projects that:

- sequester carbon in land and soil to reduce Queensland's carbon emissions
- boost revenue sources for farmers and other landholders in regional and rural Queensland
- deliver social and community benefits especially for Traditional Owners
- strengthen critical habitat protection
- restore ecosystems and degraded land.

Land Restoration Fund has announced two new funding programs for 2019. Noosa Landcare can assist with information on new and upcoming grant and funding opportunities.

## Constraints

The current carbon credit market system is not robust; prices of carbon credits are highly volatile and based on supply and demand. Currently the ERF methodologies are only economically viable for large parcels of land. For those entering into the carbon market there are many aspects and risks to consider; for example, the length of the project, as some projects have a 10 or 25-year timeframe. To help navigate the carbon market it is recommended to seek the guidance of an accredited Carbon Service Provider and gain independent legal advice.

Under the ERF, landowners can experience the following constraints:

- methodologies will require a level of data collection outside the scope of normal farming practices
- methodologies will require sampling, measurement and statistical techniques that are specialised
- methodologies generally require auditing and reporting of project results.

Along with an initial set-up cost there will be the ongoing cost of engaging external services for monitoring, measurement, auditing and reporting and marketing any credits earned.

## Case Study: Noosa and District Landcare 20 Million Trees Program

In May 2018, Noosa and District Landcare completed their largest tree planting project to date. Over the last 2 years, 340,000 native trees were propagated in Noosa Landcare's nurseries in Pomona and planted on 34 hectares of ex-grazing land within the Great Sandy National Park at Elanda Plains. The site is a wetland and delivered many challenges to the project including periods of excessive waterlogging.

The project, which helped support the direct employment of local residents and youth, was funded through the Federal Department of Environment's 20 Million Trees Program in partnership with the Carbon Service Provider CO2 Australia. The Australian Government's 20 Million Trees Program is part of the National Landcare Program and has the following key objectives: 20 million trees planted by 2020, carbon reduction by contributing to Australia's reduction of greenhouse gas emissions, environmental conservation and community engagement.

The Elanda Plains site, acquired by Queensland Parks and Wildlife Service over 20 years ago, provides a vegetated corridor along the western border of Lake Cootharaba and forms part of the lower floodplains of Kin Kin Creek. The planted trees will not only help to sequester carbon, but will also reduce sediment and nutrients entering Lake Cootharaba in times of flood, and will improve the water quality of the Noosa River system.

## Further information

### The Paris Agreement

<https://unfccc.int/process/the-paris-agreement/what-is-the-paris-agreement>

### Emissions Reduction Fund

<http://www.environment.gov.au/climate-change/government/emissions-reduction-fund>

### Clean Energy Regulator

<http://www.cleanenergyregulator.gov.au/ERF/About-the-Emissions-Reduction-Fund/How-does-it-work>

### Farm 'Aggregation' under the Emissions Reduction Fund

<http://www.cleanenergyregulator.gov.au/ERF/Want-to-participate-in-the-Emissions-Reduction-Fund/Planning-a-project/Aggregation-under-the-Emissions-Reduction-Fund>

### Carbon Service Provider

CO2 Australia offers a carbon advisory service for landowners

<https://www.co2australia.com.au>

CO2 Australia has worked with Noosa Landcare on the 20 Million Trees Program at Elanda Plains (see Case Study).

### Noosa Council Land for Wildlife and Voluntary Conservation Agreement Programs

For further information contact Council's Community Partnerships Officer on **0419 672 813**

Or email [kylie.gordon@noosa.qld.gov.au](mailto:kylie.gordon@noosa.qld.gov.au)

**Noosa and District Landcare** contact 07 5485 2468

<https://noosalandcare.org/>

**Nature Refuge Information** [https://www.ehp.qld.gov.au/ecosystems/nature-refuges/the\\_nature\\_refuges\\_program.html](https://www.ehp.qld.gov.au/ecosystems/nature-refuges/the_nature_refuges_program.html)

### Land Restoration Fund

<https://www.qld.gov.au/environment/climate/climate-change/land-restoration-fund>

**20 Million Trees Program** <http://www.nrm.gov.au/national/20-million-trees - show>



# Country Noosa

PROMOTING A SUSTAINABLE RURAL FUTURE



Rural Enterprise Project

## CONCEPT PAPER

# Eco-tourism, recreation, and farm-based tourism

## Introduction

For residents of rural Noosa considering an eco-tourism or farm-based tourism business venture, this paper outlines ideas and opportunities in the Noosa hinterland region. It includes short stay visitor accommodation, either in a home-stay or bed and breakfast, businesses promoting local produce, such as farm-gate sales, pick-your-own businesses, and cafés and associated agribusinesses. This paper discusses the planning and zoning requirements and constraints associated with rural and rural settlement areas in the Noosa hinterland region to inform new development. Two case studies, one local, the other international, are used to inspire new businesses and provide insight into viability of farm-gate and trail-based opportunities. Finally, resources and links are included for those seeking further information.

This paper is being developed in a dynamic environment. Tourism Noosa is currently developing a master plan for the Noosa Trail network that runs through the hinterland and villages of Noosa, with a draft expected in 2019. Concurrently, Noosa Council has released a draft new Noosa Plan for public comment until 20 May 2019. The two plans will provide guidance for development in the rural areas and communities, such as Cooroy, Pomona, Kin Kin and Boreen Point.

## Community engagement on hinterland tourism concepts

Initial workshops and a survey of rural residents conducted by Country Noosa identified that residents of rural Noosa use their properties for a variety of purposes, ranging from small scale agriculture including livestock, fruits and vegetables, and niche crops to home-based businesses, such as permaculture education and soap making. Rural residents show an appreciation of the environment, land stewardship, and a desire to share their environmental and farming knowledge. Several residents expressed interest in exploring how to take advantage of being located close to the Noosa Trail.

An eco-tourism focused workshop held during December 2018 in Kin Kin specifically focused on identifying key constraints, needs and opportunities for hinterland residents to develop farm-based and eco-tourism opportunities. Participants identified the following needs and opportunities as highest priority for the region:

- Developing a network of local hinterland businesses to leverage strength in numbers to provide quality tourism experiences year-round, across the seasons. This is particularly relevant for recreational activities such as those linked to the trails network, as they are affected by seasonal weather fluctuations. Participants also noted the value of collaboration between farms and hospitality businesses combining in “paddock to plate” ventures.

- Involving the local Aboriginal community in tourism opportunities and promoting Indigenous heritage, culture and connection with the land. This would not only help to guide ecotourism in the region in healthy ways that recognise and preserve indigenous history, but also leverage tourist interest in Aboriginal culture and history of the region that could have commercial potential. It was noted that Aboriginal people should always lead these opportunities.
- There was significant interest in the forthcoming Noosa Plan and updated planning regulations particularly about by providing greater flexibility and scope in rural tourism opportunities such as tiny houses for both short and long-term accommodation options.
- The opportunity to capitalise on increased cycling-based tourism was identified by both residents and Tourism Noosa via increasing interest in the improvements to the Noosa Trail network, which is primarily used for mountain biking.

## Opportunities in the Noosa region

Noosa has experienced a steady growth in tourism over the years and Tourism Noosa and the Noosa Council support eco-tourism recreation opportunities, such as the [Noosa Country Drive](#) and the [Noosa Trail network](#). Taylor (2015) indicates that the three main factors that contribute to the success of trail-based tourism include the willingness of non-locals to visit, the experiences they have, and the support of governments, the tourism industry and the local community.

### Tourism statistics

From 2017 to 2018, visitor numbers in Noosa increased by 7% and they spent 5.8% more than the financial previous year. This is the third consecutive year that tourism statistics have shown significant growth in visitation, nights stayed and spending (See figure 1 below). This steady increase demonstrates the first contributing factor to trail based tourism success; the willingness of non-locals to visit (Taylor 2015).

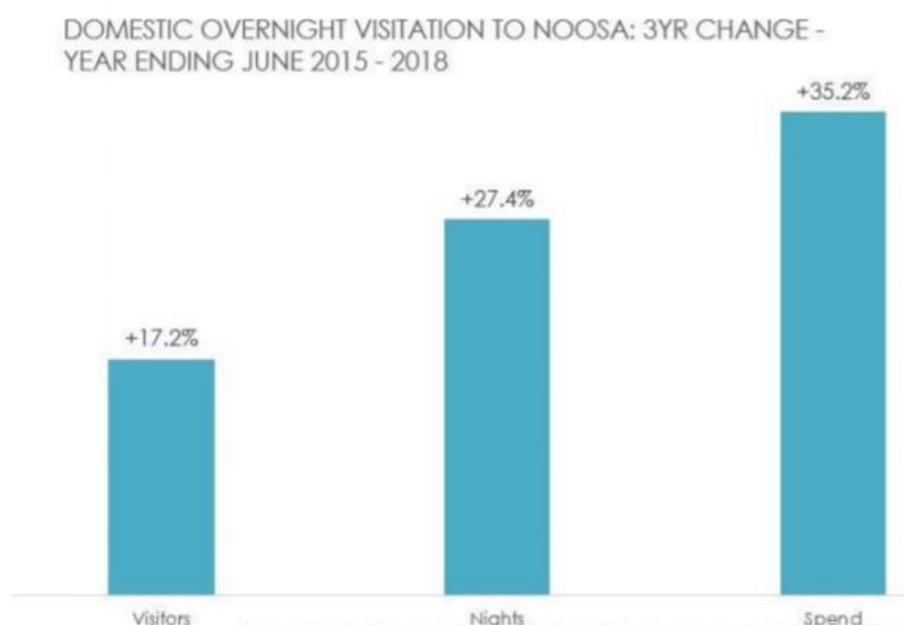


Figure 1 - Domestic Overnight Visitation 2015-2018 (source: Tourism Research Australia National Visitor survey year ending June 2018)

### Existing Tourism Assets

Recreation opportunities on offer in the Noosa hinterland region, such as hiking, horse-riding, mountain-biking and four-wheel driving are being promoted by Tourism Noosa through their Noosa Country Drive initiative and the repair and promotion of the Noosa Trail Network. These two projects encourage a greater diversity in tourism experience, complementing the traditional conservation assets with additional hinterland opportunities that provide places to stay, play and eat. This demonstrates another key factor to the success of trail-based tourism, namely the supportiveness of the local tourism industry (Willard & Beeton 2012).

### Noosa Country Drive

The Noosa Country Drive provides three main driving trails from Eumundi to Mt. Wolvi that promote the hinterland landscape and tourist activities that are available. A map of the Noosa Country Drive is provided in [Appendix A](#). The Noosa Country Drive provides a platform for businesses to advertise their product through a membership program provided through Tourism Noosa. The Noosa Country Drive expands and adds to their map to meet the demands of new members and their offerings.

### Noosa Trail Network

The Noosa Trail Network includes eight trails of varying lengths and difficulties for mountain bike riders, bushwalkers and horse-riders. The trails pass through national park, state forest, private property and council parks from Cooroy to Kin Kin. A map of the Noosa Trail Network is provided in [Appendix B](#). The Noosa Trail is undergoing repairs allowing for more access and better use of the trails by visitors. Tourism Noosa is developing a masterplan for the trail network to be finalised in 2019.

## **Ideas for Eco-and Farm-based Tourism in Noosa**

Eco-tourism, nature- and farm-based tourism is a natural fit with values held by the Noosa community. This paper outlines opportunities to expand in Noosa Biosphere Reserve's 'transition area', where sustainable human activities include settlements, cropping, recreation, and forestry. Eco-tourism is generally characterised as low-impact, small scale and ecologically sustainable, with a focus on high-quality experiences that build awareness and appreciation of natural, environmental and cultural assets, and provide socio-economic benefits to local people. With the upgrade of the [Noosa Trail Network](#) and the promotion of [Noosa Country Drive](#), visitors that want to experience Noosa away from the typical coastal experience will look for businesses and services that cater for their specific tastes and interests. This may include niche accommodation, food, beverage and cooking, environmental, educational, farm experiences, as well as services catering for the trail network experience, such as bike rental, baggage transport and horse agistment. Complementary businesses include art studios, workshop spaces, day spa and wellness centres.

### **Visitor Accommodation and Farm Stays**

There is an opportunity for short-term accommodation in the Noosa hinterland region that creates additional income for property owners, while enabling them the flexibility to restrict access when required. Accommodation styles may include bed and breakfast accommodation, which involve the owner interacting and providing meals for visitors within or adjacent to the existing dwelling, or separate self-contained cabins where visitors are more independent and require less attention. Accommodation can be listed through local tourism sites or registered with external sites such as Airbnb. Planning requirements may affect the building type permitted in particular zones (outlined in more detail in *section 4.0*). Key considerations for

those contemplating such a venture might include: road access; other attractions that may bring people to the vicinity; noise and comfort; parking; scenic amenity; access to finance; sufficient water; internet and mobile phone service; and the capacity to provide on-farm experiences such as farm animals, short bushwalks, or environmental education.

The revitalisation of the Noosa Trail Network also provides specific opportunities to the residents of properties located along the trail networks to cater to the needs of horse riders, mountain bikers and hikers. Many of the trails are long enough to warrant overnight stays, therefore accommodation for hikers and riders, as well as their horses or bikes adjacent to the trail, may increase use of the trails and attract even more 'adventure tourists'. There are currently very few hosts offering short-term horse agistment and farm stays targeted at multi-day walkers, bike or horse riders, therefore there may be an opportunity to diversify into this market. Considerations for short term horse agistment may also include sufficiently large fenced properties with secure shelter; adequate water and feed; and pest-free pasture.

### **Farm-Gate Businesses**

Farm-gate businesses may include: selling your own and/or neighbours' produce at the premises, seasonal 'pick your own' fruits or vegetables, or a farm-based café, shop, cooking school, or tour. Two great examples within the region are Cooloola Berries (see *section 5.0*) and organic Hinterland Feijoas. Key considerations are: crop establishment time; access to finance and insurance; sufficient water; food service licence; road access and signage to farm; accessibility and safety within the farm; planning permission; labour; and relationship with neighbours (since cafés may generate more traffic than small scale accommodation). A genuine desire to interact with many different sorts of people who may 'turn up at the gate' is also needed.

### **Bike Rental and Services**

Bike rental and maintenance services could serve a growing number of interstate and international tourists that are passionate about bicycle touring, especially if the trail network and roads are upgraded over time. Bike rental and bike servicing are currently only available in coastal Noosa. The success of bike rentals for the Otago Central Rail Trail was reported by Otago District Council in 2014: all sports stores in the region ran out of bikes during their high season. As a result, 150% more bikes were ordered for the following season to accommodate consumer demand (Central Otago District Council, 2015). Considerations for establishing these businesses include: skills in bike maintenance and bike rentals; ability to invest in a range of bike sizes and additional equipment such as helmets and safety gear; and the ability to deliver and pickup bikes and bikers who need rescuing.

### **Baggage transport**

Bush-walkers using the Noosa Trail overnight and staying in accommodation adjacent to the Trail may be interested in having their luggage moved from one accommodation site to the next over a period of days, rather than carry a large pack. If exclusively used for transporting baggage, this may be considered a courier service; alternatively being an Uber driver may be cost-effective for transporting people when necessary. Considerations may include: commercial auto licence and insurance; business liability insurance; reliable vehicle; flexibility.

# Planning and zoning requirements and other constraints

The draft of the New Noosa Plan has been released for public comment up to 20 May 2019. For property owners interested in undertaking an eco-or farm-based tourism business, please refer to the detailed planning advice and constraints of the draft Plan at <https://yoursay.noosa.qld.gov.au/draft-new-noosa-plan>. For the purpose of this paper, we refer to the draft Noosa Plan 2019 and provisions within the 'Rural' or 'Rural Residential' Zones (See figure 2). It must be noted that some requirements may be subject to change in the Final Noosa Plan, to be confirmed later in 2019.

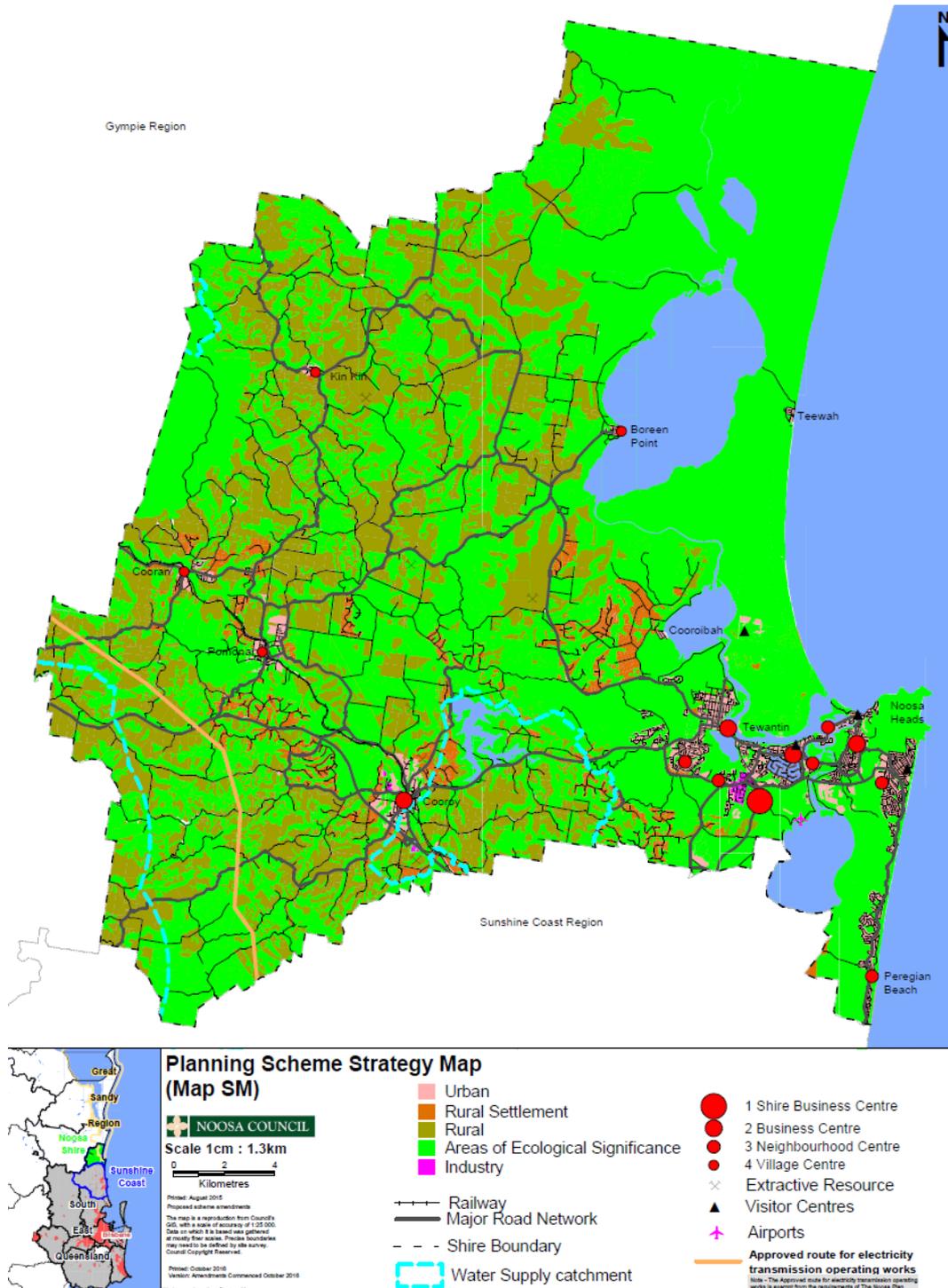


Figure 2 – draft Noosa Plan (2019) Planning Scheme Strategy Map - Rural and Rural Settlement

## **Rural Zone and Rural Settlement Zone Requirements and Constraints**

Figure 2 shows the Rural Zone coloured in khaki and the Rural Residential Zone (areas around regional towns, such as Cooroy), as red patches in the hinterland region. This land use is scattered throughout the map, of special relevance in areas where the Noosa trail intersects. There has been some rationalisation of the Rural Residential Zone in the draft scheme with some 350 lots currently in the Rural Settlement Zone moving to the Rural Zone. Smaller lots are generally in the Rural Residential zone if they are in the Rural Living designation of the South East Queensland Regional Plan, part of an established estate or very close to towns and villages. If isolated from services and amongst farming lands they are more likely to be zoned Rural. Definitions of visitor accommodation types are consistent with the State Planning Provisions. The New Noosa Plan increases flexibility for rural and rural residential land owners to undertake appropriate rural enterprise and home-based businesses. Home-based businesses include value adding to food production through cooking classes or farmgate sales, as well as studios, professional services, health clinics, etc. A fact sheet 'working from home' is available online regarding 'home-based businesses' at <https://yoursay.noosa.qld.gov.au/draft-new-noosa-plan/documents>.

Likewise fact sheets are available at the above weblink, about the range of visitor accommodation requirements under the Plan including for parking of RVs, camping, BnBs, cottages/cabins and nature-based lodges. Level of assessment and requirements differ with the scale and nature of the proposal.

Under all zones, overlays, such as biodiversity values, flooding or bushfire hazard, may affect development applications. Overlays do not necessarily rule out development, however some specific outcomes may need to be addressed. Noosa Council provides public access to interactive maps to show what zone and overlays a property is subject to. Some applications may also incur a small infrastructure charge.

### Bed 'n' Breakfast Accommodation

Accommodating guests in your home while you are in residence is considered a 'home-based business'. Accommodation is not self-contained but could be detached from the balance of the house. In a Rural and Rural Residential zone, providing an owner meets the requirements of a home-based business, no planning approval is needed.

### Caravan/RV Parking

Such use is defined as a Tourist Park and includes holiday accommodation in caravans, self-contained cabins, camping ground and tents or similar – with no ablution block. In the Rural Zone lots of at least 10 ha may have up to 5 fully self-contained recreational vehicles for no more than 4 nights. The Visitor Accommodation Code in the Plan sets out specific requirements. In all other zones, planning approval is required.

### Rural/nature-based Accommodation and Farm Stays

The defined use of Nature-based tourism covers tourist accommodation for the appreciation, conservation or interpretation of an area of environmental, cultural or heritage value; or a local ecosystem; or the natural environment. It would include environmentally responsible accommodation facilities with a small ecological footprint (such as cabins, huts and tented camps). Within the Rural Zone this use is acceptable development subject to requirements (self-assessable) on lots of at least 4ha in area where accommodating no more than 8 guests in no more than 2 cottages/cabins/tents. The code provisions are quite specific. Slightly larger developments would require code assessment but for more than 4 cottages/cabins or 6

permanent tents impact assessment would be required. In the Rural Residential zone a planning approval will always be necessary.

Other accommodation not qualifying as nature-based accommodation (such as farm stays, cottages & cabins) would be defined as short-term accommodation and might include a farm stay. This is not supported in the Rural Residential Zone and in the Rural Zone will require planning approval, although only code assessable if on a property of at least 4 hectares and accommodating no more than 8 guest in no more than 4 cottages or cabins. Impact assessment is necessary for bigger development or those including any event or conferencing facilities.

(New Noosa Plan Fact Sheets 11, 14, 15 accessible at <https://yoursay.noosa.qld.gov.au/draft-new-noosa-plan/documents>)

## **Case study - Cooloola Berries and the Cooloola Farm Trail**

The Cooloola Berries farm is a great example of farm gate tourism. It is located in the hinterland just to the north of the Noosa Council boundary, approximately 20km east of Gympie in the small town of Wolvi. After opening their business in 2014, the Cooloola Berries tourism experience evolved from a pick-your-own strawberry farm to incorporate a café that serves local produce inspired food and drinks, including their own strawberry ciders. Diversifying their product has allowed them to operate their business all-year round, rather than seasonally. Originally just pick-your-own strawberries, which were available from June to November annually, the farm now provides pick-your-own blueberries in December and January as well. Their café is open all year and their venture into ciders has allowed them to showcase their produce out of season.

Cooloola Berries has joined [Gympie Gold Regional Produce](#) which showcases and promotes local produce in the area by creating events and putting Gympie and its local businesses on the map. Gympie Gold included Cooloola Berries among seven farms in their annual Cooloola Farm Trail held over one weekend in September. Although Gympie Gold only provides membership and events to food and beverage agritourism businesses in the Gympie region, inspiration comes from what Cooloola Berries have achieved. This agritourism-focused promotion could be applied to the Noosa Country Drive concept as similar values are held by the people in these regions.

The Cooloola Berries experience has proved to be highly popular for locals and tourists alike and the evolution from farm to diversified farm-gate tourism demonstrates the ability of small farms to create a unique business in a rural setting. It also showcases the way in which the promotion of a business in a local setting can help boost the business (Willard & Beeton 2012).

## **Case study - Otago Central Rail trail, New Zealand**

The Otago Central Rail Trail (OCRT) is an international example of trail-based tourism success in a rural setting. The trail was established in 2000 and from 1997 to 2005 the region experienced a 260% increase in visitor numbers (Reis & Jellum 2012). One third of businesses in the region reported that they decided to establish themselves because of the trail. This is reflected in this small region's \$2.3 million contribution towards New Zealand's GDP (Reis & Jellum 2012). Businesses that have emerged to cater for tourists on the trail include food and wine-based tourism such as pubs, bakeries and restaurants where local produce features, along with accommodation options such as farm stays, bed and breakfasts and more luxurious accommodation. Other services are provided in the area include bike rental, bike maintenance, car hire and operator-led tours.

Funding for the maintenance of the OCRT is seen as critical to the success of the trail, and therefore the tourism businesses that have emerged to cater for the cycling market (Taylor 2015). This has implications for the establishment of the Noosa Country Drive routes and the repairs of the Noosa Trail Network, as continued maintenance and development should increase amenity and, in turn, increase visitor numbers.

## Conclusions

Community engagement in late 2018 demonstrated that rural Noosa residents value environmental stewardship and many have a desire to increase diversification and the business potential of their rural properties. As tourism statistics demonstrate a steady increase in visitor numbers and spending habits, this improves the potential for more eco-and farm-based tourism in the region, especially combined with existing tourism assets, such as the Noosa Trail Network and Noosa Country Drive. The success of similar farm-gate and trail-based businesses is demonstrated in the Cooloola Berries and Otago Central Rail Trail case studies.

With regards to zone and planning requirements, visitor accommodation such as home hosted and rural accommodation businesses are either self-assessable or impact assessable in Rural and Rural Settlement zones under the Noosa Plan 2006. They are generally accepted as long as guidelines are met. Although the exact specifications of the New Noosa Plan 2019 are unknown, changes to zoning types and land uses will not change due to State Planning Provisions.

## Relevant links and resources

The Noosa Council provides public access to interactive maps, allowing anyone to determine what zone they live in, as well as natural hazard maps, natural resource maps and heritage maps: <https://noosacouncil.wixsite.com/interactivemaps/noosa-plan>

Tourism Noosa provides the Noosa Country Drive initiative that aims to increase awareness and visitation in the Noosa hinterland. Membership with tourism Noosa includes various advertisement types to help all business types be seen and heard: <https://www.visitnoosa.com.au/industry/become-a-member>

Cooloola Berries - <http://cooloolaberries.com.au/>

Hinterland Feijoas – Organic and slow food network. Orchard, food van and shop. <https://hinterlandfeijoas.com.au/>

Noosa Trail Network - <https://www.noosa.qld.gov.au/noosa-trail-network>

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## Appendices

### Appendix A: Noosa Country Drive map







# Country Noosa

PROMOTING A SUSTAINABLE RURAL FUTURE

Rural Enterprise Project



## CONCEPT PAPER

# History of Agriculture

Authors: Brian O'Connor and John News

## Introduction

The following concept paper outlines the historical agricultural activity of the Noosa region, from the mid 1880s to the 21st century. The paper seeks to provide context for current and future agricultural work in the region and, hopefully, will contribute to consideration of evolving and rapidly-changing sustainable farming practices.

Historically, Noosa Shire's economy was founded on agriculture, with timber, beef cattle and dairying comprising major industries in the area, followed by significant fruit and vegetable production. Only a few of the big cattle runs of early years remain.

Among the vegetable and pasture crops grown in the past were potatoes, maize, hay, bananas, sugar cane and green beans. Other significant fruit and vegetable growing has included tomatoes, melons, papaws, passionfruit and zucchini.

More recent history has seen less traditional avenues of agriculture emerge, with ginger, horticulture, macadamias and nurseries thriving across the region. In addition smaller, niche farms producing salad greens, herbs, garlic, native foods and tree nuts now supply the local markets and restaurant industry. Regenerative farming and permaculture practices are popular among a new breed of growers and producers in the region.

Historical fragmentation of the rural areas has created a large number of smaller properties, which effectively rule out some uses but facilitate others. Various produce, such as ginger, strawberries, hydroponic vegetables and cut flowers can be grown quite profitably on small lots. The emerging focus is intensive cultivation of smaller areas sustaining high-value crops and produce.

Today, contemporary Noosa is a diverse community that maintains some historical industries and land uses, while exploring new ones. Agriculture and forestry are going through a phase of reinvention, with farm forestry, 'bush tucker', horticulture (based on high value and local native crops/plants) and organic farming all increasing in popularity.

## Indigenous food gathering practices

The Indigenous people of the Noosa region are the Gubbi Gubbi (also called Kabi Kabi) people, who have a long history of custodianship of the land in and around the Noosa region. Traditionally they engaged in land management practices involving a cycle of visitation to areas where fruits, berries and vegetables growing naturally were available to eat. Possessed of an extensive and intimate knowledge of their landscape and its resources, they have practiced sustainable land management principles over thousands of years.

During fruiting season, turkeys and pigeons were plentiful. The months of August and September provided turkey eggs, while December to March was the bunya nut season. People sometimes then moved to the coast to feast on fish. Apart from fish, they gathered shellfish, lobster, pipis and crabs along the coast; and freshwater mussels and yabbies in freshwater streams. Bush honey and bunya nuts were especially prized.

The most common fruits and vegetables gathered included quandong, raspberries, yellow berries, yams, native fern roots and cabbage tree palms.

The abundant forests provided a variety of marsupials, lizards, snakes and echidnas. Brush turkeys were hunted and trapped. Waterfowl were caught and their eggs gathered, as were insect larvae and lerp.

Men and women shared the task of obtaining and supplying food and fashioning utensils.

Women were adept at climbing trees and helping men capture small tree-dwelling animals, birds and their eggs. Women and men shared the work of gathering shellfish and fishing. The use of nets was common in Kabi country.

The burning of country by Aborigines was practiced for centuries, noted by early settlers and explorers as a way to restrict and limit growth of thick bush and forest in favour of open grassy areas with large trees.

Discontinuation of, and disruption to, these Indigenous land management practices and cultural principles followed European settlement. This, coupled with substantially different European land management practices, led to a rapid change to the natural environment and to the ability of Indigenous peoples to maintain their hunter-gatherer way of life.

## **History of European settlement**

Although parts of Noosa Shire had been traversed and claimed by Europeans before 1870, it was not until the wealth of gold (at Gympie) and timber (in the scrub country) was realised that the area was settled more closely. Gold was discovered at Gympie in 1867 and the subsequent development of the goldfield demanded transport access.

After the establishment of Tewanin township, surveyed in 1871, a road link was made to Gympie. Tewanin is an anglicised version of the Indigenous name for the area, Dauwadhum, meaning 'place of dead logs'. Two Cobb and Co. routes were established between Brisbane and Gympie: a dry weather one through Tuchekoi and Traveston, and a longer wet weather route through Tewanin. People and materials associated with the Gympie goldfields came by sea to Tewanin.

Sawmilling was established at Tewanin in the 1870s and a fishing industry supplied fish to the Gympie miners. By the end of the 19th century the two big sawmills at Elanda Point, on the shores of Lake Cootharaba and at Tewanin, had closed down.

Cooran was established in 1889 following construction of the railway from Gympie. It served as the terminus for a coach route linking to Yandina until the Yandina–Cooran rail link opened in 1891. The arrival of the railway helped the district develop as an agricultural and timber centre. Shops were built along King Street and the town was an important centre for loading local goods, freight, timber, and produce onto the train.

Following completion of the North Coast Railway between Gympie and Brisbane in July 1891, Cooroy was established as a station in 1893. It became the main rail centre for access to Tewantin. Timber-getting was a major industry in the early days, with 40 bullock teams hauling to the railway yards and later to the two Cooroy sawmills erected in 1908. Before the railway, teams hauled cedar from Black Mountain to Tewantin where it was shipped to Brisbane.

In 1906 Pomona became established on the rail line to give new settlers in the scrub lands better access to rail facilities. The first industry at Pomona was timber-getting, then bananas and dairying.

Land around Cooroy was opened up for selection in 1907. The new settlers milled their own timber and cleared the land for dairying, fruit growing, and sugar cane. In the early 1890s cane was grown near Cooroy Mountain and a small mill was erected there. Cream was brought to the railway by horseback and sent to factories in Gympie and Caboolture until a factory was built at Cooroy in 1915. The establishment of the Noosa Shire Council in 1910 confirmed the State Government's confidence in the maturity of the new towns in the area and the timber and dairying industries.

## **Early agricultural pioneers**

While escapees from the Moreton Bay penal settlement were known to have lived with the Indigenous tribes of the Noosa region in the first half of the 1800s (notably David Bracewell or Bracefell), the first European settlers within the Noosa Shire were the Skyring family in 1853.

Zachariah and Daniel Skyring took up four runs: Whildka Whildka (later known as Tuchekoi) bounded on the north by the creek that became known as Skyring Creek; Canando and Yandina to the south along the Maroochy River and bounded on the west by the Coast Range; and Pooreema, east of Whildka Whildka and across to the coast. The runs of between 8,000 and 12,000 hectares were stocked with cattle, but the dense scrub made mustering a problem and limited the capacity of the runs to about 600 cattle each. By 1858, the Skyrings had allowed their tenure on these runs to lapse and they were taken over by John Delaney Bergin. Subsequently, Daniel Skyring later purchased land around what is still known today as Skyring Creek.

Lieutenant John Bligh took up part of the Pooreema run, called 'Caroora' in 1860. The other part of the Pooreema run, Coutharaba (sic), was taken up by Walter Hay. The north-west section of the shire was included in Traveston run, which was taken up by Robert Glissons in 1857.

Bligh and Hay, who pioneered Noosa Heads and Tewantin as a port for transport of timber, located the route from Gympie to Tewantin. Hay did this informally for the state government in 1873 and it is retained to this day as Old Tewantin Road. Establishment of this route enabled further settlement and the eventual development of villages.

The Lands Acts of the late 1860s opened the way to closer settlement by resumption of land from pastoral holdings. The first application lodged with the lands office at Gympie was from C.S. Russell on 16 March 1869 for 2,000 hectares of second-class pastoral land on Kin Kin Creek. The lease was transferred four years later to Cootharaba sawmiller James McGhie.

Much of the land was taken up purely for its timber and then let go, but the scrub lands proved valuable after the timber had been cut.

In seeking to open up Queensland to wider settlement and productive agriculture, the state government passed the *Cooperative Communities Land Settlement Act 1893*, which led to the occupation of land at Noosa by two resident cooperatives – the Woolloongabba Exemplar Group, which began communal farming on about 4000 hectares (9700 acres) beside Lake Weyba (on land now known as Doonan), and the Protestant Unity Group, which was the last of 12 community settlements to be proclaimed by the then Queensland Governor, Sir Henry Norman.

The Woolloongabba Exemplars were people who had been made homeless by the 1893 Brisbane flood. In 1894, the Exemplars consisted of about 200 people led by a deeply religious land surveyor, George Chale Watson. Their dream was a socialist utopia where everything would be owned collectively, and each would work for the common good. The Exemplars soon developed outlets at Gympie and Brisbane for fish and had hopes of being ship-owners. Farming proved difficult, with numbers reduced to five men and their families when they disbanded a few years later. The government dispersed the worked land equitably.

The Protestant Unity Group was proclaimed on 18 July 1894, 35 members listed on the proclamation. They were of English, Scottish Irish and German descent, all protestant.

The Protestant Unity Group achieved more than any other communal group in Queensland, in terms of area cleared for the number of members, and also for the best use of establishment funds supplied by the government. Their 2320 hectares (5800 acres) in the Parish of Tuchekoi, was located west of present day Pomona, which did not exist. Members leased land from the government at an annual rental of 13 cents an acre, with a view to owning a parcel after eight years, whereupon each member could acquire not more than 64 hectares (160 acres) freehold title.

The group differed from other communal settlements in Queensland in that each member was given four hectares (10 acres) to farm for their own benefit, in addition to a communal farm worked by all the men. The first settlement for the group was in an area now known as Jampot Creek Road. The group built a rough road to the railway line at a point that came to be known as Pinbarren Siding.

As with the Exemplars, some left the group and built houses on allotments at Skyring Creek. A large portion of cleared land was planted to sugar cane, but also to tobacco, maize and oats. There were hopes of a sugar cane mill at Cooran when, in 1906, the Noosa mill refused to accept for crushing cane from north of Yandina. The farmers diversified into dairying and vegetable growing instead.

What is known as the Ellis and Grant land selections were subdivided to become the Pomona township, but not after a dispute with the state railway authorities over the name of the new settlement. Locals wanted to call it Cooroora, after the mountain. Pomona, the name of the Roman goddess of food and plenty was a compromise.

In other attempts at closer settlement, timber merchants McGhie, Luya, and Company attempted to establish a village settlement at Lake Cootharaba by letting land cheaply to

families for farming. Most of the settlers soon returned to Tewantin, reporting that the land was unfit for farming, being either too wet or too sandy.

Dr. Lang, who was involved in bringing settlers to Moreton Bay, called attention to the suitability of the land at Cootharaba for sugar and cotton, but few of the later settlers took his advice. One who did was George St John Carter, who had timber interests in the area. He experimented with sugar cane crops on his selection, portion 181 Parish of Noosa, near Cooloothin, and won a first prize and silver medal at the first Gympie exhibition.

The early families of the region also included the Sivyver family, who arrived in Sydney in 1839 from England. Initially employed with the railway departments in Maryborough the family descendants soon became successful sugar cane farmers in Mackay. Spencer Sivyver and the family settled permanently on a 63-hectare property in Tinbeerwah in 1902 where the family began dairy farming. Fourteen-year-old Stanley Sivyver also began a job in the timber industry, which would later lead him to establish a sawmill on a nearby property. The old timber mill is now submerged beneath Lake Macdonald.

Following the death of Spencer, Wally Sivyver purchased part of the property from his mother and would continue dairying while becoming a successful pig farmer, winning many competitions with his prized pigs. Stanley also received a part of the property, which he developed into a small crop farm where he would grow corn, watermelons, beans, and pineapples. The family continued to be involved in the milling, dairy and small crop agricultural industries until the 1950s.

### **Focus on Kin Kin** (by John News)

The Kin Kin region was first visited by timber getters between 1868-1900, who removed the best stands of majestic native rain forest timber comprising of Cedar, Kauri, and Mahogany. Logs were floated down Kin Kin creek through the bar to be dragged across the lake and processed at Tewantin mills.

In 1902 the Kin Kin valley was released as selection lots. The first to take up this release was J. Turnbull who chose land on Kin Kin range to the south. He was followed by Sorensen, Hanson and Sheperton among others, including the Nash brothers. They proceeded to clear, burn regrowth and scrub timber as per government conditions of release at the time. Timber forests were replanted with grasses including Paspalum, Rhodes and Clover. By 1904 a road was completed over the range from Cooran.

Cattle were transported by rail, firstly from Ipswich then from the Richmond district of northern NSW. In the early stages in the establishment of a cattle industry, red water fever played havoc, with whole herds being wiped out overnight. This led to the necessity of breeding stock with tick resistant animals.

The township of Kin Kin in 1918 consisted of a shop/post office, the butcher, the school of arts and the butter factory, which was completed in 1914. Cream was produced at the factory then transported to Gympie via Cooran for further processing.

By 1920, banana production was in full swing and a timber mill had been established producing 6000 packing cases a week for the bananas. About 100 Indian labourers were employed to grow the crop. The banana industry began to struggle under the pressure of Bunchy top and Panama disease. These are problems introduced then that we are still dealing with today. Many of the labours relocated to north of Coffs Harbour, another a well-known banana-growing area. During this time, a very respected Indian official died and was cremated on one tonne of butter fat in Pomona. Thousands of people attended.

By the late 1920's there were 120 farms. This included 35 banana growers, 58 dairies, and a number of other meat, pineapple and sugar cane producers.

By the middle of the century, there were fewer farms because large scale banana production had ceased. At this time, dairy and beef cattle were still the major income producing industries. Continuing on through the 1970's Kin Kin was predominantly a small crop, dairy, beef cattle community. Beans, macadamias, ginger, garlic, mangos and pineapples were also grown. The deregulation of the milk industry in 2000 saw the writing on the wall for the dairy industry in Kin Kin.

With improved farming practises there are boutique farms producing quality products today. There is grazing, mixed farming, horticulture, coffee, Goats for milk and cheese, Alpaca for fleece and organic greens grown in the region. A successful farming future in Kin Kin relies on the responsible use of fertilisers, chemical, erosion control and an enforceable catchment management plan.

# Industry snapshots

## Logging and timber-getting

Around 1870 the township of Cooran began as a coach stop on the road from Tewantin to Gympie. This road was formed after a sawmill was established at Mill Point, to supply the Gympie goldfields. The sawmill operated from 1871 to 1892 and supported a thriving community.

Initially timber logs were rafted down Kin Kin Creek to the lake and held in a yard by a double line of piles forming a breakwater. During later sawmilling operations, timber was taken from as far away as Mount Coondoo and hauled to a tram terminus. By the early 1870s loads of timber were sent along Cootharaba Road to Gympie.

Transporting the timber was the most problematic aspect of early operations at Mill Point. Bullock teams became bogged in the saturated, sandy soils and Cootharaba Road had swampy sections, steep pinches, and 11 kilometres of scrub along Kin Kin and Tinana Creeks. The difficulties of Cootharaba Road were resolved with the establishment of an outlet by sea via a depot at Tewantin.

Flat-bottomed paddle-wheel boats, known as droghers, (the *Black Swan*, *Countess of Belmore* and *Elanda*), towed punts of sawn timber through lakes Cootharaba and Cooroibah to Tewantin. There the timber was loaded onto the steamer *S.S. Culgoa* and taken to Brisbane three times a fortnight.

In 1885, sawmillers Dath Henderson and Co. owned 2,046 hectares stretching west from Mt Cooroy, including the current town site. The railway station became the district's focal point upon its completion in 1891, dispatching log timber and produce and receiving goods and mail.

J.L. Boden established the first store in the railway yard. The Queensland Government repurchased the area in 1907 and surveyed the land into agricultural farms and town lots. The timber and dairy industries supported the town. Following closure of the Butter Factory in 1975, land use gradually changed from farming to rural residential. The closure of the sawmill in 2000 ended an era for Cooroy.

The industry was revitalised in the 1990s. Incentives offered by the Queensland Government encouraged many rural land owners to plant timber on their otherwise unproductive properties. Eucalypt species in particular dominated in areas around Cooran and Pomona, with fewer numbers of cabinet timber species planted. In lowlands where soils are less conducive to hardwood, softwoods such as pines prevailed. Non-native species such as bamboo, Paulwenias, or Pongamia were planted also, although these required management to prevent weed spread.

The 1999 South-East Queensland Forest Agreement led to the closure of the two mills at Cooroy as the supply of timber from Crown land no longer warranted their operation.

In October 2017, Noosa Council instigated a plan that will result in 2,400 hectares of land within Yurol and Ringtail State Forests transitioning to National Park status over 10 years. More than half the area was covered by long-term plantation harvest rights held by HQ Plantations. The proposed change from State Forest to protected area tenure will result in permanent protection

of this important corridor between the Cooloola and Tewantin national parks. It provides valuable habitat for a range of threatened species, including the koala.

### **Alfredson's joinery factory**

At Cooran, The former Alfredson's joinery, pre-cut house workshop and sawmill complex at 28 King Street is evidence of the long history of timber-based industry in Noosa Shire. The business was also involved in efforts to address the post-World War II housing shortage. Pre-cut 'Queenslander' houses were manufactured at the premises and transported by rail and road throughout the state, helping perpetuate this distinctive style of housing.

Mervyn William Henry Alfredson, born in Nambour in 1912, started his apprenticeship as a cabinetmaker with Page Furnishers in Pomona, and completed it in Gympie. He then returned to Cooran, where his father, Thorvald P. Alfredson, was the Cooran railway station master. In May 1933, Mervyn Alfredson purchased 37.7 perches (0.09ha) of land opposite the railway station from Alice McIlwraith and set up a woodworking shop.

The workshop supplied the Australian Army with tent floors, tent pegs and other items.

In July 1944, the Widgee sawmill, near Gympie, was purchased to supply timber to Alfredson's operation, and M.W. Alfredson & Company was also formed that year.

Now listed on the Queensland Heritage Register, Alfredson's Pre-Cut House Workshop and Alfredson's Sawmill provides intact evidence of a timber-based family business that was operated, expanded and adapted between 1933 and 1990.

## **Dairy**

Commercial dairying started in the late 1890s and became the major industry in Noosa Shire. Milking machines were introduced on the larger farms from 1911. Children provided the substantial labour for milking cows and feeding pigs and calves, and herding cattle. The main breeds of dairy cattle in the shire were Jersey and Friesian.

Grazing in the Noosa Shire had been based mainly on introduced grasses and legumes. With the large-scale clearing of softwoods and eucalypts between 1906 and 1924, thousands of hectares were sown to Paspalum and Rhodes grass. These introduced grasses proved to be the mainstay of the grazing industries (initially mainly dairying) for some 50 years.

Gympie's first co-operative butter factory began operations in 1898, but it suspended operations in 1899 and was taken over by the Silverwood Dairy Company. In 1906 a new cooperative, the Wide Bay Co-operative Dairy Company, started with 175 suppliers and purchased the factory and its 'Golden Nugget' brand. Cream runs were introduced to service suppliers from outlying districts, while isolated suppliers sent their cream as best they could, often by packhorse to pick-up points or rail sidings. Cream from the Kin Kin area was sent to Cooran by packhorse and then by rail to Gympie.

Butter factories opened at Kin Kin in 1914, Cooroy in 1915 and Pomona in 1919 – the Silverwood Assoc. Company at Kin Kin, the Wide Bay Co-operative Dairy Assoc. at Cooroy and the Caboolture Co-operative Dairy Assoc. at Pomona. Before that, farmers railed their cans of cream in louvered vans from Cooroy, Pomona, and Cooran railway stations.

The Kin Kin factory closed in 1937 following improvements in methods of transportation. After 1937, Kin Kin cream was sent to the Caboolture Co-operative Dairy Assoc. Pomona factory.

The dairy industry in Noosa Shire peaked in the 1940s and 1950s but declined rapidly from the mid-1960s. The industry was based on butter production. The production of cream for butter had become uneconomical with the disappearance of export markets, increasing costs, and competition from margarine. Substitute products eventually transformed the markets, and the Pomona and Cooroy butter factories closed in the 1970 and 1975 respectively. For some years after that, whole milk from Noosa Shire was sent to a distribution centre at Gympie. By 1980 the number of dairies in Noosa had dropped to 43, with less than 4,000 head. By 1992 there were 19 dairies. Finally, the deregulation of the industry in 2000 resulted in all major dairy farming operations disappearing from the area.

By the seventies with the continuing cost/price squeeze more and more farmers left dairying. Much of this land went into beef production.

## **Cattle**

Cattle were first run in the area now Noosa Shire in the mid 1800s. While dairy farms became popular, there has consistently been grazing of beef cattle at a smaller scale. These cattle grazed on the same introduced grasses and legumes as the dairy cattle.

Beef cattle grazing decreased as dairy farming had picked up in the 1960s, by which point roughly 200 beef cattle producers were operating in the Noosa region in 1966. This number had halved by 1992.

In the 1970s, a high proportion of the land improved for cattle was developed by absentee owners under the guidance of farm consultants. The slump in beef market prices in 1973–74 subsequently made expenditure on pasture renovation, topdressing, and oversowing uneconomical.

In 1979, there were 13,471 beef cattle in the shire, representing only 0.13 percent of Queensland's total. Factors contributing to the decline in numbers included a degeneration of wallum pastures, overstocking during the initial establishment period, waterlogging of inadequately drained areas during a series of wet seasons in the early 1970s, and insufficient maintenance fertiliser applied, due mainly to large increases in the cost of superphosphate.

Also, the original developers encountered severe cattle tick infestations due primarily to inefficient dipping facilities. The improvement of these facilities, the adoption of strategic dipping programs, and the infusion of the drought-resistant *Bos Indicus* breed of cattle reduced the problems associated with the cattle tick.

In recent times there has been an upswing in beef cattle production, albeit from a low base. The small numbers necessitate a small scale slaughterhouse in the Sunshine Coast and Noosa hinterland area.

## **Bananas**

The impetus for growing bananas came when the Gympie and District Fruitgrowers Association was formed in 1916. Cooroy farmers railed 1,375 cases of bananas in early October 1917. A fast fruit train service was extended to Gympie in 1921, which saw an increase to just short of 15,000 cases in 1925.

Kin Kin was one of the prolific producing areas, followed soon after by Cooran and Pinbarren.

Bunchy top disease affecting big suppliers in northern New South Wales caused a short-lived boom. New growers entered the market through the World War One Soldier Settlement Scheme and were able to prosper quickly using lots as small as two hectares of fertile soils. Growth of the banana industry coincided with a population boom. The number of people in Noosa Shire doubled between 1920 and 1927, and increased a further 30.7 percent by 1933.

In 1928, a banana experimental station was established at Kin Kin East to conduct experiments in steeping (dipping in different solutions for given periods), spacing, depth of planting, trimming, fertilising, and baiting banana beetle borers. The beetle borer was discovered in the Cooroy district in 1916, apparently transported there in infected plant material from the Redlands area. The station closed in the 1930s.

From 1930 onwards the industry declined almost as fast as it had risen. The main reasons were rust thrips infestation, the worldwide economic recession, and the recovery of the Tweed banana areas from bunchy top disease.

By 1935 very few bananas were produced from the Noosa area. In 1966 there was still some 79 hectares of land committed to bananas, which had decreased to 11 hectares by the 1990s.

## **Pasture seed production**

Because of Noosa Shire's pioneering involvement in development of tropical legumes and grasses, it was a logical sequence that some producers would specialise in seed production of these new pasture plants to satisfy market demand.

Terranora Tropical Pasture Seeds began operations in northern NSW in October 1962 and quickly established a foothold in the Noosa Shire, with producers growing seed on a share basis.

The company joined with Anderson's Seeds, and expanded operations to provide two headers in the field, and a crop drying plant at Pomona. All seed cleaning was carried out in their facilities at Duranbah, New South Wales. The well-known Yates company also entered the pasture seed business, in conjunction with the Poulsen family at Carters Ridge, and set up a comprehensive seed cleaning plant on the property. This became fully owned by the Poulsens at a later date.

The period from the mid-1960s to 1970 was one of peak production. More than 20 growers were involved locally.

Of the full range of pasture species and cultivars grown over those years, Kazungula setaria, Greenleaf desmodium, and Archer axillaris persisted in production, followed in later years by Narok setaria, Samford Rhodes, and Safari clover.

By the late 1970s, there were eight producers growing one or more pasture cultivars for seed in the shire (three producing certified seed of Narok, or Samford). Virtually all this seed was contract harvested by one grower who has an auto-header and seed drying and cleaning facilities.

## **Further reading**

More information on the agricultural history of the area can be found at the Noosa Shire Museum at Pomona, or visit the website <http://www.noosamuseum.org.au/>.



# Country Noosa

PROMOTING A SUSTAINABLE RURAL FUTURE

Rural Enterprise Project



## CONCEPT PAPER

# Marketing, distribution, collaboration and networks

Author: The Social Deck

## Introduction

In recent years, agriculture in the Noosa region has seen a trend toward small-scale farming and niche products, in addition to an increasing number of lifestyle or hobby farms. This is a significant change in the regional industry, compared to the significant history of primary production, ranging from extensive timber milling and dairy farming and major production of bananas and some vegetables. Historical fragmentation of agricultural land has promoted the growing of produce that can be profitable on small lots, such as ginger, strawberries, hydroponic vegetables, and cut flowers.

One of the challenges that comes with this transition is finding alternatives for processing, marketing and distribution where economies of scale cannot be leveraged.

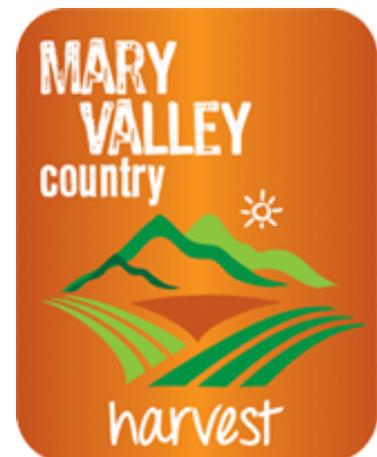
Discussions with community members, including growers, other landowners, and business owners during the initial workshops uncovered numerous opportunities for better collaboration and sharing of resources in the local region. This was particularly around the themes of shared food processing and distribution, cooperatives, share farming, rotational grazing, carbon farming opportunities, knowledge sharing, and spreading best practice in the community.

The following are a number of opportunities and avenues to connection between land owners, growing, customers and distributors in the region.

## Case study: Mary Valley Country Harvest

The Mary Valley Country Harvest is a growers' cooperative, gathering a network of local producers in the Mary Valley and servicing businesses in throughout the Sunshine Coast region including Noosa and Gympie. The collective now sells produce via their webstore, partnered businesses, and individual customers at a stall at the Dagon growers' market and other markets each week.

The Co-operative was started in 2013 with 20 growers, prompted by an increase in demand for locally grown food in Gympie and the Sunshine Coast. Research indicated that local farmers were restricted by poor access to storage and handling facilities, high transport and distribution expenses, and lack of time to pursue new markets. The Mary Valley Economic Development Fund recommended that a food hub be



established to aggregate produce, assist in marketing, and provide a centralised point for distribution should be established. The Co-operative had expanded to 70 members by 2016, and were selling in Gympie and Dagon.

The cooperative supports a network of small growers, allowing profitability by finding markets for niche products, collaborating to meet production needs, providing training, support and mentoring, coordinating bulk purchase of farming material such as mulch, and facilitating the sharing of processing and storing facilities.

Growers share information and work together practically, organising joint educational activities to share new ideas and innovation, administering shared accreditation and organising bulk purchase and sharing materials and services. In this way, small-scale producers can alleviate some of the difficulties that come with their deficit in the economies of scale. One such producer is Double Creek Farm in Imbil, a certified chemical-free farm growing tomatoes, cucumbers, eggplant, and lettuce.

Customers range from cafes, retail outlets, cooperative stores, and neighbourhood buyers' groups, mostly in the form of \$30 bags of fresh produce according to season.

### **Case study: Maravista farm - Local produce and vertical integration**

The Ogilvie group, owners of Rickys, Locale, Wood Fire Grill and Aromas Noosa, own and manage a macadamia farm nestled deep in the Cootharaba hinterland. The original heritage macadamia farm was operating in the 1930s but was revitalised in 1983, going into serious development to now produce over 200 tonnes of macadamia nuts from over 20,000 trees each year.



More recently, Maravista converted some of the spare land to small-scale farming to grow food for the restaurants. Three years in, they are continuing to work with their farmers and chefs to establish an efficient and flexible system to supply their restaurants with high quality, organic produce grown specifically for seasonal menus. It has taken periods of trial and error for the farm, moving between producing a small number of consistent crops and attempting to meet complex needs of the chefs' creative and exotic culinary imagination. An efficient balance is a work in progress for Maravista, but the project is taking shape with each year the farm matures. The flexible and complementary relationship between chef and farmer means very little is wasted, with excess produce becoming the weekly special or pickled for alternative uses.

Maravista farm produces a variety of vegetables including zucchinis, pumpkins, broccolini, and spinach, a range of microgreens, and flowers for garnish such as borage. Using only organic processes and products, the farm utilises organic waste and kitchen scraps from the restaurants to build nutrient rich soil on the farm and close the food/waste loop. They are also looking to produce citrus on the farm, with 60 fruiting trees still partially in development.

More information and photos can be found at [maravistafarm.com](http://maravistafarm.com)

### **Case study: Suncoast Fresh - Local produce distributors**

Suncoast Fresh are a local product distribution business operating for over 18 years, originating from the Sunshine Coast and now servicing through distribution centres in Brisbane and more recently Byron Bay. Suncoast prioritise high quality produce for the consumer, restaurants, hotels, and anyone who needs

fresh fruit and vegetables where they are. Epitomising the farm to table philosophy, building direct contact and strong relationships with Sunshine Coast farms promotes efficient and sustainable growing practices. They pride themselves on being in tune with seasonal growing processes, as well as industry food trends. Suncoast also provide an extensive seasonal guide on their website, with information on what produce is available through each month. Suncoast Fresh provides a distribution option for producers of small-scale and niche food products in the Noosa region.

Interested producers can contact Suncoast Fresh at [suncoastfresh.com.au](http://suncoastfresh.com.au)



### **Case study: Spare Harvest - Online community and marketplace connecting excess with need**

Spare Harvest is an online marketplace for food and garden goods and services. The database of listings does not facilitate the transaction itself, rather it encourages people to connect with those nearby for efficient food and garden resource usage. Started by the Sunshine Coast's Helen Andrew, the idea started with excess fruit from backyard trees and has grown into an international community. Users can share, swap, and sell goods via a website and app. There is also a desire to see



community building happen in this process where sharing, swapping, and trading bring people together. Spare Harvest works to better use and distribute resources to reduce waste and maximise efficiency of consumption. It is simple to sign up and browse the marketplace and list your own items. It provides an opportunity for entry-level marketplace activity, perhaps for community members growing produce but not yet set up for any official commercial operation.

All community members can register and begin trading for free at [spareharvest.com](http://spareharvest.com).

## **Case study: Food and Agribusiness Network (FAN)**

The Food and Agribusiness Network (FAN) is a member-based not-for-profit that exists to help the industry connect, collaborate, and grow and spans from Moreton Bay, up the Sunshine Coast to Noosa and out to Gympie. It was recently awarded the best small business social enterprise at the Sunshine Coast Small Business Awards.



FAN has a vision to double the region's food and agriculture industry by 2030. They aim to do this by actively facilitating collaboration, promoting innovation, and promoting trade in South East Queensland and across the globe. FAN develops strategic partnerships to further the growth and success of their network, and hosts events that connect businesses, distributors, exporters, and consumers across the entire food chain.

One such event is FAN's annual Meet the Makers event which features a large variety of producers in the region, each showcasing their products and telling the story of their work. This year, over 50 FAN members will feature at the event held at the Big Pineapple.

FAN also offers business development workshops and a six month mentoring program which links FAN members at different stages of business development. It also features an intensive three month food start up accelerator for high-potential businesses, funded by Advance Queensland.

Since its inception in late 2015, FAN has grown to 260 members, supported 13 members to exhibit at the Fine Food trade show, and facilitated new partnerships for 53 percent of their members.

FAN is a powerful advocate for the development of food and agriculture in the region, hoping to raise the profile of the Sunshine Coast to the highest reputation of quality, innovation, and sustainability.

To connect with FAN, interested growers can contact the network via [foodagribusiness.org.au](http://foodagribusiness.org.au).

## **Case study: Food connect**

The Food Connect foundation works to encourage bottom-up economies by facilitating connections between ethical regional food businesses, co-operatives, bulk buyers groups and

ecological farmers through the [Food Connect](#) network of local farmers and artisan foodmakers.

Food Connect has recently transitioned its operations to a multi-farmer/processor/consumer aggregation and distribution enterprise. Their main activities include retail and wholesale operations with processing facilities that are used by five other ethical food businesses. Currently 89 organic and ecological farmers that are too small to compete in wholesale and too big to operate exclusively in direct to consumer channels work directly with Food Connect. The Hub improves farmers' economic advantage by strengthening their capacity to supply local markets, thereby r-building resilient regional food systems.



Additional investment in the model is planned to take advantage of the burgeoning Social Procurement policies by institutional providers (hospitals, child care, government agencies) and bulk buying clubs. The long-term plans include scaling to include twenty on-site processors collaborating with farmers on marketing, waste minimisation, logistics, ecological sustainability, and local economics.

Food Connect successfully raised over \$2.1million in a crowdfunding campaign to create the local food hub, with over 500 investors engaging in the project. This allowed them to purchase their current industrial premises.

The Food Hub collaboration will be governed by the Food Connect Foundation through a multi-stakeholder board from farmers to consumers who have oversight on the direction and use of the intellectual property the collaboration develops.

## Other networks and distributors

### Cooran Food Collective

Connects growers in the region and hosts events celebrating local foods. The collective can be contacted with the following details:

(e) [cooranfoodcollective@gmail.com](mailto:cooranfoodcollective@gmail.com)

(m) 0472710831

### Farmtucker

Farmtucker is an online directory of farms that sell produce direct from their property. It aims to increase access for consumers and restaurants, promote healthy eating, and educate people about the origins of food. This will allow producers 'to decommo-ditise and humanise their produce'.

The Farmtucker website profiles farms nationwide, and features details about the farm, contact information and product information and seasonality. Farmtucker also promotes its farmgate members regular on social media.

The directory is still under development and encourages farms to register their details through the website form.

Local growers can register at [farmtucker.com.au/contact](http://farmtucker.com.au/contact).

### **The Produce Wholesaler**

The regions longest running fruit and vegetable wholesaler, The Produce Wholesaler works with growers local and further afield to bring the best quality to restaurants and homes, through their overnight all-week delivery and 'holiday boxes'.

<https://www.theproducewholesaler.com.au/>



## CONCEPT PAPER

# Mixed farming and holistic management

Author: Sandra O'Sullivan and Jason Virtue

## Introduction

Holistic management is a value-based, decision-making framework that helps farmers, food producers, or landowners (and community) move towards a future that is financially, ecologically, and socially sound for themselves and the community around them.

The definition of 'holistic' is to treat or deal with the whole of something and not just a part. Holistic management does exactly this; optimising the use of all available resources as a way of life. Holistic management can be applied by all landowners both large or small as it is a decision-making process about management rather than scale of production. Taking a holistic approach allows farmers to work through challenges as they arise, bringing them down to a manageable level reducing financial, ecological and social risks

This paper aims to provide high level information on Holistic management including case studies for existing or potential new landowners in the Noosa Shire Hinterland as part of the Noosa Rural Enterprise Plan.

## Rationale

The Holistic management decision-making process is an internationally tried tested process. In the planning process an individual's short-term and long-term goals are carefully considered, key questions are answered, and a risk management strategy is devised to help deal with issues when they arise.

Farming holistically can help deliver the following benefits:

- more productive land
- enhanced profits
- reduced input costs
- reduced business risks
- improved soil quality
- improved water infiltration of rainfall into the soil thus lessening the effect of drought
- prevention of creek erosion
- improved wildlife habitat
- improved personal livelihood and healthier, happier communities.

## What has worked?

Holistic management is popular in US and Africa and now increasingly in Australia, where large areas have been transformed from degraded landscapes into permanently regenerating ecosystems.

Since the 1960's Allan Savory has been the pioneer for holistic management. Allan Savory is a Zimbabwean born biologist and farmer. His work in Africa has transformed once productive (then degraded) grass and savannah lands from desert-like conditions into fully regenerated grasslands. As a young biologist, Allan saw firsthand that the issues of land desertification and soil erosion were due to how livestock were managed by humans. He devised a simple method for livestock management which considered both animal grazing and animal impact. His methods simply mimicked the vast wild grazing herds of Africa and the predator-prey relationship.

As part of holistic management, planned grazing of livestock is a practice of charting grazing moves to plan plant recovery by considering the time a plant has been exposed to a grazing animal. The bunching of livestock into a single cohesive herd in a limited portion of land encourages the grazing animals to graze on all of the available food sources and reduces grazing selectivity. When grazing is complete the livestock are herded to a new area and the original area is left to recover and replenish. Grass requires regular defoliation to remain healthy. Allowing a grass plant to recover after a defoliation event and then defoliating it again after recovery is what creates both healthy soil and healthy plants. The periodic defoliating of the plant combined with the animal impact causes the plants to grow again. The active, healthy plants pull the carbon from the atmosphere into the soil as nature intended. This photosynthetic activity is crucial for healthy soils, plants and livestock.

There is [resounding scientific evidence](#) supporting Holistic Management, in particular with improved grazing the soil's ability to sequester or store carbon greatly improves. Holistic management has helped thousands of farmers and landowners create more healthy soil. A leading researcher, Dr Richard Teague from Texas A&M AgriLife, has compared land where holistic grazing has been carried out with neighbouring land where it was not. The results showed on average that holistically grazed lands added three tonnes of carbon per hectare per year more than the neighbouring lands. This was an increase of 30 per cent in soil carbon storage.

This type of planned grazing is a paradigm shift in modern day agriculture where livestock are traditionally free to roam very large areas of land or set stocked on small areas. This shift in thinking could be seen as a challenge by some and possibly an increase in work load. However with proper planning, and once smaller areas are established, the workload decreases due to improved soil quality, pasture composition, and livestock resulting in enhanced profits.

## Case study: Holistic mixed farming at Bunya Grove Produce

In 2016, Mick and Kylie Carr formed **Bunya Grove Produce** to supply families and individuals with nutrient dense, ethically raised food. The farm is located in the Mary Valley just outside Amamoor, 57 kilometres from Noosa.

Mick and Kylie first began raising beef on 85 hectares in 2011. Subsequently they expanded their farm by an additional 77 hectares to include a 11,000 tree persimmon orchard which produces two varieties of persimmon. Bunya Grove Produce also produces beef, pastured free range pork, pastured free range chickens, free range eggs, and free-range duck eggs. The farm is managed holistically and biodynamically.



The mission at Bunya Grove

Produce is 'nurturing the earth, regenerating and enriching the soil producing nutrient-rich food in a harmonious and diverse environment where all creatures prosper, supporting and educating along the way. Farming for the future!'

The Carr's first became interested in holistic management in 2013 when they read about a decision-making process that looks at the 'whole' not just individual parts. Initially Kylie attended a two-day introductory workshop on holistic management, followed by series of further workshops. Kylie then went on to complete a holistic management course through TAFE. The Carr's were looking for a better way to farm sustainably and be more profitable.

Mick and Kylie started farming holistically by combining all their cattle into a single herd. They started their planned grazing strategy by charting all paddock grazing throughout the year. The cattle are moved as a single herd to fresh pasture several times a week, depending on seasonal growth. After the cattle have been moved out of a paddock to a new area, the pigs are then moved in to further work the soil in the original paddock. Eventually the flock of laying hens move in. Each flock have their own custom-built hen house, which are moved weekly to spread manure into the pasture to improve the soil quality, thus helping to regenerate the land. At Bunya Grove Produce all animals are utilised to improve the quality of the land.

With this way of mixed farming, the Carr's have seen great improvement in their soil, pasture and animals. Using conventional farming practices they would be able to run 60 to 70 head of cattle on their original property of 85 hectares. Now they have 170 head of cattle plus the additional animals.

Their advice for anyone intending to start on holistic management is to find a great mentor, who is knowledgeable in the area and can provide support in the decision-making process.

They also advise to plan, monitor, and replan to align decisions with your goals and overall mission.

Bunya Grove Produce can be purchased at Noosa Farmers Markets, Kin Kin General Store, Amamoor Store, Wright Cut Meats Cooroy, and directly from the farm ([www.bunyagroveproduce.com.au](http://www.bunyagroveproduce.com.au)).

## **Case study: Holistic mixed farming**

Noel and Debbie Granshaw run a beef cattle farm in Mooloo in the Gympie Region. In 2008, they started with a 55-hectare farm. The original farmer grew beans and then ginger. When the Granshaw's took over, they began the hard work and planning needed to restore the depleted pasture. Their successful results meant that in 2015 they were able to expand the farm by another 80 hectares by purchasing the adjacent property. Predominately the farm specialises in 'backgrounding,' which is raising cattle from six months to two years old (depending on weight) before on-selling for the local beef market.

Noel is highly passionate about holistic management. He has attended holistic management training and cites Allan Savory as his hero. Noel's first step in restoring the land was to map the farm and his second was to look at the available water supply system. Next Noel divided the original larger paddocks into smaller areas using string (electric) fencing. He keeps the cattle in a single herd to graze in a single smaller area before moving them on to the next area and leaving the original area to rest completely. He decides when to move the cattle based on his visual assessment of the grazing area.

Since 2014, Noel has been applying this high-density grazing strategy with great success. The main benefits he has experienced have been an increase in carrying capacity by 50 percent, reduction in chemical inputs, healthier cattle with significant reduction in tick levels, overall improvement in land quality and pasture composition, and no pasture dieback, which is a serious issue experienced throughout Queensland.

For those thinking of starting holistic management, Noel emphasizes how crucial it is to have an overall plan and long-term strategy. Noel's advice is to firstly map your farm and know what you are dealing with so you can lay solid foundations for successful future paddock management.

## **Further Information**

**Allan Savory Institute** - <https://www.savory.global/>

**Holistic Management International** - <https://holisticmanagement.org/>

**Allan Savory:** Land transformations can be seen in his 2013 TED talk:

([https://www.ted.com/talks/allan\\_savory\\_how\\_to\\_green\\_the\\_world\\_s\\_deserts\\_and\\_reverse\\_climate\\_change](https://www.ted.com/talks/allan_savory_how_to_green_the_world_s_deserts_and_reverse_climate_change))

**Polyface Farms** (Joel Salatin) - <http://www.polyfacefarms.com/>

**Dr Richard Teague** - <https://vernon.tamu.edu/research-project/grazing-ecology-management/>  
<http://fergusonfoundation.org/wp-content/uploads/2017/02/StevenApfelbaum-DiggingDeeper.pdf>

## **Holistic Management Training**

In South East Queensland, **Jason Virtue** is an educator of holistic management and is accredited with the Allan Savory Institute and Holistic Management International. Jason provides mentoring and customised one on one training for individuals, families and tailored workshops for groups and small-scale food producers <https://www.landlifeeducation.com.au/>

Jason can be contacted on 0427 199 766 or [jason@landlifeeducation.com.au](mailto:jason@landlifeeducation.com.au)

**For further information on Holistic Management in North Queensland**, NQ Dry Tropics Project the Table Top Case Study <https://www.youtube.com/watch?v=yjMaDGv7otw>

**Improving Soil Carbon study by World Bank and Arizona State University**

Soil Carbon Cowboys <https://vimeo.com/80518559>



# Country Noosa

PROMOTING A SUSTAINABLE RURAL FUTURE  
Rural Enterprise Project



## CONCEPT PAPER

# Permaculture

Author: Bill Berry (Permaculture Noosa), Tom and Zaia Kendall (Kendall Permaculture, Permaculture Research Institute Sunshine Coast)

NB This paper is a condensed version of an article written by Bill Berry of Permaculture Noosa appearing on the Permaculture Noosa website. The full version may be accessed by clicking on these links: [REP case study](#) & [Concept Paper](#)

*Permaculture: a Designer's Manual*, Mollison (1988)

## Introduction

(by Tom and Zaia Kendall)

Permaculture, being a design process, can be of great benefit for the Noosa region. Within the permaculture function, through replicating natural processes, improvement in biodiversity, productivity, ecology and much more can be achieved.

A misconception has occurred that permaculture is just about gardening, however it has much more capacity than this. Many disciplines are addressed within permaculture, that encompass all the necessities for life.

Since the introduction of European culture to the Australian landscape many changes have occurred at a rapid rate which have disrupted the natural cycles of landscape function. Permaculture practices in their simplicity and complexity have the ability to aid in the rectification of these processes.

The water cycle function has been reduced, mainly by deforestation causing the speeding up of water flow to the ocean which has led to dehydration of the soil profiles. Conventional agricultural practices increase soil loss and compaction, inhibiting the mineral cycle and reducing soil carbon.

Permaculture has a philosophy to work within natural processes and one of the main directives is diversity. Diversity gives the opportunity for the multifunction of elements and systems to provide resources for other elements and systems. This leads to increased fertility and hence productivity.

Agriculture and lifestyle are a main form of living in the region, however a lot of energy is applied maintaining lifestyle properties that apart from aesthetic values provide little productivity. With a permaculture design these properties could also provide food and an economy whilst still being aesthetically pleasing. Agricultural properties could enhance their resilience with permaculture design due to harvesting natural resources and identifying loss of opportunities that the landscape could be providing.

# Definition

Permaculture is an ethics and values-based movement initiated by Australian Bill Mollison with the help of his student David Holmgren in the late 1970's. It is now practised world-wide.

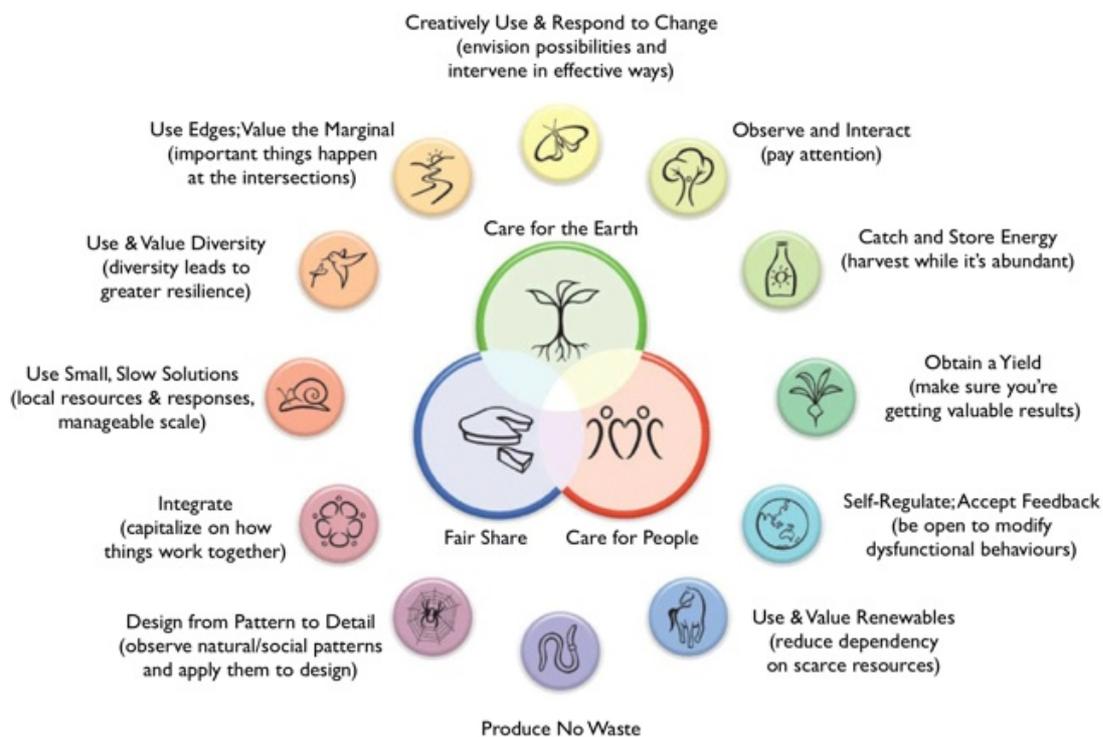
“Permaculture (permanent (agri)culture) is the conscious design and maintenance of agriculturally productive ecosystems which have the diversity, stability and resilience of natural ecosystems. It is the harmonious integration of landscape and people providing their food, energy, shelter and other material and non-material needs in a sustainable way.” (Mollison 1988)

## The Ethical Basis of Permaculture

1. CARE OF THE EARTH: provision for all life systems to continue and multiply.
2. CARE OF PEOPLE: Provision for people to access those resources necessary for existence.
3. FAIR SHARE: By governing our own needs, we can set resources aside to further the above principles.

## Definition of Permaculture Design:

Permaculture design is a system of assembling conceptual, material and strategic components in a pattern which functions to benefit life in all its forms.



David Holmgren, <http://www.permacultureprinciples.com>

## Why Permaculture?

The huge body of evidence of ecological disaster is appalling. Soil erosion, deforestation and pollution are amongst the most pressing. We are in danger of perishing from our own stupidity and lack of personal responsibility to life. Our consumptive lifestyle has led us to the brink of annihilation.

Permaculture seeks to address these problems by partnering ecosystem interactions through intelligent ecological design. Farms must adopt a different accounting system, beyond a simple report of what is spent and earned. This system takes into account the amount of energy used in relation to what it produces, the effects on the environment, and the high quality social outputs like meaningful employment and quality food. As time passes, the system increases in value.

Growth at any cost is an outmoded and discredited concept. To accumulate wealth, power or land beyond one's needs in a limited world is immoral. The only possible decision is to withhold all support for destructive systems and to take responsibility for our own existence and that of our children. It is important to do it now.

## Methods of Permaculture Design:

1. ANALYSIS • Listing characteristics of components • Making connections between them
2. OBSERVATION • Design by expanding on direct observation of a site
3. DEDUCTION FROM NATURE • Design by adopting lessons learnt from nature
4. OPTIONS & DECISIONS • Design as a selection of options or pathways based on decisions
5. DATA OVERLAY • Design by map overlay
6. RANDOM ASSEMBLY • Design by assessing the results of random assemblies
7. FLOW DIAGRAMS • Design for work places
8. ZONE & SECTOR ANALYSIS

**Zones** can be visualised as a series of concentric circles, the innermost circle being the one visited most frequently. A real site will not conform neatly to this pattern; it will be modified by access, slope, soils, wind patterns etc.

There are 6 zones:

- Zone 0 - typically the house or village
- Zone 1 - where we place those components needing frequent visits, typically closely tended herb gardens, egg laying poultry, seedling nursery, etc
- Zone 2 - less intensively managed, typically main crop vegetable beds, ranging animals, small ponds, orchards, etc
- Zone 3 - commercial crop and animals for sale or barter, broad scale farming systems, large water bodies, etc
- Zone 4 - bordering on forests or wilderness, but managed for wild gathering - forest and fuel needs, large dams, hardy trees
- Zone 5 - natural unmanaged environment - occasional foraging, recreation or just let be

**Sectors** are the wild elements of sun, light, wind, rain, wildfire and water flow, all coming from outside our system and flowing through it. Some need to be excluded and some invited in. We plan to regulate these factors to our advantage, in conjunction with placement of our zonal components.

## **The Concept of Guilds in Nature and Design**

In the natural world, we can observe assemblies of plants or animals of different species which offer each other mutual benefits. We try to design guilds of plants and animals which will assist each other and to aid us in management.

Monocultures in conventional agriculture typically produce more of one crop than polycultures. However inputs, such as machinery, fuel, fertiliser, pesticides, herbicides, and fungicides, in monocultures are typically high. With polycultures, the sum of all the different crops produced is typically higher and inputs are lower. For example, fertiliser is provided by leguminous support species, green manure crops, and animals. Pest control is provided by beneficial insects and birds, which thrive in the intelligently designed polyculture. Weeds are suppressed by use of diverse cover crops and never exposing bare soil. Those weeds which do emerge are composted and used as fertiliser. Complex, mature systems don't need as much energy, and while they produce less, their output is more diverse, stable and efficient.

## **Succession: Evolution of a System**

Nature shows us that a sequence of processes arise in the establishment on landscapes which have been devastated by processes such as basalt flows, ice planing, floods, burning, or overgrazing. Hardy pioneer species (including weeds such as thistles and lantana) are the first to establish themselves. These species stabilise water flow over the landscape. They provide mulch and shelter and improve soil quality for the longer term forest or tree crop species that succeed them. We can enable a cultivated system to reach a long-term stable state by carefully planning succession of plants and animals so that we receive short, medium, and long-term benefits. We can place most of the elements of such a succession in one planting. With this approach, remarkable changes can occur in as little as two or three years.

## **The Establishment and Maintenance of Systems**

The first priority is to locate and cost the components of the design. We examine the site itself as a potential source, investigating clay, rock, and weeds. We can think of labour, skill, time, cash, and site resources as interchangeable energies: what we lack in one we can exchange for another.

The planning stage is critical. We need to take the evolution in stages to break up the job into easily achieved parts, placing components that will be needed early in development like access ways, shelter, nursery, water supply, and energy sources.

Impulsive sidetracks should be avoided. It's best to fully plan the site and its development, changing plans only if subsequent information forces us to do so. Zones one and two are the first priorities; these support the household and save the most expense. Starting with a nucleus and expanding outwards is the most successful way to proceed. To be successful it is very important to have flexibility in management, act on new information, continue to observe and be open and non-discriminatory in our techniques.

## What has worked, new opportunities, and constraints

NB: headings are web links: click for more information

[Permaculture Noosa](#) is an Incorporated Association formed to encourage and promote permaculture within the Noosa area of the Sunshine Coast of Australia. At our monthly meetings, members have stalls of produce and plants for sale. A seed saving bank is available to donate to and to access. There is a library for members to borrow books that relate to permaculture. Every month an interesting speaker with a particular expertise presents to the group. Often, a member presents a profile of a plant, its uses, how to grow and propagate it. The evening wraps up with supper and an opportunity to socialise with other members, the guest speakers, and visitors.

[Yandina Community Gardens Inc.](#) (YCG) is a membership-based community group dedicated to providing education and practical experiences in Permaculture Design Principles. YCG and “The Blue House” is a volunteer-run learning environment for Permaculture gardening. It was established for the community to gain practical skills in growing their own food and also features an old Queensland weatherboard house which has been retrofitted to demonstrate practical solutions to changing your home to be more sustainable.

[Maungaraeeda Farm](#) is the home of the Not For Profit Permaculture Research Institute Sunshine Coast Inc., and is owned by Tom & Zaia Kendall (See case study below). It is an almost self-sufficient site providing for its owners’ and visitors’ needs. It is located in the Noosa Hinterland town of Kin Kin and is a Permaculture Demonstration and Education site, educating young and old through tours, workshops, events, courses, and onsite training.

[Noosa Forest Retreat](#): The community living goals of Noosa Forest Retreat begin with a holistic or integral vision of life with a central value of treating the land and all life on it as sacred, and utilising organic and permaculture farming to do so. With their organic, permaculture farming they are not only growing nutritious food, but are creating a healthy community starting with the earth and for all creatures in and on the earth including us.

[Melliodora Farm](#): The development of permaculture co-founder David Holmgren's home plot at Melliodora, Central Victoria, has been well documented.

[Zaytuna Farm](#): Geoff Lawton's Zaytuna Farm next to The Channon in northern NSW, Australia, is a 27-hectare medium scale example of permaculture implementation. It is the home base for the Permaculture Research Institute. Begun in 2001, the site is off-grid, and has multiple food forest systems, animal systems, kitchen garden and main crop areas. It has a large network of water-harvesting earthworks for passive hydration of the site, composting toilets, rocket stove powered showers, and straw bale natural buildings.

[City Farm Perth](#) is an example of community permaculture in an inner suburb of Perth, Western Australia. The farm was constructed on a brownfield site in 1994, and is a focal point for permaculture education, as well as community music and art.

[Northey Street City Farm](#) Founded in 1994, Northey Street City Farm has since created a vibrant green oasis in the heart of Brisbane. More than 1500 exotic and native fruit trees, bush food plants, shrubs and ground covers have been planted on the four-hectare farm site since its inception. The farm has been developed for people to enjoy and participate in using the principles of permaculture. It is also intended to be a demonstration site where people of all ages can learn through practical, hands on experience.

[Kalangadoo Organic Orchard](#) is a small family business located in the Limestone Coast of South Australia. Chris and Michelle McColl have a background in Agricultural Science and around 30 years experience in horticulture from Central Australia to the Middle East to South Eastern Australia. They have come to appreciate that a holistic approach with biodiversity at every level of the orchard ecosystem is the way to build a resilient farm and business.

[The Food Forest, Gawler River, South Australia](#) Developed by Annemarie and Graham Brookman and their children Tom and Nikki, the Food Forest is a permaculture farm and learning centre that demonstrates how an ordinary family with a typical Australian income can grow its own food and create a productive and diverse landscape.

When the 15-hectare property was purchased in 1983, it was not much more than a bare barley paddock. Only a few towering River Red Gums remained along the Gawler River from the time the Kaurna Aboriginal people camped in their shade and gathered food from the land. The heritage-listed homestead was built within the first few years of white settlement of South Australia. Much of the fascinating history of the farm can be traced through the stone troughs at which Clydesdale horses drank and implements that once made life easier for the farmers of the day.

For a list of permaculture projects worldwide, click on this link:  
[https://en.wikipedia.org/wiki/List\\_of\\_permaculture\\_projects](https://en.wikipedia.org/wiki/List_of_permaculture_projects)

### **New opportunities**

There are limitless opportunities in the field of permaculture. It can be practiced on a site as small as a balcony to a site as large as a country.

Most permaculture practiced in Australia today is in suburban backyards and small farms. This is an extremely important area in permaculture. If practiced widely enough, permaculture could rescue Australia from potential starvation and [anarchy](#) in the event of natural or manmade catastrophes.

Human-made catastrophes such as peak oil, and Australia's critical lack of fuel oil reserves, are much more likely than most people realise: [Australia's Liquid Fuel Security NRMA reportNRMA Report Part 2](#)

David Holmgren's recently released book: [Retrosurburbia](#): the downshifter's guide to a resilient future, promotes the idea that Australian suburbs can be transformed to become productive and resilient into uncertain futures. It is an excellent resource.

### **CASE STUDY - Federal Farm, Noosa Shire, Queensland**

Please refer to the attached Plan for a better understanding of the design.

#### **Factors informing this permaculture design:**

- As much as possible, the Three Ethics of Permaculture (care for the earth, care for people, and fair share) and the 12 Design Principles of Permaculture have been adhered to in the design of Federal Farm.
- In response to 'Care of the Earth', the main emphasis has been to rehabilitate the landscape through water harvesting methods (swales, gabions, silt barriers, and vegetation), so that rainwater will be slowed and absorbed. The ponds will be naturally replenished over an extended period. The quality of the soil will be improved by soaking from the swales and by

the use of rotational grazing, cover crops, and green manures. Livestock carrying capacity of the site will be considerably enhanced.

- The principle of 'Care for People' is addressed through the provision of a worthwhile healthy lifestyle, clean water, and nutrient dense clean food, not only for the property owners but also for family, friends, and visitors to the site. When there is a surplus, it will be either sold locally or shared, thus following the principle of 'Fair Share'. Federal Farm will not only be a working farm but will host visits and tours for people who wish to learn and see firsthand the principles of permaculture in action. Permaculture teachers and likeminded professionals will be invited to conduct courses. Accommodation will be provided for teachers, students and farm workers from time to time.

The **12 Principles of Permaculture** (as described by David Holmgren) and their application are:

1. **Observe and Interact** – The site has been explored and studied. Its topography, climate, vegetation, soils, and water resources have been taken into account in this permaculture design.
2. **Catch and Store Energy** – Solar panels will collect energy from the sun and store it in batteries. Swales, gabions, silt traps, and improved capacity of the soil created by rotational grazing and enhanced vegetation will capture and store water to be taken up in dry periods.
3. **Obtain a yield** - There are many different systems which are designed to yield a harvest. Some, such as the trees in Zone 4, will take years to develop. Others like the herbs and vegetables produced in Zones 1 and 2 will yield rewards within a short time and will provide the inhabitants with much of their food requirements. Zone 3 will contain predominately livestock which should result in a harvest after three or four years.
4. **Apply Self-Regulation and Accept Feedback** – As much as possible, a great number of alternative possibilities for the use of the site have been studied and considered through attendance of courses, workshops, internet, books, and discussions with experienced likeminded people. All sites are different and we are aware that surprises and failures will occur, and unexpected, valuable lessons will be learned. Hopefully we will learn those lessons sooner rather than later by constant observation, consideration, and thought, in keeping with Bill Mollison's teaching: 'The philosophy behind permaculture is one of working with, rather than against, nature: of protracted and thoughtful observation rather than protracted and thoughtless action: of looking at systems in all their functions, rather than asking only one yield of them: and of allowing systems to demonstrate their own evolutions.'
5. **Use and Value Renewable Resources and Services** –As much as possible, resources will be sourced from the site or will be obtained by exchanging resources with others, preferably local. It is proposed to produce not only food, but timber and fabrics from within the site.
6. **Produce No Waste** – As much as possible, material resources used will be of high quality, carefully maintained, and long lasting. Waste produced will be minimised and, if produced, will be recycled.

7. **Design From Patterns to Details** – We have endeavoured to follow this principle by producing a sector analysis and zoning plan. Details of uses within the zones have been considered and suggested but not entirely resolved in all their complexity.
  8. **Integrate Rather Than Segregate** – By carefully considering the placement and design of zones, an efficient method of working has evolved. Many of the beneficial relationships between the zones have been considered. For example the purification of water in Zones 5 and 4 flowing to downstream zones, Zones 4 and 5 providing a source of pollinators for crops in the other zones, the supply of waste products from Zone 2 as food for livestock in Zone 3, and Zone 0 supplying food scraps to produce compost materials and worm castings for Zone 1.
- A man wearing a wide-brimmed hat, a blue shirt, and dark boots is standing in a large, rectangular wooden trough. He is using a long-handled shovel to mix a thick, brown, muddy substance. The trough is situated outdoors, with trees and a building visible in the background. The scene appears to be part of a permaculture or agricultural project.
9. **Use Small and Slow Solutions** – The initial development work will be done by the owner (who is not in a hurry) with occasional help from others. This will naturally result in a relatively slow process with adequate time for frequent consideration and observation, and allow for small incremental changes if necessary.
  10. **Use and Value Diversity** – With a wide range of produce, Federal Farm will be far less vulnerable to threats. Produce will include, timber, honey, cane, a variety of fruit, cattle, sheep, poultry, fish, crustaceans, crayfish, and 'market garden' vegetables.
  11. **Use Edges and Value the Marginal** – The swales and the boundaries between zones provide long lengths of interfaces which are taken advantage of.
  12. **Creatively Use and Respond to Change** – The property owner is aware of this principle and will follow it as closely as possible.

## **Case Study: *Maungaraeeda* (“Place of Food”), Kin Kin Qld**

Tom and Zaia Kendall have been on their permaculture demonstration property *Maungaraeeda* for 13 years and have gradually implemented permaculture principles toward the goal of complete self-sufficiency.

The property uses long-term volunteers to provide ongoing labour for farm work. People from all around the world stay at the property for a minimum of four weeks. Shorter time periods are not worth the training necessary to efficiently undertake the work to upkeep the processes.

Tom has over 40 years of agricultural experience with a history in broad acre farming and biodynamics. He now aligns to permaculture processes for their holistic value and the incorporation of polyculture farming, which he believes to be crucial in creating a design system for truly sustainable living. He now consults nationally and internationally including recent trips to Iran, where he holds an advisory role in the development of a large-scale permaculture venture.

The Kendalls are working toward developing a system that provides for itself and produces more energy than it consumes. Currently, this permaculture demonstration site produces 90 to

95 percent of their food, 65 percent of their animal feed, 75 percent of their electricity, and all of their cooking fuel, fertiliser, compost, and water needs. The Kendalls collect methane gas from cow manure to produce their own gas for cooking in an interesting process. Manure is collected daily, mixed in water, and poured into the bio-digester onsite. The methane released in the bio-digester is captured and piped into the house. Like much of the Kin Kin region, Maungaraeeda is fairly steep, hilly land. As such, water management is a high priority and significant challenge. Tom has developed swales to direct rain water through the food forest and prevent runoff of valuable nutrients. All buildings onsite are made from recycled, local and/or natural building materials, such as timber, straw bale, mud brick and adobe.



The Kendalls began in 2005 with an overgrown property with few services, no gardens, minimal fencing, very poor soil, and a leaky dam as the only water source. They have since converted the property into a lush, productive and beautiful piece of land.

They produce almost all of their own food including meat, dairy, gluten free flours, vegetables, fruit, and nuts. They use rocket stoves and gas from the onsite bio-digester for cooking, run a solar system for most of the electricity needs and have gravity fed water for house and garden use. The site is a Permaculture Demonstration site, accredited by the Permaculture Research Institute Australia, and the not-for-profit organisation the Permaculture Research Institute Sunshine Coast Inc. runs courses and events on site.

Although the desire is to have the property itself self-sustaining, Tom believes permaculture functions ideally in community, where there is collective land to undertake permaculture practices.

Tom believes that permaculture can be profitable if a couple of factors exist. Multiple properties need to work together in a complementary community, cooperating for market needs, and the market needs to shift its understanding and expectations to value natural processes and to appreciate seasonal growing.

### **Interview with Zaia Kendall**

#### Q. How important is the sustainability of the food we eat? Why?

It is of utmost importance that the food we eat has been produced in a sustainable way. The food industry is the biggest industry in the world, including agriculture and processing/manufacturing of food products. The current, unsustainable food industry is one of the biggest causes of pollution, soil degradation and erosion, biodiversity loss, weather pattern changes, and numerous other problems.

If we work with nature rather than fight nature, we are able to have clean air and water, build healthy soil, work in a biodiverse environment and not have draught, flooding issues or hunger in the world. Working with natural systems creates an abundant environment of healthy food, not just for humans but also for flora and fauna, including soil and its bacteria.

#### Q. What are the advantages and disadvantages of permaculture?

Permaculture is a sustainable design system that works with and by observation of nature. Permaculture methods may include accelerating naturally occurring systems using natural methods to achieve results more quickly. Its advantages are that Permaculture methods and design focus on repairing damage done to the natural environment and on working with nature to achieve abundance.

There are no disadvantages of permaculture, as we as permaculturalists attempt to achieve long term yield. We aim to get a yield for generations to come. When first starting permaculture practices, this may mean that the yield may not be as high as by conventional means due to the restoration process. Patience is required, but once yield is achieved it will be abundant and ongoing.

Q. Is there a more effective method?

We do not believe there is a more effective method. You may hear of terms like Re-gen Ag, holistic management and other methods, which are methods devised through observation of nature. Therefore, these methods are also a part of Permaculture. Permaculture is not meant to be stagnant but is continually evolving due to people's observations of nature. We continue to learn every day, as every day puts forth new challenges which requires a new approach. Permaculture encompasses all other methods that require working with nature, sometimes accelerating natural processes to achieve yield, abundance and healthy flora and fauna (including Homo sapiens...). Permaculture stands for Permanent (Agri)culture, and thus is quite a large umbrella.

For more information, go to [kendallpermaculture.com](http://kendallpermaculture.com) and [permaculturesunshinecoast.org](http://permaculturesunshinecoast.org)





## CONCEPT PAPER

# Pest & weed control

Author: The Social Deck with support from Phil Moran (Noosa District Landcare) and Ken English (Noosa Council)

## Introduction

The following concept paper covers the topics of pest and weed control and waste management. It will outline some of the primary plant and animal pests of the region, and provide links to resources on how to identify, treat, and manage their impact in the short and long term. It will also provide links to important information from Noosa Council on how to manage waste, and case studies detailing examples of common pests and treatment programs in place to manage them.

## Plant pests

It is important to manage plant pests because of their detrimental impact on biodiversity. They compete with and hinder regeneration of native plants, have flow on effects to native fauna, and adverse effects on agricultural crops.

The prevalence and growth of different weeds varies throughout the Noosa region. Some of the most common weeds include the Cats claw creeper (*Macfadyena unguis-cati*), Madeira vine (*Anredera cordifolia*), Camphor laurel (*Cinnamomum camphora*), Chinese elm (*Celtis sinensis*), Rat's tail grasses (*Sporobolus natalensis* and *pyramidalis*), Climbing asparagus fern (*Asparagus africanus*), Corky passionfruit (*Passiflora suberosa*), Morning glory (*Ipomoea indica*), Lantana (*Lantana camara var. camara*), Rattle pods (*Crotalaria spp.*) and Water hyacinth (*Eichhornia crassipes*).

Weeds are also an issue in dams and streams. These include Salvinia [*Salvinia molesta*] and Water hyacinth [*Eichhornia crassipes*]. Early detection of both aquatic and terrestrial weeds is very important. If you can recognise a problem early, you can save a great deal of time and money by early intervention.

## Case study: Cats Claw Creeper

(*Macfadyena unguis-cati*)

### Impact, identification & treatment

The Cat's Claw Creeper (pictured) is a large dense vine that smothers native plants and trees with consistently aggressive and dense growth. It blooms large yellow flowers and climbs with 3-clawed tendrils. It was introduced as an ornamental creeper in Queensland gardens but has spread to become



known as a widespread problem weed in South East Queensland and some smaller patches of central and north Queensland. Its impact is primarily in smothering native vegetation and altering soil chemistry.

### **Council program (Noosa Pest Management Plan)**

Noosa Council, in conjunction with Noosa Landcare and the Department of Agriculture and Fisheries DAF, have initiated a program targeting infestation of Cats claw creeper (CCC) across the shire and particularly in Kin Kin in the Kin Kin area. Using an integrated pest management approach, a combination of manual, chemical, and biological control is recommended depending on the site and level of infestation. Chemical treatment can be very effective and is useful in reducing the impact in heavy infestations. The biocontrol solution treatment involves lab-bred Tingid Bugs, which lay eggs only on the CCC plant. Extensive trialling has been undertaken in Australia and the Tingid bug poses no risk to other plant life. Monthly releases of the bug occur across designated release sites to maintain population levels, and their impact on CCC is monitored on an ongoing basis.

More information can be found at

[https://www.daf.qld.gov.au/\\_\\_data/assets/pdf\\_file/0003/63336/IPA-Cats-Claw-Creeper-PP139.pdf](https://www.daf.qld.gov.au/__data/assets/pdf_file/0003/63336/IPA-Cats-Claw-Creeper-PP139.pdf)



## Animal pests

Council has established the key animal pests of the Noosa region includes foxes, wild dogs and red, rusa, and fallow deer. They cause damage to the natural environment by competing with domestic livestock and native species, by spreading disease or by directly damaging vegetation. Additionally, they destroy some property infrastructure such as fences.

### Case Study: European Red Fox

#### Description

A common pest throughout mainland Australia, the European red fox (*Vulpes Vulpes*) grows up to 90 centimetres and six kilograms in weight with a pointed muzzle and large ears. They are mostly active at night and have adapted to inhabit a variety of environments but are likely to be found in tropical areas. They typically live for around 4 years and breed annually. Their high infant mortality means only one in five pups survive the first year.



#### Impact

Foxes primarily prey upon small native marsupials, poultry, and livestock, even in an abundance of food. They are the greatest threat to many of Australia's smaller native marsupials. They also threaten ground dwelling birds and turtles. Economically, they have their largest impact on sheep and goat farming, impacting infant numbers. Foxes can also disrupt and damage irrigation infrastructure and crops.

#### Management

Landowners can work in partnership with Noosa Council to manage the predation of the European red fox. Council promotes awareness and response to animal pests through fencing and active participation in control programs to manage impact on crops and livestock in the region.

Council is currently undertaking a program to manage the European Red Fox population in Noosa through a range of interventions. Firstly, Council workers and contractors are using soft catch foot hold traps on council owned land and private properties. This method is often time consuming and highly dependent on the skill of the worker but can be effective. Noosa council also employs den fumigation methods with a specialist operator, using trained fox detector dogs. Over 10 dens are mapped and monitored each year. Fumigation occurs while the juvenile foxes are inside the dens, removing the next generation. The council encourages Noosa landowners to report any fox dens on their properties to aid management of the region.

Foxes and wild dogs are targeted with baiting in April and September in the Noosa region on state and council managed land and 35 participating private properties. The timing of the baiting is coordinated with adjacent council regions. Candid pest ejectors are also used for fox control in Noosa. These tools use dried meat bait to deliver a dose of the poison directly into a fox or dog's mouth once the spring-loaded bait mechanism is triggered.

Generally speaking, the most effective method of protecting livestock and poultry from the European red fox is exclusion fencing. To be effective, fences must be at least two metres high and extend 50 centimetres below the surface to prevent digging. Guard dogs, mostly Maremmas, and alpacas are also used to protect sheep and goat stock.

Comprehensive information on population, biology, impact, and management can be found here: [https://www.daf.qld.gov.au/\\_\\_data/assets/pdf\\_file/0007/71836/IPA-RedFox-PSA-CompleteReview.pdf](https://www.daf.qld.gov.au/__data/assets/pdf_file/0007/71836/IPA-RedFox-PSA-CompleteReview.pdf)

## **Identification, treatment and support**

There is a range of support options and numerous resources available to identify, treat, and develop management plans for these and other pests and weeds.

### **Noosa & District Landcare**

Noosa Landcare offer land management programs which include education and training on identifying weeds, and other related land maintenance. With a three-year gold membership, Landcare also offers property inspection and pest management plans, and can provide factsheets and information on weeds and how they can be managed on properties. Their services can also be procured to treat and help manage weeds.

<https://noosalandcare.org/>

### **Noosa Council**

The Noosa council website provides an extensive range of information plant and animal pests that are prevalent in the Noosa shire, and an overarching pest management plan for the region.

<https://www.noosa.qld.gov.au/weed-management>

<https://www.noosa.qld.gov.au/documents/40217326/40227890/Pest%20Management%20Plan>

### **Queensland Department of Agriculture and Fisheries**

The Queensland DAF provides fact sheets, management and assessment plans, strategies, manuals and other educational resources to deal with a range of pest animal and plant problems. They also provide information on legislation and permits in the realm of biosecurity and the Feral Pest Initiative which funds industry and local governments in addressing pest problems.

<https://www.daf.qld.gov.au/business-priorities/plants/weeds-pest-animals-ants>

<https://www.daf.qld.gov.au/business-priorities/forestry/pests-and-diseases>

**Weed Society of Queensland** - <http://www.wsq.org.au/>

**Healthy Land and Water (Kin Kin)** - <https://hlw.org.au/>

**Burnett Mary Regional Group (BMRG)** - <http://www.bmrg.org.au/>

**Mary River Catchment Coordinating Committee (MRCCC)** - [www.mrccc.org.au](http://www.mrccc.org.au)

**Sunshine Coast Council** - <https://www.sunshinecoast.qld.gov.au/Environment/Trees-Plants-and-Animals/Pests-and-Weeds/Weed-Identification-and-Control>



## CONCEPT PAPER

# Small crop farming and niche produce

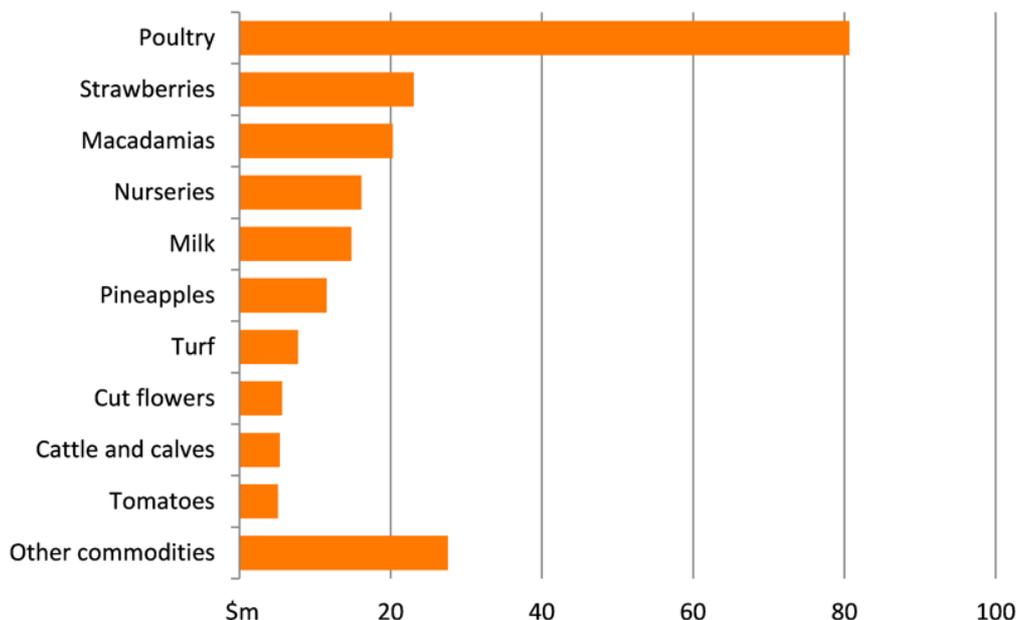
Author: Sandra O'Sullivan with Nina Saxton

## Introduction

The Sunshine Coast region has a diverse agricultural sector. In 2016-17, the gross value\* for agricultural production on the Sunshine Coast was \$218 million and was two percent of the total gross value for agricultural production in Queensland. The main commodity was poultry (\$81 million) followed by strawberries (\$23 million) and macadamias (\$20 million). These commodities together contributed to 57 percent of the total agricultural value for the region (see **Figure 1**).

As part of the Noosa Rural Enterprise Plan, this information paper aims to inform on Small Crop Farming and high value 'niche' produce for existing or potential new landowners in the Noosa Shire hinterland.

**Figure 1. Value of Agricultural Production for the Sunshine Coast Financial Year 2016-17.**



Note: The graph shows only data published by the ABS. Some values were not published by the ABS to ensure confidentiality. The 'Other commodities' category includes the total value of commodities not published as well as those with small values. Source: Australian Bureau of Statistics, cat. no. 7503.0, Value of agricultural commodities produced, 2016-17 \* The gross value estimates in this publication are derived by the multiplication of price and quantity estimates of agricultural commodities.

Source: Australian Bureau of Statistics, Cat. no. 7503.0, Value of agricultural commodities produced 2016-17.

## Species and varieties that grow in the region

The Noosa Shire Hinterland has a sub-tropical climate, rich soils, and a clean water supply, which are all conducive factors for crop growing. Table 1 provides a list of vegetables, fruit, and nuts grown in the region.

**Table 1. List of vegetables, fruit, and nuts**

Vegetables	Fruit & Nuts
Asian Vegetables	Avocadoes
Brassicas (Broccoli, Brussel Sprout, Cauliflower, Radish)	Citrus (Lemon, Lime, Mandarin)
Beans	Custard Apples
Beetroot	Fingerlime
Capsicum	Lychees
Chilli	Mangoes
Ginger	Macadamias
Garlic	Nectarines
Melon (Rock Melon, Honeydew, Watermelon)	Strawberries
Mushrooms	Passionfruit
Peas	Papaya
Potatoes	Persimmon
Pumpkin	Peaches
Sweet potato	Pineapples
Sweet corn	Coffee
Spinach	
Tomatoes	
Turmeric	

Due to the sub-tropical climate experienced in the Noosa Shire Hinterland, the growing year can be split into dry season during winter and wet season during summer.

Some of the vegetables and fruit that peak during the winter months are strawberries, kale, peas, herbs, potatoes, garlic, pumpkin, and coffee. Some of the vegetables and fruit that peak mainly in the summer season are beans, ginger, lychees, melon, pumpkin, sweet potato, sweet corn, mangoes, citrus, and persimmons.

## Opportunities and constraints

To be a successful vegetable and fruit grower, basic factors such as soil suitability, irrigation availability, and the effect of temperature on growth, production, and quality need to be understood. The first crucial step when starting to grow small crops is to carry out a comprehensive soil test. Knowing the soil type can help with choice of crop and knowing how to optimise the plant growing conditions.

Growers who wish to grow for specific niche markets can succeed through planning and consideration of all the risks associated with production and marketing. It is important to speak to others in the industry. These connections can be made through contacting industry associations. Industry associations arrange seminars, networking opportunities, and workshops where you can meet others and create new business opportunities. Industry associations also hold training and education events and provide you with critical information about your industry (for example legislation information). A number of key industry associations are listed in the Further information section.

### New opportunities

Some of the new market opportunities for the small crop farming are:

- Organic grown produce or chemical free produce. In Australia, organic certification can be carried out by certifying organisations that are accredited by the Department of Agriculture and Water Resources (Contact information for the approved certifying bodies are listed in Further information section).
- Asian vegetables for green grocers and supply to local restaurants
- Micro greens and edible flowers
- Herbs, including culinary, medicinal, fresh and dried
- Australian bush foods such as finger lime, lemon myrtle, quandongs, and wattle seed
- Farm Tourism, where farms are open to visitors for farm tours and fresh produce can be sold at farm gate shops

### Constraints

Climatic factors such as rainfall, temperatures (low and high) and length of season can be major limitations for growers. Small land size can also be viewed as a constraint for growing crops. Both case studies presented in this concept paper are excellent showcases of successful cultivation from small areas of land in the Noosa hinterland.

Labour can also be a constraint for growers, with some crops requiring higher labour requirements than others throughout the growing season and during harvesting. For example, the harvesting and re-seeding of most greens and edible flowers is often a delicate process requiring intensive time and labour.

Options such as labour sharing and equipment sharing with others can help lessen these burdens.

## Processing, marketing, and distribution challenges

Processing, marketing, and distribution can be major issues for growers. There may be difficulties with maintaining quality of produce with goods being highly perishable. Distribution may be difficult due to fuel costs and time constraints.

For small crop growers, understanding your local market is crucial. Weekends on the Sunshine Coast see many local markets selling fresh fruit and vegetables. Some of the main markets are Noosa Farmer Markets, Dagon Station Growers Market, Yandina Markets, Hinterland Harvest Markets, Woombye markets, Kawana Waters Artisans and Farmers Markets, Kin Kin farmers market, and Peregian Beach farmers market.

Co-operatives and food networks can help growers facing processing, marketing, and distribution issues. The Mary Valley Country Harvest Co-operative is a community-operated organisation that assists growers and producers in the Mary Valley region. The co-operative assists growers in marketing and distribution. Produce is available online and businesses and customers are serviced throughout the Mary Valley, Noosa, and wider Sunshine Coast region. For further information please see Country Noosa Concept Paper: Marketing & Distribution for a Case Study of Mary Valley Country Harvest Co-operative.

The Food and Agriculture Network (FAN) is the food and agribusiness network for the Sunshine Coast region including Noosa, Gympie, and Moreton Bay. Members of FAN span the entire industry supply chain. FAN is a conduit for collaboration, communication and co-operation, promoting knowledge sharing in the industry.

Sunfresh Marketing Co-operative is an avocado and selected tropical fruit marketing co-operative based on the Sunshine Coast. The co-operative first formed in 1995 by 22 local producers. It has since thrived and has now more than 175 members. The members include growers of avocados, lemon, lime, finger limes, custard apples, apples, peaches, persimmons, mangoes, and lychees. Sunfresh has developed thriving domestic and export businesses. Sunfresh not only helps with marketing produce but also has a packing facility in Coolumb.

### Case study: Banyan View farm

At **Banyan View Farm** located in the Upper Pinbareen Creek catchment, Nina Saxton grows market garden vegetables on a small section of her 26-hectare farm, with the majority being dedicated to beef cattle.

In 2011 Nina moved to the area from Brisbane and in 2013 she set about following her passion for growing market garden vegetables. Nina farms holistically and grows vegetables using organic and biodynamic techniques. She describes the early days as a steep learning curve which involved a certain degree of trial and error in discovering which crops were most suitable to fit her target market and lifestyle.

Nina now grows a variety of market garden vegetables, mainly kale, garlic, peas, heirloom tomatoes, fennel, daikon, radish, spinach, rocket, edible flowers, and culinary herbs. She has a standing order with the local greengrocers for her chemical free kale, peas, herbs like dill, parsley, coriander, and chervil, and garlic when available. She also provides fresh produce on a regular basis to Sails restaurant at Noosa Heads.

Even though Banyan View Farm is cultivating a small area for market garden crops, The area can be quite productive. For example, in a season Nina was able to output 145 kilograms of

chard, 40 kilograms of daikon, 20 kilograms of spinach, 15 kilograms of fennel, 130 kilograms of kale, 150 kilograms of heirloom tomatoes, 15 kilograms of peas, 30 kilograms of rocket, 60 kilograms of garlic, 40 punnets of edible flowers, and 120 bunches of herbs. The farm also turned-off 24 steers at a carcass weight of 200 to 250 kilograms and 10 lambs.

Initial infrastructure and setup costs are high, but with these levels of production the farm can now support itself.

Nina's tips to anyone starting out are to plan ahead, be flexible, and investigate ways to work with others to reduce your input costs, for example by equipment or land sharing. Overall, take time to consider the economic return and to find out what produce is most cost effective per square metre. Nina's future goals include supplying herbs for the medicinal herb market. According to Nina, the most valuable lessons have been to be realistic, work out profitability on land area, and the immense value in diversifying the farm. This includes conducting tours, producing a range of products for food, health, or decoration, or uncovering market trends for unique products.

## **Case study: Noosa Black**

Noosa Black is a small coffee plantation growing on just under three hectares just outside of Kin Kin, in the Noosa Shire hinterland. In 2003, Peter and Tracey Hinner bought the farm. The Hinner's plan was to grow something a little bit different with the intent of supplying to the local area. After two years of planning, which involved talking to other people, visiting other plantations, finding nursery for seedlings and preparing the paddock, they planted 6,400 coffee seedlings. Their mission was to focus on being the only and best grower and supplier of coffee in the Noosa area, hence the name. Four years later they had their first commercial crop.

Noosa Black is the Arabica k7 coffee variety. There are no chemicals used because in Australia the coffee tree does not have any natural pests. Harvesting begins mid-winter when the cherries on the coffee trees turn to red. Not all cherries ripen at once because of the east-west planting and variations in spring rains, therefore harvesting occurs several times over an eight-week period. Although hand picking can provide higher yields, harvesting is done using mechanical harvester for economic reasons. Once harvested, the cherries are then pulped using a wet method to remove the outer skin. The inner seed, or parchment, is then rinsed in water for 24 to 48 hours before being dried naturally out in the sun. The sun-dried beans are then transported to Northern New South Wales for hulling, grading, and sorting. Finally, the coffee beans are roasted locally.

The Hinner's recommendation for growing in the Noosa hinterland is to choose a niche product and to consider Noosa and greater Sunshine Coast region as your target market. In growing for the local market, they believe your product is more embraced and supported.

Noosa black is sold in IGA groceries in Pomona, Cooroy, Noosa Junction, and Caloundra, Black Ant Café in Pomona, and Heart of Cooran Café in Cooran, as well as speciality café Pantry 360 in New Farm, Brisbane. Noosa Black also supply a retail outlet at Sunshine Coast Airport. The four flavours of Noosa Black are also available for purchase online ([www.noosablack.com](http://www.noosablack.com)).

## Further Information

### Grower Advice

Queensland Government Department of Agriculture and Fisheries grower advice:

<https://www.daf.qld.gov.au/business-priorities/plants/fruit-and-vegetables>

For a guide on soil health for vegetable production:

<https://www.daf.qld.gov.au/business-priorities/plants/fruit-and-vegetables/vegetables/soil-health-for-vegetable-production-in-australia>

Country Noosa <http://www.countrynoosa.com/>

Biodynamic Agriculture Australia Ltd <https://biodynamics.net.au>

### Industry Associations

Food and Agribusiness Network (FAN) <https://foodagribusiness.org.au>

Horticulture Innovation Australia Limited <https://horticulture.com.au>

Citrus Australia <https://www.citrusaustralia.com.au/>

Custard Apples Australia Inc. <http://www.custardapple.com.au/>

Avocados Australia <https://www.avocado.org.au/>

Australian Macadamia Society <https://australianmacadamias.org/industry>

Australian Garlic Association <https://www.garlicaustralia.asn.au/>

Australian Lychee Growers Association <http://www.australianlychee.com.au/>

For a list of other industry associations

<https://www.business.qld.gov.au/industries/farms-fishing-forestry/agriculture/agriculture-associations>

### Organic Certifying Bodies

Australian Certified Organic (ACO) <http://www.aco.net.au/>

AUS-QUAL Pty Ltd (AUSQUAL) <https://www.ausmeat.com.au/>

NASAA Certified Organic (NCO) <https://www.nasaacertifiedorganic.com.au/>

Organic Food Chain (OFC) <http://organicfoodchain.com.au/>

Bio-dynamics Research Institute (BDRI) <https://biodynamic.com.au/>

### Processing and Marketing Co-operative

Mary Valley Country Harvest Co-operative <https://www.maryvalleycountryharvest.com>

Sunfresh Marketing Co-operative <http://www.sunfresh.com.au/>

Braidwood Garlic Co-op Ltd can provide advice for growing organic garlic.

<https://www.braidwoodgarlic.com.au/>



# Country Noosa

PROMOTING A SUSTAINABLE RURAL FUTURE

Rural Enterprise Project



## CONCEPT PAPER

# Sustainable grazing

In the Noosa Hinterland and surrounding areas

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## Introduction: why grazing and why beef?

### Lifestyle and mixed farming

There has been a decline in large grazing properties in Noosa Shire with many sub-divisions into smaller lots, typically 20 to 60 hectares. A significant proportion of this land has been cleared in the past for grazing. Although there are reforestation opportunities, they are unlikely to cover a large part of the cleared land for economic reasons.

Many of these smaller properties are now owned by new 'lifestyle' farmers who have decided to live in the Hinterland for the quality of life. Typically, they are looking to generate income from the property but supplement the costs with other income. This is necessary as land costs are high due to the popularity, natural environment, and convenience of the Noosa Shire. These contribute to the lifestyle quality we cherish.

There are many high value activities which can generate good income. This can be an area of special interest to the owners and their families. However, in general they will occupy a limited amount of the land typically available in the higher quality areas. It therefore makes sense to mix together high value item production and grazing to maximize income, utilisation, and maintenance of the land. For example, a 40 hectare property might dedicate eight hectares to high value production and 32 hectares to grazing.

Grazing counts as primary production according to the Australian Taxation Office as long as specific criteria are met. This brings many financial advantages for the grazier.

### Our climate

The sub-tropical climate brings many opportunities and issues for farming in the Hinterland.

Overall, we have a high annual rainfall of around 1600 millimetres per annum. Monthly rainfall is high in spring and summer and low in autumn and winter. The low rainfall, lower temperatures, and reduced daylight hours mean paddock growth is very low in autumn and winter. This means that, in turn, we must generate enough feed in the paddocks in spring and summer to see us through the low growth months.

Of course, the pattern in any specific year can be very variable around these averages. A degree of resilience must be built into our plans to allow for this. Dams to store water, paddock

irrigation equipment, varying the stocking level, and storing grass bales can be used as necessary but are likely to be costly.

There is another downside to our climate. At the time when we are trying to fatten young cattle, there is a high water content in the grass. This fills the stomachs and slows growth. In that sense our country is good for breeding and not so good for fattening and finishing stock.

### **Why beef?**

Our wet climate and the presence of ticks and other parasites poses serious problems for stock such as sheep, and goats. Keeping more than 20 pigs results in heavy regulation, so most mixed farms are likely to have a small number for their own consumption and limited sales. Chickens can be run in a 'pastured' fashion combined with cattle for many benefits. However planning regulations and rural residents can limit poultry and make it uneconomic for the labour involved.

Horse agistment can be a profitable exercise. In general, owners like their horses in individual paddocks and there is often a high infrastructure cost. Also, the predominant improved pasture in the Hinterland is Setaria. This has problems for horses in that it gives them 'big head'. Alpacas have many of the characteristics of beef from a pasture point of view. There are farms in the area producing wool. However, the real business opportunity is in the growing interest in alpaca meat. It is early days for this opportunity.

All of these factors contribute to beef cattle being a very appropriate stock to keep in a sustainable and low impact fashion. There are few planning issues and rural residents, in general, are happy to have cows nearby.

## **What works for raising beef in the hinterland?**

### **Rotational grazing**

Economics suggests that meeting the consumer desire for grass fed beef is a perfect strategy for the Noosa Hinterland. We can also make clear the provenance of any product which is also in high demand.

An essential part of achieving such production effectively and sustainably in the Noosa Shire is a rotational grazing scheme. In this scheme, paddocks are sized to be grazed for about a week. Seven or eight paddocks are ideal and allows some additional resting of poor paddocks to go on. The mob is rotated around all operational paddocks so that, in fact, paddocks are resting a lot of the time.

When a paddock is working, the cattle eat the grass evenly, intensely and effectively. This is in contrast to range grazing where cattle are free to just eat the best grass at will.

The actual rotation of the cattle is managed by observing the feed available and the rotation can be sped up or slowed down as necessary.

This has many advantages:

- The effectiveness of the feeding leads to excellent carrying capacity – up to one breeding unit (cow plus calf) per hectare.
- The delay in returning to a paddock reduces the effectiveness of parasites and reduces the need for pesticides
- The even eating of the grass removes the weeds from the paddock, requiring little use of herbicides
- The manure helps fertilise the grass and the encouragement of worms and dung beetles helps disburse it.
- There is no need for harrowing or slashing, thus reducing the need for machinery and the use of diesel plus reduced compaction.
- There is growing evidence that well managed, improved pasture is an effective carbon sequestration tool.
- The cattle get used to the rotational approach and will move themselves once the gates are opened, which contributes to the best practice of sensitive handling.

This requires:

- Significant fencing infrastructure. While we recommend wire fencing for property boundaries, modern developments in electric fencing can significantly reduce the cost and effort of the internal fencing of the paddocks.
- Off-stream watering in the paddocks. The use of tanks, pipes, troughs, and pumps to provide a water reticulation network. Grants do seem available to help fence off creeks and gullies, and provide the water supply equipment. Typically, the materials are funded and the farmer provides the labour.
- Labour for cattle movement and regular paddock monitoring.

There are many additional conservation benefits of implementing a rotational grazing system around the property. Riparian zones, fewer creek crossings, improved water quality both on and off the farm, nature corridors, re-vegetation, carbon sequestration, and improved habitat are the immediate benefits and opportunities.

All in all, rotational grazing provides a sustainable and profitable way to operate beef cattle in the Noosa Hinterland.

### **Breed choice**

Breed choice is a highly emotional issue amongst farmers and is a matter of personal conviction.

Firstly, there is a big difference between raising stud cattle and commercial beef. A stud requires strict adherence to breed conformation and pure-bred cows and bulls. Raising commercial beef allows the use of hybrids and crossed breeds with associated quality and economic benefits.

Running a stud is a dedicated activity. Attending shows and breed sales events takes a lot of time and effort to publicise the stud and its progeny. In every breed, there are large dedicated studs that attract the cream of the buyers by having their own sales events.

Many of us have learned the hard way that a small stud is hard work and not likely to generate consistent high income. We would not recommend it other than as a real hobby operation.

In our climate, it is important to have tick resistance in the cattle we use. Typically this comes from having a Brahman (*Bos indicus*) content in the breed. This is usually crossed with a European (*Bos taurus*) breed for better meat quality and quantity. There are many such crosses which have reached a stable situation and can be regarded as a 'breed' for all intents and purposes.

Droughtmaster is a popular Queensland breed, which crossed Brahman with English short horn. It is very popular in the Hinterland. Other popular crosses are Brangus (Brahman with Angus), Charbray (Brahman with Charolais), and Braford (Brahman with Hereford). With careful pest management, cross bred cows can be serviced with a pure breed bull. Black Brangus cows with Black Angus bulls is a common and effective combination. A Caribbean breed, Senepol, has been found to have good tick resistance and better meat quality than Brahman and is being pursued locally.

In the commercial situation, 'in-breeding' should be avoided so that bulls do not mate with their progeny. Typically, one bull can service 40 cows. It is important to have bulls semen tested each year as it can be an expensive mistake to find out too late that the bull is infertile.

There is no single answer to what breed to use. In starting out, it may well be best to use a well-known breed in the first place rather than a pioneer. When buying cattle, consider that our harsh climate and pests mean our coastal cattle are a tough lot, so we do not recommend you purchase from too far west and bring them to the area.

### **Pasture grasses, legumes, and weeds**

Our paddocks have, in general, been stocked with improved pasture grasses from the time of land clearing and subsidised fertiliser. Where possible it is desirable to have diversity in the grasses and many grass mixes are available. There are some very comprehensive books available on grass recognition and good processes for determining the species and forage quantities available in a paddock. From time to time, Country Noosa runs field days and workshops on these topics, which are well worth attending.

It is important to plant legumes among the pasture grass as these are not only good fodder but are nitrogen fixing and good for soil fertility. Wynn Cassia is a common legume used locally which is very cost effective. Commercial grass mixes will normally contain suitable legumes.

Many local farms were planted with Setaria seed improved pasture which came from Southern Africa. This is highly palatable, perennial and productive – the key '3 Ps' of pasture grasses. However, Setaria is very dominant and will take over other grasses. It will also dominate many legumes, but works well with Wynn Cassia.

If you have some paddocks with other pasture grasses then it is very valuable to build on this diversity. Make sure, where possible, that Setaria cannot spread into it from nearby paddocks. If

you have heavy *Setaria* in paddocks, there will be so much seed in the soil that it is probably best to live with it and encourage *Wynn Cassia* to live amongst it.

*Setaria* has many specific characteristics and needs to be managed with these in mind. Country Noosa has produced a short handbook on this which can be found once again at [www.countrynoosa.com/resources/](http://www.countrynoosa.com/resources/).

There are not many weeds that a good rotational grazing system will not keep under control. However, Giant Rats Tail is a real problem that can spread very quickly, but it's easy to recognise and there are techniques for dealing with it. Completely getting rid of it is an ongoing task that takes many years. Neglected farms can often have an infestation of Giant Rats Tail and the real effort required to contain and eliminate this needs to be recognised.

### **The product**

There are a number of product options for commercial beef farms. In particular, breeding can be avoided by buying young steers and fattening them for market. If breeding, many farmers sell weaners at around nine months old for others to fatten. Alternatively, we could breed and finish over two years.

Making a simple assumption that costs are equal in each option then, at typical market prices, the income from each approach would be \$700 per year for breeding and selling a weaner, \$500 per year for breeding and finishing over two years, and \$300 per year for buying a weaner and fattening for a year. On this basis, breeding a weaner each year is a more attractive proposition.

It is recommended to cull around 15 percent of your breeding cows each year to maintain fertility, to keep the average age down, and manage temperament. This is not such a burden as cows put on weight during their lifetime. As such, purchasing a young cow at \$1100 would be more or less balanced later by selling a heavier animal at a lower cents per kilogram.

It is tempting to replace culled cows by hanging on to some of the weaner heifers. As it will take two seasons or so to bring the heifers to fertility, this may be a poor economic decision. Purchasing cows ready to breed may be a simple and more cost-effective approach which also avoids the issues of in-breeding.

### **Further opportunities**

The above has described the basic choices in commercial beef production. There are a number of other production opportunities worth considering.

## **Adding value by detailed planning**

As described above, given the climate, topography, and soil types in the hinterland, each paddock can have different qualities and attributes. By carefully recording how each paddock performs and when it is used, we can gain a good understanding of the real production value. It is a common approach to spend money and energy trying to improve poor paddocks when, in fact, making good paddocks even better has a higher return.

Just as each paddock can be different, so can the performance of individual cows, bulls, and calves. Again, by recording detailed results, individual animal performance can be assessed. This can then lead to a highly effective process of giving the best paddocks to the best animals to improve the top end performance rather than settling for the average. It is important to consider where value can be added most profitably.

## **Yearling beef**

With funding from Noosa Council, Country Noosa is researching the feasibility of a yearling beef process. In this, weaners would be held for longer on the mothers until they can be processed as young grass-fed beef. It appears this is a product we can finish effectively in our climate. The product is lower fat, ideal for general use but also good for the sorts of recipes usually associated with veal. The feasibility study looks good and further work is planned on the marketing, distribution, and organisational aspects.

## **Group farming**

A real possibility is to group together beef activities to achieve economies of scale. A group of farmers may join together with each doing their own specialist high value activities but co-operating together on beef production. Individual properties could specialise on certain parts of the production chain for the overall benefit of everyone, for example fattening cull cows.

This concept seems to have real potential in the shire, particularly with the spirit evident among the new entrants. Country Noosa expects to play a significant part in bringing these together.

With this in mind, the case study below is about a group farming activity.

## **Processing, marketing, and distribution**

At the moment, the majority of beef farmers are selling weaners, finished animals, and cull cows through the Sullivans Gympie Saleyards. Many of these then go through the processing activities of Nolans and feedlot owners, although some go to local farms too.

There is increasing pressure for larger animals and the avoidance of 'private kills'.

Any farmers wishing to breed or fatten other animals than beef are required to transport the animals a long way for processing. This is expensive and stressful for the beasts.

Country Noosa is investigating the feasibility of re-opening the Eumundi Abattoir – a small, multi-purpose operation ideal for a farmers' co-operative. This would greatly simplify processing for both the Noosa Shire and the Sunshine Coast.

Some local farmers have arrangements with local butchers for mutual benefit. Some offer product to a network of local consumers. This whole area is one we look to expand as the Shire produces more beef and especially if we can develop the yearling beef concept.

At the moment, marketing is very much an individual activity. As some of the new concepts develop, we will be able to pursue this in very advantageous ways.

## Financials

A simplified financial model has been developed as a guideline for beef farmers. As an illustration, the following chart show the profitability of producing weaners. Prices and costs have been taken from real life.

To simplify further, the commercial rates for agisting and having cattle managed have been used as a surrogate to reflect the contribution to the cost of land and the cost of farm labour that can be legitimately charged to the cattle. In these financials, the cattle activity is regarded as an 'add on' to the property and this is a guide to the income that can be achieved.

### ON FARM MODEL FOR PRODUCING AND SELLING ONE WEANER CALF:

Assets – buy cow	\$ 1,100 (as young cows put on weight they can later be sold for purchase price and replaced.)
<u>Sales</u>	Transfer value of offspring to next stage is, say, \$750 p.a. (average sale price between a steer and a heifer)
<u>Costs</u>	Buy Bull \$3,000 - as services 40 cows for 5 years – cost effect \$15 per calf produced
Fertility	85% - cost $750 \times .15 = \$112.50$ (includes calf mortality)
Mortality	3% - cost $\$1,100 \times 0.03 = \$33$
Agistment	\$2.50 pw / breeder = \$130 p.a. surrogate for land charge
Management	\$3.00 pw/breeder = \$156 p.a. surrogate for labour cost
Cow and Calf Treatments	\$100 p.a. pesticides, testing
Total Costs	\$546.5 p.a. per calf
<u>Income</u>	$750 - 546.5 = \$203.5$ per calf
<u>Return</u>	$203.5 / 1100 \times 100 = 18.5\%$

As such, this shows a high and worthwhile return for investing in beef production at 18.5 percent. Using these estimates and taking a simplified example of 40 hectares used for weaner beef production:

100 acres devoted to beef grazing with 50 breeding 50 cows:

<u>Investment</u>	\$55,000	(50 x \$1100 cows– not depreciated but bull written off)
<u>Gross Income</u>	\$35,063	(50 x 85% x \$750)
<u>Calf Income</u> (after all direct costs)	\$10,175	( \$203.5 x 50)
<u>Return on investment</u> cow costs	18.5 %	
<u>Agistment income</u> for use of land	\$ 6,500	(50 x \$130)
<u>Cattle Management Income</u>	\$ 7,800	(50 x \$156)
<b><u>TOTAL INCOME</u></b>	<b>\$24,475</b>	

(If land owned and self-managed)

This example shows that the calves themselves make a good return on the capital cost of the cows. In addition, the operation makes additional contributions to the cost of the land and the labour cost of cattle management. If the cows and land are owned, and the mob self-managed, an income of around \$25,000 can be obtained towards costs and living expenses. In addition, the land is maintained and at these levels the property could be classified as a primary producer with significant tax advantages.

## Case study: an example of group farming at Bellbird beef

This case study is a comprehensive example of how group farming can work across a large area, with six farmers using a variety of co-operation techniques. It operated from 2010 until 2017 when the owner of Bellbird Homestead retired. At the time, many of the property owners were new to local farming and this provided a vehicle to establish their farm in an economic way. It is satisfying to note that these farms are either still managed on a group basis or are now established separately in their own right.

At the start of this co-operation, the farms were only running around 80 breeding cows. The group farming concept allowed this to expand to around 450. Rotational grazing was used everywhere to provide excellent carrying capacity and the approach proved highly resilient despite several periods of drought.

Bellbird Beef Pty was formed to manage the operation, which today could easily be a formal co-operative. This structure did enable a variety of different sharing approaches. Bellbird Beef oversaw operations and financials.

The home farm, Bellbird Homestead, was the core of the co-operation and provided the machinery, expertise, management, and labour as required.

Ridgewood Downs and Eli Farm are owned by investors who wanted to be involved but not on a day-to-day basis. They owned the properties and the cattle, and Bellbird Beef provided labour and expertise on a fee basis as required.

Fig Tree farm shared in the profits of the operation by share farming with Bellbird Beef, which provided the cattle and management. As long as the owners of Fig Tree shared in the risks it could be classified as a primary production property. On Red Cedar Ridge, Bellbird Beef placed its own cattle and paid an agistment fee and a management fee for them to look after the cattle. There were also several simple agistments involved.

We believe this case study shows that effective group farming can dramatically increase the production, productivity and profitability of beef in the Noosa Shire

### An Example of Group Farming

