CONTENTS

Case studies

Aquaculture development – Guthalungra, Bowen 4
Horticulture land use conflict – Logan City 6
Grain transport – Darling Downs 8
Cotton and mining – Nogoa River floodplain, Emerald 10
Dairy farm tourism, Scenic Rim 12
Poultry industry planning – Bromelton 14
Mining and agriculture conflict – Jacobs Well 16
References 18

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Case study: 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 (C’wlth) 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.

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. It was proposed that pond wastewater would be treated by sand filtration and settlement ponds before discharge to Abbot Bay.

Rationale of applicant:
The proponent intended to invest around $100 million to produce 1,600 tonnes per annum of black tiger prawns for domestic and export markets. It was estimated that the project would 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 to 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 by the Australian Institute of Marine Science of the EIS 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 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 had to be implemented in stages with each stage subject to a demonstration that the previous stage was able to meet the development conditions. The assessment process has now taken more than 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 Planning Scheme.
Council and from the Great Barrier Reef Marine Park Authority (GBRMPA) 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 (C’wlth) and the Marine Parks Act 2004 (Qld) 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 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 are 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 Environment Protection and Biodiversity Conservation 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:

**CASE STUDY:**
**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.

**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 business was 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 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.

**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 the 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 use conflict is best avoided by maintaining adequate separation distances between agricultural production areas and encroaching residential uses. 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. 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. 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:

Key Issues for intensive horticulture operators in Logan City http://www.logan.qld.gov.au/__data/assets/pdf_file/0008/87236/2012-03_A5_horticulture2_web.pdf


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 was estimated that there would 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 relatively 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 is impacted by the issue?
The key stakeholders in this issue are grain growers, commodity marketers, bulk handlers, road transport operators, infrastructure providers.

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 (e.g. Graincorp, Grainflow) have emerged as being the best placed to build cargoes and organise 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 capitalise 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. The mix of road and rail transport networks should be optimised by concentrating the transport of grain from farms and storages by road to a facility close to Toowoomba for loading onto rail (e.g. Welcamp/Gowrie).
References, resource documents, data sources:


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 were approved in 2009 and 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. In a separate decision, Ensham obtained approval from the Coordinator-General 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. The landholder lodged an objection to the application.

Planning 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)).

Application of policy by the Court:

Flooding
The Court accepted evidence from the applicant based on flood modelling that the proposed revised mining operations and levee upgrades would 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 would 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 would monitor the two bores and the results of the monitoring would be provided to the landholder.

Longwall mining impact on the Nogoa River
The court stated that mining would be restricted to at least 212 metres from the high bank of the river and the Court found there would 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 should implement a monitoring program to audit the condition of the river and floodplain after significant flood events and at two yearly intervals.

Wider statutory involvement:
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 was the applicant or the regulator.

Points of agreement:
There was agreement that there would be impacts on 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 assessment system (2010) did not adequately take into account the number of other mines and landholders on the same river or floodplain that have existing/planned levies 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 modelling.

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 into account the full impact of all current and potential structures.

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.


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, up to two 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. 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.

Rationale of applicant:
The landowner wished to diversify their small-scale dairy farming venture 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 seven 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 small scale 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 ‘multiple-use farming’ 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:
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.
CASE STUDY:
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 is impacted by the issue?
The key stakeholders in this issue are poultry growers, feed millers, poultry processors, local governments and community groups.

Poultry growers who are facing complaints from encroaching residential users or those who are unable to expand on their current sites are looking for suitable locations to either re-establish 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 two lots greater than 400 ha, eight 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 (SDA) under the State Development, Public Works and Organisation Act 1977. The area is included in the Rural Uses Precinct of the 2012 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 Kooralbyn 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 SDA. 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 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 precincts to identify areas where industry proposals may be subject to code assessment rather than impact assessment.

References, resource documents, data sources:
Case study: Resolving mining and agriculture conflict  
Jacobs Well, SEQ

Geographical context:
The sand extractive industries in the Jacobs Well area south east of Brisbane supply the construction industry market in an area comprising the southern part of Brisbane, Logan and Redland cities and most of the Gold Coast City.

The extensive Jacobs Well resource is the largest remaining sand resource in South East Queensland suitable for supplying the Brisbane and Gold Coast markets with fine sand for concrete and asphalt. Fine sand is an important component of construction materials such as plaster and mortar sand and for blending with manufactured sand produced by crushing of hard rock.

Agricultural production in the area is worth almost $25 million per year spread evenly across three main industries - sugarcane, plant nurseries and animal production. In 2006, the total area producing cane was 5534 hectares, resulting in 381 000 tonnes of cane crushed by the Rocky Point sugar mill. The long-term viability of the cane industry at Rocky Point is threatened by continued fragmentation of land holdings, and cessation of cane growing by individual (mainly smaller) producers, although some of this land may remain in production via leases to larger producers.

In the Jacobs Well area, the sand resources underlie good quality agricultural land used for sugarcane production. They also overlie a large aquifer storage and recovery area. It is important that any future extractive industry does not compromise the integrity of this aquifer for future water cycle management.

Planning Policy context:
Estimates of the available sand resource suggest that the area contains approximately 165 million tonnes of sand resource. Estimates of the demand for sand indicate that the market area's cumulative demand for fine sand will be around 7.5 million tonnes to 2016, 17 million tonnes to 2026, and (by extrapolation) around 22 million tonnes to 2031. Total estimated demand for the market area to 2031 comprises only about 13 per cent of the estimated fine sand resource within the study area.

Description of proposal:
In 2008, the Gold Coast City Council was processing several applications for sand mining development which in total would exceed the market requirement for sand. A planning process was needed to determine which applications to approve to supply the market while prioritising sequential development options minimising the economic impact on the sugar industry through loss of cane production and minimising the environmental impact on the aquifer.

In considering any sequence of development for sand extraction industries, it was important that due regard was given to the quality of the agricultural land overlying the resource, accessibility to infrastructure and opportunities to provide flood offset and marina basins associated with marine industry precincts.

Who are the key stakeholders?
Sand miners, sugar-cane growers, sugar millers, construction industry, local government and community groups comprise the key stakeholders in this issue.

Rationale of applicant:
Each applicant for sand mining approval believed that their application should be approved to supply the sub-regional demand for sand.

Application of policy by Council/approval body:
The Council was required to give due regard to two State Planning Policies in reaching its decision. These were SPP 1/92: Development and the Conservation of Agricultural Land; and SPP 2/07: Protection of Extractive Resources. Both these policies sought the protection of important natural and economic resources from encroachment by incompatible uses. However no guidance was provided on which policy should prevail in circumstances where both resources coincided at the same location.

Wider statutory involvement:
The Gold Coast City Council approached the State Government for assistance in carrying out a planning study to determine which, if any, of the applications should be approved in the context of the regional plan, State Planning Policies, regional and sub-regional demand for the sand resource, and impacts on the sugar industry and the environment. The planning study was not a statutory process and would provide recommendations to the City Council and to the South East Queensland Regional Plan that was being reviewed at the time.

Views/engagement of neighbourhood:
Public comment was sought at two stages during the conduct of the planning study, once on the release of an issues and options paper and again on the release of a draft planning strategy for the area. The sand extraction, development and construction industry and some local landholders supported...
the expansion of the sand mining activities, while other landholders, the sugar mill operators and some sugar-cane growers supported limiting sand mining activities to existing operations.

Points of agreement:
It was agreed that, if possible, the two industries should co-exist. It was also agreed that the sand extraction industry should continue to provide the construction resources to the South East Queensland market; and that the sugar industry should continue to produce sugar for the domestic and export markets.

Identified issues to resolve:
The planning study identified five priority areas for supplying the market area’s estimated demand of 22 million tonnes of fine sand to 2031. These priority areas comprise:

- resource areas that hold current approvals for extractive industry
- resource areas identified for other possible uses, such as marine industry - enabling the resource to be extracted prior to the commencement of the final intended use
- resource areas that are an extension or consolidation of existing, approved or prior extractive industry sites - to limit the extent of haulage and other impacts and facilitate potential post-extraction use for water-based recreation or other activities.
- sugar-cane areas already approved for development or of marginal suitability.

The study recommended that:
- development proposals for extractive industry use outside these priority areas should be refused, except where the applicant is able to demonstrate that there is an overriding need for the proposed development because the demand for sand from the study area is unable to be met by the identified priority areas.
- proposals for extractive industry use should be required to ensure that sites are suitably rehabilitated for subsequent uses, including land- and water-based outdoor recreation, wetland and ecosystem services (including support for nutrient management for aquaculture) and potential flood offsets.
- proposals for extractive industry should be required to demonstrate that the proposal will not detrimentally affect either the potential aquifer storage and recovery area identified by Gold Coast City Council (the deep aquifer), or the shallow aquifer used for irrigation and other purposes by a number of landowners in the study area.

Outcome of application:
The Gold Coast City Council approved one area for sand extraction consistent with the recommendations of the study.

Outcome for industry:
Certainty was provided for the sand mining and construction industries in terms of locations favoured for approval that would allow the supply of 22 million tonnes of sand to the local market until at least 2031. Certainty was also provided for the sugar industry in terms of the limited area that would be converted to sand mining in the period up to 2031.

What should/could be changed?
1. The planning study recommended that the Gold Coast City Council planning scheme be amended to:
   - identify the priority areas for extractive industry use to 2031
   - designate extractive industry as either code assessable development or impact assessable development in the identified priority areas
   - incorporate requirements to consider site rehabilitation and impacts on agriculture and aquifers into the management of extractive industry in the North East Gold Coast study area.

2. The methodology used in the planning study could be applied to other land use conflicts between mining/extractive resource development and agriculture.

References, resource documents, data sources:
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