

Planning for **HEALTHY AGRICULTURE**

A toolkit for good
practice planning for
prosperous agriculture
in Queensland

Version 2 2015



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SUMMARY

Agricultural systems are concerned with the production, transport, processing and supply of food, fibre, timber and foliage to consumers. Planning and agriculture come together when society examines the issues of future sources and supply of agricultural products and thinks about where provision will be made for future housing, industry and infrastructure and where in the landscape, these uses will maintain environmental processes.

Rural areas encompassing agriculture have been considered by past planning approaches as the balance of the available land area, providing a source of land for development. Until recently, Government policy and planning has reflected this attitude. There is increasing recognition that land zoned rural should not be considered as just a holding zone for another land use at a later stage. Instead productive rural land requires planning attention in its own right as a setting for a complex set of land uses and industries that complement each other and are essential for providing for society's needs for food, clothing, shelter and environmental services.

The following definition of agriculture has been adopted in this document:

Agriculture – Any activity connected with the growing of food, fibre, timber and foliage including, but not limited to, cropping*, intensive horticulture*, animal husbandry*, intensive animal industry*, animal keeping*, aquaculture*, permanent plantation* wholesale nursery*, production nursery, roadside stall*, winery* and rural industry*; and also including ancillary activities concerned with accommodation of farm workers, visitors and tourists; the storage of water; irrigation and drainage works; the storage of equipment for the production and transport of agricultural products; and the on-farm processing, packaging, storage and sale of agricultural products.

Land use planning for agriculture is primarily achieved through the Sustainable Planning Act 2009 which provides for the preparation of Regional Plans by the State Government and for local planning schemes by Local Councils; the Regional Planning Interests Act 2014 which manages the impact of resource activities on agricultural and residential areas; and through the Land Act 1994 which also determines land use on leasehold land. These plans and schemes determine the distribution of land uses in regional and local areas by preparing strategic plans that indicate the desired or preferred future land use patterns; and by the assessment of development applications when landholders or developers propose either a change of land use or the subdivision of land.

Local government planners, State regional planners, farmers or community representatives, should consider the following nine principles to achieve a healthy agricultural sector at the regional and local level.

*The uses marked with an asterisk in this definition are drawn from definitions in the Queensland Planning Provisions listed in Appendix 1.

THE CORE PRINCIPLES OF AGRICULTURAL PLANNING

<p>1</p> <p>THE ECONOMY</p> <p>Recognise the importance of agriculture to a sustainable regional economy and urban communities by including references to agriculture in the vision and objectives of planning documents.</p>	<p>2</p> <p>NATURAL RESOURCES</p> <p>Identify and protect the natural resource base for agriculture by defining areas of suitable land and excluding incompatible land uses, particularly urban or rural-residential uses, mining and petroleum extraction, permanent plantations and infrastructure corridors from these and other areas important for local or specialised agricultural production.</p>	<p>3</p> <p>LOT SIZES</p> <p>Avoid fragmentation of agricultural land and other pressures of urban growth by setting appropriate lot sizes in agricultural areas consistent with the economics of local and regional production systems.</p>
<p>4</p> <p>LAND USE CONFLICT</p> <p>a. Avoid land use conflict and provide for compatible rural uses by defining areas for compatible agricultural production, particularly intensive animal industry* and intensive horticulture*, preventing the location of incompatible uses in and adjacent to agricultural production areas and where necessary requiring buffer areas between incompatible uses.</p> <p>b. Manage existing land use conflict by giving preference to pre-existing lawful and lawfully operating agricultural land uses when dealing with complaints.</p>	<p>5</p> <p>NATURAL RESOURCE MANAGEMENT</p> <p>Encourage sustainable land and water use and practices by promoting agricultural production on suitable land and promoting sustainable land and water use practices.</p>	<p>6</p> <p>DIVERSIFICATION</p> <p>Encourage value-adding and diversification in agriculture by recognising the complexity and diversity of modern agricultural enterprises and providing for efficient development approval processes for small scale tourism activities and on-farm handling, processing and sale of agricultural produce.</p>
<p>7</p> <p>INFRASTRUCTURE</p> <p>Provide and maintain needed and efficient transport, energy and water infrastructure to support agriculture by identifying and planning for critical and strategic rural infrastructure that supports primary production and access to processing or supply chain services.</p>	<p>8</p> <p>SOCIAL SERVICES</p> <p>Provide economic, employment and social support services for agriculture in compact, self-contained rural towns and villages by providing for the growth of these settlements within clearly defined urban boundaries.</p>	<p>9</p> <p>MULTIPLE VALUES</p> <p>Protect the multiple values of agricultural land by recognising the ecosystem services provided by and attractiveness of agricultural production areas for tourism and avoid land use elements that would reduce these values.</p>

WHY PLAN FOR AGRICULTURE?

1



Land use planning is concerned with making provision for society's and the environment's needs from the available resources of people, land, water, vegetation and space; and protecting environmental resources that provide environmental services to humans and the biosphere.

Agricultural systems are concerned with the production, transport, processing and supply of food, fibre, timber and foliage to consumers. Planning and agriculture come together when society examines the issues of future sources and supply of agricultural products and thinks about where provision will be made for future housing, industry and infrastructure and where in the landscape, these uses will maintain environmental processes.

Planning for agriculture is necessary for a number of reasons. One is that land suitable for agriculture is a finite resource that cannot be replaced. If agricultural land and associated water resources are used for other development such as housing or mining it is no longer available for productive use. If the community wants to maintain the production of food, fibre, timber or foliage for a growing population, particularly for future food security, this must be achieved by either developing additional agricultural land that is further away, increasing productivity from the existing land or importing primary produce from other localities or other countries. New agricultural land cannot be manufactured

and, once converted to another use, is extremely difficult if not impossible to rehabilitate to a productive state.

Another reason is that, with a few exceptions, agricultural production can only occur on land suitable for cropping or animal production, where there is adequate water supplies or rainfall and in locations where other (sensitive) land uses are scarce. This is because other land uses such as residential and rural-lifestyle uses are sensitive to the by-products of agricultural production of noise, odours, chemicals, dust and, through complaints, can reduce the efficiency of productive practices. At the same time, farmers are bound by environmental regulations to ensure their practices meet acceptable workplace and environmental standards.

Because agriculture is not limited to production activities, but includes the transport and processing of food, fibre, timber and foliage, planning must also provide access to water infrastructure and transport infrastructure for the efficient movement of commodities from farms to processing facilities and markets.

To feed a growing world and to make the best use of our scarce natural resources, planning for the growth of agriculture is essential.

“to make the best use of our scarce natural resources, planning for the growth of agriculture is essential”

PURPOSE OF THIS GUIDE

This guide has been prepared to assist all parties involved in land use planning for agriculture. These include

- farmers, graziers and rural landholders who need to participate in planning processes at the local or regional level;
- local government councilors and planners responsible for planning in their local areas; and
- planners and decision-makers in State Government agencies and industry peak bodies who are responsible for policy settings at the state level.

Section 3 provides a definition of what is included in the term 'agriculture'; and Section 4 provides a policy and legislative setting for planning for agriculture. Section 5 presents nine planning principles for planning for agriculture including case studies and examples of good planning practice in Queensland.

2

3 WHAT IS AGRICULTURE?

Agriculture
– any activity
connected with
the growing
of food, fibre,
timber and
foliage

Agriculture is generally understood to be the production of food, fibre, timber and foliage. A more holistic description would include the use of natural resources to produce food, industrial raw materials and energy sources. However agriculture is more than merely production – it includes the inputs into production, the social and environmental setting of farms and people, and the downstream transport and processing of commodities to prepare them for consumption as food, clothing, building materials and energy.

Traditional agricultural practices have included cropping, the management of pasture for livestock, and market gardening. These practices are evolving to embrace new technologies, operational innovation, different crops and new purposes such as energy and carbon sequestration.

The diversity and complexity of modern agriculture raises a number of issues and challenges accepted definitions. These issues include the following:

- In the recent past agriculture has been remote from, or unnoticed by, other land users (urban, commercial and industrial) and been 'taken for granted'. excludes possible exception to this is market gardening which has operated harmoniously within urban areas.
- The boundary between urban and rural areas has become increasingly blurred. The term 'peri-urban' has been applied to this zone which now combines traditional rural users undertaking primary production, farmers supplementing their income from off-farm employment and new users seeking an urban way of life in a rural setting.
- Agriculture is intensifying and becoming increasingly mechanised. Producers are also pursuing other on-farm businesses (such as processing and tourism) to diversify farm income.
- Competition for land is increasing. There is also differing expectations about the way land is used and managed. As a result, land use conflict is becoming a more frequent occurrence.

Rural areas encompassing agriculture have been considered by past planning approaches as the balance of the available land area, providing a source of land for development. Until recently, Government policy and planning has reflected this attitude. There is increasing recognition that land zoned rural should not be considered as just a holding zone for another land use at a later stage (see for example, Rural Planning Group 2009). Instead productive rural land requires planning attention in its own right as a setting for a complex set of land uses and industries that complement each other and are essential for providing for society's needs for food, clothing, shelter and environmental services.

The following definition of agriculture has been adopted in this document:

Agriculture - Any activity connected with the growing of food, fibre, timber and foliage including, but not limited to, cropping*, intensive horticulture*, animal husbandry*, intensive animal industry*, animal keeping*, aquaculture*, permanent plantation*, wholesale nursery*, production nursery, roadside stall*, winery* and rural industry*, and also including ancillary activities concerned with accommodation of farm workers, visitors and tourists; the storage of water; irrigation and drainage works; the storage of equipment for the production and transport of agricultural products; and the on-farm processing, packaging, storage and sale of agricultural products.

*The uses marked with an asterisk in this definition are drawn from definitions in the Queensland Planning Provisions listed in Appendix 1.



Provisions for Agriculture in Planning Schemes

Typical Scheme Elements*

How Planning Schemes should address agriculture

STRATEGIC VISION	The strategic vision should state the importance of agriculture and farming communities to the local and regional economy, to social sustainability and to sustainable natural resource management. A strong rural sector is essential to a prosperous community offering a diverse range of employment opportunities supported by the sustainable use and management of the natural resources of the area.
3.0 STRATEGIC PLAN	The strategic plan sets out land use strategies, specific outcomes under a number of themes and elements. The 'Agriculture' element should be addressed in the strategic outcomes for the 'Natural Resources and Landscape' and 'Economic Development' themes. Specific outcomes should refer to a strong, sustainable agricultural sector achieved through land use strategies that protect the land resources for agriculture and prevent the encroachment of incompatible land uses.
5.0 TABLES OF ASSESSMENT	Appropriate assessment levels (exempt, self, compliance, code or impact) are set out for development. Development that has the potential to adversely impact on agriculture or natural resource values should be subject to code or impact assessment. Extensive agricultural uses (cropping and grazing) should be exempt from development assessment. Intensive agricultural uses (intensive animal industry, intensive horticulture) may be subject to code or impact assessment dependent on location.
6.0 ZONES	Zones support agriculture by locating areas where agriculture is the preferred land use and restricting incompatible uses to other zones. Agriculture will be a preferred use in the Rural Zone and also permitted in other appropriate zones while residential and other lifestyle development will be confined to the General Residential and Rural Residential Zones.
8.0 OVERLAYS	Overlays support zones by showing the distribution of natural resources such as good quality agricultural land, strategic cropping land, remnant vegetation and constraints such as acid sulfate soils, steep slopes and areas of salinity hazard. Overlays allow a more detailed planning approach tailoring requirements to specific areas.
9.0 DEVELOPMENT CODES	For development encroaching on agriculture, codes can set out required separation distances and other requirements to minimise land use conflict. For some forms of agriculture (eg intensive animal industries) that are subject to code or impact assessment, codes set out clear statements of standards of operation and expected outcomes.
Schedule 1 DEFINITIONS	Standard definitions are set out in the Queensland Planning Provisions. (See Appendix 1 for definitions of agricultural activities).

* Queensland Planning Provisions version 4.0 December 2014

POLICY AND LEGISLATIVE CONTEXT

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The regulatory framework for agriculture in Queensland involves Commonwealth and State legislation as well as local government instruments and local laws. Agriculture is affected by the range of regulations that are concerned with environmental management and planning; as well as those concerned with workplace health and safety, food safety, animal welfare and business management.

In the planning and environment space, these consist of 33 pieces of State legislation and regulations and one major piece of Commonwealth legislation, the Environment Protection and Biodiversity Conservation Act 1999. At the local government level, local laws affect pests, lighting fires and building certain structures. Land use is controlled on leasehold land by the Land Act 1994 and through planning schemes prepared under the Sustainable Planning Act 1999 (State). These pieces of legislation are listed in Appendix 2. A compendium of legislation and policies affecting the agricultural industry has been compiled to assist landholders and is available on the QFF website.

Various pieces of legislation affect the use of natural resources such as water (Water Act 2000), vegetation (Vegetation Management Act 1999), fire (Fire and Rescue Service Act 1990) and land (Regional Planning Interests Act 2014, Sustainable Planning Act 2009; Land Act 1994). Legislation also seeks to protect natural or cultural heritage and the environment in general (Nature Conservation Act 1992, Aboriginal Cultural Heritage Act 2003, Environment Protection Act 1994).

Experience has shown that regulation alone can be a blunt instrument that potentially reduces responses and performance to the lowest common denominator. By contrast, proactive and cooperative approaches that combine regulation with education such as the Australian Government's Reef Programme have a far more positive impact for farmers, natural resources and the environment by increasing innovation and investment and delivering on-ground outcomes.

There is a growing recognition by policy makers that regulation of on-farm practice is very difficult and costly to implement and by itself is unlikely to be effective in delivering complex long term improvements in the management of natural resources.

Rural industry has demonstrated that best-management practice (BMP) programs can be a valuable self-regulatory tool. Provided there is widespread uptake of these programs and ongoing monitoring, industry BMP can deliver practical and realistic outcomes that achieve the triple-bottom line approach, without imposing excessive red tape associated with government regulation.

Land use planning for agriculture is primarily achieved through the Sustainable Planning Act 2009 which provides for the preparation of Regional Plans by the State Government and for local planning schemes by Local Councils; and through the Land Act 1994 which also determines land use on leasehold land. These plans and schemes determine the distribution of land uses in regional and local areas by preparing strategic plans that indicate the desired or preferred future land use patterns; and by the assessment of development applications when landholders or developers propose either a change of land use or the subdivision of land. More recently, the Regional Planning Interests Act 2014 has addressed the need for additional controls on resource (mining and gas) activities where they impact on agricultural land uses and rural towns. This Act and accompanying regulations defines Priority Agricultural Area and Strategic Cropping Areas where additional controls on resource activities apply that require additional approvals for the nature and scale of activities that impact on agricultural land.

As part of the planning framework in Queensland, the planning for agriculture has been recognized in three important planning policies since 1992. The State Planning Policy 1/92: Development and the conservation of agricultural land was prepared and adopted in 1992 to set out guiding principles for the identification and protection of good quality agricultural land (GQAL). In 2012, in order to address the emerging conflict with resource industries and ongoing urban development, the State Government adopted State Planning Policy 1/12: Protection of Queensland's Strategic Cropping Land and passed the Strategic Cropping Land Act 2012.

In December 2013, the State Government adopted a new comprehensive State Planning Policy that included agriculture as one of 16 State Interests. This new single SPP which was revised in July 2014, replaced all existing and former SPPs.

The State Planning Policy requires local Councils to protect agricultural land in their planning schemes from encroachment or fragmentation by urban and rural residential development.



5.1 Agriculture in the economy

Introduction

Agriculture is an important part of the State and regional economies. It provides jobs and contributes to food, fibre and foliage production. The gross value of production (GVP) of Queensland's primary industries at the 'farm gate' is forecast to be \$11.89 billion for 2014–15. The largest value industries are livestock (\$4.57 billion), horticulture (\$3.95 billion) and broad-acre cropping (\$2.73 billion) (DAF, 2015).

There are estimated to be 28,000 agricultural businesses in Queensland, with agricultural holdings covering almost 130 million hectares (75 per cent of the State). The importance of agricultural land to society is magnified in areas close to metropolitan and coastal growth areas where competition for land is greatest. For example, 72.3% of the State's fresh vegetable production comes from South East Queensland and coastal areas. The Lockyer Valley alone grows 44% of the

state's cauliflowers, 60% of its lettuces, 75% of its broccoli and 90% of its carrots (Willis 2005). The area around Bowen produces 52% of Queensland's tomatoes, 47% of its French and runner beans, 44% of its capsicums and chillies and 42% of its aubergine (eggplant) crop (Sinclair, forthcoming).

However, agriculture is more than production and the economy. Agriculture and its farmers form a critical component of the social sustainability of rural communities. Agriculture has a crucial role in maintaining and enhancing strong regions and has a major stake in many issues to do with the social and environmental vitality and sustainability of regions. The agricultural community dominates the social fabric of rural communities through its contribution to voluntary efforts to sustain communities and both supports and is supported by the social infrastructure and vitality of regional towns and villages.

Principle 1

Recognise the importance of agriculture to a sustainable regional economy and urban communities.

Implementation

1. Include references to agriculture in the vision and objectives of regional plans, strategies and planning schemes.
2. Recognise the role of agriculture and farmers in contributing to the social sustainability of regional communities.

Examples

State Planning Policy - agriculture (July 2014)

The state's interest in planning for agriculture is to:

- reduce the potential for conflict between agricultural land and other uses
- protect resources from inappropriate development
- minimise encroachment to ensure viable tracts of agricultural land are maintained and
- improve opportunities for increased agricultural investment, production and diversification.

Planning protects the resources on which agriculture depends and supports the long-term viability and growth of the agricultural sector.

The planning scheme is to appropriately integrate the state interest by:

- (1) considering the strategic economic significance of important agricultural areas by promoting and optimising agricultural development opportunities and enabling increased agricultural production in these areas, and
- (2) protecting Agricultural Land Classification (ALC) Class A and Class B land for sustainable agricultural use by:
 - (a) avoiding fragmentation of ALC Class A or Class B land into lot sizes inconsistent with the current or potential use of the land for agriculture, and
 - (b) avoiding locating non-agricultural development on or adjacent to ALC Class A or Class B land, and
 - (c) maintaining or enhancing land condition and the biophysical resources underpinning ALC Class A or Class B land, and

- (3) protecting fisheries resources from development that compromises long-term fisheries productivity and accessibility, and
- (4) facilitating growth in agricultural production and a strong agriculture industry by:
 - (a) considering the value and suitability of land for current or potential agricultural uses when making land use decisions, and
 - (b) considering the planning needs of hard-to-locate intensive agricultural land uses, such as intensive animal industries and intensive horticulture, and
 - (c) locating new development (such as sensitive land uses or land uses that have biosecurity risks for agriculture) in areas that minimise potential for conflict with existing agricultural uses through the provision of adequate separation areas or other measures, and
 - (d) considering model levels of assessment and including agriculture development codes (or similar development assessment requirements), and
 - (e) facilitating opportunities for mutually beneficial co-existence with development that is complementary to agriculture and other non-agricultural uses that do not diminish agricultural productivity, and
 - (f) considering the infrastructure and services necessary to support a strong agriculture industry and associated agricultural supply chains, and
 - (g) protecting the stock route network from development (both on the stock route and adjacent) that would compromise the network's primary use or capacity for stock movement and other values (conservation, recreational).

Agriculture has a crucial role in maintaining and enhancing strong regions and has a major stake in many issues to do with the social and environmental vitality and sustainability of regions.

Wide Bay-Burnett Regional Plan (2011)

Rural Futures

The region's rural community is strong and resilient, with a sustainable economy that contributes to the overall liveability of the region.

A strong rural community with a sustainable economy will contribute to the health, wealth, character and liveability of the region. Rural communities, industries and environments make an important contribution to people's quality of life within the region. The region's rural sector is a major contributor to Queensland's economy, providing diverse agriculture, grazing, forestry and fishing opportunities.

The future of the region's rural areas requires long-term planning and management that supports diversification of rural industries. Reliable and efficient use of land and resources will underpin land and environmental management, decision-making processes and strategic land-use planning activities.

To support a strong and sustainable rural economy, the productive lands in the region must be appropriately protected and managed to preserve their heritage and landscape values, while embracing changing circumstances.

Douglas Shire Planning Scheme (2008)

Desired Environmental Outcomes:

Economic Development

- DEO 5 A prosperous community with a strong rural sector, a dynamic tourism industry and commercial and industrial activities offering a diverse range of employment opportunities, is supported by the sustainable use and management of the natural resources of the Shire.
- DEO 6 The natural resources of the Shire, such as Good Quality Agricultural Land (GQAL), extractive resources, water and forestry resources, are protected and managed in a manner that ensures their ecological and economic values are assured for present and future generations.
- DEO 7 The values of the Shire are protected by a preferred pattern of development through identifying GQAL which sustains productive primary industries, particularly the sugar, horticultural and cattle grazing industries, and consolidates growth and employment opportunities, primarily in the identified locations of Mossman and Port Douglas.

Southern Downs Regional Council Planning Scheme (2012)

Strategic Intent:

Rural production

Rural industries contribute to the economy, character and identity and food security of the Southern Downs. Land used for rural production will be protected from further fragmentation and from urban and rural residential encroachment. Diversification and the introduction of innovative farming techniques will be encouraged wherever this can be achieved with positive environmental and social impacts.

Cassowary Coast Regional Council Draft Planning Scheme (2013)

Natural resources and landscape Strategic Outcomes

- (3) Land classified as important agricultural land is prevalent in the Region This land is important in maintaining the viability of the Region's agricultural industries and its protection is required from development that may lead to its alienation or diminished productivity.
- (4) All rural zoned land is acknowledged as being important in supporting rural and agricultural activities and development must ensure that its ability to do this is not compromised. Agricultural activities that do not require important agricultural land should avoid establishing on important agricultural land.

Planning Principle	Planning Checklist Items	Yes	No	Not Required	Comments
1	Does the strategic vision statement refer to the contribution of agriculture to the economy and to social and environmental sustainability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Does the strategic plan include land use strategies and specific outcomes for the agricultural sector?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Terms:

Desired environmental outcomes are statements in local planning schemes prepared under the Integrated Planning Act 1997 that set out the intended outcomes from the implementation of the planning scheme. They are usually set out under a number of headings such as community wellbeing, economic development and ecological processes.

Links:

Cairns Regional Council (2008) Douglas Shire Planning Scheme. Cairns Regional Council, Cairns.
 Cassowary Coast Regional Council (2013) Draft Cassowary Coast Planning Scheme. Cassowary Coast Regional Council, Innisfail.
 Department of Agriculture and Fisheries (2015). Agtrends Update April 2015. State of Queensland, Brisbane
 Department of Agriculture Fisheries and Forestry (2014). State of Queensland agriculture report State of Queensland, Brisbane June 2014
 Department of Local Government and Planning (2011) Wide Bay Burnett Regional Plan Queensland Government, Brisbane.

Department of State Development, Infrastructure and Planning (2014) State Planning Policy State of Queensland, Brisbane
 Sinclair, I. (forthcoming) Contested landscapes: managing the tensions of land use planning in strategic agricultural regions on Australia's eastern seaboard, Ecological Economics.
 Southern Downs Regional Council (2012) Southern Downs Planning Scheme. Southern Downs Regional Council, Warwick
 Willis, A. (2005), 'From peri-urban to unknown territory'. Paper presented to the State of Australian Cities Conference, Griffith University, Brisbane, 30 November 2005



In some traditional agricultural areas, there is competition for land between food and fibre crops such as sugar-cane and other crops such as plantation forestry.

PLANNING PRINCIPLES

5.2 The natural resource base

Introduction

Agricultural land protection efforts are typically targeted toward the best agricultural lands. The best farmland, because of level topography and soil characteristics (fertility, moisture levels, depth, and texture), is the land most suitable for regular cultivation. Other agricultural lands may have a special combination of characteristics (e.g., soil qualities, location, topography, and growing season) that make them ideally suited for specialty uses like vineyards, tree crops, and improved pastures.

The best soils are also often erosion resistant, allowing intensive cultivation with minimum tillage to minimise adverse environmental impacts, such as soil erosion and other agricultural runoff. The conversion of farmland to other land uses, such as commercial, industrial, or residential increases pressure to farm less productive, ecologically fragile lands, which when cultivated tend to degrade more rapidly, erode easily, and contribute excessively to water quality problems.

Many of the same characteristics that make land ideal for farming also make it attractive for urban development (good drainage, relatively flat topography). In South East Queensland between 1997 and 2009, the area of farmland declined by 2.8% per annum and the average farm area declined by 1.6% per annum (Budge et al 2012).

In recent years, the expansion of mining activities and the development of the coal seam gas industry have led to conflicts over access to the land resource above the mineral

and petroleum deposits. The Queensland Government responded to these conflicts by introducing the Strategic Cropping Land Act 2012 to provide assessment of the impacts of these developments on agricultural land and effectively precluding open cut coal mining from areas identified as strategic cropping land. In 2014, the State Government repealed this legislation and replaced it with the Regional Planning Interests Act 2014 that retained the SCL 'trigger map' and included Strategic Cropping Areas as 'areas of regional interest'. In NSW, the State Government has adopted a Strategic Regional Land Use Policy to introduce a 'gateway' assessment process to screen mining and petroleum developments on strategic agricultural land.

In some traditional agricultural areas, there is competition for land between food and fibre crops such as sugar-cane and other crops such as plantation forestry. While timber crops may take land out of cane for many years (10–15 years), the land can usually be returned to traditional cultivation following the growing cycle, depending on the relative economics of the production systems. Timber plantations should be viewed as complementary land uses that provide opportunities for diversification or utilisation of less suitable land such as creek banks and rocky or steep paddocks. Plantations for carbon sequestration on the other hand are a permanent change in land use and should not be located on cropping land.

There are two steps in the process of protecting the resource base for agriculture. Firstly, the land to be protected must be identified and mapped; and secondly, effective planning measures must be implemented to maintain the land

in agricultural production. In 2015, agricultural land in Queensland is identified and protected under a number of classifications. The State Planning Policy defines the agriculture state interest as Important Agricultural Areas and Agricultural Land Classification Class A and Class B. Under the Regional Planning Interests Act and Regulation 2014 enhanced controls over resource activities apply to areas mapped as either Priority Agricultural Areas (PAA) or Strategic Cropping Areas (SCA).

Agricultural production and potential growth areas must continue to be protected from incompatible uses. These areas should include land suitable for irrigated and dryland broad-scale cropping; irrigated and dryland horticulture; and irrigated and dryland improved and modified pastures for grazing. The classifications described above include land suitable for broadscale and horticulture cropping but do not include grazing land. It would be preferable, in the interests of avoiding confusion, for these different classifications to be rationalized into a single classification of agricultural land.

Agricultural land protection is a high priority and must be included as a part of the community's land use planning processes. Public involvement is a vital component to successful protection programs. Farmers, residents, and developers all need to be included in the planning process. A regional plan or local planning scheme plan should include:

- Agreed goals for protecting farmland and prioritizing existing farmland for future protection efforts.
- A community's participation or support of state or local farmland protection measures.



Principle 2

Identify and protect the natural resource base for agriculture

Implementation

1. Identify areas of suitable agricultural land and other resources such as water important for local or specialised agricultural production.
2. Exclude incompatible land uses, particularly urban or rural-residential uses, mining and petroleum extraction, permanent plantations and infrastructure corridors from these areas.
3. Provide for development in appropriate locations away from agricultural lands.

Examples

State Planning Policy - agriculture (July 2014)

Queensland Agricultural Land Audit

The Queensland Agricultural Land Audit (Audit) will identify land important to current and future agricultural production across Queensland. The Audit will provide information on the location, land area and types of existing productive agricultural land and new or upgradeable sites for potential future agricultural development.

Agricultural Land Class Definitions

Class A: Arable land

Land suitable for most agricultural land uses in a particular area.

Limitations to production range from none up to moderate levels. Conservation tillage and structural soil conservation works are required for cultivation on sloping lands.

Class B: Limited Arable land

Land suitable for pastures and/or some crops with specialized requirements.

Land with severe limitations for most agricultural land uses, and would require further economic, engineering or agronomic studies before the land would be considered suitable (Suitability class 4 land for most crops).

and/or

Land with severe limitations to most crops but which may

be suitable for crops that have different requirements. For example, land too steep for continuous cultivation may be suitable for tree crops or perennial forage crops, as such crops do not require continuous cultivation. Poorly drained land may be only suitable for rice production.

In particular areas of the state it may be desirable or necessary to indicate the location of areas suitable for specific uses that either contrast with the general classes or require special management.

Subscripts should be limited to cases where a specific use needs to be highlighted, and the use of more than one subscript should be avoided. The following list gives the initial set of standard subscripts that are to be used: r-rice; s-sugar cane; b-tobacco; t-tea; v-tree or vine crops; f-plantation forestry.

Class C: Pastoral land

Land suitable for native and improved pastures only.

Limitations preclude continuous cultivation for crop production but some areas may tolerate a short period of ground disturbance for pasture improvement. Where necessary, highly productive native pastures or land suitable for sown pasture may be highlighted by using the subscripts: i-improved and n-native to denote the more and less productive pastoral land respectively

Class D: Non-agricultural land

Land not suitable for agricultural land uses.



State Planning Policy State interest – agriculture

Planning protects the resources on which agriculture depends and supports the long-term viability and growth of the agricultural sector

Core concepts

Important agricultural areas (IAAs)

Important agricultural areas (IAAs) have been identified by the Queensland Agricultural Land Audit 2013 (Audit) and are mapped in the SPP Interactive Mapping System.

A detailed description of the attributes of each IAA is included in the relevant regional chapter of the audit. Detailed information on the audit process for identifying IAAs is provided in the Queensland Agricultural Land Audit Method: Technical Report which is available on the Audit website www.daf.qld.gov.au/environment/ag-land-audit

Agricultural land classification

Agricultural Land Classification (ALC) refers to the Agricultural Land Classes identified and mapped in the Audit. The classes are largely based on the Queensland Agricultural Land Classification approach. Further information on the ALC approach, and land evaluation generally, can be found on the Queensland Government website at www.qld.gov.au/environment/land/soil/soil-data/land-evaluation.

ALC Class A and ALC Class B land is the most productive agricultural land in Queensland, with soil and land characteristics that allow successful crop and pasture production.

Priority Agricultural Areas (Regional Planning Interests Act 2014)

Priority Agricultural Areas (PAA) are strategic areas, identified on a regional scale, that contain significant clusters of the regions' high value intensive agricultural land uses. Within a PAA, high value intensive agricultural land uses are recognised as the priority land use over other proposed land uses. These uses are termed priority agricultural land uses (PALUs) and will be given priority in the consideration of applications for resource activities and regulated activities to ensure the continuation of the existing PALUs is not threatened.

Strategic Cropping Area (Regional Planning Interests Act 2014)

The Strategic Cropping Area (SCA) consists of the areas shown on the Strategic Cropping Land (SCL) Trigger Map as SCL.

SCL means land that is, or is likely to be, highly suitable for cropping because of a combination of the land's soil, climate and landscape features. Detailed criteria for SCL is listed below.

Southern Downs Regional Council Planning Scheme (2012) Strategic Framework:

3.6.2 Rural land and production areas

Agricultural and pastoral activity underpins the economy of the Southern Downs and is strengthened and supported by protecting rural land and production areas, innovation, diversification and value adding.

3.6.2.1 Specific outcomes

- (1) Agriculture contributes significantly to the Southern Downs' economy and forms part of the social and historic character and identity of the area. The integrity of good quality agricultural land and strategic cropping land and potential strategic cropping land is protected for continuing productivity.
- (2) Agriculture also contributes to the character, identity and scenic beauty of the Southern Downs.
- (3) Good quality agricultural land is identified and protected for on going production in accordance with State Planning Policy 1/92.
- (4) Planning and approval powers are used to protect strategic cropping land and potential strategic cropping land from those developments that lead to permanent impacts or diminished productivity. Impacts are avoided, minimised and mitigated consistent with State Planning Policy 1/12.
- (5) The potential for conflict between rural uses and other land use activities is minimised by location, design and management of potentially conflicting uses.

3.6.2.2 Land use strategies

- (1) Agriculture is protected from any activities or development that alienates agricultural resources. Development that results in further fragmentation, degradation or alienation of rural land holdings is not supported in the planning scheme.
- (2) Reconfiguring of lots, including rearrangements of boundaries, does not result in the fragmentation of rural land holdings. Rearrangement of boundaries is only permitted when it results in the same or a lesser number of lots, an improved lot layout having regard to topography, existing land use, environment and habitat areas and contributes to the sustainability of a rural enterprise. Rural land is only subdivided into lots that reflect its capability and suitability for agricultural and pastoral purposes according to the precinct in which the land is located. To support productivity for agricultural or pastoral purposes, lots comprising land with limited capability must be larger than lots with greater capability. Existing small lots are not further subdivided.
- (3) Eight precincts have been identified within the Rural zone. These precincts have been determined having regard to land type, land use, land resources, nature conservation values, water values, scenic amenity and the existing pattern of lot sizes. The precincts therefore summarise the opportunities and constraints for new development in the Rural zone including agricultural diversification. Protection of the agricultural land resource is important in all of the precincts and uses and activities that compromise the agricultural resource in the precincts will not be supported. The Alluvial plains, Basalt quality grazing, Walloon arable and Granite Belt precincts contain the greatest concentrations of agricultural land and intensively cultivated land. Development in these precincts will only be supported if it is complementary and compatible with the dominant agricultural land uses.
- (4) Activities associated with agriculture and keeping animals have impacts on residential uses. Houses in the rural area are effectively separated and buffered from existing and potential rural uses.
- (5) The character and social cohesion and scenic amenity of rural production areas is protected from development that may impact negatively on these values

Planning protects the resources on which agriculture depends and supports the long-term viability and growth of the agricultural sector

Summary of Criteria for Strategic Cropping Land

Criteria	Criteria thresholds for each Strategic Cropping Land zone				
	Western Cropping	Eastern Darling Downs	Coastal Queensland	Wet Tropics	Granite Belt
Slope	≤ 3%	≤ 5%			
Rockiness	≤ 20% for rocks > 60 mm diameter				
Gilgai microrelief	< 50% of land surface being gilgai microrelief of > 500 mm in depth				
Soil depth	≥ 600 mm				
5. Soil wetness	Has favourable drainage				Has satisfactory drainage
Soil pH	For non-rigid soils, the soil at 300 mm and 600 mm soil depth must be greater than pH 5.0. For rigid soils, the soil at 300 mm and 600 mm soil depth must be within the range of pH 5.1 to pH 8.9 inclusive.				
7. Salinity	Chloride content < 800 mg/kg at 600 mm soil depth		EC 1:5 < 0.56 dS/m at 600 mm soil depth		
Soil water storage	≥ 100 mm to a soil depth or soil physico-chemical limitation of ≤1000 mm		≥ 75 mm to a soil depth or soil physico-chemical limitation of ≤1000 mm	≥ 50 mm to a soil depth or soil physico-chemical limitation of ≤1000 mm	≥ 25 mm to a soil depth or soil physico-chemical limitation of ≤1000 mm

Source: Table 1 in RPI Act Guideline 08/14. Department of State Development, Infrastructure and Planning (2014). State of Queensland (Brisbane).

Planning Principle	Planning Checklist Items	Yes	No	Not Required	Comments
2	Has the plan identified and classified land suitable for agriculture?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Is there an overlay map of suitable agricultural land?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Does the rural zone identify preferred areas for agriculture and compatible uses?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Are there appropriate assessment levels for uses that may impact on agriculture in rural zones?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Are water resources needed for agriculture identified and protected?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Terms:

Important agricultural areas (IAAs) have been identified by the Queensland Agricultural Land Audit 2013 (Audit) and are mapped in the State Planning Policy Interactive Mapping System on the DILGP website.

ALC Class A and ALC Class B land is the most productive agricultural land in Queensland, with soil and land characteristics that allow successful crop and pasture production. Mapping of agricultural land is available at the State Planning Policy Online Mapping System on the DILGP website.

Strategic Cropping Land (SCL) means land that is, or is likely to be, highly suitable for cropping because of a combination of the land's soil, climate and landscape features. The Trigger Map showing areas of potential SCL is available on the DNR website and on the Development Assessment Mapping System on the DILGP website. Detailed criteria for SCL is listed below.

Priority Agricultural Area (PAA) are strategic areas, identified on a regional scale, that contain significant clusters of the regions' high value intensive agricultural land uses. Mapping of PAA is available on the Development Assessment Mapping System on the DILGP website.

Links:

Budge, T. Butt, A. Chesterfield, M. Kennedy, M. Buxton, M. and Tremain, D. (2012) Does Australia need a national policy to preserve agricultural land? Australian Farm Institute, Sydney NSW.
Department of Agriculture Fisheries and Forestry (2012) Queensland Agricultural Land Audit. State of Queensland, Brisbane.
Department of State Development Infrastructure and Planning (2014) RPI Act Guideline 08/14: How to demonstrate that land in the strategic cropping area does not meet the criteria for strategic cropping land State of Queensland, Brisbane www.dsdipl.qld.gov.au/resources/guideline/rpi-guideline-08-14-strategic-cropping-land-criteria.pdf

Department of State Development Infrastructure and Planning (2014) RPI Act Guideline 02/14: Carrying out resource activities in a Priority Agricultural Area. State of Queensland, Brisbane <http://www.dsdipl.qld.gov.au/resources/guideline/rpi-guideline-02-14-carrying-out-activities-in-a-paa.pdf>
Department of State Development Infrastructure and Planning (2014) State Planning Policy - State interest guideline Agriculture State of Queensland, Brisbane July 2014.
NSW Strategic Regional Land Use Policy <http://www.planning.nsw.gov.au/srlup>
Southern Downs Regional Council (2012) Southern Downs Planning Scheme. Southern Downs Regional Council, Warwick

5.3

Lot sizes for productive agriculture

Introduction

The two land uses that most compete for rural land are agriculture and rural living. Rural living refers to the occupation of rural land for the purpose of lifestyle or non-rural business (eg. trucking or kennels) rather than agriculture and generally occupies small lot sizes as income comes not from production but from external sources. Rural living may be in the form of rural residential estates where whole lots are subdivided for residential use; or as single lots that are cut off existing lots for either family members (of the farmer) or to generate a capital injection into the farm. The impact of rural living on agricultural production is through economic pressure and conflict over agricultural practices.

The subdivision of rural land to cater for rural living is one of the most insidious influences on maintaining productive agriculture for two reasons. Firstly, the value of rural land is forced to rise as higher prices per hectare are paid by rural lifestyle investors who do not require a return on their investment from agriculture. The rise in land value makes it more difficult for primary producers to purchase land for expansion and the economics of production are made more difficult due to higher interest and council rates costs. The second and equally damaging impact is the conflict over agricultural practices that result from the location of residential uses amongst working farms (see Principle 4).

Another important aspect of small lot sizes is the impact on environmental parameters – loss of habitat and wildlife corridors, fragmentation of ecosystems, change in the landscape that makes it unattractive to native fauna and reduced management of weeds, pests and diseases.

In many agricultural areas the only subdivision that should be permitted is that required to facilitate farm 'build-up' or to realign boundaries. If a new lot must be created, it should be tied to an existing lot under the Land Title Act 1994 so that they cannot be sold separately.

Special care must be taken in setting lot sizes based on intensive horticulture enterprises. Many high-value enterprises such as strawberries, amenity horticulture and hydroponic vegetable production are profitable on small lots. These enterprises are often located on urban fringe areas close to urban markets. Lot sizes in these rural areas should not be reduced to reflect farm profitability in the absence of restrictions on dwellings as the small lot sizes will be attractive to the residential market and lead to conversion to residential use and conflict over land use practices.

Principle 3

Avoid fragmentation of agricultural land and other pressures of urban growth

Implementation

1. Set appropriate lot sizes in agricultural areas consistent with the economics of local and regional production systems by:
 - a. undertaking economic analyses of the current and agricultural enterprises in the planning area to determine the area required to generate sufficient returns and profitability (Hardman and Strahan 2000).
 - b. using data on the existing property (or holding) sizes in an area. The median property sizes for similar agricultural enterprises in an area will generally indicate the area of production required for profitable enterprises. Note that individual properties in this analysis commonly consist of multiple individual lots due to the amalgamation of farms to maintain profitability.
2. Restrict subdivision to farm build-up or boundary realignment by
 - a. capping the number of lots in an area so that any new lot created must be amalgamated with a neighbouring title or
 - b. tying new lots to an existing lot (Land Title Act 1994) so they cannot be sold separately or
 - c. making the construction of a dwelling on new lots impact assessable with strict planning requirements to prevent the incursion of residential uses into a farming area.

Examples

Far North Queensland Regional Plan

2.6 Rural subdivision

Past settlement patterns and subdivision approvals have resulted in a highly fragmented rural landscape, with up to 82 per cent of lots across the region being less than 40 hectares in size. In some locations, such as in the former Johnstone Shire, this figure is as high as 92 per cent

Land fragmentation has accumulative impacts which may contribute adversely to the region's economic potential, environmental health and community wellbeing. Issues include:

- fragmentation causing loss of good quality agricultural land
- declining economic viability of small cane farms
- reduced viability of sugar mills due to loss of cane lands to urban development or other uses
- fragmentation of wildlife corridors and areas of ecological significance
- land use conflicts between agricultural practices and urban living
- restrictions on access to and use of non-renewable resources
- infrastructure and servicing costs.

Boundary realignments allow for rearrangement of existing property boundaries to provide the flexibility to enable landholders to respond to changing circumstances. Local government should only approve boundary realignments where it can be demonstrated that the

realignment of boundaries does not result in an additional lot and is needed to:

- improve agricultural efficiency (i.e. leads to a more efficient layout or more practical rural operation, such as separating productive from nonproductive lands or shifting boundaries to include all irrigated lands on the one title)
- facilitate agricultural diversification (i.e. allowing smaller lots for high value crops)
- resolve land tenure issues (such as a house built across a boundary) or
- facilitate conservation outcomes (i.e. to separate a nature refuge from the remainder of the property).

Where boundary realignments are permitted, resulting lot sizes need to be appropriate to the surrounding rural production area and should not prevent existing industries from expanding or new enterprises from being established. Boundary realignments also need to allow for sufficient space to accommodate buffers so that adjoining land uses such as residential activity are not adversely affected. Boundary realignments should not be used to create new rural residential or rural lifestyle lots. Where there is an existing house (pre 9 May 2008), the proposed lot must be of a sufficient size to contain adequate buffers from agricultural uses. Individual new lots created should not be split across road reserves or other tenures.

Southern Downs Regional Council Planning Scheme (2012)

Assessment Criteria

Table 6.2.10.3 – Reconfiguring a lot in the Rural zone Performance Outcome P011:

Reconfiguring a lot results in lots that reflect the capability and sustainability of land for agricultural or pastoral purposes. Where a site has low capability for rural purposes lots must be larger to reflect the reduced rural capability. Reconfiguring a lot also allows for coordinated land management and results in a more sustainable use of the rural land resource. Except where new lots result from the rearrangement of the boundaries of existing lots, the minimum lot size is as follows:

Precinct	Minimum lot size
Alluvial Plains	200 ha
Basalt Quality Grazing	200 ha
Basalt Uplands	200 ha
Granite Belt	100 ha
Granite Hills	500 ha
Granite Plains	500 ha
Sandstone Rises and	
Traprock Hills	700 ha
Walloon Arable	200 ha

Planning Principle	Planning Checklist Items	Yes	No	Not Required	Comments
3	Are the minimum lot sizes in rural zones based on an analysis of local agricultural enterprises?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Are there provisions for farm build-up and boundary realignment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Are there adequate controls on dwellings in rural areas?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Terms:

Boundary realignment: The realignment of property boundaries that does not result in an additional lot and is needed to improve agricultural efficiency, facilitate agricultural diversification, resolve land tenure issues or facilitate conservation outcomes.

Lot: An individual land title

Minimum lot size: The smallest size lot that can be created in a particular zone or area. The restriction may be based on farm productivity or waste disposal requirements for septic tanks.

Property: Land in a business ownership that may consist of a multiple number of separate lots.

Links:

Department of Infrastructure and Planning (2009) Far North Queensland Regional Plan Queensland Government, Brisbane.
 Hardman, J.R. and Strahan, R. (2000). Farm size guidelines for horticultural cropping in the Lockyer and Fassifern Valleys. Department of Natural Resources, Queensland Government, Brisbane.
 Southern Downs Regional Council (2012) Southern Downs Planning Scheme. Southern Downs Regional Council, Warwick



5.4 Land use conflict

Introduction

Land use conflict occurs when incompatible uses are located in proximity to each other. This occurs in rural areas where uses such as residential or resource extraction are located either adjacent to or amongst active farming activity.

Occupiers of rural lifestyle lots are generally seeking an idealized rural environment and are intolerant of activities that may generate noise, odour, smoke or chemical spray drift. Where there is an insufficient separation distance between these uses, complaints can lead to restrictions on practices, loss of efficiency and profitability for the farming operation.

In a similar way, agricultural operations may be impacted by poor management practices on adjacent non-agricultural properties that result in the movement of dust, sediment, pollutants, pests, disease, dogs and fires across boundaries.

Where approved resource activities (mining, gas and petroleum) encroach onto agricultural land to access resources below productive surface agriculture, the impacts are more direct through the displacement of agriculture by above ground infrastructure, disturbance and waste materials and impact on water resources. The need for regular access to infrastructure for maintenance and repair is also a major factor in disruption of agricultural operations, affecting farm productivity and efficiency.

As with all industries, agricultural activities are governed by a range of regulations (Appendix 2) that limit pollution caused by noise, smoke and dust, however limits are generally not as strict as those placed on urban-based industry. Intensive

animal industries (poultry, cattle feedlots, piggeries) are particularly closely regulated as they are prescribed as Environmentally Relevant Activities under the Environment Protect Act 1994 and require an environmental authority to operate.

Two approaches are necessary to address land use conflict so that land uses may co-exist. One is through strategic planning approaches (Principle 4a) that avoid land use conflict by identifying areas preferred for compatible agricultural uses; separating potential conflicting land uses; and placing conditions on development approvals for adequate and effective buffer areas. This may include the delineation of building envelopes to ensure dwellings are not constructed within a proposed buffer area. A covenant under the Land Titles Act 1994 can be registered to restrict the use of a buffer area to non-residential uses and to protect vegetation. The advantage of a covenant is that it is attached to the land title and binds future owners. However, this instrument does not prevent a neighbor from lodging a complaint of nuisance due to nearby agricultural operations (see Principle 4b). Future land use conflict can also be reduced by providing incentives to transfer the dwelling entitlement on existing small rural lots to a more appropriate location.

The second approach (Principle 4b) applies where separation of land uses is not possible due to existing land use patterns and land use conflict is already occurring or cannot be avoided. Of particular concern to farmers is the situation where residential uses or resource activities are occurring beside or encroaching on a pre-existing use that has been operating for some time. An important principle is

that a new use should not be able to object to long-used management practices that are lawful and meet industry standards that are necessary for successful production. At present this 'reverse amenity' protection is only available to registered uses that are the subject of a development approval and a code of environmental compliance such as intensive animal industries and hazardous industries (Chapter 8A Sustainable Planning Act 2009.).

In New Zealand, it is possible for a local government to enter into a 'no complaints' covenant with a landowner to preclude complaints by the landowner (or subsequent land owners) about the adverse effects from land use or management practices on nearby allotments. Such covenants are usually required as a condition of approval of a sensitive use in the vicinity of an existing activity that is producing adverse effects. This mechanism is not available in Queensland due to the narrow allowable purposes defined for either an easement or a covenant under the Land Titles Act 1994.

The Regional Planning Interests Act 2014, rather than avoiding land use conflict through a planning approach, addresses land use conflict between resource activities and agriculture by requiring the resource proponent to obtain a regional interests development approval for any on-ground activity that affects land in either a Priority Agricultural Area or Strategic Cropping Area. The Act provides an exemption for resource activities that have reached a voluntary agreement with a landholder on the conduct of their operations, thus providing an incentive for the negotiation of mutually satisfactory agreements.

The expansion of the chicken meat industry in South-East Queensland has resulted in an increased potential for land use conflicts, especially relating to odour and dust impacts as well as health concerns from pathogens.

Principle 4a

Avoid land use conflict and provide for compatible rural uses

Implementation

1. Define areas for compatible agricultural production, particularly intensive animal industry* and intensive horticulture*, prevent the location of incompatible uses in and adjacent to agricultural production areas and where necessary require buffer areas between incompatible uses.
2. Provide incentives for the transfer of dwelling entitlements (development rights) on small rural lots to more appropriate rural living or urban areas.
3. Avoid land use conflict by maintaining adequate separation distances between agricultural production areas and encroaching incompatible uses.

Examples

Ipswich City Transferable Dwelling Entitlements

Ipswich City Council has adopted provisions in its planning scheme to encourage the transfer of 'dwelling entitlements' from vacant primary production and conservation constrained lands to existing, fragmented designated areas in the Rural C (Rural Living) Zone.

The concept involves the amalgamation or consolidation of vacant rural lands in exchange for the creation (by subdivision) of a similar number of lots within the defined area in a manner that ensures no net increase in the overall number of rural lots. Lots from which existing dwelling entitlements are taken are amalgamated or consolidated to other existing lots in order to remove pressure for future dwelling entitlements.

Landholders in the source and receiving areas negotiate to come to a private arrangement for the purchase price of a 'dwelling entitlement'. Following agreement, the parties lodge a single or joint development application, although both parties must sign the 'consent of owner' form.

Following approval a notation is placed on the Council's property system stating the rural lots were consolidated as part of a boundary realignment application and that any previous dwelling entitlements have been transferred. This advice is also conveyed to intending purchasers of the rural land by way of Planning and Development Certificates.

State Planning Policy – State interest – emissions and hazardous activities

Community health and safety, sensitive land uses and the natural environment are protected from potential adverse impacts of emissions and hazardous activities, while ensuring the long-term viability of industrial development, and sport and recreation activities.

The planning scheme is to appropriately integrate the state interest by:

- (3) protecting the following existing and approved land uses or areas from encroachment by development that would compromise the ability of the land use to function safely and effectively:

(c) intensive animal industries, . . .

Covenants under the Land Titles Act 1994 (Queensland)

A covenant can be registered over land in a buffer area to ensure the buffer achieves its purpose. A covenant is a voluntary agreement that creates an obligation by a deed entered into by the parties. Covenants may be of a positive nature in that they require the performance of an action. They may also be negative or restrictive, that

is one of the parties is forbidden from undertaking or performing a specified action.

Chapter 6 Part 4A Division 8A of the Land Act 1994 and Part 6 Division 4A of the Land Title Act 1994 allow covenants to be registered in favour of the State, another entity representing the State, or a local government for the purposes specified in the legislation.

A covenant must be validly executed and include a description sufficient to positively identify the subject lots or land. It must also fully set out the agreed terms and conditions.

Both the covenantor (the owner of freehold land or holder of State owned land) and the covenantee (the State, an entity representing the State or a local government) must execute the covenant.

On registration, a covenant complying with the legislation attaches to the land and binds the owner or holder and all successors in title until it is released.

Types of covenants

A covenant under the Land Title Act 1994 must:

- relate to the use of a lot or part of a lot; or
- relate to the use of a building built or proposed to be built on a lot; or
- be aimed directly at preserving a native animal or plant; or a natural or physical feature of the lot that is of cultural or scientific significance; or
- be for ensuring that all lots that are subject to the covenant are transferred together to another person (the lots subject to the covenant may be freehold, non-freehold or a combination of freehold and non-freehold); or
- be for ensuring that a lot and a registered lease for another freehold lot or part of a lot that are subject to the covenant are transferred together to another person.

'Use' covenants under s 97A(3)(a) of the Land Title Act 1994 or s 373A(4)(a) of the Land Act 1994 may be used to achieve a local government planning objective, provided they are consistent with the local government's planning scheme and any conditions of development approval, as well as complying with the Land Title Act 1994 and/or the Land Act 1994.

Examples of 'use' covenants that would be appropriate for land in a buffer area:

- that the covenant area must be used for noise, dust or odour attenuation purposes
- that a building on the lot/land is not to be used for residential purposes
- that the lot/land may be used only for organic farming or landscaping



Poultry Industry Planning – Bromelton, SEQ

Geographical context:

The gross value of Queensland's poultry meat industry in 2010–2011 was approximately \$370 million. Most poultry farms are concentrated in South East Queensland within short transport distance of processing facilities located in or near the Brisbane metropolitan area.

Bromelton is an area of 4,600 ha located in the Scenic Rim Regional Council approximately 70km south of Brisbane via the Mt Lindsay Highway. The area is in the rural buffer area of a declared State Development Area and is used for cattle grazing.

What is the background and evolution of the issue?

The majority of current meat poultry farms are located on the fringe of the Brisbane metropolitan area where opportunities for expansion are limited. The simultaneous expansion of the chicken meat industry to meet consumer demand and increasing urban development in South-East Queensland has resulted in an increased potential for land use conflicts, especially relating to odour and dust impacts as well as health concerns from pathogens.

Description of issue:

Bio-security factors, urban encroachment and very

specific site suitability factors associated with regulatory and planning constraints limit the potential locations for the expansion of the industry. The industry is seeking to identify suitable areas for industry expansion and/or relocation.

Who are the key stakeholders?

Poultry growers, feed millers, poultry processors, local governments, community groups.

Who and what is impacted by the issue?

Growers who are facing complaints from encroaching residential users or growers who are unable to expand on their current sites are looking for suitable locations to either reestablish their farms or expand their operations.

Planning Policy context:

Bromelton is located in the Regional Landscape and Rural Production Area of the South East Queensland Regional Plan; and in the Rural Zone of the Beaudesert Shire Planning Scheme where a 'Poultry Farm' is impact assessable.

Views/engagement of neighbourhood:

There are 33 freehold lots in the area consisting of 2 lots greater than 400 ha, 8 lots between 100 and 400 ha and 23 lots less than 100 ha. Generally rural producers

are tolerant of poultry farms however residents of small lifestyle properties oppose the establishment of new poultry farms within their vicinity.

Application of policy by Council/approval body:

There have been no applications for intensive animal industries in the area to either the Scenic Rim Regional Council or the Coordinator-General.

Wider statutory involvement:

Bromelton is a declared State Development Area under the State Development, Public Works and Organisation Act 1977. The area is included in the Rural Uses Precinct of the draft Development Scheme for the SDA where 'Intensive Animal Industries' require the approval of the Coordinator-General. Residential development is restricted within the State Development Area.

Points of agreement:

While there are areas of high ecological significance to the west of the area and Good Quality Agricultural Land to the east of the area, the area contains approximately 2,700 ha of suitable land of which 72% is on lots larger than 100 ha. Large lot sizes provide adequate internal buffers.

Identified issues to resolve:

Some potential meat poultry farms will be approximately 2 km from the Koorabyn rural residential area to the south-west of the area; and 10 km from the Beaudesert urban area. There is potential conflict with workplaces in the urban footprint of the State Development Area. Design and siting of potential farms will need to ensure odour, dust and noise impacts are confined to within the Bromelton area.

Outcomes for industry:

The Bromelton area contains land potentially suitable for approximately 20 meat poultry farm sites with adequate buffers to surrounding land uses.

What is the key message from the case study?

Strategic planning to identify potential suitable areas for intensive animal facilities can assist in future planning for rural industries and regional councils. Such planning does not preempt development assessment but may indicate locations where assessment may be positive to the industry.

What tools and processes could be used to support industry in improving this issue?

What should/could be changed?

1. Strategic industry planning to identify potential areas for industry growth.
2. Strategic planning by local governments to protect potential industry locations from incompatible uses such as rural living or rural subdivision activity.
3. Designation of rural industry areas where intensive industry proposals may be subject to code assessment rather than impact assessment.

References, resource documents, data sources:

Mortimer, W (2011). Rural Planning: The identification and constraint mapping of potential poultry farming industry locations within Southern Queensland. Esri Australia User Conference 2011, Sydney, NSW.

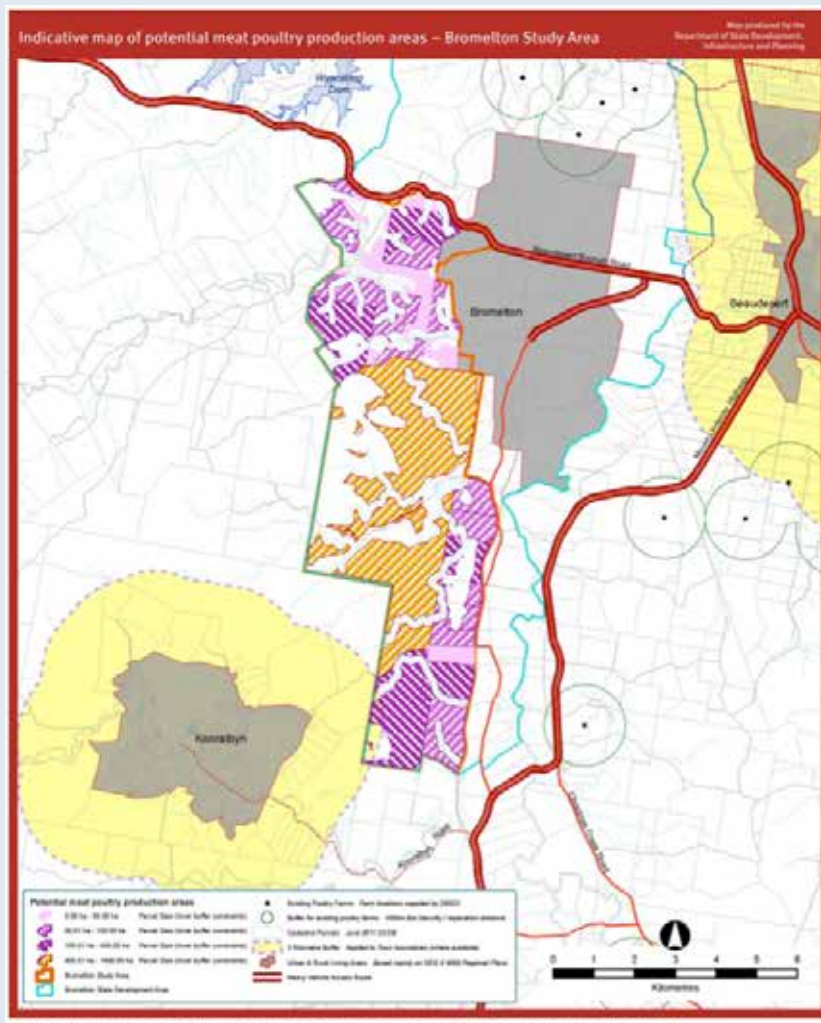


Figure used with the permission of the Queensland Department of Infrastructure, Local Government and Planning, Brisbane.

Principle 4b

Manage existing land use conflict

Implementation

1. Give preference to pre-existing lawful and lawfully operating agricultural land uses through 'reverse amenity' approaches.
2. Where agriculture is operating in urban and peri-urban areas, appropriate agricultural use codes should set clear operational conditions.
3. To achieve land use coexistence, communities need to establish open communication channels to discuss complaints and negotiate outcomes satisfactory to all groups of land users.
4. Provide farmers with the powers to negotiate the conditions under which resource activities operate on agricultural land to minimise impacts and disruption.

Examples

Horticulture land use conflict Logan City

Geographical context:

Greenbank is a rural-residential area in Logan City in the southern peri-urban area of Brisbane. Lot sizes in the neighbourhood range from 1.2 hectares to 4.6 hectares. The land use is a mixture of rural-residential, recreation and horticulture based on both open-field and enclosed greenhouse production of vegetables and fruit.

Planning Policy context:

The property of 4.4 hectares is in the Rural Residential Precinct in the Mount Lindsay Corridor Zone of the Beaudesert Shire Planning Scheme (2007). On lots greater than 8,000m² in this precinct, agriculture and animal husbandry are exempt uses, however intensive agriculture is impact assessable. On lots less than 8,000m², agriculture and intensive agriculture are impact assessable, while animal husbandry is code assessable. Intensive Agriculture means the growing of plants or plant material within a building or structure or under artificial light, mushroom farming, turf farming or hydroponic farming.

Description of proposal:

The landholder proposed changing production from open field horticulture by the erection of structures enclosed with plastic sheeting to allow more intensive greenhouse production. The application was therefore subject to impact assessment.

Rationale of applicant:

The landholder wished to improve the efficiency and productivity of the farming enterprise by achieving greater control of environmental factors through the enclosure of production practices within shade structures.

Views/engagement of neighbourhood:

The development application attracted 75 submissions from neighbouring and local residents, mostly raising issues of concern with the proposal. The main issues raised were that the proposed intensive horticulture is not compatible with a rural residential area due to the use of chemical sprays for the control of plant pests and disease and the resulting spray drift into residential areas. Other issues raised included the impact on visual amenity of large plastic structures, noise, waterway and domestic water contamination, traffic and impact on land values.

Application of policy by Council/approval body:

The Council considered that the proposal was inconsistent with the purpose of the Rural Residential Precinct by not providing a safe environment, nor protecting or enhancing the existing residential amenity of the area. In addition there was insufficient buffering between the operation and adjacent residential uses. Overall the proposal did not meet 24 of the intended outcomes for the area in the planning scheme.

Wider statutory involvement:

The application did not require referral to any other statutory body or agency.

The issue of assessment levels for agriculture has been the subject of proposed changes to the planning scheme. The Council proposed that on lots less than 8,000m², agriculture be made code assessable, rather than impact assessable. This change was proposed to lessen the regulatory burden on open-field farming activities in the area while maintaining performance standards on spray drift and other potential impacts through amendments to the Agriculture Code. Agriculture on lots greater than 8,000 m² would continue to be exempt (subject to the preparation of the new planning scheme).

The State Government supported these changes but they have not been implemented due to strong community objection over issues of spray drift and residential amenity.

Points of agreement:

There were very few points of agreement between the landholder and the Council.

Identified issues to resolve:

There is a need for acceptable and appropriate operation codes for agriculture and intensive agriculture in residential areas.

Outcome of application:

The application was refused

Outcomes for industry:

It will be very difficult for intensive agriculture to establish in areas designated for Rural Residential use, regardless of the size of allotment. Agriculture or open-field farming will also remain under close scrutiny by local residents due to concerns about agricultural practices such as spray drift, odour and noise.

What should/could be changed?

1. At the strategic planning level, land suitable for agriculture should not be converted to rural-residential use as production activities will either continue in these areas or small-scale, intensive uses will be attracted to establish on suitable locations on small allotments.
2. Land use conflict is best avoided by maintaining adequate separation distances between agricultural production areas and encroaching residential uses.
3. Where agricultural and rural-residential uses are permitted to co-exist by past planning decisions, land use conflict must be managed by setting clear operational conditions on agriculture in these circumstances by appropriate agricultural use codes.
4. Beyond planning measures, there is a need for Councils and their communities to establish open communication channels to discuss complaints and negotiate outcomes satisfactory to both groups of land users.

References, resource documents, data sources:

Logan City Council (2007) Beaudesert Shire Planning Scheme March 2007. Logan City, Qld.

Logan City Council (undated) Key issues for intensive horticulture operators. Logan City, Qld.

Logan City Council (2012) Report by Development Assessment Manager to the Logan City Planning and Development Committee on application for Material Change of Use for Intensive Horticulture. Logan City, Qld.

Reverse amenity

Chapter 8A Urban Encroachment Provisions in the Sustainable Planning Act 2009 (Based on Corrs Chambers Westgarth, March, 2012)

Agricultural activities that operate under a development approval and an environmental authority such as intensive animal industries may seek protection from complaints from encroaching new development under the Sustainable Planning Act 2009 (SPA). The purpose of Chapter 8A is to introduce provisions that protect the existing lawful use of registered premises from encroachment by new development. In doing so, these new provisions, to a certain extent, codify common law principles dealing with 'reverse amenity' and the consequences of moving to a nuisance.

The protection is afforded to those premises recorded on a register, which are accepted by the Minister to be 'significant' premises that emit aerosols, fumes, light, noise, odour, particles or smoke in compliance with the development approval or code of environmental compliance applying to the activity. The Minister must also be satisfied that public consultation about the proposed registration has been undertaken in the mapped area by or for the applicant and the outcomes of the public consultation show the levels of support for the proposed registration.

Prior to deciding whether to register the premises the Minister must also be satisfied the activity carried out at the premises is 'significant', in that the activity is significant to the economy, heritage or infrastructure of the State, a region or the locality in which the mapped area is situated. The activity carried out at the premises must also be consistent with the nature of the development proposed for the mapped area under the planning scheme, and any regional plan, applying to the mapped area. Premises may be registered for a period of between 10 and 25 years.

In circumstances where an affected person claims the emission being emitted from a registered premises will interfere with an 'environmental value', that person is precluded from bringing civil proceedings for nuisance or criminal proceedings relating to a local law if the emissions are consistent with a development permit for the registered premises or any applicable code of environmental compliance.

The provisions do not in any way prevent residential encroachment or provide protection from proceedings being instituted under the SPA or the Environmental Protection Act 1994 relating to the breach of conditions of approval in circumstances where residential development has encroached on developments that at the time of their establishment did comply with conditions of approval.

No Complaints Covenants (New Zealand)

"No complaints covenants" are a common voluntary mechanism used to restrain incoming activities from complaining about the adverse effects of an existing activity. Such covenants are usually proposed by an applicant attempting to gain consent for an incoming activity as a means of responding to reverse sensitivity concerns by the operator of an existing activity. The covenants usually consist of an acknowledgement of a lawfully established activity, a pledge not to complain in respect of that activity, and constraints upon seeking changes to that activity.

Such an undertaking may be either agreed as a condition of consent under section 108 of the Resource Management Act (RMA) or as a private agreement, and can be registered on the title of the receiving site under section 109 of the RMA. If a no complaints covenant is imposed as a condition of consent under section 108, it must meet the test in *Newbury District Council v Secretary of State for the Environment*, and may not be imposed without the consent of the applicant: *Ports of Auckland v Auckland City Council*.

No complaints covenants have been successfully used by various industries when faced with increased residential activity in their immediate vicinities. For example, the Auckland District Plan Central Area Section 14.6.6.1 provides that building for accommodation in the Britomart Precinct will be a permitted activity where the site is subject to a no complaints covenant in favour of the Ports of Auckland. In *Sugrue v Selwyn District Council*, proposed restaurant operators covenanted not to complain about odour from an existing neighbouring piggery, provided that the effects were no greater than the effects which were lawfully established at the date of the covenant. Despite the increased use of such covenants, concern has been expressed by the Environment Court regarding the efficacy of covenants when they are not accompanied with measures to mitigate cross boundary effects.

(Note that 'no complaints covenants' are not available in Queensland due the narrow allowable purposes defined for either an easement or a covenant under the Land Titles Act 1994.)

An extract from DSL Environmental Handbook, a collection of up-to-date practice guides produced by DSL Publishing.



How will the Regional Planning Interests (RPI) Act assist agricultural landholders?

The RPI Act allows regional communities, through the preparation of regional plans, to determine the agricultural, living and environmental areas to be protected, and establishes a process of assessing resource development in those areas.

The laws will level the playing field for landholders negotiating with the resources sector and provide a strong incentive for resource companies to effectively negotiate with landholders. The framework ensures that landholders have a say in any development that occurs on their property. It provides an incentive for a resources company not to take action in the Land Court after 40 days if agreement cannot be reached for land in Priority Agricultural Areas (PAAs).

If agreement cannot be reached between a landholder and a resource company, the company must seek a Regional Interests Development Approval from the Department of Infrastructure, Local Government and Planning, with advice provided by the independent GasFields Commission Queensland.

Department of State Development, Infrastructure and Planning (2014)



The covenants usually consist of an acknowledgement of a lawfully established activity, a pledge not to complain in respect of that activity, and constraints upon seeking changes to that activity.

Planning Principle	Planning Checklist Items	Yes	No	Not Required	Comments
4	Does the rural zone restrict uses incompatible with agriculture?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Are there incentives to transfer existing dwelling entitlements out of rural areas?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Are there provisions addressing reverse amenity impacts on agricultural enterprises?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Are their provisions for requiring buffer areas between sensitive uses and farming areas and measures (eg covenants) to implement these provisions?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Terms:

Buffer area: An area of land separating adjacent land uses that is managed for the purpose of mitigating impacts of one use on another. A buffer area consists of a separation distance and one or more buffer elements.

Reverse Amenity (Sensitivity): Action taken by or imposed on an encroaching land use to protect the amenity of the encroaching land use and to avoid conflict with an existing activity.

Separation distance: The total linear distance between a source and a sensitive receptor.

Transfer of development rights: The movement of existing development rights from an undesirable location to a more appropriate location. The transfer of rights may be by commercial sale or by development approval including an incentives package involving enhanced development at the receiving site.

Links:

Corrs Chambers Westgarth (2012) Corrs in Brief Sustainable Planning and Other Legislation Amendment Act 2012 Amendments March 2012.

Department of Natural Resources and Department of Local Government and Planning (1997) Planning Guidelines - Separating Agricultural and Residential Land Uses DNRQ 97088. Queensland Government, Brisbane.

Department of State Development Infrastructure and Planning (2014) Regional Planning Interests Act and the agricultural sector. State of Queensland, Brisbane. <http://www.dsdiq.qld.gov.au/resources/factsheet/>

[planning/rpi-act-agricultural-sector.pdf](#)

Ipswich City Council (2006). Implementation Guideline No. 11 New Rural Living Lots Created as a result of Transferable dwelling entitlements". Ipswich City Council, Ipswich.

Batistich, M. and Taffs, E. Reverse Sensitivity in Campbell, F. DSL Environmental Handbook Thomson Reuters New Zealand.

Scholefield Robinson Horticultural Services (2011) Issues facing vegetable production in peri-urban areas — review and scoping study VG10059. Final Report to Horticulture Australia Limited/ AUSVEG. Scholefield Robinson, Fullarton, SA.

Sustainable natural resource management covers land, water, vegetation and air and is essential for long-term agricultural productivity, environmental management and ecological processes.



5 PLANNING PRINCIPLES CONTINUED

5.5 Sustainable Natural Resource Management

Introduction

Sustainable natural resource management covers land, water, vegetation and air and is essential for long-term agricultural productivity, environmental management and ecological processes. The achievement of sustainable natural resource management on farms is influenced by a range of approaches covering incentives, education and regulation.

All regions in Queensland are covered by Natural Resource Management Plans prepared by Regional NRM Bodies. These plans have been prepared in a collaborative process with community, industry and local government stakeholders and identify a range of specific NRM issues, strategies, targets and actions. These plans have been approved by State and Commonwealth agencies as the basis for funding under a range of programs. The current National Landcare Programme will operate until 2018-2019 and is comprised of two funding streams: national and regional that will invest \$1 billion in projects that address environmental and sustainable agriculture issues.

In many NRM plans, actions are identified which require implementation through local planning schemes (LGAQ 2007).

Water is significant natural resource upon which agricultural production relies. Water is also a point of conflict as competing demands for a limited resource creates tension and conflict. These demands are fueled by the emergent need for water for urban use, industrial use and environmental use that competes with the existing need for water to sustain agricultural production.

Regulatory approaches to sustainable natural resource management are focused on publicly owned resources such as water and State land. Examples of regulation include the Water Act 2000, Vegetation Management Act 1999, Land Act 1994 and Environment Protection Act 1994. Some of these regulations include, in various forms, requirements for property-level management plans that include commitments by the landholder to sustainable NRM practices. The Queensland Government has adopted an industry-led Best Management Practice (BMP) program to implement changed management practices

to safeguard the Great Barrier Reef and other areas of concern. Industry groups, including CANEGROWERS, AgForce and the Fitzroy Basin Association have developed BMP programs for the sugarcane and grazing industries. This approach has also been extended to the fruit and vegetable industry to protect water quality in South East Queensland.

Many landholders voluntarily adopt sustainable management practices and organic farming methods as best practice. They also undertake property-level and sub-catchment management planning as a best practice business tool to understand their natural resources, production, business and human resources to plan and prepare for future scenarios. Intensive animal industries (cattle feedlots, piggeries, poultry farms) are Environmentally Relevant Activities (ERA) under the Environment Protection Act 1994 and subject to both development assessment under the Sustainable Planning Act 2009 and require an environmental authority under the EPA. Guidelines have been prepared for these industries to comply with established environmental standards and are listed under the Links below.

Principle 5

Encourage sustainable land and water use and practices

Implementation

1. Promote agricultural production on suitable land and encourage sustainable land use practices.
2. Protect environmental assets such as wetlands, surface and groundwater resources by identifying these assets, appropriate buffers and appropriate development standards.
3. Identify areas of acid sulphate soils, good quality agricultural land, strategic cropping land, salinity risk, landslip hazard, bushfire hazard, flood and storm surge hazard and apply conditions to development approval in these areas.
4. Incorporate relevant assessment criteria in codes aimed at reducing the spread of weeds and other pests.
5. Adopt policies that incorporate a precautionary approach to the risks associated with climate change.
6. Incorporate Regional NRM Plans into regional plans and local planning schemes

Case Study

Best Management Practice (BMP) for Australian sugarcane growers

CANEGROWERS has secured \$3.5M of funding for development and delivery of a sugarcane Smartcane BMP in partnership with the Queensland Government, in an outcome which will give sugarcane growers an opportunity to showcase that they manage their industry best management standards.

The CANEGROWERS Sugarcane BMP is a far more effective approach to industry change than regulations as it focuses on the business of sugarcane and delivers the environmental outcomes which will meet the expectations of the Australian community.

What will the Smartcane BMP look like?

The basic philosophy is that there are no set 'recipes', but rather a recognition of on-farm management styles that allow for progress towards the adoption of an improved cropping system that is based on best practice principles.

CANEGROWERS has worked collaboratively with growers and industry to develop a series of 7 web based education and training modules:

As a minimum, growers will need to be accredited in the below three modules to be able to use the Smartcane BMP

- Module 1. Drainage & irrigation (minimum needed for accreditation)
- Module 2. Pest, disease & weed
- Module 3. Soil health & plant nutrition

They then may take on any of the remaining four modules

- Module 4. Farm business
- Module 5. Natural systems
- Module 6. Workplace health & safety
- Module 7. Crop production & harvest

The practices contained within each module will be categorised depending on ability to improve productivity, profitability and stewardship.

Building on existing work

There are already a lot of products which have been developed over the past 30 years. The Sugarcane BMP project will consolidate and build on this and emerging work. It will also build on the successful Australian Government Reef Program, and be integrated into any future Reef Program initiatives.

Will growers be audited?

Many sugarcane growers operate to a best practice industry standard and will already comply with main parts of the BMP system. Signing on to any or all of the below steps is completely VOLUNTARY.

Planning Principle	Planning Checklist Items	Yes	No	Not Required	Comments
5	Are there measures that encourage sustainable land and water use and management practices?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Have environmental assets (biodiversity, wetlands) been identified and protected?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Have the principles of Regional NRM Plans been incorporated into the planning scheme?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Terms:

Best management practice is a method or technique that has consistently shown results superior to those achieved with other means, and that is used as a benchmark. In addition, a "best" practice can evolve to become better as improvements are discovered. Best management practices are used to maintain quality as an alternative to mandatory legislated

standards and can be based on self-assessment or benchmarking and, in some cases, independent auditing. Property management plan: A document including maps and records to describe property resources, management practices and development intentions for the future sustainability and profitability of an enterprise.

Links:

Interim Guidelines – Sheep Feedlot Assessment in Queensland CSIRO <http://www.publish.csiro.au/pid/114.htm>
Local Government Association of Queensland (2007) Integrating Natural Resource Management into Planning Schemes LGAQ, Brisbane
National Environmental Guidelines for Piggeries 2nd edition http://www.australianpork.com.au/pages/images/11pt_

[final_Lowres_31_08_11.pdf](#)
Queensland Guidelines for Meat Chicken Farms 2012 http://www.daff.qld.gov.au/documents/AnimalIndustries_Poultry/chicken-meat-guidelines.pdf
Reference Manual for the Establishment and Operation of Beef Cattle Feedlots in Queensland CSIRO <http://www.publish.csiro.au/pid/114.htm>

5.6

Diversified agricultural enterprises

Introduction:

Australian farming enterprises, particularly those located in coastal and peri-urban areas, are increasingly dependent on diversified sources of income both on and off the farm. Many farm families derive their family income from transport, teaching or contract work in addition to on-farm animal and crop production, value-adding, processing, farm accommodation and small-scale tourism ventures. In suitable areas, aquaculture production also has the potential to diversify agricultural production.

In 2006-07, the average off-farm income on Queensland broadacre farms was \$32,230 or 90% of on-farm cash income. This compares with Australian broadacre farms where the average off-farm income was 67.5% of on-farm cash income (Hooper et al 2009) and the United States where the average off-farm income for all farms accounts for over 90% of farm operator household income (Wikipedia)

In South East Queensland, almost 70% of farms produce less than \$100,000 value of output (Budge et al, 2012). In broadacre agricultural regions, the number of small farms is declining as farms seek economies of scale, but in peri-urban areas the proportion of small farms is increasing. In South East Queensland between 1997 and 2009, the number of farms and area per farm declined by 1.2% and 1.6% per annum respectively, whereas the figures for Queensland as a whole were a 1% per annum decline in the number of farms, but a 1% per annum increase in the average farm size through amalgamation of properties (Budge et al 2012).

The trend towards 'multi-function farms' involving combinations of production, tourism, processing, transport and retail has moved ahead of traditional planning approaches that classify agricultural enterprises as either 100% production or 100% non-production, for example ecotourism. Many local planning schemes require a landholder to navigate a development application for a Material Change of Use (MCU), often involving impact assessment, for a relatively minor activity intended to complement their agricultural activity.

Planning approaches should recognize that there are a range of on-farm activities that complement agriculture through either value-adding or by assisting to educate the community of the realities of agriculture through farm- tourism and accommodation. These uses should be considered as secondary or ancillary uses to the primary agricultural use on farms and treated as such in planning schemes. A definition of a multi-function farm in the Queensland Planning Provisions would enable local governments, particularly in peri-urban regions, to allow farms to diversify and value-add to their produce and sell on-farm.

It is also important to identify agricultural production areas in planning schemes where a range of compatible and complementary activities can occur.



Principle 6

Encourage value-adding and diversification in agriculture

Implementation

1. Recognise the complexity and diversity of modern agricultural enterprises and provide for efficient development approval processes for small scale tourism activities and on-farm handling, processing and sale of agricultural produce.
2. The definitions of 'cropping' and 'animal husbandry' in the Queensland Planning Provisions could be broadened to include ancillary activities that include host farming and farm tours.
3. Local planning schemes should provide for uses such as 'short-term accommodation', 'tourist attraction' and 'tourist park', up to a reasonable threshold, to be exempt or self-assessable uses in rural areas.
4. The Queensland Government should establish a definition of 'multi-function farm' in the Queensland Planning Provisions to recognise complementary uses associated with agricultural value-adding and agritourism.
5. Provide for agricultural production areas that promote a mix of compatible and complementary agricultural activities.

Case Study

Dairy farm tourism – Scenic Rim

Geographical context:

The Lost World Valley is centred on the upper-Albert River valley located south of Beaudesert in South East Queensland, 1.5 hours drive from Brisbane. Land use in the valley is dominated by small-scale dairy farming and beef cattle grazing. There are numerous accommodation cottages located on farms and rural lifestyle properties in the valley.

Planning Policy context:

The area is covered by the Beaudesert Planning Scheme (2007) that is currently being revised to create the Scenic Rim Regional Council Planning Scheme. The area is in the Countryside Precinct of the Rural Zone. In this precinct agriculture, animal husbandry, a roadside stall (<5m²), and temporary activities are exempt; a bed and breakfast facility, up to 2 tourist cabins are self-assessable; and a cottage tourist facility (shop), a roadside stall (5-25m²), camping ground, 3-6 tourist cabins and tourist facility (<75m²) is code assessable. Other undefined uses are impact assessable.

Description of proposal:

The landowners operate a small (65 head) dairy farm on 80 ha over two land titles. In addition they had been operating small-scale farm tours and on-site camping for a period of time, unaware that an approval was required.

The Council had advised the landowners that the activity required an approval under the planning scheme.

Under the planning scheme a 'host farm' or 'farm tour' were undefined uses in the scheme, therefore the landholder would have to apply for a Material Change of Use approval and these uses would be impact assessable.

Rationale of applicant:

The landowner wished to diversify their small-scale dairy farming operations and to operate a small-scale tourism operation involving on-farm camping and farm tours for school groups and members of the public.

Views/engagement of neighbourhood:

Neighbours and local members of the Lost World Valley tourism group were supportive of the proposal.

Application of policy by Council/approval body:

Council officers advised the landholder that the impact assessment process and likely conditions would include: road upgrading, road contributions per busload, bus turn-around, car parking, post and rail fencing and landscaping and toilet facilities. The landowner estimated that the application and development cost would be between \$30,000 and \$50,000. This was considered excessive in terms of the scale of the proposed activity.

Wider statutory involvement:

None

Points of agreement:

The Council agreed that the farm tours could be considered a Temporary Activity under the planning scheme. This is an exempt use under the scheme provided the activity does not exceed 7 camping sites or 20 persons per night and that there are no more than 20 days of the activity per year. Use in excess of these numbers would require a planning application.

Identified issues to resolve:

Requiring a Material Change of Use application for small-scale on-farm activities that complement the primary farming use is considered an unreasonable imposition by local landholders. Making these complementary activities impact assessable appears to be out of proportion to the potential impacts.

Outcome of application:

The application was not pursued and the landowners are operating the farm tours as a temporary activity. They are also operating a tourist cabin in a renovated farm cottage as a self-assessable use on the property.

Outcomes for industry:

Local planning schemes can be very limiting and do not recognise or allow some form of agri-tourism and food value-adding activities to occur. Acceptable modifications to definitions need to be developed to enable these enterprises to gain approval and start operating.

What should/could be changed?

1. Council should provide a case manager to facilitate farm diversification through small-scale tourism activities to support diversification and rural economic development.
2. The definitions of 'cropping' and 'animal husbandry' in the Queensland Planning Provisions could be broadened to include ancillary activities that include host farming and farm tours.
3. Local planning schemes should provide for uses such as 'short-term accommodation', 'tourist attraction' and 'tourist park', up to a reasonable threshold, to be exempt or self-assessable uses in rural areas.
4. The Queensland Government could establish a definition of a 'multiple-function farm' in the Queensland Planning Provisions to recognise complementary uses associated with agricultural value-adding and agritourism. This definition would enable local governments, particularly in peri-urban regions, to allow farms to diversify and value-add to their produce and sell on-farm.

References, resource documents, data sources:

Beaudesert Shire Council (2007) Beaudesert Planning Scheme. Beaudesert, Queensland.
Tourism Extension Unit, School of Tourism and Hospitality Management, Southern Cross University (2010) Scenic Rim food and agritourism business development program: Final participant outcomes. Southern Cross University, Tweed Heads, NSW.

Aquaculture development – Guthalungra, north of Bowen

Geographical context:

The proposed development is an 800 hectare coastal site located adjacent to the Elliot River on Abbot Bay, approximately 40km north of Bowen in North Queensland. The site has been cleared of original vegetation for cattle grazing and had been identified by the State government in regional assessments as a suitable site for aquaculture. An existing prawn hatchery currently occupies part of the site.

Planning Policy context:

The site is designated Rural in the Bowen Shire Planning Scheme where marine aquaculture is impact assessable. In January 2001, the project was declared a 'controlled action' under the Environment Protection and Biodiversity Conservation Act 1999 (Cwlth) due to potential impact on a World Heritage Area, threatened species and communities, migratory species and the marine environment. In June 2001, the project was declared a 'significant project' by the Coordinator-General under the State Development and Public Works Organisation Act 1971 (Qld). The State-level Environment Impact Statement (EIS) was used to assess the impacts of the proposed development for both State and Commonwealth processes.

Description of proposal:

The proposal involved the construction of 259 aquaculture ponds, each one hectare in area, using seawater sources from Abbot Bay through an offshore pumping station and pipeline system. Pond wastewater will be treated by sand filtration and settlement ponds before discharge to Abbot Bay.

Rationale of applicant:

The proponent intends to invest around \$100 million to produce 1,600 tonnes per annum of black tiger prawns for the domestic and export markets. It is estimated that the project will increase the farmed prawn production in Queensland by approximately 50%.

Views/engagement of neighbourhood:

Following the public release of the EIS on the project in September 2003, submissions were received from four individuals, four organisations and 12 advisory agencies. A supplementary EIS was released for public comment in February 2007.

Issues raised in submissions included: wastewater discharge, impacts on marine plants, impacts from the intake and discharge pipeline and pumping infrastructure, pond construction, acid sulfate soil disturbance, cultural heritage and socio-economic impacts from proposed employee housing.

Application of policy by Council/approval body:

In January 2008, the Queensland Coordinator-General recommended the project be approved subject a number of conditions. The recommendation was referred to the Commonwealth Government for consideration and a final decision.

Wider statutory involvement:

As part of the Commonwealth Government

assessment, the Department of Environment, Heritage and the Arts commissioned an independent review of the EIS by the Australian Institute of Marine Science and the likely impact on the Great Barrier Reef World Heritage Area. The review found that there was unlikely to be a significant impact from the project and that the risk to the world heritage values of the Great Barrier Reef and to listed threatened species and communities was low. The review found that the Queensland Government had imposed appropriate conditions to address environmental risks and to ensure that any residual environmental impact would be minimised and appropriately monitored.

Outcome of application:

Following a prolonged assessment the Commonwealth Minister for the Environment, Heritage and the Arts approved the project subject to 19 conditions in March 2010. Following an appeal by the applicant and negotiations about offsets and waste discharge conditions these were amended to 21 conditions in November 2011. They included a set of daily maximum load limits for discharge of nutrients or sediments to Abbot Bay; and a requirement to implement an offset facility to achieve a zero net discharge of nutrients and sediment into Abbot Bay. The development also must be implemented in stages with each stage subject to demonstration that the previous stage is able to meet the development conditions.

The assessment process has now taken over 11 years resulting in major costs to the applicant. The company still needs to obtain planning approvals under the Sustainable Planning Act 2009 (Qld) through the Whitsunday Regional Council and from the Great Barrier Reef Marine Park Authority for infrastructure within the Great Barrier Reef Marine Park.

A Marine Parks permit is required under the provisions of the Great Barrier Reef Marine Park Act 1975 (Commonwealth) and the Marine Parks Act 2004 (Queensland) for the construction and operation of the new prawn farm. The Commonwealth and State Governments have established a joint assessment framework under which consideration of projects within the Great Barrier Reef Marine Park is made. GBRMPA has advertised the project and invited public comments on the proposal and will consider these comments in as part of its final assessment of the Marine Parks permit application. The period for public comment has closed (March 2015).

Points of agreement:

The proponent has accepted the conditions regarding construction of the ponds and other earthworks including management of spoil and acid sulfate soils. There is also agreement on environmental monitoring and reporting.

Identified issues to resolve:

Based on the technology currently available within the Australian industry, the proponent believes it is impossible for a prawn farm to achieve a zero net discharge of nutrients, particularly in the dry tropics where high levels of evaporation require greater

water turnover. While there is some potential for nil discharge to be technically feasible, it is currently economically unviable in Australia. While the conditions allow for a small daily discharge from the facility, an offset facility to achieve zero net discharge will be very difficult to achieve due to the small size and limited opportunities in the local Abbot Bay catchment.

Outcomes for industry:

Future growth of discharge-based aquaculture in the Great Barrier Reef catchment and industry development programs will be severely constrained.

What should/could be changed?

1. There is a need for a strategic planning approach that undertakes a broad-scale assessment of resources and environmental values to identify areas feasible for aquaculture in sensitive catchments such as the Great Barrier Reef World Heritage Area.
2. Such an assessment was agreed to in February 2012 by the Commonwealth and State Governments who are undertaking a joint 'strategic assessment of the impacts of actions on the values of the Great Barrier Reef World Heritage Area, and other relevant matters of national environmental significance, under the Queensland coastal management, planning and development framework' under the EPBC Act.
3. Such an approach should identify areas where aquaculture applications are likely to be approved. While application and assessment of proposals would still be required, there would be a level of expectation of approval based on the strategic assessment process with assessment confined to fine-tuning conditions to protect local and regional environmental values.



References, resource documents, data sources:

Department of Sustainability, Environment, Water, Population and Communities (viewed 25 July 2012) Referral detail on Pacific Reef Fisheries (Bowen) Pty Ltd Proposed Guthalungra Aquaculture Facility Received 12 Jan 2001 Reference Number: 2001/138 http://www.environment.gov.au/cgi-bin/epbc/epbc_ap.pl?name=current_referral_detail&proposal_id=138
Queensland Coordinator-General (January 2008) Coordinator-General's Report Guthalungra Aquaculture Project Report evaluating the Environmental Impact Statement, pursuant to Section 35 of the State Development and Public Works Organisation Act 1971 http://www.deedi.qld.gov.au/cg/docs/library/pdf/Guthalungra_Aquaculture_CG_Report_Jan2008.pdf

Many farm families derive their family income from transport, teaching or contract work in addition to on-farm animal and crop production, value-adding, processing, farm accommodation and small-scale tourism ventures.

Planning Principle	Planning Checklist Items	Yes	No	Not Required	Comments
6	Are rural enterprises permitted to diversify into ancillary activities to support the primary productive activity?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Are small scale ancillary activities such as farm accommodation, tourism, processing and retail outlets exempt or self-assessable?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Are areas/zones identified where compatible and complementary agricultural activities are encouraged?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Terms:

Multi-function farm: A rural enterprise based on the growing of food, fibre, timber or foliage including ancillary activities concerned with accommodation of farm workers, visitors and tourists; the conduct of farm tourism and the on-farm processing, packaging, storage and sale of agricultural products.

Links:

Budge, T. Butt, A. Chesterfield, M. Kennedy, M. Buxton, M. and Tremain, D. (2012) Does Australia need a national policy to preserve agricultural land? Australian Farm Institute, Sydney NSW.

Hooper, S. Ashton, D. Crooks, S. Mackinnon, D. Nicols, P. and Phillips, P. (2009) Farm financial performance Australian farm income and drought recovery, 2005-06, 2006-07 and 2007-08 Australian Commodities • Vol 15 No. 1 • March quarter.



5.7

Infrastructure for agriculture and supply chains

Introduction:

Agricultural industries rely on regional processing, value adding, transport hubs and other infrastructure for the supply of inputs to production such as irrigation, drainage, energy and broadband; and for the transport (road and rail) and processing of produce to markets. Compared to other industries, this is a major challenge due to the dispersed scale of farming operations, the distances between production and processing centres, the age of existing infrastructure and population decline in many rural areas.

In recent years, preferences for rural living, advances in communication technology and long-distance commuting, and growth in the energy sector in traditional rural areas means that growth in rural areas and the need for consequent infrastructure development will continue for the foreseeable future. At the same time, the sprawling, low-density land use patterns occurring in many rural areas, by requiring longer roads and utility lines between structures, make for high infrastructure development costs.

Some industries such as sugar and cotton must have local processing facilities to produce marketable commodities. In the case of sugar, there is a mutual dependency between the growing and processing sectors such that neither can operate without the other. This is a critical factor in land use planning in single-mill sugar areas which should ensure that the production area is sufficient to maintain the viability of the mill.

Key challenges for rural infrastructure planning and coordination include:

- recognising and taking full advantage of the capacity of existing infrastructure to maximize effectiveness of previous investments in preference to building new networks
- exploring more efficient ways of prioritising, coordinating and working in partnership to plan and deliver infrastructure in line with growth
- seeking new, innovative opportunities for funding infrastructure
- considering climate change impacts and energy efficiency in planning, locating, designing, building, maintaining and operating new and existing infrastructure
- responding to changing demographic needs and economic development within the region to ensure infrastructure investments are appropriate
- building resilience to the impacts of oil dependency
- avoiding, minimising or mitigating against the impact of infrastructure on areas of ecological significance and other regional landscape values. (Wide Bay Regional Plan 2011).

In recent years, preferences for rural living, advances in communication technology and long-distance commuting, and growth in the energy sector in traditional rural areas means that growth in rural areas and the need for consequent infrastructure development will continue for the foreseeable future.

Principle 7

Provide and maintain needed and efficient transport, energy and water infrastructure to support agriculture

Implementation

1. Identify and plan for critical and strategic rural infrastructure (water, energy, communication) that supports primary production and provides all-season transport access to processing or supply chain services.
2. Strategic studies should identify infrastructure needs and preferred infrastructure corridors or locations to minimise the risk of land use conflict.
3. Location and design of infrastructure in rural areas should minimise impacts on land resources, agricultural operations and natural resource hazards.

Case study:

Grain Transport – Darling Downs

Geographical context:

Grain production is concentrated on the Darling Downs and Central Queensland. Major grains are wheat and barley grown in winter and sorghum and maize grown in summer. In 2011–12 it is estimated that there will be 2,773,000 tonnes of winter grain produced and 2,926,000 tonnes of summer grain (DAFF, 2011). Grain is produced for both domestic and export markets.

What is the background and evolution of the issue?

Grain is traditionally handled as a bulk commodity by the bulk handling network involving storage sites located throughout the grain growing areas, three export shipping terminals and a rail and road transport network.

Domestic supply chains are mainly handled by road transport to flour mills and feedlots on a daily basis to meet a relative steady demand driven by domestic food demand.

Export supply chains have traditionally been handled by rail transport from storages to ports predominantly in the January to June period. The average tonnage hauled by QR Limited between 1998–2005 was 1,130,000 tonnes in Queensland and 755,000 tonnes from the Darling Downs to the Port of Brisbane. The average tonnage exported from the Port of Brisbane between 2005–2008 was 689,000 tonnes.

Description of issue:

As a result of a series of low production seasons, grain industry restructuring and the growth of demand for coal transport, the proportion of the export grain harvest carried by rail has declined in recent years. The number of train sets available for grain transport from the Darling Downs has reduced from 11 to 5 per year while rail freight costs have increased. This has resulted in a large increase in road transport from the Darling Downs to the Port of Brisbane.

Who are the key stakeholders?

Grain growers, commodity marketers, bulk handlers, road transport operators, infrastructure providers.

Who and what is impacted by the issue?

Grain growers are impacted by higher freight costs. Road transport operators face increased congestion and safety issues at unloading points. Grain handlers and marketers face cargo assembly difficulties due to variation in grain quality and management of the variability of grain compared with grain on rail. Infrastructure providers face increased damage to

road surfaces due to additional tonnages travelling by road.

What steps have been taken to address the problem?

Following deregulation, bulk handlers (eg Graincorp, Grainflow) have emerged as the best placed to build cargoes and organize the transport and handling logistics to meet export orders.

What are the potential implications for the industry more broadly?

The ability for the industry to move large volumes of grain to the port and onto export destinations is critical to capitalize on strong early-season premium prices.

What is the key message from the case study?

Rail transport will remain a problem for the industry as, in good seasons, the movement of high volumes of grain over short periods in competition with coal transport is required; while in poor seasons there is less demand. Road transport augmenting rail transport will continue to be a feature of future grain harvests, particularly in good seasons.

What tools and processes could be used to support industry in improving this issue?

Bulk handlers and marketers need to negotiate increased certainty of train capacity with QR Limited based on predicted grain yields as early in the season as possible.

What should/could be changed?

1. With the growth in road transport, port unloading facilities need upgrading to resolve congestion and safety issues and to test, sort and assemble cargoes from complex grain quality and grade deliveries.
2. Department of Transport and Main Roads should preserve the current strategic rail freight corridor from Gowrie to Grandchester and investigate alternative train paths to the Port of Brisbane to alleviate congestion between grain and coal trains.
3. Optimise the mix of road and rail transport network by concentrating transport of grain from farms and storages by road to a facility close to Toowoomba for loading onto rail. (eg Wellcamp/ Gowrie).

References, resource documents, data sources:

Department of Agriculture, Fisheries and Forestry (2011) Prospects for Queensland's Primary Industries 2011–2012. Queensland Government September 2011.

Department of Transport and Main Roads (2011) Connecting SEQ 2031: An Integrated Regional Transport Plan for South East Queensland. Queensland Government, Brisbane

Strategic Design and Development (2009) Integrated Transport Strategy for Agricultural Commodities – Grain. Prepared for the Department of Transport and Main Roads and Agforce. SD+D Epping NSW

The landholder has stated that the financial cost of a flood on his property is in excess of \$2.8 million and that the cost of constructing higher levees for flood protection is approximately \$2.4 million.



Cotton and mining levee banks—Nogoa River, Emerald

Geographical context:

The landholder operates a farm on the Nogoa River approximately 9km upstream of the Ensham Coal Mine operated by the Ensham Joint Venture Participants. He produces irrigated cotton, cattle and dryland sorghum. There are approximately 10.5km of levee banks from 1.0 to 4.5 metres high along the Nogoa River within the property. The Ensham mine is an existing coal mine using both open cut and underground longwall mining methods. The mine has built 30m high levee banks to withstand a 1 in 1,000 year flood after previous smaller levees were overtopped in 2008. The current levee banks withstood the flood in 2010/2011.

Description of proposal:

Ensham Joint Venture Participants applied under the Mineral Resources Act 1989 to the Mining Registrar in October 2006 to extend the surface area of an existing lease by 25.65 ha to include restricted land. The landholder lodged an objection to the application.

In a separate decision, Ensham obtained approval from the Coordinator-General in 2009 to raise levee banks to 30 metres high to protect the mine from flooding from a 1 in 100 year flood to a 1 in 1,000 year flood.

Policy context:

Section 275(2) of the Act requires this type of application to be dealt with as if it were an application for a mining lease. Due to the lodgment of objections, the application was referred to the Land Court for consideration against 13 criteria listed in Section 269(4) of the Act. The most important of these in this case related to the environmental aspects (s.269(4)(j)).

Rationale of applicant:

The applicant stated that the additional land is required for the purpose of coal mining, infrastructure, stockpiles, overburden placement, environmental buffer and for rehabilitation.

Views/engagement of neighbourhood:

A number of objections to the application were received. The upstream landholder objected to the proposal in March 2010 on the grounds that higher levees would increase flooding on his upstream property; that two groundwater bores within 15km of the mine will adversely impacted; and that subsidence due to longwall mining would impact on the Nogoa River and the Nogoa Mackenzie Water Supply Scheme. In the January 2008 flood, the levee banks on the

landholder's property failed, until the Ensham mine levees also failed. After the mine was flooded, the landholder's levees were adequate. The landholder has stated that the financial cost of a flood on his property is in excess of \$2.8 million and that the cost of constructing higher levees for flood protection is approximately \$2.4 million.

The objection was withdrawn in August 2010, but the Court opted to address the issues in the objection in considering the application.

Application of policy by the Court: Flooding

The Court accepted evidence from the applicant based on flood modeling that the proposed revised mining operations and levee upgrades will result in an increase in flood levels from a 1 in 20 year flood of 30mm. This was not considered to be a significant impact on adjacent land uses.

Groundwater

The Court stated that there will be less than 1 metre drawdown on the existing bores on the landholder's property. It was made a condition of the lease that the mine operator will monitor the two bores and the results of the monitoring be provided to the landholder.

Longwall mining impact on the Nogoa River

Mining will be restricted to at least 212 metres from the high bank of the river and the Court found there will be no adverse impact on the river or the Nogoa Mackenzie Water Supply Scheme. It was made a condition of the lease that the mine operator implements a monitoring program to audit the condition of the river and floodplain after significant flood events and at two yearly intervals.

Wider statutory involvement:

In 2011, with support from the Central Highlands and Isaac Regional Councils, the Nogoa River Flood Plain Board, which was formed in 1996, voted to dissolve itself because it was formed to deal with farming levees but, due to the increased scale of levees proposed by mining operators, 'it was unable to regulate the floodplain efficiently'.

The Queensland Floods Commission of Enquiry considered the issue of the effect of levees in the 2010/11 floods. It found that the patchwork of State Government and local council approvals, and in some areas, a complete absence of regulation, 'is not conducive to consistent decision making'.

The Commission of Enquiry considered options for controlling the building of levees and recommended that levees should be regulated. Other recommendations were that the Queensland Government should consult with councils to

determine an effective method of regulation and a definition of 'levee'; and that there should be a consistent process for determining an application to build levees, regardless of who is the applicant or the regulator.

Points of agreement:

There was agreement that there would be impacts on flood levels and groundwater bores due to the mining development, but not on the level of impact. There was also agreement on the requirement to monitor groundwater levels in affected bores and to monitor the effects of mining on the Nogoa River and the floodplain.

Identified issues to resolve:

The cumulative impacts of the continuing construction of levee banks on river floodplains must be better understood. The current assessment system doesn't adequately take into account the number of other mines and landholders on the same river or floodplain that have existing/planned levees in one catchment and the cumulative and interactive impact on surface hydrology and water quality.

Outcome of application:

The application for mining tenure was approved with additional conditions on 20 August 2010.

Outcomes for industry:

Farming adjacent to coal mining development will continue to be uncertain as monitoring continues to audit the changes in surface and groundwater hydrology compared with the changes predicted by modeling.

What should/could be changed?

1. Levee banks are now defined as development and regulated under the Sustainable Planning Act 2009. A guide to the regulation of levee banks is available on the Department of Natural Resources and Mines website.
2. Baseline monitoring of environmental conditions prior to the construction of levee banks or other floodplain structures should be undertaken;
3. The cumulative impact of structures on floodplains must be modelled and monitored so that development approval processes take the full impact of all current and potential structures into account.

References, resource documents, data sources:

Isdale, W. A. (2010) Reasons for decision Idemitsu Australia Resources Pty Ltd and Others application for additional surface area. Land Court, Brisbane, Qld.
Queensland Department of Natural Resources and Mines (2015) Regulation of levee banks. <https://www.dnrm.qld.gov.au/water/catchments-planning/levees>
Queensland Floods Commission of Enquiry (2012) Final Report Chapter 7 Development and flood considerations Section 7.7 Levees. Brisbane Qld.



Planning Principle	Planning Checklist Items	Yes	No	Not Required	Comments
7	Are the infrastructure needs of agriculture supply chains identified?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Do identified infrastructure corridors avoid agricultural production areas?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Terms:

Levee: In Queensland, under the Water Act, a levee is defined as an artificial embankment or structure which prevents or reduces the flow of overland flow water onto or from land.

A levee includes levee-related infrastructure, which is defined as infrastructure that is:

- connected with the construction or modification of the levee
- used in the operation of the levee to prevent or reduce the flow of overland flow water onto or from land.

There are a number of types of levees, including:

- earthen levees (these can include fill material pushed up or deposited for the purpose of diverting overland

flow water)

- crib walls
- concrete walls.

There are a number of exclusions to the definition.

Structures in the following categories are not subject to the levee regulation:

- Prescribed farming activities, including cultivating, laser levelling or contouring, clearing or replanting vegetation. Note however that if fill is left over from prescribed farming activities, such as laser levelling or contouring, and it is subsequently used to divert overland flow water, then this will be captured under the definition of a levee.
- Irrigation infrastructure or levee-related infrastructure

- Fill used for gardens or landscaping (up to a certain volume)
- Structures regulated under other Acts. This includes roads, railways and water storages
- Coastal infrastructure, such as groynes, used to protect life or property from the threat of coastal hazards.

Supply chain: a system of organizations, people, activities, information, and resources involved in moving a product or service from producer to customer. Supply chain activities transform natural resources, raw materials, and components into a finished product that is delivered to the end customer.

Links:

Department of Local Government and Planning (2011) Wide Bay Burnett Regional Plan Queensland Government, Brisbane.

5.8

Support services for agriculture

Introduction:

A healthy economy is one that provides prosperity, employment and the necessary tax base needed to provide public services to raise the standard of living for citizens at all income levels. In rural areas, the farming and urban communities are closely linked. Businesses in small towns and villages rely on the spending by farming and resource activities in their hinterland; and farming families rely on the health, education, retail sales and repair services supplied from the rural centres. Together, the population of rural areas provides the social glue for rural communities through membership and participation in sporting, social and community organisations.

With this inter-dependency, it may be tempting to allow a blurring of the boundary between urban and rural by having a large peri-urban area made up of rural living and difficult-to-locate industries such as trucking yards, wrecking yards and kennels. These uses need to be carefully located, but not at the expense of productive agricultural land.

The most efficient arrangement with regard to the provision of infrastructure and mutual co-existence is to provide for urban growth and associated services

and social infrastructure in compact, self-contained rural towns and villages with clear boundaries between urban and rural areas.

The way in which social infrastructure is provided in communities will often differ between urban and rural / peri-urban settings. In determining infrastructure requirements, the hierarchy of provision needs to be clearly understood as do the particular challenges within rural/peri-urban communities. Smaller peri-urban centres often retain a traditional network of social infrastructure, with halls, shire chambers, and long-established hospitals as key facilities. This is often suited to an older population and there are sometimes issues relating to the age and condition of facilities, especially as new, younger populations move into surrounding areas. The level of facilities provided is often dependent on whether a township is the primary centre in a Local Government Area, the size of the surrounding rural catchment area and its isolation from other centres (SGSEP et al 2007).

Principle 8

Provide economic, employment and social support services for agriculture in compact, self-contained rural towns and villages

Implementation

1. Provide for the growth of urban settlements within clearly defined urban boundaries.
2. Provide adequate social infrastructure by strengthening the hierarchy of rural centres to serve the needs of the whole community.
3. Provide for compatible and complementary rural industries to collocate for local economic development.

Example:

Wide Bay Regional Plan

Towns and cities structure and form

Towns and cities are the focus for regional growth in employment, housing and provision of services. Where and how growth is accommodated can affect accessibility, the character of a place and the economic sustainability of the region.

A mix of uses, including affordable housing, will be designed to enhance accessibility and efficiency of infrastructure provision and management for long-term sustainability and investment security. It will also assist in the reduction of greenhouse gases that influence climate change.

Establishing a clear role for centres, and adopting a complementary and cooperative approach to the planning and development of the subregions, will benefit the economy of the region as a whole by reducing unnecessary competition between centres.

Rural towns

Rural towns are an integral part of the region, providing services to surrounding communities and a range of local employment opportunities. Capacity building and encouraging value-adding to local rural production activities will be important factors in the long-term viability of these communities.

Southern Downs Regional Council Planning Scheme (2012) Settlement pattern

Strategic outcomes

The definition of clear and stable urban and rural residential boundaries also provides the existing urban and rural residential areas contained within the boundaries with a strong sense of community identity, minimises confusion regarding future urban or rural residential land and protects and maintains the separation between settlements and protects the integrity of rural areas. The provision of strong boundaries supports sustainable urban development which depends on the ability of the urban areas to meet the needs of residents and visitors for goods and services and employment opportunities in a compact accessible environment. Strong boundaries around urban and rural residential areas also protect the economic, social and environmental values of non-urban land.

Businesses in small towns and villages rely on the spending by farming and resource activities in their hinterland; and farming families rely on the health, education, retail sales and repair services supplied from the rural centres.

Planning Principle	Planning Checklist Items	Yes	No	Not Required	Comments
8	Are service industries for agriculture provided for?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Are residential and rural residential uses restricted to clearly defined urban development boundaries?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Terms:

Social infrastructure: The community facilities, services and networks that support individuals, families, groups and communities to meet their social needs, to maximise their potential for development and to enhance community wellbeing. They include:

- Universal facilities and services such as education, training, health, open space, recreation and sport, safety and emergency services, religious, arts and

cultural facilities, and community meeting places;

- Lifecycle-targeted facilities and services, such as those for children, young people and older people; and
- Targeted facilities and services for groups with special needs such as families, people with a disability and Indigenous and culturally diverse people. (Office of Urban Management, 2006).

Links:

Department of Local Government and Planning (2011) Wide Bay Burnett Regional Plan Queensland Government, Brisbane.

Office of Urban Management (2006). Implementation Guideline No. 5 Social Infrastructure Planning. Queensland Government, Brisbane.

SGS Economics and Planning Pty Ltd, Briggs and Mortar Pty Ltd, Elliott Whiteing Pty Ltd and Andrea Young Planning Consultants (2007). Final Report: Lockyer and Brisbane Valleys Social Infrastructure Plan. Office of Urban Management, Queensland Government, Brisbane June 2007.

Southern Downs Regional Council (2012) Southern Downs Planning Scheme. Southern Downs Regional Council, Warwick

PLANNING PRINCIPLES CONTINUED

5.9

Multiple values of agricultural land

Introduction:

Often the motivation for protecting agricultural areas that are in the path of urban growth is preserving rural character as much as protecting the natural resource. Therefore, agricultural protection done in combination with other innovative growth management techniques to guide urban growth to other areas has a higher chance of success.

Agricultural production is a significant component of the rural landscape and contributes significantly to liveability and environmental quality. The community recognizes this by taking part in the use and management of these areas, both passively and actively. Some of these landscape values include:

- areas of significant biodiversity value
- rural production and primary industry
- scenic amenity
- landscape heritage
- outdoor recreation
- environmental services

Any part of a landscape may have one or more of these identified values associated with it. These values exist on different tenures of land, with no single jurisdiction responsible for their protection or management. Areas of significant biodiversity value, and the biodiversity networks that join these areas, are spread across both publicly and privately owned land. It is therefore a responsibility to be shared across all levels of government, non-government organisations, community and industry groups to collectively and cooperatively protect and manage these areas (WBRRP, 2011).

Agriculture and associated land management practices also contribute to the ecosystem services provided by rural and natural areas. Agriculture captures carbon and protects water quality. Agricultural development has been responsible for benefits such as the growth of the kangaroo populations, the meeting of Kyoto requirements (through land clearing restrictions) and, through control of pests such as dogs and rabbits, enhanced habitats are created for small macropods. Many industries, including agriculture, fishing and tourism, directly or indirectly rely on the various ecological attributes of agricultural land and floodplains that provide services such as food, fuel and fibre from arable land, stormwater filtration, flood retention and recreational opportunities.



Principle 9

Protect the multiple values of agricultural land

Implementation

1. Recognise the attractiveness of agricultural production areas for tourism and avoid land use elements that would reduce these values.
2. Identify major scenic amenity and landscape character values, outdoor recreation opportunities and landscapes of cultural heritage value and apply appropriate conditions on development approvals in these areas.
3. Recognise the significance of land and sea to the traditional owners of an area and incorporate the protection of landscapes and places of cultural importance.
4. Recognise the ecosystem services and the biodiversity assets associated with agricultural landscapes by defining areas of high conservation and biodiversity values.
5. Recognise the benefits from carbon sequestration in the rural landscape.

Examples

Wide Bay Regional Plan

It is important that landscapes with recognised natural, cultural, social and economic value within the region are identified, protected and managed to meet current and future community and environmental needs. Residents and visitors to the region value the extensive and diverse range of environmentally, culturally, socially and economically significant landscapes that underpin the region's many values. These values and landscapes can be some of the main reasons that people move to, and stay in, the region.

The regional landscape is made up of multiple components, each with its own specific value and significance to the environment and residents of the region. These components include:

- core landscape areas—areas of multiple landscape value and ecosystem services such as Fraser Island, Great Sandy Strait and the Bunya Mountains
- inter-urban breaks—areas separating urban development, which can have a variety of uses such as productive agricultural land, environmental reserves, and sport and recreational activities
- regional offset areas—strategically identified areas to manage the offset of negative impacts from development
- regional community green space network—areas of land publicly owned that facilitate community health and wellbeing through physical activity, social interaction, liveability and direct interaction with the environment
- rural towns—scenic amenity of rural towns in rural and natural environs
- coastal waters and foreshores—which provide a significant service and maintain environmental, community and economic integrity within the region
- biodiversity networks—wildlife habitats and associated connecting corridors that are managed to maintain biodiversity values at a regional scale

- natural economic resource areas—sections of the landscape that support agricultural production, extractive industry, forestry, fisheries and rural industries.

To remain a competitive, functional and attractive place, the natural environment qualities of the regional landscape must be maintained to support values such as biodiversity, rural production, scenic amenity, landscape heritage and outdoor recreation. Any part of a landscape may have one or more of these regional landscape values associated with it. These values exist on different tenures of land, with no single jurisdiction responsible for their protection or management. Scenic landscapes, as an example, occur both on privately and publicly owned land.

It is also important to recognise that landscape values are not limited only to natural environmental features. Rural towns and rural activities, such as cropping and grazing, contribute to the character of the region, and illustrate their importance, not only to the economy, but also to the regional landscape. The patchwork of greens and rich soil in the undulating landscape of the South Burnett, or the cane fields around Bundaberg, provide a backdrop to the picturesque region, as much as its natural environs.

Open space and rural lands contribute to a sense of place and to the scenic amenity of the region, and play a role in creating inter-urban breaks. The benefits of inter-urban breaks can be enhanced by compatible land uses and activities. Local government may undertake an investigation into the benefits and contribution of inter-urban breaks which will provide clarity and certainty by ensuring:

- the long-term viability of maintaining inter-urban breaks through effective management and use by supporting appropriate rural industries, including agricultural production, tourism and recreational opportunities
- the clear identification of the important landscape value, planning and management functions of inter-urban breaks.

Southern Downs Regional Council Planning Scheme (2012)

Strategic Intent:

Landscape and environment:

The landscape is characterised by its wooded hillsides, rivers and floodplains, extensive areas of cultivation, orchards and vineyards, grazing lands, dense forest and rocky outcrops. The residents of the region value this diverse landscape as it

contributes significantly to their sense of place and identity and to the scenic beauty of the area. As well as supporting rural production the non-urban areas support environmental, recreational, cultural and scenic functions and will be protected from urban and rural residential development.

Planning Principle	Planning Checklist Items	Yes	No	Not Required	Comments
9	Have the landscape values of rural land been identified and protected?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Has the cultural values of the landscape been identified and protected?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Have the ecosystem services provided by agriculture been recognized?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Has the plan provided for carbon sequestration in appropriate parts of the landscape?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Terms:

Ecosystem services: The benefits that people obtain from natural ecosystem processes. They include provisioning services such as food, water, timber, fuel and fibre; regulating services such as air quality, water quality, disease prevention, a habitable climate, arable land and pollination; and

cultural services that provide recreational and aesthetic benefits.

Scenic amenity: A measure of the relative contribution of each place in the landscape to the collective appreciation of open space as viewed from places that are important to the public (Department of Natural Resources, 2001).

Links:

Department of Local Government and Planning (2011) Wide Bay Burnett Regional Plan Queensland Government, Brisbane.

Department of Natural Resources and Mines and Environmental Protection Agency (2001), Scenic amenity: Measuring community response to landscape aesthetics at Moggill and Glen Rock. Queensland Government, Brisbane.

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SIGNPOSTS TO FURTHER INFORMATION

Australian Rural Planning Website <http://www.ruralplanning.com.au/>

Michigan Rural Planning Toolkit http://planningtoolkit.org/agriculture/protecting_agricultural_lands.pdf

New Jersey Agricultural Smart Growth Toolkit <http://www.state.nj.us/agriculture/toolkit.htm>

NRM and Local Government Planning Support Tool (Western Australia) <http://www.eksa.com.au/scnrm-planningtool/MainPage.ashx>

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Appendix 1

Agricultural use definitions in the Queensland Planning Provisions Ver 4.0 under the Sustainable Planning Act 2009

Use	Definition	Examples	QLUMP* Land Use Categories
Animal husbandry	Premises used for production of animals or animal products on either native or improved pastures or vegetation. The use includes ancillary yards, stables and temporary holding facilities and the repair and servicing of machinery.	cattle studs, grazing of livestock, non-feedlot dairying	grazing – improved pasture, grazing – native pasture
Animal keeping	Premises used for boarding, breeding or training of animals. The use may include ancillary temporary or permanent holding facilities on the same site and the ancillary repair and servicing of machinery.	aviaries, catteries, kennels, stables, wildlife refuge	
Aquaculture	Premises used for the cultivation of aquatic animals or plants in a confined area that may require the provision of food either mechanically or by hand.	pond farms, tank systems, hatcheries, raceway system, rack and line systems, sea cages	aquaculture
Cropping	Premises used for growing plants or plant material for commercial purposes where dependant on the cultivation of soil. The use includes harvesting and the storage and packing of produce and plants grown on the site and the ancillary repair and servicing of machinery used on the site.	fruit, nut, vegetable and grain production, forestry for wood production, fodder and pasture production, plant fibre production, sugar cane growing, vineyard	rainfed broadacre cropping, irrigated broadacre cropping, annual horticulture, perennial horticulture, plantation forestry
Intensive animal industry	Premises used for the intensive production of animals or animal products in an enclosure that requires the provision of food and water either mechanically or by hand. The use includes the ancillary storage and packing of feed and produce.	feedlots, piggeries, poultry and egg production	intensive animal industries,
Intensive horticulture	Premises used for the intensive production of plants or plant material on imported media and located within a building or structure or where outdoors, artificial lights or containers are used. The use includes the storage and packing of produce and plants grown on the subject site.	greenhouse and shade house plant production, hydroponic farms, mushroom farms	horticulture (lifestyle horticulture).
Permanent plantation	Premises used for growing plants not intended to be harvested.	permanent plantations for carbon sequestration, biodiversity or natural resource management	
Roadside stall	Premises used for the roadside display and sale of goods in rural areas.		
Rural industry	Premises used for storage, processing and packaging of products from a rural use. The use includes processing, packaging and sale of products produced as a result of a rural use where the processing and packaging is ancillary to a rural use on or adjacent to the site.	packing shed	
Wholesale nursery	Premises used for the sale of plants, but not to the general public, where the plants are grown on or adjacent to the site. The use may include sale of gardening materials where these are ancillary to the primary use.		
Winery	Premises used for manufacturing and sale of wine manufactured on site.		
Production nursery (not a QPP definition)	Premises used for the growing and selling of plants, but not to the general public, where the plants are grown on or adjacent to the site		

* Queensland Land Use Mapping Program mapping data is shown on the Queensland Agricultural Land Audit web mapping tool.

Appendix 2

List of planning and environment legislation and regulations affecting Queensland agriculture.

Commonwealth legislation

Environment Protection & Biodiversity Conservation Act 1999 & Regulation 2000

State legislation

Agricultural and Veterinary Chemicals Act 1994

Agricultural Chemicals Distribution Control Act 2003

Agricultural Standards Act 1994

Aboriginal Cultural Heritage Act 2003

Biodiscovery Act 2004

Biological Control Act 1987

Biosecurity Act 2014

Coastal Protection and Management Act 1995

Dangerous Goods Safety Management Act 2001

Environment Protection Act 1994

Fire and Rescue Service Act 1990

Fisheries Act 1994 & Fisheries Regulation 2008

Forestry Act 1959 & Regulation 1998

Gene Technology Act 2001

Great Barrier Reef Protection Amendment Act 2009

Health Act 1937

Land Act 1994 & Regulation 2009

Land Protection (Pest Stock Route Management) Act 2002

Marine Parks Act 2004

Nature Conservation Act 1992

Native Title (Queensland) Act 1993

Plant Protection Act 1989

Queensland Heritage Act 1992

Regional Planning Interests Act 2014 & Regulation 2014

Soil Conservation Act 1986 & Soil Conservation Regulation 1998

State Development and Public Works Organisation Act 1971

Sustainable Planning Act 2009 & Sustainable Planning Regulation 2009

Torres Strait Islander Cultural Heritage Act 2003

Vegetation Management Act 1999 & Regulation 2000

Water Act 2000 & Regulation 2002

Wet Tropics Heritage Protection and Management Act 1993

Wild Rivers Act 2005

Workplace Health and Safety Act 1995

Local laws and policies

Planning Schemes prepared under the Sustainable Planning Act 2009

Local Laws

Planning document checklist

Planning Principle	Planning Checklist Items	Yes	No	Not Required	Comments
1	Does the strategic vision statement refer to the contribution of agriculture to the economy and to social and environmental sustainability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Does the strategic plan include land use strategies and specific outcomes for the agricultural sector?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2	Has the plan identified and classified land suitable for agriculture?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Is there an overlay map of suitable agricultural land?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Does the rural zone identify preferred areas for agriculture and compatible uses?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Are there appropriate assessment levels for uses that may impact on agriculture in rural zones?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Are water resources needed for agriculture identified and protected?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3	Are the minimum lot sizes in rural zones based on an analysis of local agricultural enterprises?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Are there provisions for farm build-up and boundary realignment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Are there adequate controls on dwellings in rural areas?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4	Does the rural zone restrict uses incompatible with agriculture?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Are there incentives to transfer existing dwelling entitlements out of rural areas?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Are there provisions addressing reverse amenity impacts on agricultural enterprises?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Are their provisions for requiring buffer areas between sensitive uses and farming areas and measures (eg covenants) to implement these provisions?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5	Are there measures that encourage sustainable land and water use and management practices?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Have environmental assets (biodiversity, wetlands) been identified and protected?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Have the principles of Regional NRM Plans been incorporated into the planning scheme?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6	Are rural enterprises permitted to diversify into ancillary activities to support the primary productive activity?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Are small scale ancillary activities such as farm accommodation, tourism, processing and retail outlets exempt or self-assessable?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Are areas/zones identified where compatible and complementary agricultural activities are encouraged?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7	Are the infrastructure needs of agriculture supply chains identified?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Do identified infrastructure corridors avoid agricultural production areas?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8	Are service industries for agriculture provided for?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Are residential and rural residential uses restricted to clearly defined urban development boundaries?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
9	Have the landscape values of rural land been identified and protected?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Has the cultural values of the landscape been identified and protected?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Have the ecosystem services provided by agriculture been recognized?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Has the plan provided for carbon sequestration in appropriate parts of the landscape?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

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