Tweed Sustainable Agriculture Strategy

Discussion Paper

Prepared for
Tweed Shire Council
THINK FOOD in association with
JOHN MONGARD LANDSCAPE ARCHITECTS

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This discussion paper has been prepared for Tweed Shire Council by John Mongard Landscape Artchitects in association with Think Food. We would like to thank Sebastien Garcia-Cuenca who has provided detailed input and various images.

John Mongard, September 2011

Think Food
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TWEED SUSTAINABLE AGRICULTURE STRATEGY

1. Introduction

Agriculture is one of the main land uses in the Tweed Shire. However, a range of social, economic and environmental pressures - including an ageing farming population, changing land uses and increasing variability of environmental factors - are all impacting on the viability of agriculture in the Tweed.

The Tweed Shire Community Strategic Plan 2011-2021 identifies a need to foster a viable farming community and improve the environmental capacity of Tweed farmland. Tweed Shire Council is committed to meeting these objectives through its Sustainable Agriculture Program, with support from the Tweed River Committee, Tweed Coastal Committee and state agencies.

The Sustainable Agriculture Program is currently delivering actions to improve the viability and environmental capacity of the Tweed's farmland. To strengthen, formalise and expand this process, Council is preparing a strategy to help achieve several long-term strategic outcomes:

- Enhance environmental quality and the natural resource base which underpins the agricultural economy.
- Make the most efficient use of non-renewable resources and on-farm resources as possible and integrate, where appropriate, natural biological cycles and controls.
- Make farm operations more economically viable.
- Contribute to the quality of life for farmers and the wider community.

A framework for sustainable agriculture (see Figure 1) highlights that it is the area's natural resource base that ultimately supports community well-being and a strong economy.

The Sustainable Agriculture Strategy will identify actions and delivery pathways that support, now and for the future, a healthy natural resource base, a strong farming community and a resilient agricultural economy (TSC 2011a).

This project will focus on agricultural activities but will not deal with rural settlement issues and related planning regulation. A Rural Settlement Strategy and Agricultural Protection Guidelines are being separately investigated by Council's Planning Reform Unit.

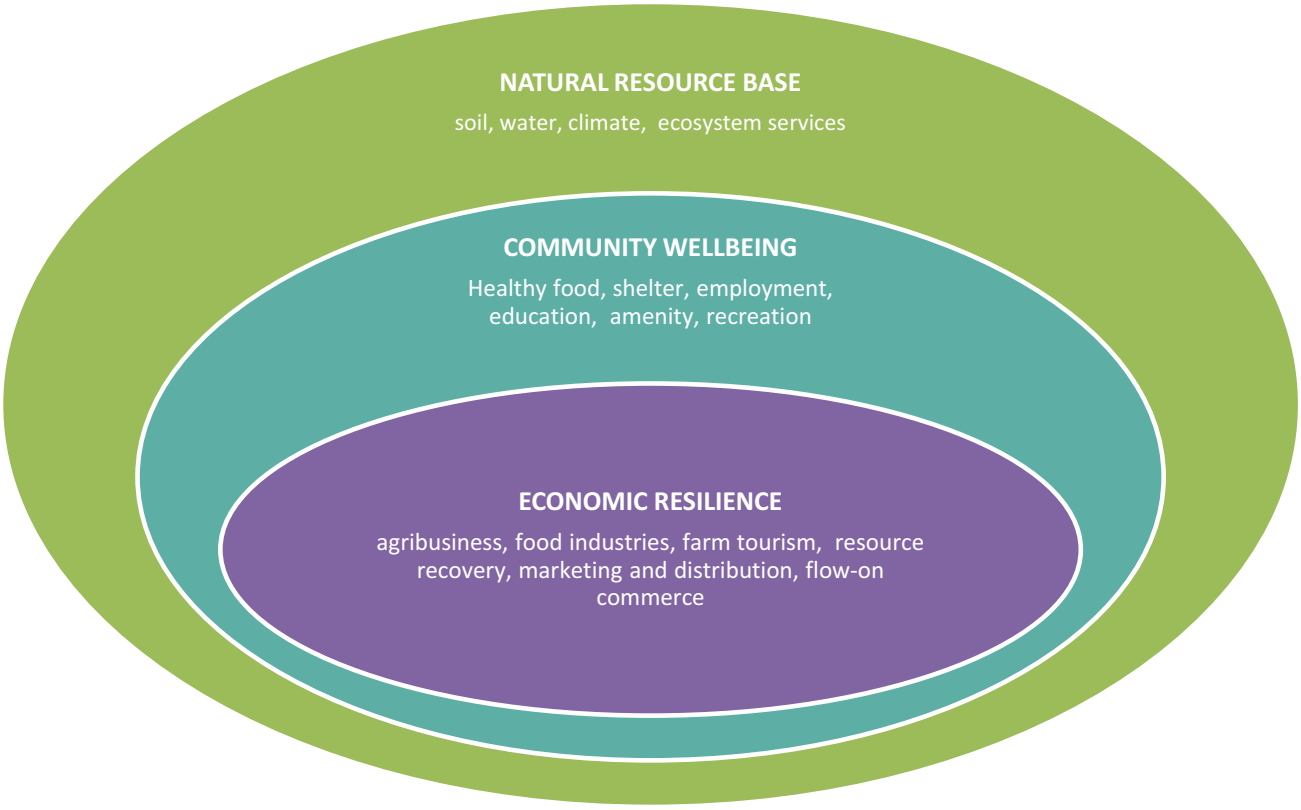


Figure 1: Sustainable Agriculture Framework (TSC 2011a)

Henrietta Fourmile of the Polidingi Tribe says:

Not only is it the land and soil that forms our connections with the earth but also our entire life cycle touches most of our surroundings. The fact that our people hunt and gather these particular species on the land means emphasis is placed on maintaining their presence in the future…What is sometimes called 'wildlife' in Australia isn't wild; rather it's something that we have always maintained and will continue gathering.

2. Aims & Objectives

The strategy aims to identify and prioritise actions that will:

- Conserve and enhance existing agricultural and environmental values.
- Remediate past adverse impacts on the land and the community.
- Highlight and respond to current and predicted pressures on agricultural land.
- Facilitate institutional change within government.
- Build capacity through education and stakeholder engagement.
- Leverage funding for delivery of these actions.

Ultimately, the Tweed Sustainable Agriculture Strategy and its actions will fit the capacity and roles of various stakeholders including:

- Agricultural producers.
- Industry groups and associations.
- Tweed Shire Council.
- Local businesses and economic development and tourism associations.
- Local community groups and individual residents.

The great challenge of our time is to learn to live sustainably: in balance and harmony with our environment and with each other. A necessary and urgent transition to sustainable, fair and resilient food and farming systems is fundamental to meeting this challenge.

That is why Council is preparing a strategy for sustainable agriculture and food production in the Tweed. This strategy is about well-being: of the Tweed's environment and landscapes, its farmers and the community as a whole.

The strategy is for the whole Tweed community, so as many members of our community as possible should play an active role in its development. Effective community engagement, to gain valuable input from local groups and individuals, is critical to formulate a relevant and meaningful sustainable agriculture strategy for the Tweed. Local knowledge and expertise will be the springboard for this strategy and local ownership of the strategy is essential for its actions to be successfully implemented and to achieve their objectives.

To secure these outcomes, the consultancy team will 'set up shop' in the Murwillumbah central business district and at the Murwillumbah Show to enable residents to express their needs, their priorities and their ideas and visions for the future.

TWEED SUSTAINABLE AGRICULTURE STRATEGY

3. About Tweed Shire

Environment

The Tweed environment is well regarded for its scenic beauty, as well as its agricultural productivity and biophysical diversity. Coastal sand dunes, estuaries and floodplains, low foothills and the steep hinterland areas of the Great Dividing Range all occur in the shire.

Significantly, the Tweed is a self-contained geographical catchment. The Tweed River and coastal tributaries sit wholly within the shire boundaries.

The Tweed's wetlands, rivers, floodplains and estuaries are important at both the regional and international level, and the shire has the third highest biodiversity of flora and fauna in Australia (TSC 2011b).

The Tweed is a great area for agricultural production because it has outstanding soils, plentiful water and a favourable climate suitable for year-round production.

Community

Generations of the local Aboriginal people of the Bundjalung Nation have lived in and derived their physical and spiritual needs from the forests, rivers, lakes and streams of this beautiful valley over many thousands of years as the traditional owners and custodians of these lands.

European settlement dates from 1844, with land used mainly for farming and timber-harvesting, but the Tweed population was minimal until the 1880s.

Rapid population growth took place from the 1980s, aided by tourism, with growth occuring primarily in the suburbs along the coast and to the south of Tweed Heads (ID Consulting 2010).

Tweed Shire now has one of the highest population growth rates in regional NSW. However, relatively little growth is anticipated within the younger age groups, with most of population increase expected in the older age brackets (TSC 2008). The Tweed Sustainable Agriculture Strategy will indentify innovative ways to address this demographic transition, which is prevalent in farming. Could sustainable agriculture become a drawcard for young families and young farmers in the future?

Economy

In contrast to a decline in the agricultural industry in recent years, the Tweed has experienced rapid growth in health and community services, construction, accommodation, education and training.

High levels of employment in the retail, construction, tourism and hospitality industries mean there is significant seasonal fluctuation in employment in the shire. A considerable proportion of residents in the Tweed leave the area to work. Despite the decline of agricultural industries, this sector still provides substantial input into the local economy. It generates close to $56 million of total regional product or over 0.6 per cent of the total gross value of the state's agricultural production value (Appendix 1, ABS, 2006a).

The median weekly gross household income in the Tweed is $679, compared to $1035 for NSW as a whole (RDA 2010).

4. Agriculture in the Tweed

Overview

Agricultural production in the Tweed is conducted predominantly on small farms. These farmers are finding it increasingly difficult to generate adequate incomes, invest in new equipment and practices and compete with larger businesses operating in other regions. It is common, if not the norm, that farms rely on supplementary off-farm income. High land prices and pressures from conflicting land uses make it difficult for farmers to expand their holdings (TSC 2011b).

Over 65 per cent of the Tweed is occupied by rural land uses and agriculture remains the dominant land use in rural areas. This rural landscape provides food, scenic and recreational amenity, as well as environmental services.

Agricultural history in the Tweed

Early commercial agriculture in Tweed Shire included sugar cane and banana plantations, as well as dairy farming. The first attempts at growing sugar cane in the Tweed Valley began in the late 1860s, at Murwillumbah and Cudgen.

Agriculture in the Tweed

The CSR mill at Condong was completed in 1880 and the Tweed River floodplain was progressively cleared and planted with cane. A labour force comprising South Sea Islanders and Indian migrants enabled early development of the Tweed sugar industry.

The first attempts at commercial banana growing were made in the 1890s, on elevated areas of volcanic soil at Duranbah, Terranora and Bilambil. There were more than 30,000 acres of banana plantations in northern New South Wales by the 1950s, three times the acreage of Queensland at that time. The shire's Chinese and Sikh community contributed significantly to the early Tweed banana industry (Boileau 2008a).

The dairy industry expanded to the north coast from its initial area of prominence in the Bega Valley in the 1890s. Early butter factories in the Tweed included the Tweed Butter Company, established in Murwillumbah in 1897, and the North Coast Co-operative Company butter factory in South Murwillumbah, established in 1906 (Boileau 2008b).

Agricultural landscapes of the shire

The Northern Rivers Farmland Protection Project (2005) highlights state and regionally significant agricultural land in the Northern Rivers (see Appendix 2).

Fertile soils and a favourable subtropical climate produce a diversity of agricultural landscapes in the Tweed. The rich red volcanic soils of the Cudgen-Duranbah plateau enable intensive horticulture production. The floodplains support sugar cane plantations. Elevated basaltic slopes and marginal lands support bananas and cattle grazing. The remaining rural landscape supports a range of rural activities and businesses.

Agricultural activity of the shire

The Tweed's main agricultural industries, based upon their monetary value, are:

- Sugar – 28%
- Bananas – 17%
- Beef – 12%
- Vegetables – 7%
- Dairy – 6%

(ABS 2008: calculated from small area data of the ABS agricultural census 2005-6)

Bananas and sugar are the shire's key agricultural commodities. Together, they made up almost half the Tweed's agricultural production in gross value when the most recent agricultural census was conducted in 2008 (ABS 2008). The Tweed produced almost 25 per cent (570,000 tonnes) of the state's sugar in 2005-06, on almost 8000 hectares. During the same financial year, Tweed Shire produced just under 30 per cent of the state's bananas (4300 tonnes). This was produced on 600 hectares.

The Tweed agricultural community

The farmers

The Tweed farming community is ageing, in line with NSW and national trends. Younger people are less likely to enter the agricultural industry as market conditions make it increasingly difficult for farmers to achieve viable returns.

This is compounded by increasing demand for non-agricultural uses of agricultural land. In particular, there is a growing number of people who can afford to purchase agricultural land as a lifestyle option.

According to the Australian Bureau of Statistics, the number of people employed in the agriculture, forestry and fishing sector in the Tweed decreased from 1427 to 939 in the 10 years to 2006, representing a 34 per cent reduction (TSC 2008).

Agribusiness

Major agribusiness in the Tweed includes the sugar mill at Condong, Tropical Fruit World and Murwillumbah cattleyards. A number of businesses operating in the Tweed provide agricultural merchandising, agricultural financing and rural real estate. A range of agriculture processors operate near the shire. These include sugar milling at Broadwater and Harwood, poultry processing at Byron Bay, dairy processing at Casino and Lismore, cattle abattoirs at Casino and macadamia processing near Lismore (RDA 2010).

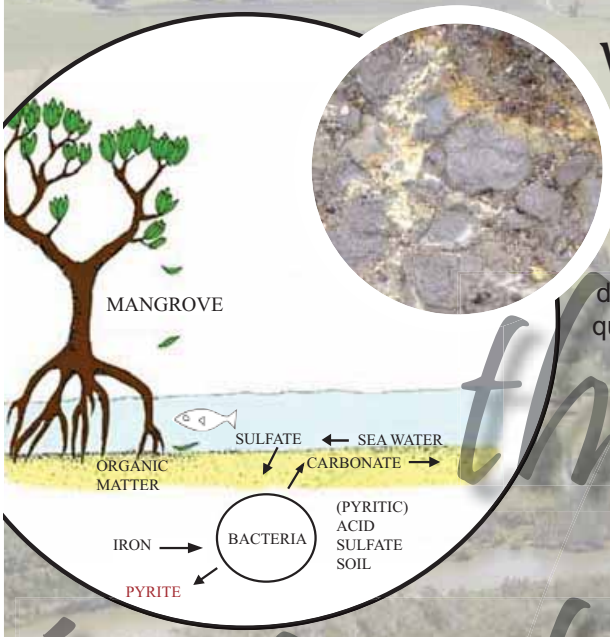
Education

Training in agriculture is limited in the Tweed. The TAFE college offers only one course in biological farming and one high school offers a single subject on agriculture, a remnant of the former Murwillumbah agricultural college. The closest tertiary agricultural training occurs in Gatton or Armidale. Lismore's TAFE campus offers courses in various agricultural subjects.

Acid Sulfate Soils

Management in the Tweed

In the last century, the Tweed coastal floodplain has been highly modified. Modified creeks, constructed drains and floodgates have been designed to remove water from the floodplain to allow agricultural activity and reduce the impacts of flooding. This floodplain drainage however, has also caused environmental impacts to fisheries and to the overall health of estuarine ecosystems.



What are Acid Sulfate Soils?

The Tweed floodplain, like many Australian coastal areas, is underlain with Acid sulfate soils (ASS). ASS is the common name given to soils and sediments containing iron sulfides, the most common being pyrite. When exposed to air due to drainage or disturbance (i.e. agricultural / urban development), these soils oxidise, often releasing toxic quantities of sulphuric acid, iron and aluminium.

the issue

Visual Water Quality Indicators


Crystal clear, pH of 3-4


Milky white, pH of 5-6


Rusty brown, pH of 3-4


Black de-oxygenated water. Monosulfidic Black Ooze (MBO) in suspension


Blue-green, pH of 4-5

impacts

Acid Sulfate Scalding

Draining of back-swamps causes drying of top soil, soil profile shrinkage, loss of vegetation and erosion of peat layers. Scalds are then formed when toxic oxidation of shallow pyrite layers overcome the soil's neutralising capacity.

Fish kills

One of the most visible impacts of acidic waters is fish kills. Following major rainfall events the drainage of ASS can produce large quantities of acidity and toxic metals, such as aluminium and iron. These pollutants as well as low dissolved oxygen levels, impact on the habitat and health of fish (red spot disease), prawns, oysters and other aquatic organisms.

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An acid sulphate soils awareness poster produced by Council in February 2009.

Consumers and residents

Much of the food produced in the Tweed is not eaten in the shire. As the population grows and the cost of petrol and other fossil fuel-based farm inputs increases, there will be inevitable flow-on impacts upon the affordability of food, especially where it has to travel large distances from paddock to plate. In this scenario, there are significant opportunities to move more towards a localised food system.

These opportunities include benefits to local farmers and growers because of shortened supply chains, savings to residents for the same reason, and positive climate change mitigation and adaptation outcomes through a reduced reliance on long-distance transport.

Wouldn't it be more economical and sustainable to buy local fresh food?

Preliminary market research conducted as part of the Northern Rivers Food Links Project indicates there is an increasing awareness of these multiple benefits, leading to growing demand for local produce among residents in the Northern Rivers region.

Government and agency

A range of government and other agencies support sustainable agriculture in the Tweed. Appendix 3 provides a brief snapshot of some of these organisations.

Biodiversity

Tweed Shire lies within a zone of overlap between two major biogeographical regions (Kingston et al 2004). Biogeographic regions have a distinct community of animal and plant species, known collectively as a biota. So overlap zones have a particularly diverse mix of flora and fauna species and communities (Kingston et al 2004).

The Tweed supports more than 200 significant plant species and in excess of 100 significant animal species, as well as more than 50 migratory bird species protected under international agreements (NSW Planning 2006; TSC 2010).

Approximately half of the shire (68,570 hectares or 52.1 per cent) is covered by bushland and most of this (48,584 ha or 70.9 per cent of all bushland) occurs outside national parks. National parks account for 16.1 per cent of the Tweed (Kingston et al 2004). There are at least 50 distinct vegetation communities within the shire. Many of them are highly depleted, inadequately conserved or listed as 'endangered' under the Threatened Species Conservation Act (1995). Many plants species found in the Tweed are highly localized; 55 species are essentially confined to Tweed Shire (TSC 2010).

Major pressures on biodiversity in the Tweed include:

- Clearing and fragmentation of native vegetation.
- Draining of swamps and wetlands.
- Invasion of coastal plant communities by bitou bush and other weeds.
- Degradation of riparian habitats by camphor laurel, privet and numerous exotic vines.
- Grazing and disturbance by cattle in riparian and wetland areas (TSC 2010).

Waterways

Waterways of the Tweed can be described as the:

- Freshwater reaches of the Tweed River catchment (upstream of the Bray Park weir).
- Estuarine reaches of the Tweed River catchment (downstream of the Bray Park weir).
- Tidal broadwaters and associated tributaries at Terranora and Cobaki.
- Coastal catchments of Cudgen Creek, Cudgera Creek and Mooball Creek.

Unique opportunities exist for catchment management because the Tweed River system and Tweed coastal creeks sit wholly within the shire boundaries. Maintaining good water quality in the Tweed's streams and rivers is important to preserve the ecological, social and economic values of the region.

The primary pressures on waterway health in the Tweed are urban stormwater and wastewater treatment plant discharges and nutrient and sediment loading from rural and agricultural practices (TSC 2007). Excessive fertiliser use, poor timing of fertiliser application, high stock loading rates and poor riparian zone management are all agricultural practices which increase the nutrient run-off rates from rural areas.

Tweed agriculture: Challenges and issues

Managing acid sulphate soils

Acid sulphate soils have been identified as a key pressure on the soil landscape in the Tweed. Most of

"We don't leave the land to our children, we rent it from them"

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the floodplain area of the Tweed catchment has 'actual' acid sulphate soils and 'potential' acid sulphate soils close to the surface. 'Potential' acid sulphate soils become 'actual' acid sulphate soils when they are disturbed by development such as excavation and drainage, which causes oxidisation and the creation of acid and heavy metals. A number of strategies involving collaboration between government agencies, industries and research institutions are in place to improve the management of acid sulphate soils in the shire. Current projects are outlined in Acid Sulphate Soils Management in the Tweed (TSC 2010).

Re-balancing nutrient cycles

Widespread availability of synthetic fertilisers has encouraged a geographical separation of livestock and crop production. This separation creates a surplus of nutrients on livestock farms with high stocking rates, and a lack of access to nutrients on cropping farms (Wivstad et al. 2005). It is becoming increasingly important to rebalance these nutrient cycles through methods such as mixed farming, retaining crop residues and composting.

The increased waste created by a growing population is, from a conventional perspective, an economic and environmental burden to ratepayers. However, it can be conceived as a valuable resource, in the form of nutrient recycling to improve soil fertility. This 'waste resource' is already being used in neighbouring shires to produce various soil amendments such as compost. Tryton is a successful example of a nutrient-cycling business venture in Lismore.

Attracting young farmers

Tweed farmers are aging and younger people are less likely to enter the farming industry. This trend is similar in many other parts of the world. To promote the entrance of new farmers, Canada's Agricultural Renewal project (Peoples Food Policy Project, nd) recommends training, mentorship and extension that encourages professional, resilient and viable new farmers.

It also recommends financing programs tailored to encourage new farmers and to support farmers who are restructuring their businesses or leaving the industry. Finally, it recommends creating new forms of land ownership, tenure and stewardship to enable new entrants and to stop farmland being lost to non-agricultural land uses.

Managing land use conflicts and protecting agricultural land

The Farmland Protection Project (DIPNR 2005) identified a range of land-use conflicts specific to agricultural land in the Northern Rivers region, including:

- Population pressures resulting in residential encroachment onto farmland.
- Increasing land-use conflicts between farming and non-farming neighbours.
- Increasing land prices caused by development pressure, making it difficult for farmers to purchase additional land.

The protection of agricultural land on the NSW North Coast is a long-term government initiative (DIPNR 2005). The Northern Rivers Catchment Action Plan (NRCMA 2005), the Far North Coast Regional Strategy (NSW Planning 2006) and many other government initiatives acknowledge the importance of protecting agricultural land – both in terms of maintaining biophysical agricultural productivity and ensuring a viable agriculture industry for the future.

Adapting to peak oil

Conventional farming systems are heavily reliant on oil, oil-derived and gas-derived products for a range of business activities, including the transportation of inputs and outputs, the production of synthetic fertilisers and pesticides, and various mechanised farm activities.

In a peak oil scenario, increased fuel prices will impact on food production and farming, and will inevitably push up the cost of food. Farming systems that are building their resilience by progressively reducing their reliance on synthetic inputs and large-scale mechanisation will probably become more successful (Coffs Coast Local Food Alliance 2010). It is worth noting that successful agriculture can be practised on a wide variety of scales. In particular, small-scale intensive agriculture, even on plots less than half a hectare, can generate impressive returns of $50,000 per year if managed effectively. These systems are labour intensive, rather than capital intensive, and do not depend on mechanisation.

Adapting to climate change

Climate change poses challenges for all sectors of the Australian economy but particularly for sectors dependent on the healthy functioning of ecosystems.

Table 1: Tweed Shire Sustainable Agriculture Strategy: Identified community priorities and current actions

Tweed Shire: Strategic Theme	Community Priorities: Agriculture	Key Objectives	Current Actions	Sustainable Agriculture System Element
Civic Leadership	Make decisions based on sustainable development Provide high quality services & maintaining assets	1.1.3 Prepare for climate change through adaptation and mitigation strategies. 1.5 Manage and plan for a balance between population growth, urban development and environmental protection and the retention of economically viable agricultural land.	Tweed River and Coastal Committees (TRC/ TCC) – Advisory role + Funding 50% Sustainable Agriculture Strategy (TSAS) TSC - Sustainable Agriculture Program (Full time officer and grant funded project) + Sustainability Program (Full time officer and grant funded project) Northern Rivers Food Link (NRFLP) – Funding 50% TSAS + Local government tool kit	Leadership, Governance & Planning
Support Community Life	Protect village life	2.3.7 Preserve the character and heritage and enhance the amenity of existing towns and villages.	Community Strategic Plan Review of Tweed LEP NRFLP – funding community gardens, community hall kitchen, farmers markets, farmers feasts, development of climate change adaptation and farm management plans TSC - Sustainable Agriculture Program & NRCMA - Community Support Officer (Contracted to TSC) + project funding	Leadership, Governance & Planning Natural & Cultural Resource Management
Strengthening the Economy	Strengthening the Tweed's food production, capitalising on our clean green image, natural assets and location Protecting economically viable agriculture Protecting economically viable agricultural land	3.2 Retain prime agricultural land, farm viability, manage rural subdivision and associated landscape impacts. 3.2.1 Foster a viable farming community. 3.3.1 Establish planning controls that balance the need for urban growth against the protection of agriculture, village character and the environment.	NSW Industry & Investment funding for Murwillumbah Farmers Market, through Caldera Institute for Sustainable Community Development. New Tweed Economic Development contract (Destination Tweed) Tropical Fruit World - Tourism and packing shed	Processing & Value Adding Marketing & Distribution Consumers
Caring for the Environment	Protecting biodiversity/natural assets Enhancing Water management Promoting sustainable development	4.1.2 Protect, regulate and maintain natural assets (the coastline, coastal and inland waterways, biodiversity, bushland and scenic landscapes) for current and future generations. 4.2.1 Promote the protection of native vegetation and wildlife habitat of high conservation value, social or cultural significance in Tweed Shire. 4.2.2 Encourage and promote rehabilitation and management of native vegetation and wildlife habitat in Tweed Shire. 4.5.1 Promote and encourage sustainable and innovative agricultural practices. 4.5.2 Promote and encourage partnerships between farming communities, governments and research institutions through consultation and participation. 4.5.3 Provide information and support on sustainable land use practices to the agricultural community. 4.3.3 Improve rural stormwater discharge quality and ecosystem health through best practice land management.	DPI – Extension/ Agronomic /Horticultural services based in Wollongbar DPI - Climate Adaptation Officer based in Murwillumbah BSES – Extension services to sugar cane Industry NRCMA – Funded projects towards Catchment management, Community Support, Acid Sulfate Soil and Floodplain management, Soil health (Contracting TSC NRM unit) DPI- Climate adaptation course and farm planning Landcare/ TSC partnership TAFE (Murwillumbah) Biological Farming Course Northern Rivers Floodplain Network (NRFN) – Knowledge sharing + collaborative cross regional grant funded on ground work TRC/ TCC – Advisory role + funding on ground projects and research TSC NRM unit – Biodiversity, Waterways, Coast, Sustainability, and Sustainable Agriculture programs delivering advisory/ extension services and on-ground projects.	On-Farm Production Practices Natural & Cultural Resource Management Education & Capacity Building

Agriculture in the Tweed

Agriculture in the Tweed is vulnerable to the impacts of climate change. However, approaches such as agroecology can provide significant climate change buffers, through reduced carbon emissions and a higher potential to sequester carbon in the soil. Agroecology, the holistic study of agroecosystems including all environmental and human elements, aims to go beyond the use of alternative practices. It seeks to develop agroecosystems with minimal dependence on agrochemical and energy inputs (Altieri and Nicholls 2005; Altieri 1995).

'Securing a Clean Energy Future' is the Australian Government's climate change plan. Its Carbon Farming Initiative will provide a carbon offsets scheme to enable farmers and land managers to generate credits that can be sold to other businesses wanting to offset their own carbon pollution (Commonwealth of Australia 2011).

Supporting local food systems

The food system (see Figure 2) covers all aspects of food, from paddock to plate and back again. Food production has become disjointed from the wider food system and a Tweed sustainable agriculture strategy could aim to reintegrate agriculture within the broader system.

A sustainable local food system integrates sustainable production, processing, distribution, consumption and waste management. Farmers and the broader community work together to create a more locally-based, self-reliant and environmentally sustainable food economy (SAREP 2011a).

Figure 2. Food system sectors

The proposed Border Ranges Biosphere Reserve

Council has given its support to the Caldera Environment Centre's nomination of the caldera and surrounds as a 'biosphere reserve'.

Before the region can be recognised as a biosphere reserve, its nomination must be approved by the Federal Government and the United Nations Educational, Scientific and Cultural Organisation (UNESCO). Endorsement of the region as a biosphere reserve could mean benefits for sustainable agriculture, including marketing opportunities by enhancing the 'green' reputation of produce grown in the Tweed. It could also bring increased funding for sustainable agriculture initiatives in the buffer and transition zones.

Rural agricultural land mapping

Current mapping of agricultural land is focussed on state and regionally-significant farmlands and these are principally protected areas with high soil values. The Northern Rivers Regional Biodiversity Management Plan of 2010 contains the most comprehensive recent data and maps.

Rural areas outside these high soil value classifications currently have no criteria for defining their relative suitability for various agricultural industries. A more comprehensive framework is needed to allow Council to manage rural lands in a more specific and methodical way, using refined attributes related to slope and environmental constraints.

Gap analysis table

An extensive community engagement program for the Tweed Community Strategic Plan 2011/2021 identified a number of important needs and 'gaps' concerning agriculture in the region. These gaps relate to education, supply, networks and the agricultural community as a whole. They are summarised in Table 1 and are the starting point for consultation which will be undertaken with the Tweed agricultural sector and the broader community in November 2011.

Wendell Berry: author, poet, farmer and agrarian thinker

The care of the Earth is our most ancient and most worthy, and after all our most pleasing responsibility. To cherish what remains of it and to foster its renewal is our only hope.

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5. Towards Sustainable Agriculture

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What is Sustainable Agriculture and how can we apply it in the Tweed?

In the past, many agricultural practices were promoted by industry and government without in-depth consideration of potential long-term impacts on the land and how that might affect future generations.

Sustainability rests on the principle that we must meet present needs without compromising the ability of future generations to meet their own needs (World Commission on Environment and Development 1987).

Conventional definitions of agricultural sustainability often focus on economic and environmental issues such as productivity, profitability and resource conservation. This approach excludes the wider socio-cultural and political arenas within which agriculture occurs.

Sustainable agriculture should incorporate stewardship of the environment (maintaining or enhancing the natural resource base for the long term) and stewardship of communities, including consideration of social responsibilities such as the working and living conditions of labourers, the needs of rural communities and consumer health and safety - now and in the future (SAREP 2006).

A definition of sustainable agriculture should also incorporate thinking about food as a system. Systems thinking enables us to see agricultural networks in their broadest sense, from the individual farm to the local ecosystem, and to identify communities affected by farming systems, both locally and globally.

Sustainable agriculture should invite the broader community to become more involved in agriculture by learning more about their food systems, encouraging them to actively participate and shape those systems.

A key step towards sustainability is to understand agriculture from an ecological perspective, particularly in terms of nutrient and energy dynamics and interactions between plants, animals, insects and other organisms, then balance them with the needs of farmers, rural communities and communities further afield (SARE 1997).

Could farmers and consumers learn from each other in a more direct way, reconnecting the food and nutrient cycle?

Research is increasingly showing it is possible to provide a balanced environment and create sustained yields - achieving a viable economic future for farmers - through the design of diversified agricultural systems and the use of low-input technologies (Altieri and Nicholls 2005, De Schutter 2011).

Ironically, it seems we might be returning to many traditional farming methods which, combined with practical and appropriate modern technologies, are achieving long-term sustainability.

The science of agroecology is the application of ecology to agricultural ecosystems and embodies emerging holistic principles to achieve sustainable agriculture. Agroecology is not associated with any particular method of farming: organic, conventional, intensive or extensive. It is not defined by certain management practices, such as the use of natural enemies in place of insecticides, or polyculture in place of monoculture.

Additionally, agroecology does not unanimously oppose technology or inputs in agriculture but instead assesses how, when and if technology can be used in conjunction with natural, social and human assets. Agroecology proposes a context or site-specific approach, recognising there is no universal formula to enhance productivity, stability and sustainability.

A lot of Tweed farmers and industries are already actively involved in restoring the balance using various measures appropriate to their specific situation, including:

- The sugar industry is using tidal flushing to mitigate the negative impacts of acid sulphate soils, while controlling the proliferation of aquatic weeds and allowing fish to travel along these waterways.
- Dairies are improving their effluent management systems and increasingly reusing valuable nutrients produced on their farms. This creates more durable soil health and reduces the costs and labour required to import and apply increasingly expensive fertilisers.
- Small vegetable farmers are joining forces to supply local customers with quality, nutritious food and farming stories.

Can we do more? Can we identify strategies and avenues to further support our farmers, our environment, our economy and our community?


BANANAS
3.50
BEANS
4.50

Agroecologists suggest that merely introducing alternative agricultural designs isn't enough to improve the sustainability of the food system as a whole (Altieri and Nicholls 2005). Some suggest the power of agribusiness corporations and trends of global agricultural trade are so strong that a more complete transformation of the agriculture and food sectors is required.

In the Australian context, this transformation would include preservation of high-quality farmland, appropriate management of conflicting land use and policies to promote the viability of farming and to attract young people to the sector.

Many farmers and agronomists are calling for alternative and sustainable food systems that:

- Work closely with the environment.
- Are based on moderate-scale diversified farming operations that nurture local and regional communities and the wider community.
- Encourage a reassessment of the value of farming and food production.

Sustainable agriculture cannot be seen solely at the level of on-farm agricultural practice. The way we think about agriculture should be broadened to include wider concerns about the food system as a whole.

A sustainable agriculture strategy must seek ways to work within the capacities of the natural environment and to grow strong rural communities into the future.

We would very much like to hear how these philosophies sit with the views of all stakeholders in the Tweed, and listen to ideas and suggestions about how they might be achieved.

6. Next steps

Set up shop

Council and the consultants will 'set up shop' in Murwillumbah during the engagement campaign to create an interactive consultation and design process, bringing the community together to resolve issues and visions for the region. Facilitators from John Mongard Landscape Architects and Think Food will talk and brainstorm with stakeholders during this intensive period to examine key agricultural issues, actions and visions.

The team will be based at the Banana Festival Office in Brisbane Street for two days. This central position will create a visible connection to the community, allowing ready access for meetings, interviews and feedback. The shop will provide a space to exhibit a growing list of ideas and issues from the community, so people look at the evolution of ideas and add to it. By the end of the two days, the shop will be covered with notes, maps and lists. Three community forums will be held in the evenings. There will also be a stall at the Murwillumbah Show for two days, including talks and a farmers' forum on one evening.

Identifying needs

The community engagement process will help identify gaps, ideas and practical actions to achieve sustainable agriculture in the Tweed.

We anticipate input from at least 400 people during the engagement campaign, which will be summarised into key issues, actions and ideas. Aspirations expressed by the community and key stakeholders will form the backbone of the strategy.

A draft strategy

After the engagement campaign, the team will develop a draft strategy for presentation to Council to consider and place on public exhibition.

The team will then amend the strategy to include any changes - from minor alterations to significant new ideas - required in response to community feedback received during the exhibition period. A final version of the strategy will then be presented to Council for adoption.

Tweed Sustainable Agriculture Strategy

We want to hear from you!

Tweed Sustainable Agriculture Strategy

We want to hear from you!

Agriculture has helped shape the Tweed of today. But what role will it play in the future?

A Tweed Sustainable Agriculture Strategy is required to meet the challenges of the 21st century. We want your knowledge and ideas to inform the creation of that strategy.

Note: this strategy will only deal with agriculture, not the settlement issues such as rural subdivision.

You can have your say by attending any of these events:

Our ideas shopfront

At the Banana Festival Office
Brisbane Street, Murwillumbah (next to the post office)

Wednesday 2 November and Thursday 3 November 10am – 4pm

Our community forums

At the Canvas and Kettle Room, in the Civic and Cultural Centre
Tumbulgum Road, Murwillumbah

'A Farm for the Future' film and ideas workshop
Including a buffet showcasing local food

Wednesday 2 November 6.30pm – 9.30pm

'The New Australian Agriculture: Stories of innovation, change and success from the frontier of Australian Agriculture'
Talk by David Hardwick, and ideas workshop
Including a buffet showcasing local food

Thursday 3 November 6.30pm – 9.30pm

At the Murwillumbah Show

Come and have a chat at our stall at the show

'Sustainable Fertilisers: Understanding the alternatives on the market'

Join agricultural ecologist David Hardwick for a talk about the wide range of fertilisers available to farmers, including newer products such as bio-fertilisers, inoculants, composts and minerals as well, as the pros and cons of conventional products.

Friday 4 November 4pm

'Food Futures: Examples and case studies of food enterprises and farmers collaborating on business models for ethical and ecological eating'
Join Food Connect Foundation representative Robert Pekin, who has been researching and implementing food distribution models for the past 15 years.
Come and enjoy a buffet showcasing local food.

Friday 4 November evening

So come and have a cuppa and a chat and give us your opinions

It would help us considerably if you could send us brief responses to the following questions, before the forums begin:

Do you have a vision for the future of your particular sustainable agricultural industry or business? (one or two paragraphs)
What are your five key issues or ideas for the future of our agricultural or food-related industries?
What do you think the Tweed Shire needs to have for a sustainable agriculture future?

We have done some research. Please feel free to read this information and bring your comments to our Ideas Shopfront.

We will provide updates closer to the events

Please email or fax your comments to:
Sebastien Garcia-Cuenca
Tweed Shire Council - Agriculture Officer

Email: sgarciacuenca@tweed.nsw.gov.au
Fax: (02) 6670 2629

TWEED SUSTAINABLE AGRICULTURE STRATEGY

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TWEED SUSTAINABLE AGRICULTURE STRATEGY

8. Appendices

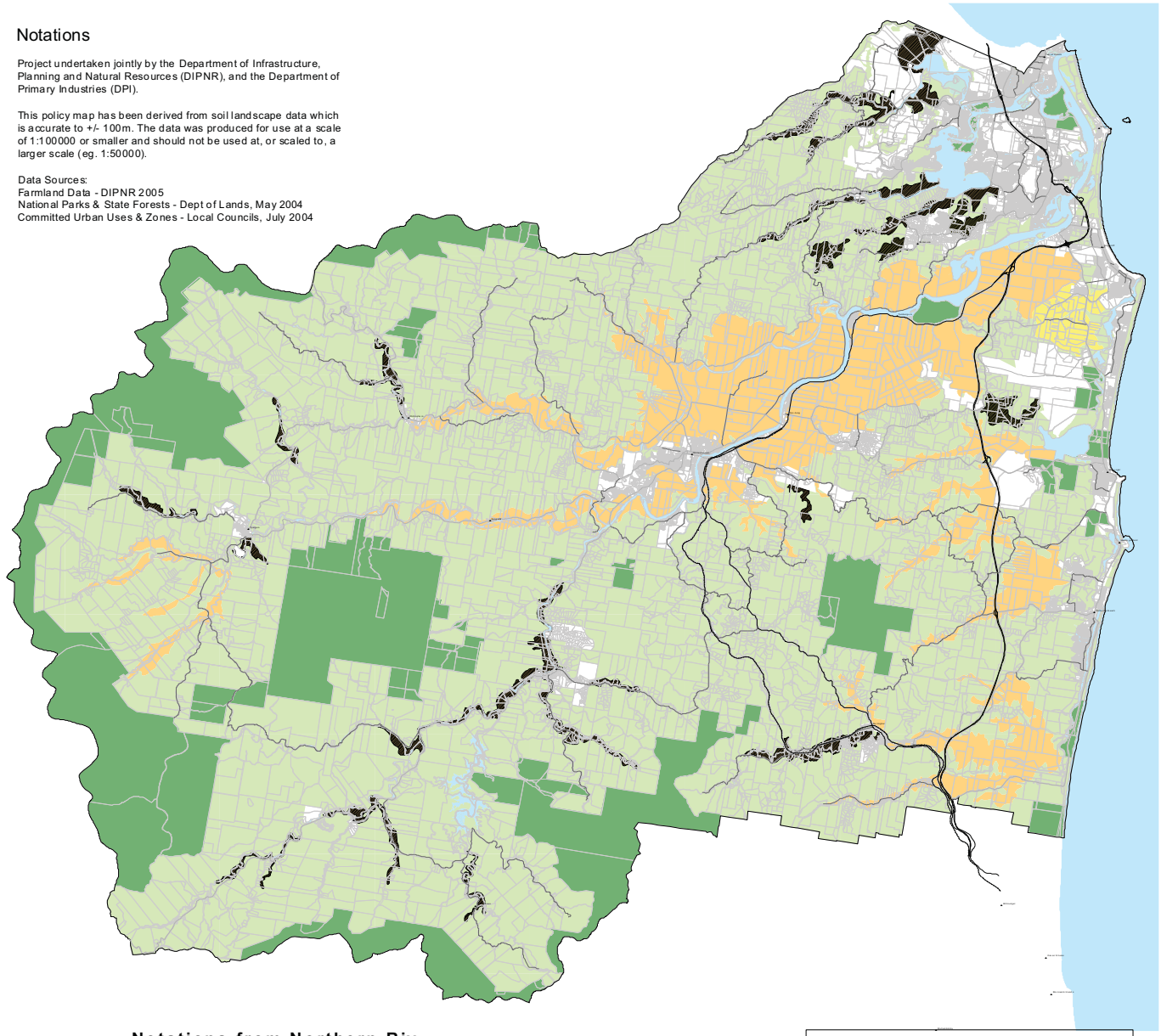
TWEED SHIRE COUNCIL

Appendix 1. Gross agricultural production in the Tweed Shire at the last agricultural census in 2006

COMMODITY	PROPORTION OF SUBCATEGORY AGRICULTURAL PRODUCTION	GROSS VALUE (t)	PROPORTION OF TOTAL AGRICULTURAL PRODUCTION
Nurseries, cut flowers and cultivated turf	88% nurseries	12,477,426	
Nurseries		10,949,912	20%
Vegetables (including for seed)	83% those listed below	3,956,526	7%
Lettuce		487,435	
Green peas		374,442	
Potatoes		171,251	
Pumpkins		103,288	
Tomatoes		698,745	
Watermelons		432,881	
Zucchini and butter squash		1,030,868	
Fruit and nuts	75% bananas	12,621,191	
Nuts	97% macadamias	230,706	
Stone Fruit	85% nectarines	31,295	
Berries	99% strawberries	70,862	
Bananas		9,454,588	17%
Citrus		61,680	
Other orchard fruit	48% avocadoes	1,375,998	
Other plantation fruit		1,396,062	
Livestock slaughterings	94% cattle	7,033,387	
Beef		6,601,243	12%
Livestock products	99% dairy	3,400,368	
Dairy		3,380,788	6%
Pasture, cereal and other crops cut for hay		106,110	
Sugar		16,099,239	28%
Other broadacre crops	86% soybeans	141,435	
TOTAL AGRICULTURAL VALUE		55,835,679	90%

Source: Calculated from small area data of the ABS agricultural census 2005-6 (ABS 2008)

Appendix 2. State and regionally significant farmland as identified through the Farmland Protection Project (DIPNR 2005)



Appendix 3. Government and agency involvement in sustainable agriculture in the Tweed Shire

NSW Department of Primary Industries

The NSW Department of Primary Industries (DPI) encourages the development of profitable and sustainable agriculture, fisheries and forestry industries in NSW. The district office is located in Murwillumbah.

Northern Rivers Catchment Management Authority (NRCMA)

A key responsibility of the NRCMA is to facilitate, together with the Northern Rivers community, the development and implementation of a 10-year Catchment Action Plan (CAP). The Northern Rivers CAP is a strategic document for the sustainable management of natural resources within Northern Rivers catchments. It contains targets that guide NRCMA investment over the next decade.

Northern Rivers Floodplain Network

Since 2004, the Northern Rivers Catchment Management Authority has funded a DPI-based extension officer, to coordinate the Northern Rivers Floodplain Network. It comprises a variety of stakeholders engaged in the delivery of coastal floodplain natural resource management (NRM). The Floodplain Network is designed to improve communications, enhance knowledge sharing and develop opportunities for collaboration among its members.

Tweed Council Natural Resource Management

The Tweed Shire Council Natural Resource Management Unit is responsible for managing, conserving and rehabilitating the natural environment of the Tweed. The unit has five key program areas: biodiversity, waterways, coastline, sustainability and climate change, and sustainable agriculture. The Sustainable Agriculture Program utilises on-ground research and extension work to raise the environmental capacity and services of Tweed Valley farmland, while enhancing, social, cultural and economic profitability.

Tweed River Committee

The Tweed River Committee comprises community representatives, state government agencies, Councillors and Council staff. The committee advises Council on issues related to the implementation of the Tweed Estuary Management Plan and Tweed Vegetation Management Strategy. Projects which address issues such as water quality, river bank stability, recreational use and education are initiated by the committee.

Tweed Coastal Committee

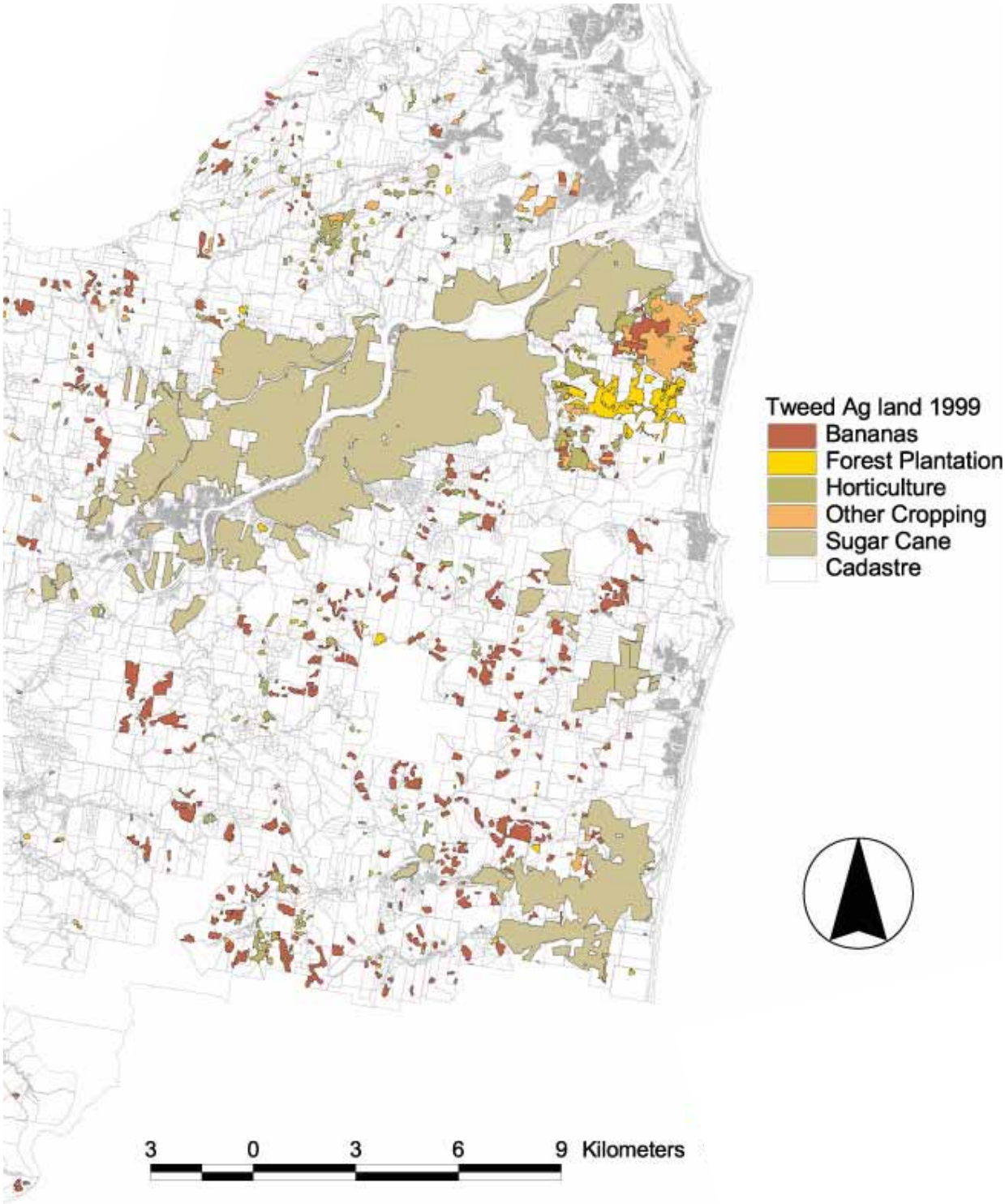
The Tweed Coastal Committee consists of representatives from each of the Tweed Coast villages, state government agencies, Councillors and Council staff. The committee oversees implementation of projects to conserve and restore ecosystem health in the Tweed's three coastal estuaries. The coastal committee advises Council on coastal asset management and implements projects identified in the Tweed Coastal Estuaries Management Plan.

Regional Development Australia (RDA) – Northern Rivers

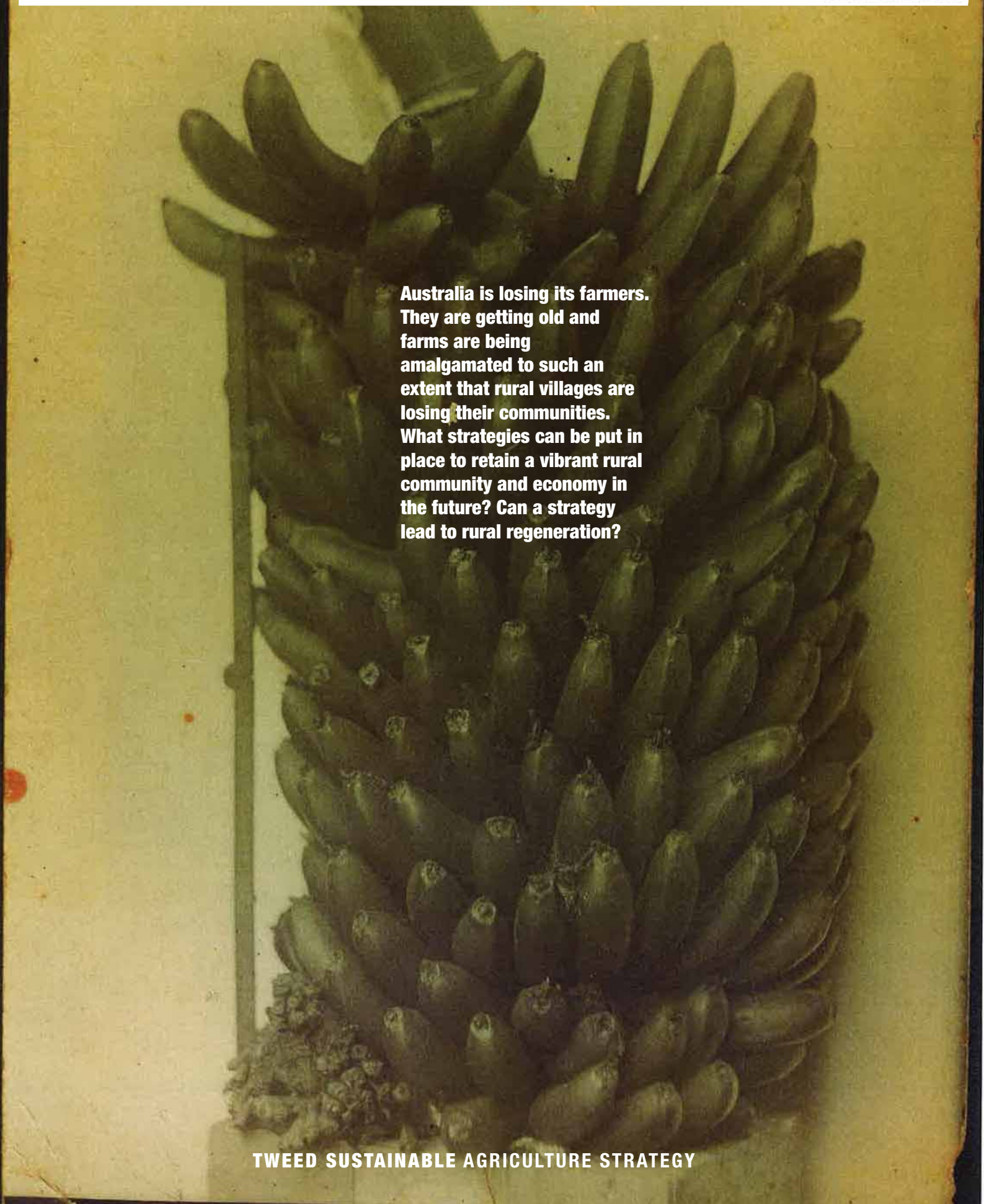
RDA Northern Rivers is currently delivering two projects related to agriculture. The first, Northern Rivers Food, is creating an effective umbrella for marketing, promoting and developing food businesses in the Northern Rivers region. The second is a source identification project delivered in partnership with Northern Rivers Food Links. It aims to increase:

- The number of retailers who stock and identify fresh local food.
- The quantity of fresh local food being stocked.
- Retailer knowledge about the source of locally produced food.

Tweed Shire Agricultural Land 1999
(Eastern portion of the Shire)



This project has been assisted by the New South Wales Government through its Environmental Trust.



Australia is losing its farmers. They are getting old and farms are being amalgamated to such an extent that rural villages are losing their communities. What strategies can be put in place to retain a vibrant rural community and economy in the future? Can a strategy lead to rural regeneration?

TWEED SUSTAINABLE AGRICULTURE STRATEGY