NSW GOVERNMENT | Department of Primary Industries

Agriculture Industry Snapshot for Planning

Lower Murray Sub Region

August 2020

The value of agricultural production in the Lower Murray Sub Region was over $290 million (ABS 2015/16) from a range of broadacre cereal crops, beef, wool, sheep and lambs, and fruit, grapes and nuts. The Lower Murray supplies nearly 50% of NSW GVP grapes and 8% of NSW GVP of fruit and nuts. Key constraints for agricultural production include access to water (surface and ground), changing climate, and non agricultural land uses on rural zoned lands. Intensive agriculture and value-adding industries may have to deal with some land use conflicts and meeting planning requirements. Despite these challenges, the region has potential to continue to grow and support agriculture, important given expected population growth proximity to Mildura, Swan Hill, Adelaide and Melbourne, all outside New South Wales.

Purpose of this profile

To develop effective land use planning policy for agricultural industries it is important to understand their location, the reasons why they exist in that location, the opportunities they take advantage of and the challenges they face. This profile details the key agricultural industries in the Lower Murray and their interactions with suppliers, processing facilities and markets.

Identifying the significance of agriculture allows its recognition and management in land use planning by Councils. By providing the evidence base for strategic planning, agricultural land and local agriculturally-based economies can be protected and supported in planning instruments.

Riverina Murray agricultural industries operate in an environment of increasingly global competition and opportunities, external challenges and changing land use. This profile will inform local council strategic planning for these key agricultural industries considering their linkages to infrastructure and secondary industries throughout SW NSW and NW Victoria. Land use planning is guided by the Far West Regional Plan 2036 (2017). The Regional Plan has clear directions for the need to identify, protect and appropriately capitalise on the region's agricultural industries, infrastructure and rural land.

Agriculture in the Lower Murray Sub Region

Agriculture is a key industry for the Lower Murray both economically and for the unique scenic and environmental qualities of the rural lands. The Lower Murray is 47,615 km^2 in area and includes Balranald and Wentworth LGAs, and is home to approximately 9,081 people (ABS 2015/16).

The area is particularly important for grapes, fruit and nuts, broadacre crops, wool, sheep and lambs and vegetables. The following table shows the Gross Value of Production (GVP) and percentage share of agricultural output for the Lower Murray for each of the top industries. These industries alone account for 93% of all agriculture.

Industry	Gross Value of Production ($)	% share of Riverina Murray total	Number of businesses	% share of NSW
Grapes	$103m	36	159	49
Fruit and nuts	$47m	16	90	8
Broadacre crops	$45m	16	66	1
Wool	$29m	10	156	3
Sheep and lambs	$24m	8		3
Vegetables	$21m	7	34	5
TOTAL	$290m			2

Source: ABS 2015/16 (note: some businesses cover multiple industries).

Grape production is the dominant industry in terms of GVP, contributing $103 million (ABS 2015/16), being 36% of regional GVP and 49% of NSW GVP.

The Lower Murray also produced 16% of the broader Riverina Murray's fruit and nuts and broadacre crops, and 10% wool. Irrigated agriculture is a feature along on the Murrumbidgee, Murray and Darling Rivers.

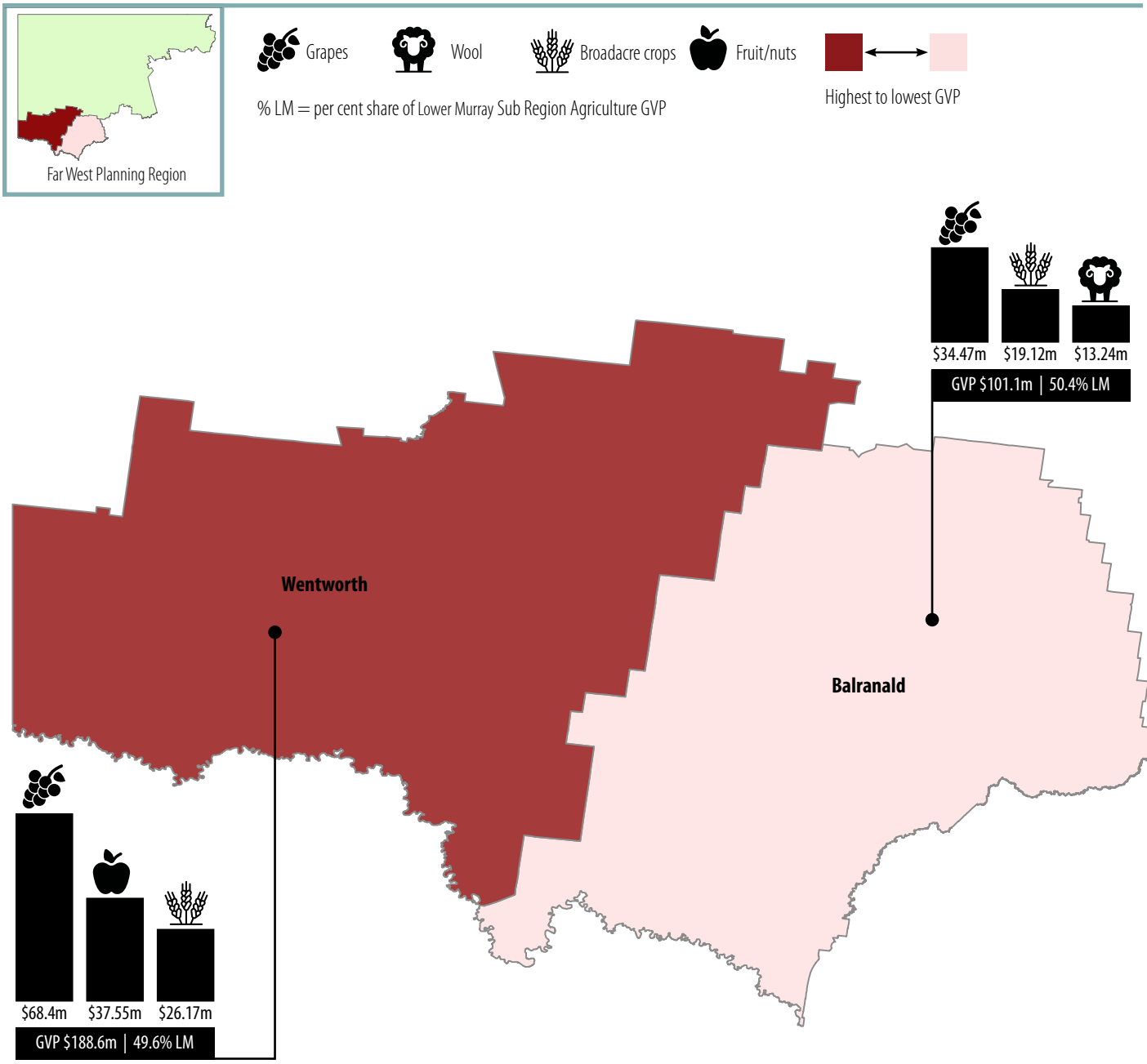
Broadacre cropping of cereals has a large land use footprint but crops are only grown when seasonal conditions are favourable. Livestock (sheep and goats) production is carried out across the landscape outside irrigation districts.

Employment

Agriculture employs over 790 people across the Lower Murray (ABS 2015/16). The biggest employer is the fruit and nut industries (44%) followed by sheep, beef and grain farming (38%). These are people employed in the primary production of agriculture and do not include the vast workforce within the key secondary industries. It does not include employees that are hired on a seasonal basis that were not working in the Lower Murray at the time of the ABS census.

Local government distribution

The following map shows the agricultural GVP of the three leading industries for Balranald and Wentworth LGAs in 2015/16.



Agricultural highlights of the Lower Murray Sub Region

The Lower Murray contains some highly productive agricultural land of the Murray Darling Basin. The variety of landscapes supports a diverse range of agricultural industries that all place a high value on reliable water supplies. Key agricultural enterprises includes broadacre cropping (cereals), horticulture, and rangeland sheep grazing. Irrigation sustains horticultural industries along the Murray and Darling Rivers and tributaries.

The Lower Murray also supports a broad range of related businesses such as agricultural suppliers, specialist irrigation and electrical services, and transport. The key secondary industries include grain storage, packing sheds, saleyards and value added food and beverage manufacturing and processing facilities. Most of these secondary industries are located in North West Victoria and South Australia.

This section highlights the prominent industries for the Lower Murray.

Horticulture

Grapes, fruit and nuts

Irrigated horticulture is concentrated near established water infrastructure in irrigation districts of Pomona, Curlwaa, Coomealla, Buronga, Gol Gol and Ellerslie and on land adjacent to the rivers. Value-added manufacturing businesses such as food and beverage manufacturing and processing facilities have established with the Sturt and Silver City highways connecting producers to export markets via Adelaide and Melbourne. Growth in local irrigated horticulture and related manufacturing sectors is expected in response to growing global demand for more and high-value agricultural food produce.

Traditionally Lower Murray horticulture has been based on extensive areas of grapes, citrus and vegetable growing. Around 90% of grapes are used for making wine with dried and table grapes also important crops on some farms. Grape growing supports wine making and wine tourism which generate significant income and employment opportunities. More recently there has been widespread establishment of almonds, pistachios and walnut orchards based on irrigation from the Murray River. These new irrigated orchards are growing in prevalence based on a shift toward larger landholdings and an increase in decoupling of water entitlements to development outside traditional irrigation districts. The water requirements of these high value crops rely on modern on farm infrastructure (drip/trickle irrigation systems) for efficient and timely irrigations that focus on effective utilisation of every drop of water applied. A range of seasonal fruits and vegetables are also grown in open paddock systems.

Industry requirements

Vineyards and fruit and nut orchards require a reliable water supply for irrigation and good quality well-drained soils. Modern large-scale horticultural developments require significant on farm infrastructure and access to seasonal workers for picking and, often, on farm processing. Quality, well maintained roads are required to transport the produce and labour. Legitimate horticultural activities are likely to cause noise, odours, dust, spray emissions, smoke, vibration and should be protected by right to farm policies.

Broadacre crops

Dryland winter cropping

Dryland winter cropping includes cereals (wheat, barley, oats, triticale), oilseed (canola) and pulses (chickpeas, faba beans, lupins, lentils). Wheat, barley and canola are the major crops by value. Crops are grown in varying rotations depending on site characteristics, seasonal conditions, disease control, market demand and production preferences.

Industry requirements

Dryland cropping systems have developed based the physical environment of soil type, climate and seasonal rainfall. Current technology and economies of scale require large scale operations to remain viable. A wide range of secondary industries are required to support the inputs and outputs of broadacre crop production.

Livestock production

Sheep meat and wool

Livestock production for red meat (sheep, lamb, goats, cattle) and wool occurs over most of the Lower Murray. Many livestock enterprises have transitioned from wool to meat sheep and more recently to goat production in response to market opportunities. The Lower Murray grazing systems are particularly vulnerable to changes in the natural resource - rainfall seasonality, land degradation and the extreme rangelands climate – as well as rising input costs (fuel) and social factors influencing farming communities.

Industry requirements

Livestock production is based on extensive rangeland properties. As pasture based systems they rely on seasonal rainfall and rotational grazing that allows paddock to recuperate. The intensity of stocking rate on (native) pasture based systems is usually low due to low rainfall, and needs to be supported with access to water supplies and stock handling facilities. Transporting stock and wool requires a reliable road system and access to Victoria for large trucks. The Swan Hill saleyards service North West Victoria and South Western NSW. As with all farmers, producers are required to manage plant and animal pests.

Lower Murray Sub Regional assets for agriculture

The Lower Murray covers the land around the lower Murrumbidgee River, lower Murray River and lower reaches of the Darling River typified by a generally dry climate, flat floodplain topography and old soils. Agriculture is conducted on a wide range of soil types and under different rainfall regimes, including significant irrigation from surface and ground water sources.

Supporting industries and infrastructure

The Lower Murray is a premium agricultural area, leading the way in agricultural innovation and value-adding, and leveraging advanced and automated technologies to maximise agribusiness diversification. The agricultural industry in the Lower Murray is diverse, producing grains, fruit and nuts, wool and meats from sheep, cattle, goats and kangaroos. The value chain is concentrated in and around Mildura and Swan Hill, although also locally significant in Balranald and Wentworth. Similarly agricultural services and infrastructure and specifically, irrigation water delivery companies and equipment suppliers are provided through North West Victoria with support services in the NSW centres.

There are consistent trends with implications for development of land use plans and promoting investment in agriculture:

- Farms are increasing in size, both in terms of the physical size and value of operations. This is observed across broadacre and more intensive horticultural enterprises.
- Most value of production is generated by the medium to large farm businesses. While more numerous, smaller farm businesses contribute a smaller proportion of overall commodity value.

This agricultural base benefits from a well-connected export conduit to ports in South Australia and Victoria. Competitive strengths of the Lower Murray include:

- the scale, diversity and productivity of agricultural lands
- significant water entitlements and infrastructure for irrigation
- range of suitable crops and livestock production systems
- locational advantage with its proximity and interface with Victoria and access over the Murray River
- good transport networks, with most major highway and rail corridors
- an international reputation for food manufacturing with strong processing and supporting industries.

The Lower Murray agricultural sector requires seasonal transport of perishable (refrigerated) produce as well as long haulage of bulk and containerised commodities. Produce is transported by road and rail to other regions in NSW, South Australia and Victoria, and to export sea ports in Melbourne and Adelaide. The largest exports by commodity flows are grains, wine and food products.

The interactions of these agricultural industries with their secondary industries is a critical consideration in planning for agricultural land uses.

Climate

The Lower Murray experiences little variation in the winter minimum temperatures; however, maximum summer temperatures are greater than 30°C with averages in the range 22–24°C. In winter, average temperatures range 8–10°C in the south east. Much of the Lower Murray is semi-arid and receives 200–400mm of rainfall per year on average. The Lower Murray is influenced by its low-lying topography and distance from the coast. While eastern fringes may experience higher rainfall totals, the western parts are very dry and not reliable for more intensive agriculture with irrigation. Milder conditions with cooler summers are found along the southern fringe adjacent to the Victorian border (OEH 2016; BoM 2018).

The climate characteristics of the Murray are suited to renewable energy production by solar panel arrays and wind turbines. These facilities have the potential to provide opportunities for low cost energy directly to primary producers and food processors. It is important that renewable energy generation facilities are located away from highly productive agricultural land.

Biophysical characteristics

The Lower Murray covers a vast area of landscapes ranging from the 'outback' semi-arid desert areas to rich farmlands, rangelands and wetlands in the west of NSW. It is one of the most environmentally diverse regions in NSW, home to mallee rangelands, nationally and internationally recognised wetlands including Willandra Lakes World Heritage Area, Yanga National Park, parts of the Nimmie Caira Nature Conservation area and Mungo National Park. The Lower Murray is the confluence of the Murrumbidgee and Murray rivers as well as that of the Darling and the Murray rivers. These river systems influence land use and shape the economy, livelihood, identity and history of the communities and the environment in the Lower Murray.

Agriculture in the Lower Murray landscape is conducted over the semi-arid grass/shrub-land known as 'rangelands'. The landscape supports grazing systems of low stocking rates over large areas. The vegetation and landscape of Lower Murray have been substantially modified through the expansion of pastoralism and artificial water sources derived from irrigation, and impacts of feral animals, in particular goats. Other components of this landscape along the major rivers have also been extensively cleared, usually land-formed and highly modified for irrigation infrastructure.

Water access and irrigation

The Lower Murray irrigation water is supplied by the Murrumbidgee, Murray and Darling Rivers with irrigated horticulture concentrated near established water infrastructure in irrigation districts of Pomona, Curlwaa, Coomealla, Buronga, Gol Gol and Ellerslie and on land adjacent to the River water sources. There is also licenced access to water entitlements from the regulated streams and groundwater systems, and seasonal rainfall runoff captured in farm dams.

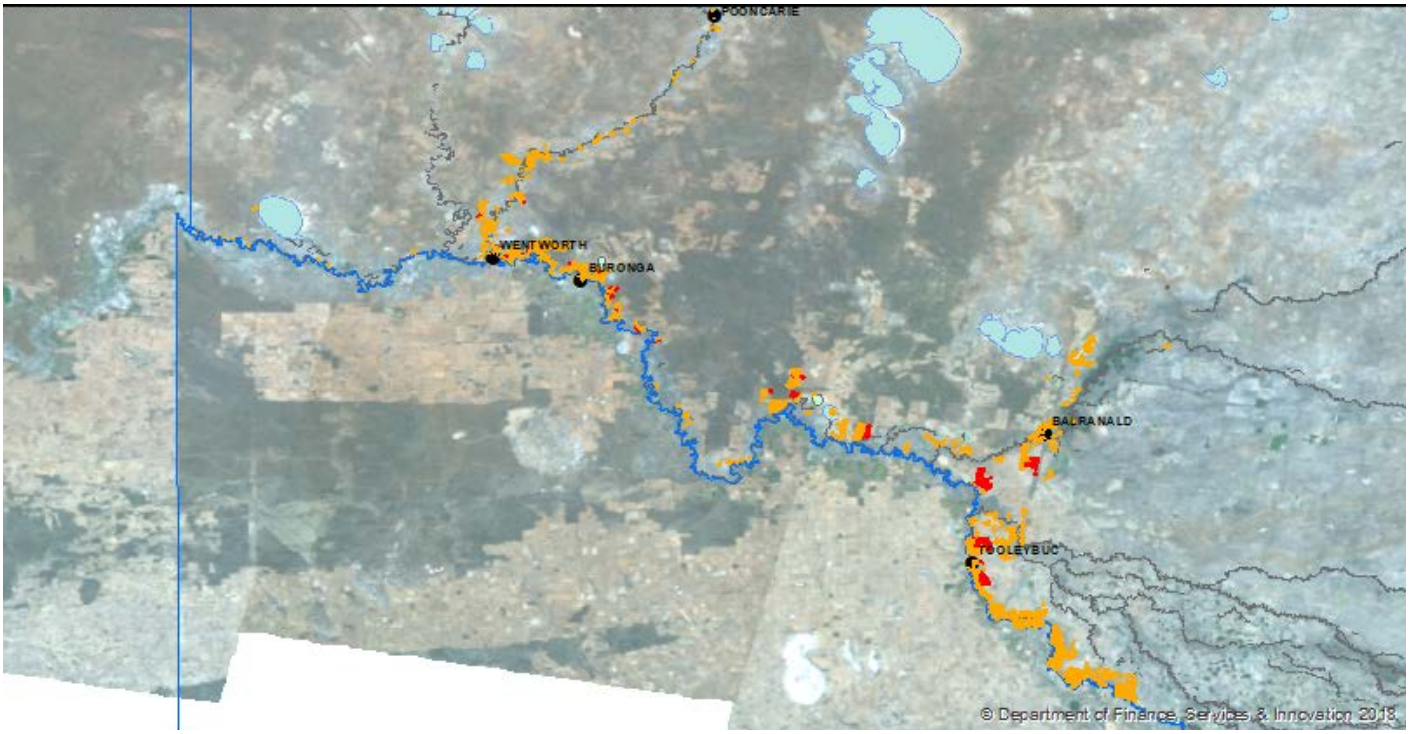
Commonwealth and State government water policy reforms has seen the introduction of water trading, the Murray Darling Basin Plan, NSW Water Sharing Plans, Australian Competition and Consumer Commission (ACCC) Water Charge and Trading Rules and ACCC Water Price Determinations. Water trading has driven water into higher value irrigated businesses and environmental water recovery has reduced water availability in every traditional irrigation area throughout the Murray Darling Basin.

The Lower Murray surface water management area falls within the southern-connected interstate trading zone of the Murray Darling Basin. Depending on seasonal water availability, the current water trading rules allow for transfer of irrigation water between river valleys. For example, the millennium drought between 2001 and 2009, resulted in significant reductions in water allocations across the southern Murray Darling Basin and prompted a doubling in water trade. In drought years, water has generally been traded downstream from rice growers in NSW to horticulturalists (permanent plantings) in the Lower Murray, Sunraysia and South Australia.

The Murray Darling Basin Plan has calculated Sustainable Diversion Limits (SDL) for each catchment within the Basin required to achieve environmental outcomes. In some catchments, achieving the SDL will result in less water available for irrigation. In the NSW Murray and Lower Darling and Murrumbidgee catchments, a reduction of 624 GL/year and 320 GL/year respectively is required to achieve the SDL in each catchment. It is also likely that there will be further contributions to shared reductions in the southern Basin.

Water trading has driven water into higher-value irrigated businesses and environmental water recovery has reduced water availability throughout the Murray Darling Basin. Depending on seasonal water availability, the current water trading rules allow for transfer of irrigation water between river valleys. Irrigated cropping enterprises are based on extensively cleared, usually land-formed and highly modified Lower Murray landscapes. An increasing proportion of the available irrigation water is being used to diversify into high value commodities such as almonds and other nuts.

NSW Sunraysia Irrigation Region (DPIE 2018)



Locational advantage

Rising interest in Australian agriculture is linked to awareness of food production systems, reducing 'food miles' and buying locally, as well as demand for fresh (seasonality) and high nutritional quality of food consumed ('clean and green'). It is also recognised that agricultural land provides ecosystem services, food security and other benefits for urbanising communities that warrant its support and preservation through planning instruments, despite inherent difficulties with coexistence with urban sprawl (Brinkley 2012). The Lower Murray Region has reciprocal advantages for producers providing these services with markets, export potential, access to supply chain and value adding.

The benefits from access to Mildura, Melbourne and Adelaide, providing access to restaurant, café hospitality and other markets as well as interstate visitors for existing and future agri-tourism and value adding enterprises.

Value chains

Primary production of the Lower Murray supports a significant value chain including food processing and manufacturing, transport and logistics, professional services and farm suppliers. The value-added manufacturing and food processing in the region includes animal products, packing of raw fruits, nuts, vegetables and meats, and processing of wine and food products. The value chain is concentrated in and around Mildura and Swan Hill, although also locally significant in Balranald and Wentworth. The Lower Murray offers a comprehensive and diverse supply of support services and infrastructure required by agricultural industries, and specifically, irrigation water delivery companies and equipment suppliers.

Agri-tourism

Tourism ventures that are underpinned by an agricultural activity can provide opportunities for income diversification and value adding. This includes some boutique food outlets and wineries along the Murray River, where production is combined with other visitor experiences. Research has found rural landscape features associated with some agricultural activities (such as pastures, vines) positively influence the demand for rural tourism.

Challenges for agriculture in the Lower Murray Sub Region and planning solutions

Challenges for agriculture are connected to climate change, commodity prices and in some areas, land use conflict and right to farm. Agricultural land is a finite resource, even in more remote parts of the Lower Murray where land fragmentation and lifestyle and non agricultural development are competing with vineyards, orchards, broadacre cropping and livestock grazing enterprises.

This section highlights some of the challenges faced and planning solutions.

Historic land use planning

Historic planning policy has not strategically valued and protected rural land in many areas, instead regarding it as 'urban land in waiting' (Houston 1993). The absence of dedicated planning policy for agriculture has resulted in Local Environmental Plans (LEPs) that do not support agriculture in practice. Agriculture has spatial, biophysical and production criteria that can be similar to industrial development, especially intensive industries. However, in LEPs industrial zones are in dedicated areas with development controls managing incompatible development. In contrast, rural planning provisions often allow incompatible development and subdivision that affect farm amalgamations, expansion or intensification plans and ultimately restrict a farmer's ability to make a living.

Planning solution

Future land use planning must recognise the importance of agriculture to society and the economy and that the land and resources on which agriculture depend need to be protected and managed to enable continued use of the land for agriculture. The above challenges can lead to the following adverse impacts for agriculture if they continue to occur:

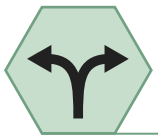
- **Inflated land prices** prevent farm expansion as residential land values are in a different market to agricultural land values.
- **Differing expectations**: Complaints are made to authorities from neighbouring residents about legal farming activities such as traffic movements, dust, noise, odour etc., resulting in adjustments being required to operations.
- **Loss of critical mass**: Urban encroachment gradually results in the loss of farmland and supporting services (a critical mass required for commercial viability), requiring farmers to source further afield.
- **Uncertainty**: land use conflict and the variable impacts on farming makes it difficult to plan for future investment in the industry. Pressures of encroaching development often result in farmers either selling land for non-rural uses or continuing to farm with the issue of land use conflict.

Statutory land use decision making

The time and cost involved in the development approval process can constrain the capacity of agriculture industries to quickly respond to market forces. Intensive agriculture land uses often require extensive site and impact assessments from specialist consultants and state agencies, while perceived environmental impacts on neighbouring properties can raise concerns in a community about the potential impact of intensive agricultural land use.

Planning solution

Clear development controls which specify requirements for intensive agricultural development, and non-agricultural developments near existing agricultural land uses, are integral to minimizing community concerns and avoiding unnecessary cost and delays. Consistent requirements for information to support development applications can also streamline the application process for proponents and assist consent authorities to manage community expectations. It is important for both the agricultural industry and the community that the development approval process results in well managed agricultural land uses in the right location to enable the continued use of the land for agricultural production for the benefit of the wider community.



Land use conflict

The land use zones that apply to land on which agriculture occurs often permit a wide range of other land uses that are unrelated to agriculture. Expansion of urban land uses, rural residential housing and non agricultural activities into agricultural areas creates potential for land use conflict with agricultural land uses. This in turn places pressure on producers to adjust their normal farming practices to minimize impacts which can increase costs and threaten viability. Legitimate rural and agricultural uses of land are likely to cause noise, odours, dust, spray emissions, smoke, vibration, etc. anytime during 24 hours including early mornings and late evenings.

Planning solution

Planning policy and controls which prevent land uses in rural areas that are incompatible with agriculture can minimize the potential for land use conflict. Planning controls which require adequate buffer distances between land uses can mitigate potential impacts from agricultural land uses. Legitimate rural and agricultural uses of land should be protected by right to farm policies.

Land fragmentation

Agricultural land in the Lower Murray is based on minimum lot sizes of 40ha to 1,000ha. Land near settlements, in irrigation districts and along the River Murray experience pressure for lifestyle subdivision, usually involving agricultural land. While there would appear to be ample land available in SW NSW, it is important that non agricultural development does not compromise productive potential, particularly where water has been traded. It is noted that adverse impacts on agriculture can occur where there is a high degree of land fragmentation. Undersized rural lot sizes result in increased land prices as competition from non-agricultural land uses arise. Small rural lot sizes limit the ability of new agricultural enterprises to achieve required buffer distances or expand their operations, particularly in irrigation districts. Expansion of agricultural operations in a fragmented rural landscape often means significant investment to purchase additional land in situ or develop a greenfield site.

Most of the semiarid landscape of the Lower Murray is managed under long-term leaseholds by the Crown Lands Commissioner under the *Crown Land Management Act 2016*. Privately-owned freehold properties are generally located in settlements and along the Murrumbidgee, Murray and Darling rivers.

Planning solution

Planning policy which sets an appropriate minimum lot size and prevents the further subdivision of rural land, except where there is a demonstrated agricultural need, can prevent the adverse impacts of land fragmentation. Councils can also limit the amount of fragmentation for dwellings in highly productive rural areas such as irrigation districts.

Critical mass

All agricultural industries have a critical level of production which ensures the economic viability of the enterprise. Where secondary industries rely on a minimum volume of agricultural product to remain viable it is imperative for the industry to maintain that critical mass for the benefit of all agricultural industries. This is important for the agricultural industries as well as the related supply chain, including ancillary services, infrastructure, markets, processing facilities and related industries.

Planning solution

When land use planning decisions have the potential to affect one aspect of the agricultural supply chain it has the potential to threaten the entire industry in a region. Land use planning needs to recognise that it is not only agricultural land with excellent biophysical characteristics that needs to be retained for agricultural purposes, but also those key secondary supporting industries which may be located on lower quality agricultural land which are still potentially impacted by encroaching non-agricultural land uses.

Murray Regional Environmental Plan No 2

River front development such as subdivision for lifestyle housing and tourism has historically been in high demand in the Lower Murray. The Murray Regional Environmental Plan No 2 (MREP2) applies to all riverfront land across the 'River Murray' and tributaries. The MREP2 sets out building and development setbacks from the high bank of the river to allow natural river migration, enhance bank stability and regulate development. The limited range of exempt and complying development types permitted on riverfront land results in numerous, potentially unnecessary DAs and referrals. However, in rural zones, agricultural activities such as livestock grazing, pump sheds and infrastructure are generally permissible within the 100m river setback.

Planning solution

A completed River Murray Riverfront Management Strategy would provide a clear, concise and modern planning framework supported by Commonwealth and state agencies, and local government. The Strategy should provide strategic planning principles for developments along the river and give effect to the current MREP2 principles through a SEPP. This should ensure interfaces between them and rural land uses are managed according to best practice to avoid land use conflict and degradation.

Other challenges

Climate change

The Lower Murray is expected to experience an increase in all temperature variables (average, maximum and minimum), more hot days, and fewer cold nights by 2030 and 'far' future, 2070. Heatwaves are also projected to increase, be hotter and last longer. Seasonality of rainfall will change. Autumn and summer rainfall will increase. The majority of models agree that winter rainfall will decrease in the near future. Spring and winter rainfall is also projected to decrease. Fire risk will increase, with projected increases in average and severe fire weather.

A critical concern to agriculture is securing water for production in terms of quality, quantity and delivery. The demand for water supply continues to intensify with projected increases in the population, the associated higher water demand from expanding urban industrial developments, changing crops with different water requirements, and meeting environmental water requirements.

In the Lower Murray, winter grain growing is totally reliant on rainfall and cropping has become increasingly risky with lower crop yield and / or reduced grain quality. In the short to medium term, farming practices may change to different crop rotations, incorporating shorter growing season varieties, and fallowing to increase stored soil moisture.

The reduced water balance arising from the predicted climate will result in lower and more variable pasture production, impacting sheep grazing, potentially changing focus to sourcing goats and kangaroos to supplement meat markets. Reduced pasture production will require enterprises to increase scale to maintain productivity. The impacts of climate change highlight the need to protect land for its future productive capacity and/or where there is a combination of biophysical assets such as water, topography and soils. The Lower Murray supports some high value agriculture now and it should be important to sustain production of more specialised agricultural and horticultural enterprises.

Biosecurity

Rural land in the Lower Murray is exposed to pests and diseases that could threaten agriculture, the environment and community safety. Biosecurity hazards are managed by the NSW Government through the Local Land Services and local government. The distribution, abundance and management of insects, pathogens and weeds is also being affected by climate change. The likelihood that tropical or semi-tropical pests will spread southward in Australia, or become established after an incursion, increases with climate warming. Stressed plant systems (grapes and cereals) may become more vulnerable to insect and disease outbreaks as the efficacy of current control measures are altered.

The combination of urban areas, open rangelands, forested areas and water sources results in serious pests such as foxes, wild dogs, deer, pigs, cats, rabbits and goats. Numerous plant species are already in the landscape and have a large impact on remnant vegetation and rural land.

Social licence

A social license to operate refers to the perceptions of local stakeholders that an industry that operates in a given area or region is socially acceptable or legitimate.

It is important for agricultural industries to maintain a 'social licence' for their operations. The agriculture industry's right to farm agricultural land and retain access to water needs to be balanced with responsible and ethical land and livestock management and adherence to best practice operations to minimise the potential for adverse environmental impacts. Producers can help to protect their social licence by open communication and education and positive contributions to their communities. Further detail can be found in the NSW Government Right to Farm Policy.

Changing markets and economic conditions

Agriculture is vulnerable to changes in markets and economic conditions. Long lead times for crop production and the need for extensive capital and infrastructure investment to change commodity or farming systems means agricultural land uses are not capable of quickly adapting to changing markets and economic conditions. Due to Australia's presence in global agricultural markets, farmers in are often 'price takers' which can have significant adverse impacts on smaller operations. In the Lower Murray agricultural and water reforms have led to removal of compulsory marketing arrangements, regulations and price supports. Farmers are now operating in a more competitive environment for growing and selling their produce. Some farm businesses are undertaking their own marketing through contract selling to processors or major retailers, while others are focused on niche markets for premium produce. Vertical integration of agricultural enterprises across the supply chain is achieving efficiency gains and price competitiveness. Land is also required for the supporting secondary activities on farm. National trends, such as reduction in the number of farms, increasing farm size and output concentration, are already evident in Lower Murray agricultural industries.

Opportunities for agriculture in the Lower Murray Sub Region and planning levers

Agriculture provides food and fibre as well as benefits to the broader community through providing ecosystem services, scenic values, open 'green space', value-adding and diversification of income eg renewables. It supports a supply chain that generates substantial productivity, employment, research, education and employment across local, regional and national scales.

This section identifies practical landuse planning approaches and opportunities for agriculture and some planning considerations to help implement them.

Sustainable farming requirements

Planning for sustainable agriculture requires measures that allow existing and future agricultural industries to operate, adapt, improve and/or expand their current operations and business. Maintaining agriculture requires land use planning that ensures:

- Farms are of a sufficient scale to:
  - support efficient sustainable and profitable operations
  - provide for essential on-farm infrastructure
  - manage environmental impacts (this may include effluent and run-off management, set-backs for streams, native vegetation and existing houses)
- The risks of land use conflicts are managed by avoiding non agricultural development in the vicinity of:
  - established intensive agricultural industries, and any future expansion
  - key infrastructure for agricultural industries such as saleyards, abattoirs, feed mills and major transport routes to markets
  - important natural resources used by a range of industries.
- Land use conflicts are also minimised by developing relevant planning controls and guidelines for primary production areas that recognise good industry practice and educate the community (on rural living and agricultural).
- The agricultural base requires associated transport services and hubs, modern telecommunications and access to skilled workforces, to take the best advantage of markets and consumers.

Planning levers

Land use planning can support sustainable agricultural development and promote improved resource management, through planning controls, in the following ways:

a. identify lands that are highly suitable for agricultural industries

b. encourage and support appropriate zoning for agricultural land and appropriate zoning within these areas

c. encourage compatible development in important agricultural land areas

d. apply controls that separate incompatible land uses to minimise land use conflict

e. adopt relevant minimum lot sizes to minimise fragmentation of resource land

f. strategically plan for urban, residential, rural lifestyle, mining and other incompatible developments in locations away from highly productive important agricultural land.

g. implement right to farm policies for legitimate agricultural uses of land.

Increased scale and intensification

Productivity growth is central to the performance and international competitiveness of Australia's agricultural sector. Producers can increase scale through expanding operations onto additional land and intensification of agricultural operations.

Horticulture is the highest value enterprise in the Lower Murray, followed by fruit and nuts and broadacre crops. Further growth of intensive animal and plant production such as livestock feedlots and fruit and vegetables growing in controlled environments, may be feasible. Recent enhancements in the design, management and operation of intensive agricultural enterprises has resulted in productivity improvements and achievement of food safety, animal health, animal welfare and environmental sustainability standards. The highly intensive nature of these operations enables high revenue generation per given production area making them a viable option on limited (high value) land and where there is ability to physically expand. If integration with onsite energy generation and a circular economy can be achieved they will become increasingly efficient and economically viable and have the potential for significant production increases (Agrology 2018).

Planning levers

a. Certainty in strategic planning policy and land use planning controls for intensive agricultural operations and neighbouring land can provide the appropriate investment environment for industry expansion.

b. Preparation of a rural land use strategy develops an understanding of the needs of various value adding industries and investigates opportunities and mechanisms through LEP controls

c. LEP zones and provisions should be applied over intensive agricultural precincts; with land use tables structured to permit intensive agriculture and related industries while prohibiting incompatible land uses such as residential accommodation, tourist and visitor accommodation, commercial, heavy industrial and recreational activities etc

d. Minimum lot sizes should be large enough to limit fragmentation of agricultural land, incorporate industry requirements, enable expansion of existing agricultural industries and provide for adequate buffers to incompatible land uses.

Food security

Maintaining food security in the face of local and global upheavals relies on the ability to produce fresh and processed foods in Australia. This is also key for the health of the community and the environment by reducing food miles, reducing the cost of the food and making it more available for more people. Murray irrigators consider that food produced in Southern NSW should be marketed to differentiate their product in the market. With the increasing population of the State and increased demand for food and fibre products dependent on irrigation, farmers are expecting the community to put a higher value on crops produced in Australia.

Planning levers

a. Strategic planning for rural land must ensure productive land is identified and protective mechanisms provided through the planning framework to enable expansion of farms.

b. Councils should zone agricultural land for primary production and only permit agriculture and a narrow range of supporting rural land uses in that zone.

c. Some forms of horticulture may be a suitable permissible use in a range of zones, with opportunities for associated agri-tourism and roadside stalls.

d. Minimum lot sizes for dwellings particularly in irrigated and broadacre areas should be large enough to disincentivise fragmentation of agricultural land, incorporate industry requirements, enable expansion of existing agricultural industries and provide for adequate buffers to incompatible land uses.

Non-Planning levers

e. An education program will assist councils in delivery of planning mechanisms to protect agriculture.

Diversification and value-adding

Access to Melbourne and Adelaide and biophysical assets of rangelands, rainfall, irrigation, productive soils and farming infrastructure means that the Lower Murray is well positioned to capitalise on growing community interest in food provenance and agri-tourism. The Far West Regional Plan identifies the need for diversification of agricultural commodities to include agri-tourism, boutique and artisan produce, and value adding.

Further value-added manufacturing and food processing opportunities can expand from current industries such as animal products processing; packing of raw fruits, nuts, and vegetables; and processing of wine and food products.

Diversification approaches can range from selling direct to the community to specialised processing facilities, that require significant capital investment and the development of new skills but have the potential to significantly improve the economic viability of agricultural operations. Currently in the Lower Murray, leasing of farm land to other farmers and to developers for renewable energy projects is considered a means of farm income diversification.

In the Lower Murray diversification may also arise from complementing rangeland grazing with conservation as a basis for farm tourism (e.g. wetlands, wildlife tours and native bush food tours) and carbon farming. Agri-tourism in the form of low-key farm stays and bed and breakfast establishments can provide an alternative income stream of agricultural producers while also educating the community about the activities that occur on farm. These ancillary land uses should not compromise the agricultural production being undertaken on the land and agricultural production should be the primary land use. Regional agri-tourism provides an opportunity to promote NSW's 'clean and green' production to the Australian community and overseas visitors.

Planning levers

a. Certainty in strategic planning policy and land use planning controls for value adding operations and neighbouring land provides the appropriate investment environment for industry expansion.

b. Preparation of a rural land use strategy develops an understanding of the needs of various value adding industries and investigates opportunities and mechanisms through LEP controls.

c. LEP zones and provisions should be applied over value adding facilities; with land use tables structured to permit industries related to the primary production while prohibiting incompatible land uses such as residential accommodation, tourist and visitor accommodation, commercial and recreational activities etc.

d. Agri-tourism (farm stays, bed and breakfast accommodation) should be associated with and complement the continued agricultural production on the land. Agri-tourism should be directed away from intensive agricultural operations or precincts.

e. Large scale renewable energy production should be restricted to identified zones for wind or solar energy generation, where there is access to and capacity of the energy grid. Renewable energy developments should be sited away from high quality agricultural soils and from irrigation districts.

Non-planning levers

f. Intensive agricultural production precincts and businesses may be used for education of the community and tourists around how food supply chains work.

g. Roadside stalls, artisan food and drink industries and cellar door premises all offer opportunities to promote NSW's clean green image to the international tourism market. Farmers markets could prioritise locally grown or made produce to support local growers.

Farming research promotion and education

The Lower Murray is uniquely positioned to provide research, promotion and education opportunities for the broader agricultural industry. Agricultural research by La Trobe University, VIC DPI and NSW DPI provide further opportunities for education of farmers, local governments and communities on sustainable production, innovative farming systems, climate change and the challenges facing agriculture and producers. This education is important for consumers who might not otherwise understand how their food is produced and the intricacies of the food production chain.

Planning levers for peri-urban farming

a. Provide agricultural education to local governments and consultants to ensure planning decisions are based on understanding up to date farming practices.

b. Information and education facilities should be a permissible land use on agricultural land to enable producers to educate the community on how food supply chains work.

Circular economies

A circular economy is one that exchanges the typical cycle of 'make, use, dispose' in favour of maximising re-use and recycling. The longer materials and resources are in use, the more value is extracted from them. The circular economy concept is best, and most often, applied in relation to resource consumption and regeneration.

For the agricultural industry a circular economy presents possibilities for significant efficiencies and input cost reductions through energy generation and smart grid distribution; innovative off-grid energy solutions; recycled water use; and opportunities for renewables and waste solutions.

Planning levers

a. Primary production zones should permit resource recovery facilities as a means of reusing waste products while also restricting incompatible uses to prevent rural land use conflict.

b. Minimum lot sizes should account for a potential increase in the need for land area requirements as farming trends towards circular economies. Reuse of effluent and other products on farm to vertically integrate farm inputs and outputs may result in additional and diversified production areas on farm.

Planning toolkit

Best practice land use planning for agriculture includes recognition of the industry as a significant contributor economically, environmentally and culturally, providing recognition and management through all levels of the planning framework. Dedicated land use zones, provisions and minimum lot sizes are available to Councils and can effectively support primary production even in contested areas.

This section highlights the parts of the planning system to facilitate this.

Strategic planning

Local strategic planning statement

A local strategic planning statement (LSPS) identifies the vision and trends for agriculture in an LGA and sets out the direction for agricultural land uses for the next 20 years. It is important that agriculture, the land it depends upon and the infrastructure and other secondary industries which interact with agricultural land uses are considered at this initial strategic planning stage. The LSPS should explain the economic contribution that agriculture makes to the local economy and reflect the community's expectations for the provision of food and fibre locally. Further information can be found in the following DPI guideline Local Strategic Planning Statements – Agricultural Planning Advice for Councils.

Local land use strategy

The Far West Regional Plan 2036 and LSPSs set out the framework and expectations for preparation of local land use strategies in the Lower Murray. The agricultural component of a land use strategy should identify the agricultural industries in the LGA, land on which they are located and the essential infrastructure and secondary industries. A land use strategy is also an effective tool in communicating to the community the scale and importance of agriculture in the LGA economically, physically and socially. It is an important step in identifying where agricultural land should be protected from incompatible land uses.

A rural land use strategy will identify the linkages primary industries have with secondary industries, infrastructure and other components of the production chain to establish a holistic picture of relationships and dependencies. The strategy will also clarify the relationship of rural land with residential development and specify the circumstances in which additional fragmentation and residential development may or may not be appropriate. The strategy will also assess the policy framework including existing LEP provisions and make recommendations to retire and/or remove redundant provisions concerning rural subdivision and non-strategic residential development.

When the spatial extent of the agricultural industries, their connections and infrastructure are known the rural land strategy can establish planning policy positions to ensure that the land on which these industries are located on is protected or appropriately managed from a land use planning perspective.

Such policy positions should include:

- zoning high quality agricultural land RU1 Primary Production
- supporting the establishment of buffer distances around agricultural operations, particularly intensive agricultural operations
- limiting incompatible land uses in zones which apply to land used for agriculture
- ensuring non-agricultural land uses avoid important agricultural land
- permitting additional land uses to diversify farm income where those additional land uses are ancillary to farming operations
- ensuring agri-tourism developments build on or complement the agricultural industry and reinforce the predominant use of the land for agricultural purposes.

Local environmental plan (LEP)

A LEP allows councils to tailor planning controls to address the issues facing agricultural industries in their LGAs. The LEP is informed by the rural land use strategy. The following are mechanisms that can result in positive outcomes for agriculture:

Land use zones: the RU1 Primary Production or RU4 Primary Production Small Lots zones are the most appropriate zones to apply to land which is currently used for agriculture and/or is suited to future agricultural land uses.

Land use zone objectives and tables: The use of specific zones for agricultural land allows the zone objectives to be specific for agricultural land uses and require other permissible land uses to be compatible with agriculture.

Limiting permissible land uses: LEPs can reduce the potential for land use conflict by restricting the range of permissible land uses where incompatible with agriculture. This is executed by careful construction of land use tables for the rural zones. Councils should review the permissible land uses in rural zones applied to agricultural land or where agricultural industries are located to prevent inappropriate land uses and limit potential for land use conflict. Land use tables for rural zones should be 'closed' to enable more control over the range of specific land uses.

Minimum lot sizes: The minimum lot size specified in an LEP for rural land needs to be of a scale to prevent fragmentation into lots which cannot support the locally typical agricultural land uses. Generally larger minimum lot sizes facilitate the establishment of larger and more appropriate buffer distance between potentially conflicting land uses. Larger lot sizes also enable expansion or diversification of the agricultural activities without the need to purchase additional land which can be an economically prohibitive option for farm expansion. While it can often be difficult to execute, the breaking of the nexus between minimum lot size and dwellings is a way to prevent new settlement on rural land, and a positive advance in promoting agriculture and preventing future rural land use conflict.

Development control plans and other approaches

Development control plans

A development control plan (DCP) for rural zones should include practical guidance for agricultural land uses. A DCP can specify buffer distances to be applied to all land uses, both agricultural and non-agricultural, to ensure that new land uses do not increase the potential for land use conflict with existing neighbouring properties. Guidance on appropriate buffer distances is provided in the Department's Buffer Zones to Reduce Land Use Conflict with Agriculture - An Interim Guideline.

Novel approaches

In some cases Councils may need to apply both planning approaches and non-planning advocacy to achieve positive outcomes for agriculture. For example, under the current legislative framework, Councils can:

- Set up a rural industry liaison committee to establish links between council and farmers and provide a forum for discussion of the issues facing agriculture in the LGA.
- Propose a highly contested area as a special planning precinct with planning provisions to protect from incompatible land uses.

Industry can provide advocacy through active involvement in land use planning decision making and strategic planning to raise the profile of agriculture. The land use planning system is only one mechanism available to reduce the potential for land use conflict. Agricultural industries can decrease the potential for land use conflict by adopting industry best practice operations which at best eliminate or reduce the impact of their operations on neighbouring land owners.

Similarly, clear communication with neighbouring properties and an education program targeting sensitive neighbours can help increase understanding of the reasons for some agricultural practices and prevent nuisance complaints.

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Grapes, fruits and nuts

Traditionally Lower Murray horticulture has been based on extensive areas of grapes (49% of state production), citrus (8%) and vegetable growing (5%). Around 90% of grapes are used for making wine with dried and table grapes also important crops on some farms. Grape growing also supports wine making and wine tourism which generate significant income and employment opportunities.

More recently there has been widespread establishment of almonds, pistachios and walnut orchards based on irrigation from the Murray River. These new irrigated horticulture plantings are growing in prevalence based on a shift toward larger landholdings and an increase in decoupling of water entitlements to development outside traditional irrigation districts.

The water requirements of these high value crops rely on modern on farm infrastructure (drip/trickle irrigation systems) for efficient and timely irrigations that focus on effective utilisation of every drop of water applied. A range of seasonal fruits and vegetables are also grown in open paddock systems.

Trends

The nut industry in Australia is currently experiencing considerable expansion, with new plantings occurring across all tree nuts. With a lead time of five to 10 years, this expansion will push the national farm gate value close to AU$1.7b by 2025. Almonds, macadamias, walnuts, pecans and chestnuts export to more than 65 countries with export sales of $750m per annum (2018) and expected to increase by 75% to $1.3b by 2025. Tree nuts account for approximately 40% of all horticultural exports. Almonds are the nation's most valuable horticultural export commodity. Most Australian nuts attract a premium in markets that appreciate food safety, product quality and reliability of supply chains.

The Australian Grape Growing industry has been growing strongly with wine grapes making up an estimated 60.3% of industry revenue, so the industry is highly dependent on the downstream Wine Production industry. Australia currently has over 2000 wine exporters sending tens of thousands of different wines to 119 destinations worldwide at a value of over $3B. Volumes and values have not been as buoyant in recent years however exports have been strong to China, USA and Canada (to March 2020).

The Australian citrus industry is in the middle of a growth phase, with more plantings going in and existing trees set to bear more fruit in coming years. Nationally, the greatest plantings are coming from southern NSW, which accounts for 30 per cent of plantings or around 8,000 hectares. Predominately this is oranges, split between the navel and juicing oranges.

Locational requirements

The Lower Murray provides some good quality soils, a Mediterranean climate and access to irrigation water supplies, which are important for large scale permanent horticulture. It also has good freight connections to Adelaide and Melbourne

The horticulture industries are reliant on a number of ancillary industries that are also utilised by other agricultural enterprises in the Lower Murray. These industries relate to machinery and irrigation equipment suppliers, mechanics, freight – logistics, competent trades, rural supply stores for crop husbandry inputs (fertiliser, pesticides, shade houses, hail netting), processing facilities for grading, packing, storage (including refrigeration) and seasonal labour requirements.

Challenges

Water availability for irrigation

Within the Lower Murray irrigation water is supplied from the Murray River, directly by licenced river pumpers or diverted into irrigation areas and districts. There is also licenced access to water entitlements from groundwater systems, and rainfall runoff captured in farm dams.

Commonwealth and State government water policy reforms has seen the introduction of water trading, the Murray Darling Basin Plan, NSW Water Sharing Plans, Australian Competition and Consumer Commission (ACCC) Water Charge & Trading Rules and ACCC Water Price Determinations. Water trading has driven water into higher value irrigated businesses and environmental water recovery has reduced water availability in every traditional irrigation area throughout the Murray Darling Basin.

The Murray surface water management area falls within the southern-connected interstate trading zone of the Murray Darling Basin. Depending on seasonal water availability, the current water trading rules allow for transfer of irrigation water between river valleys. For example, the millennium drought between 2001 and 2009, resulted in significant reductions in water allocations across the southern Murray Darling Basin and prompted a doubling in water trade. In drought years, water has generally been traded downstream from rice growers in NSW to horticulturalists (permanent plantings) in Sunraysia and South Australia.

The Murray Darling Basin Plan has calculated Sustainable Diversion Limits (SDL) for each catchment within the Basin required to achieve environmental outcomes. In some catchments, achieving the SDL will result in less water available for irrigation. In the NSW Murray and Lower Darling and Murrumbidgee catchments, a reduction of 624 GL/year and 320 GL/year respectively is required to achieve the SDL in each catchment. It is also likely that there will be further contributions to shared reductions in the southern Basin.

This extensively cleared, usually land-formed and highly modified Lower Murray landscape has had a focus on irrigated enterprises such as grapes, citrus, nuts and vegetables. The reduction in water availability is resulting in a reduced irrigation footprint and an increasing proportion of the available irrigation water diversifying into high value commodities, such as almonds and other nuts.

Permanent horticultural industries have been moving from small scale production systems to larger broadacre systems. These changes in horticultural enterprises and land uses has been resulting in changing seasonal water requirements and creating conflicts with upstream irrigation communities.

Competition from foreign fruit imports, particularly tinned, juiced, processed and frozen fruit products, has increased.

Opportunities

Export markets

While the majority of Australian fresh fruit production is sold in domestic markets, export markets offer the greatest opportunity for diversification and offsetting risks. Wine, nuts and some citrus varieties are exporting large quantities overseas to meet seasonal market requirements.

Capital input

Permanent horticultural operations which need significant capital expenditure need assurances that production will be unencumbered by land use planning changes for approximately 25 years to justify the capital expenditure needed. When changes to the planning system enable encroachment by urban land uses and result in land use conflict investment in agricultural businesses can be reduced and infrastructure can become rundown and production decreases.

Vegetables

Vegetable production is a large agricultural industry in the Lower Murray producing $21m worth of gross value product (ABS 2015/16), mainly melons, potatoes and capsicums. Vegetable crops are mostly grown under large scale irrigated field conditions. This is 5% of the state's production.

Trends

Vegetable production in the metropolitan rural areas has been declining as urban encroachment and small farm sizes impact their viability. Economies of scale, production cost and access to labour are the main issue for vegetable growers.

In the Lower Murray large holdings and access to irrigation water supplies allow vegetables to be grown under broadacre farming systems. The industry requires reliable access to electricity, water and skilled labour.

This area has not followed the trend towards protected cropping and high-tech glasshouse production due to high summer temperatures and the availability of cleared land. The intensive horticulture industry does not require high quality soils/expensive land as the main costs are in the development of expensive infrastructure.

Locational requirements

The Lower Murray provides some good quality soils, a Mediterranean climate and access to irrigation water supplies, which are important for broadacre vegetable cropping. It also has good freight connections to Adelaide and Melbourne

The vegetable industry is reliant on a number of ancillary industries that are also utilised by other agricultural enterprises in the Lower Murray. These industries relate to machinery and irrigation equipment suppliers, mechanics, freight – logistics, competent trades, rural supply stores for crop husbandry inputs (fertiliser, pesticides, shade houses, hail netting), processing facilities for grading, packing, storage (including refrigeration) and seasonal labour requirements.

Challenges

Vegetable production is moving from small scale production systems to larger broadacre systems. These changes in enterprises and land uses has been resulting in changing seasonal water requirements and creating conflicts with upstream irrigation communities. Additionally, competition from foreign vegetable imports, particularly processed and frozen vegetables has increased.

Opportunities

Export markets

The majority of Australian vegetable production is sold in domestic markets with locally produced vegetables accounting for approximately 85% of vegetable products sold in Australia (Clark 2017). Therefore, export markets offer the greatest opportunity for the vegetable industry. Growing demand from international markets and freeing of trade barriers presents opportunities for vegetable growers (Horticulture Australia Limited 2013). ABARES (2014) found that the more profitable vegetable growers are more likely to be exporting their produce as expansion into overseas markets mitigates the risks of the domestic market and increases the scope for future growth.

Capital input

Irrigated horticultural operations require significant capital expenditure and need assurances that production will be unencumbered by land use planning changes for approximately 25 years to justify the capital expenditure needed. When changes to the planning system enable encroachment by urban land uses and result in land use conflict investment in agricultural businesses can be reduced and infrastructure can become rundown and production decreases.

Planning considerations

The encroachment of non agricultural land uses and resulting increased land use conflict and higher land prices will restrict the opportunity for expansion of the vegetable growing industry. Large scale production systems necessitate the development of other on farm infrastructure which may not satisfy the rural character expectations of the community.

Livestock
Wool, sheep/lambs, cattle

The livestock industries in the Lower Murray contribute to agricultural production by GVP of wool $29m, sheep/lambs $24m and $16m in cattle.

Trends

Together, Australia and New Zealand account for 71% of world sheep meat exports, but only produce 8% of global production.

Although drought conditions in Australia have restricted the volume of beef cattle and sheep available for slaughter, red meat export supplies of 2020/21 are also expected remain constrained by the effects associated with COVID-19.

There is a forecast increase in lamb production in 2020/21 consistent with export demand expected to remain robust in the short term due to increased import demand for alternative protein sources. Demand is expected to remain strong, although the COVID-19 pandemic has increased uncertainty around meat exports.

Meanwhile the price for wool is down dramatically. This is due to textile manufacturers substituting away from wool in response to lower demand in major wool-consuming countries. Closure of clothing stores in these countries is expected to reduce demand for woollen apparel manufacturing in 2020/21.

Locational requirements

Critical mass is crucial for the ongoing viability of the industry within NSW given variations in seasonal conditions across the state.

The Lower Murray provides a locational advantage given the availability of land, reliable water supply and integration of grazing, feedlotting and processing. The large tracts of land available allow for continued investment in technology, equipment and breeding to ensure competitive and profitable enterprises. This area is usually free of land use conflicts and competing non agricultural land uses.

Secondary industries include freight services, grain and hay production, livestock handling and trading facilities, as well as seasonal labour. As well as exports, the sheep meat/lamb industry supports local, state and national markets.

Challenges

Biosecurity

Noxious weeds are an ongoing challenge for rural landowners, particularly those in the sheep industry as they are often the owners of large tracts of land that require ongoing management of weed species. The costs of weed control including product purchase and time, can be substantial and can impact on profitability. This is also a major challenge for producers on smaller holdings located in high lifestyle areas where these neighbouring landowners may be unaware of their biosecurity responsibilities or are 'weekenders' and often absentees. Pest animals, for example feral dogs, can result in loss of lambs.

Opportunities

Export markets

While the majority of Australian meat production is sold in domestic markets, export markets offer the greatest opportunity for diversification and offsetting risks. There is ongoing development of integrated supply chains through joint ventures to supply growing export markets and value-added meat exports based on distinguishing attributes such as grass-fed, organic and provenance attributes

Capital input

Rangelands grazing is usually a low input enterprise, relying on seasonal native pastures. Sheep/lamb feedlotting operations require capital expenditure and need assurances that production will be unencumbered by land use planning changes to justify the capital expenditure needed. Similarly the technology required for commercial sensing and objective measurement in processing to improve cost-competitiveness of supply chains need significant capital expenditure

Planning considerations

Legitimate livestock farming activities are likely to cause noise, odours, dust, spray emissions, smoke, vibration, etc. anytime during 24 hours including early mornings and late evenings and should be protected by right to farm policies.

Broadacre cropping

Broadacre cropping delivers the highest gross value to the Lower Murray of $45m. Dryland winter cropping includes cereals (wheat, barley, oats), oilseed (canola) and pulses (chickpeas, faba beans, lupins, lentils). Wheat, barley and canola are the major crops by value. Crops are grown in varying rotations depending on site characteristics, seasonal variations, disease control, market demand and production preferences.

Trends

Long-term productivity growth in broadacre industries is said to be around 1% per year (Boult and Chancellor 2020). This is also an analysis supported by RMCG Agricultural Expansion Analysis which identifies a plateau in wheat yields. A simplistic comparison between ABS 2010/2011 and the 2015/2016 census data shows a decline in tonnes of many broadacre crops and an increase in Pulse crop production.

Locational requirements

Broadacre cropping in the Lower Murray have been based on the favourable winter rainfalls which are becoming increasingly unreliable. The large tracts of land have been cleared to allow for continued investment in broadacre technology, equipment and plant breeding to ensure competitive and profitable enterprises. This area is usually free of land use conflicts although there are competing non agricultural land uses at specific sites.

Secondary industries include freight services, grain processing, grain storage and handling, and grain trading and marketing, as well as seasonal labour. As well as exports, the cereal grain industry in Lower Murray supports feedlots, piggeries and poultry production in other parts of Southern NSW.

Challenges

Biosecurity

Growers are facing challenges from increasing herbicide resistance and increasing soil-borne pathogens in their farming systems.

Production rates

Declining soil fertility is having an overall effect on production rates even with advances in plant breeding, machinery/ technology development, and improved agronomic practices.

Opportunities

Export markets

To increase gross value of broad acre crops, opportunities lie in gaining capital investment, accessing global market and improving farm productivity.

Farming practices therefore need to focus on opportunities to attract a high price premium from nutrient continent, GM free, organic, environmentally sustainable production, or other value added premium niche.

Planning considerations

LGA planning need to ensure large holding sizes are maintained, and fragmentation and land use conflict is minimised.





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For further information please contact us via email: landuse.ag@dpi.nsw.gov.au or visit our website: www.dpi.nsw.gov.au/agriculture/lup