NSW GOVERNMENT | Department of Primary Industries

Agriculture Industry Snapshot for Planning

Central West Slopes and Plains Sub Region

August 2020

The value of agricultural production in the Central West Slopes and Plains Sub Region (CWSP) (also known as the Orana region) was over $1.77 billion from a range of livestock for meat and wool, cotton, broadacre crops and vegetables. Agriculture and agricultural product manufacturing employ the largest percentage of people across the Sub Region (ABS 2015/16).

The Central West Slopes and Plains has the advantage of large areas of unfragmented land that allow the achievement of economies of scale for broadacre agriculture including irrigation. This coupled with suitable soils and water supply, infrastructure as well as access to markets in Dubbo, Orange, Sydney, and Newcastle make the Sub Region one of the most successful and profitable in NSW.

While rural land in the Sub Region is mainly used for agriculture, the expansion of dispersed residential and lifestyle development has sterilised some areas and incrementally displaced farming activities, making it difficult for remaining producers to operate. Some farmers and value-adding industries need to deal with increased land use conflict and inflated land prices due to competing interests particularly around larger towns. Despite these challenges, the Sub Region has great potential to grow and continue to support the profitable agricultural sector that underpins the Sub Region's economy.

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 Central West Slopes and Plains and their interactions with suppliers, processing facilities and markets.

Establishing 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.

The Central West Slopes and Plains agricultural industries operate in an environment of increasingly global competition and opportunities, external challenges and changing land use. This profile will inform local strategic planning for these key agricultural industries considering their linkages to infrastructure and secondary industries throughout and beyond the Sub Region. Land use planning is guided by the Central West and Orana Regional Plan 2036 (DPE, 2017). The Regional Plan has clear directions for the need to identify, protect and appropriately capitalise on agricultural industries, infrastructure and rural land.

Agriculture in the Central West Slopes and Plains Sub Region

Agriculture is a key industry for the Central West Slopes and Plains economically and for the scenic and environmental qualities of the rural lands where agriculture is undertaken. The area is particularly important for broadacre cropping, beef, sheep and wool, cotton, and dairy.

The Sub Region is 94,215 km^2 in area and incorporates land in the Lachlan and Macquarie river valleys: Parkes, Forbes, Weddin, Lachlan, Dubbo Regional, Warrumbungle, Gilgandra, Coonamble, Narromine, Warren and Bogan local government areas (LGA). The Sub Region is home to 105,176 people (ABS, 2016). The Sub Region makes a significant contribution to agricultural production in NSW, over $1.77 billion in 2015-16, being highly productive for broadacre cropping (18.9% share of NSW, $950m). The following table shows the Gross Value of Production (GVP) for the Sub Region.

Industry	Gross Value of Production ($)	% share of CWSP total	Number of businesses	% share of NSW
Broadacre crops	$950.2m	53.6%	2,242	18.9%
Beef	$338.4m	19.1%	2,052	13.2%
Sheep meat	$149.5m	8.4%	2,319	20.4%
Wool	$191.7m	10.8%		20.3%
Dairy	$33.9m	1.9%	69	5.7%
Vegetables	$15.7m	0.9%	12	3.7%
All other agriculture	$93.5m	5.3%		1.8%
Total	**$1,772.9m**	**100%**		**13.5%**

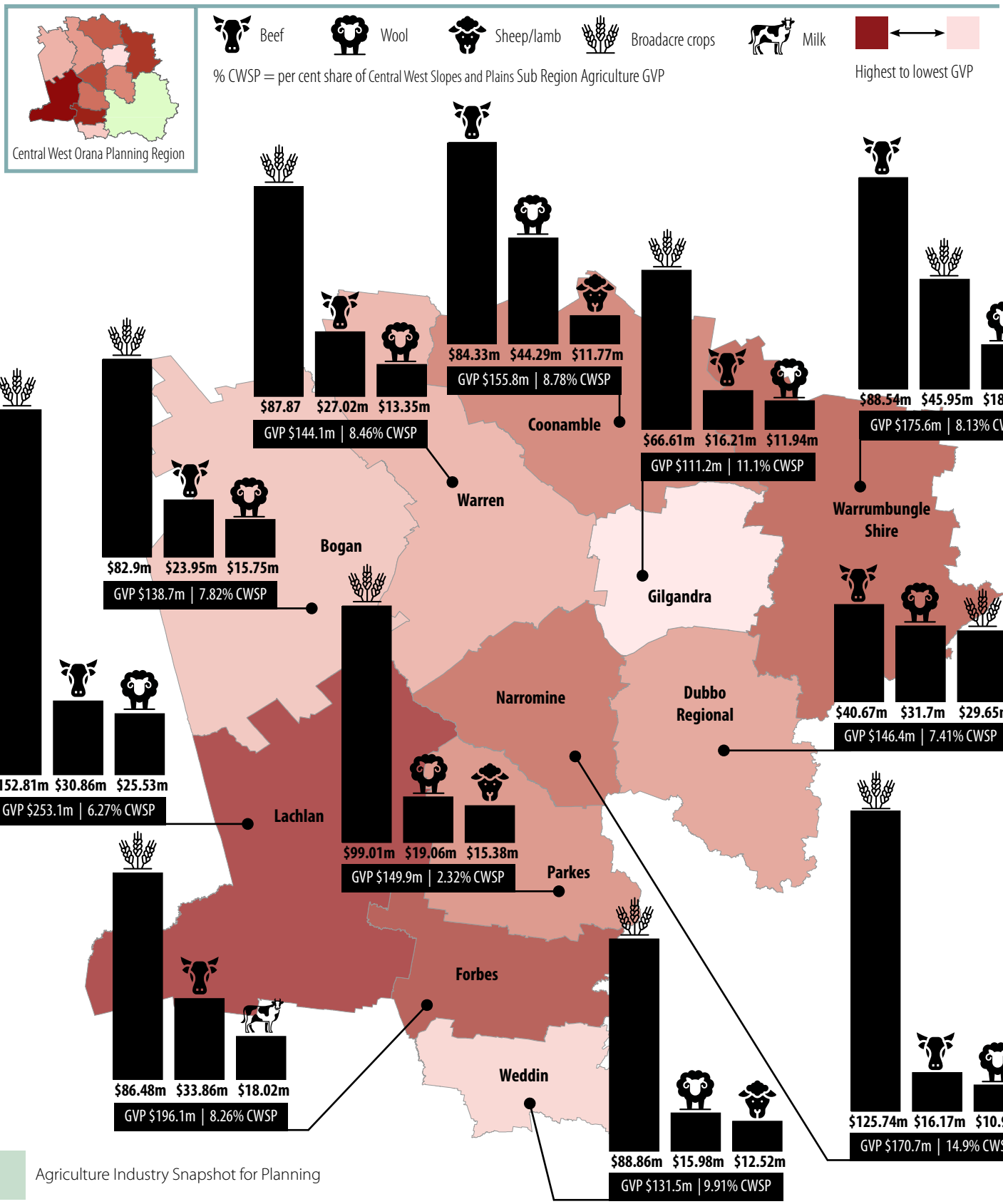
Source: ABS 2015 – 16 (note: some businesses cover multiple industries)

Employment

Agriculture employs over 5,640 people across the Central Slopes and Tablelands Sub Region (ABS, 2015/16). The biggest employer is cattle and grain farming (79.0%) followed by the dairy industry (1.6%). The LGAs with the highest agriculture employment are Dubbo Regional (17.4%) and Warrumbungle Shire (15.1%) 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 Sub Region at the time of the ABS census. The Mid-Lachlan REDs notes that the agricultural sector accounts for 18% of all employment in the Parkes, Forbes and Lachlan Council areas. The industry did experience a decline of 2.3% between 2011 and 2016. However there has been an increase in the agricultural support industry sector indicating a higher skilled job sector.

Local government distribution

The following map shows the LGAs in the region and agricultural GVP. The biggest individual contribution is Lachlan followed by Forbes.



Agricultural highlights of the Central West Slopes and Plains Sub Region

The Central West Slopes and Plains has some of the most highly productive and sought-after agricultural land in NSW, suited to a wide variety of summer and winter broadacre cropping, and livestock production. Cotton is grown in large unfragmented areas with access to irrigation in the Macquarie Valley, with industry expansion accelerating in the Lachlan Valley. Beef production is the main livestock industry by GVP, with wool, dairy and sheep meat production also important. Livestock production is often integrated with cropping systems.

Industries located on alluvial soils are dairying in Dubbo and Forbes LGAs, and vegetables on alluvial areas and lower footslopes in the Lachlan and Forbes LGAs. Fruit and nut production is a localised industry, worth $11.98m in 2015/16. Orange production ($3.76m) is important in Forbes and Narromine. Forbes grows all fruit to the value of $7.9m and is the main fruit growing area of the Sub Region. Turf is also an important industry in the Narromine and Dubbo areas, dependent on the alluvial soils and irrigation water from the Macquarie River.

This section highlights the prominent industries for the Central West Slopes and Plains.

Broadacre crops

Dryland cereal cropping (principally wheat and barley) are the highest value of agricultural produce in the Sub Region . Most grain is moved by bulk to ports for export although domestic grain is also used regionally and interstate. Lachlan Shire is the leader in wheat grain production, followed by Narromine, Weddin and Parkes. Lachlan also grows the most barley followed by Parkes and Forbes. Lachlan also has the most oat production in terms of GVP. Canola is the main oilseed crop grown in the Sub Region , with Weddin, Parkes and Forbes having the highest GVP values. Chickpea production is predominantly produced in the Coonamble, Warren and Narromine LGAs.

Hay is an important part of the Sub Region's agricultural production with the Forbes LGA having the highest GVP, followed by Dubbo Regional and Lachlan LGAs. More than half of hay production is lucerne hay, relying on the level alluvial floodplains of the Lachlan and Macquarie Rivers. Cereal and other crops also contribute to hay production in the Sub Region.

Industry requirements

Dryland cropping systems have developed based the unique physical combination of medium to high quality soils, relatively flat topography, warm climate and reliable rainfall over 400mm (RMCG, 2016). It is also facilitated by large holdings in a unfragmented landscape which accommodate the changes in technology and economies of scale necessary for profitable broadacre cropping enterprises.

A wide range of secondary industries are required to support the inputs and outputs of broadacre crop production, such as machinery and irrigation equipment suppliers, mechanics, freight and logistics, trades, and rural suppliers, agronomic services, grain storage and marketing, milling, contract planting and harvesting.

Graincorp has grain storage infrastructure across the Sub Region. There are also grain related services such as traders, packers, freight and logistics, transporters, and processors are located across the Sub Region , including the smaller centres. Companies include Agrigrain at Narromine and Coonamble, Robinsons Grain Trading in Dubbo and Ooma Enterpises at Forbes. Seed breeding is carried out at Narromine for canola, corn and sorghum with local and interstate grower participation (Pioneer Hi –Bred Australia (https://www.pioneerseeds.com.au/).

Ben Furney Flour Mills based in Dubbo sources 90% of it grain from within 200 kilometres of the mill, employing 90 people (https://benfurney.com/). Bio-Oz Buckwheat Enterprises Pty Ltd is a small specialized flour mill and buckwheat product facility located in Parkes.(https://www.bio-oz.com.au/). Artisan Grains Australia is also a Forbes based specialised on farm grain and flour producer (https://www.artisangrainsaustralia.com/).Hoey Holdings Pty Ltd is a specialist animal feed facility based in Forbes employing 27 people.

Cotton

Irrigated cotton is mainly grown in Narromine, Warren and Bogan LGAs, with dryland cotton grown in all other LGAs apart from Dubbo Regional Council. The Jemalong irrigation district at Forbes and Lachlan River catchment are more recent locations for cotton as varieties and technology improve (Acres of Opportunity 2018). Groundwater is an important water source for irrigation in the area. In the Macquarie valley this is used for both urban and rural water supplies. The main area of groundwater use is west of Narromine (RCMG 2016).

The first cotton crops were grown at Warren in 1967 with water from Burrendong Dam on the Macquarie River near Wellington. Cotton expanded as a crop in the 1980s and 1990s, and by 2000 much of the irrigated lands had been converted to cotton (in Narromine and Warren LGAs). The area of cotton fluctuates in response to irrigation allocations, or in the case of dryland cotton in response to rainfall events. A range of summer and winter cereals, pulses and oilseeds are grown under irrigation in rotation with cotton.

Private investment in cotton through land formation of irrigation fields, on-farm water storages and processing currently delivers the highest value commodity per megalitre of water per hectare. There is substantial investment in value-adding, secondary agricultural industries and infrastructure ancillary to cotton, highlighting the importance and significance of this farming system to the Sub Region .

Industry requirements

Cotton is a summer crop, requiring a reliable water supply. This may come from rainfall and/or adequate soil available moisture or irrigation water. While cotton can be grown in both dryland and irrigated situations the yield from irrigated cotton exceeds that of dryland cotton by at least 2.5 times. Cotton is known to achieve the highest yields in black self-mulching soil however it may grow in a wide range of soil types. The floodplain environment of the Central West Slopes and Plains has proven highly suited conditions for this high value crop.

The success of the cotton industry has created synergistic opportunities for ancillary industries and other agricultural enterprises such as machinery and irrigation equipment suppliers, mechanics, freight and logistics, and rural suppliers, agronomic services, cotton ginning, contract planting and harvesting businesses. Large tracts of unfragmented agricultural land free from conflicting land uses are required for cotton production.

A number of cotton gins are located in the region to support the cotton industry in the Narromine, Warren and Coonamble shires. These include:

- Namoi cotton at Trangie (Narromine LGA) which also accommodates a commodity packing site and warehousing site at Warren
- Queensland Cotton (Olam) - Warren Cotton Gin
- Auscott Gins at Warren and Trangie

Some of these gins also provide cottonseed byproduct that is used as a livestock feed.

The Lachlan Valley is a developing area for cotton production, and there is potential for future ginning opportunities to be developed in the area.

Livestock production

Beef and lamb

Beef production is focused in all LGAs, particularly Warrumbungle, Gilgandra and Coonamble due to the ability for economies of scale, pasture growth and heavier soils. The Castlereagh REDS (2018) for Gilgandra and Warrumbungle Council areas notes that specialist sheep and beef enterprises has seen a move away from mixed cropping/livestock enterprises. There is less beef production in the Parkes and Weddin Council areas where sheep and cropping enterprises dominate. Sheep meat production value to the Sub Region is $149m (ABS, 2015/16).

Dubbo produced the highest value of sheep meat with the other LGAs in the region also contributing on a high level except for Narromine. This may also be due to the Fletchers International Exports being located in Dubbo. It is the largest lamb abattoir in the southern hemisphere with another plant located in WA. They combined process 4.5million head per year and employ 700 in Dubbo. The level of sheep meat production has increased over the years from the Sub Region, while beef has remained stable.

The supply of finished beef cattle from farms or feedlots and sheep meat underpin a critical mass of primary product to support the value adding supply chain for surrounding meat processors and transport companies. Supporting livestock production through planning is essential as livestock production systems are complementary to broadacre cropping and combined make up a significant proportion of the total farm area. The number of beef and sheep feedlots in the region are increasing for finishing animals especially in drought or as an alternative method of animal management. The 2017-2020 drought has resulted in permanent arrangements with often small farm operations establishing feedlot systems based on sheep production (Sheep Central 2020). Beef feedlots are a feature of the area, taking advantage of the availability of grain sources nearby.

Industry requirements

Cattle and sheep for meat production ranges over a wide variety of land types, with slopes less than 20 degrees and rainfall generally above 500mm (RCMG, 2016). Some enterprises also combine with cropping systems, particularly sheep. Livestock grazing production also requires large areas of unconstrained land with opportunity for producers to increase scale without risk of land use conflict. Holding sizes need to reflect the ability for beef enterprises to return a gross margin that can cover associated costs and deliver a sustainable income. Pasture-based cattle, sheep and wool production needs access to suitable water supply, and a range of infrastructure for livestock handling, husbandry, fodder production, storage and transport access. Typically, livestock are managed in a system of rotational grazing, with paddocks recuperating after grazing. Intensive animal industries require reliable water supply, transport access for stock and feed and areas of unfragmented rural land with large separation distances to sensitive receptors for odour and noise management.

Livestock industries are supported by ancillary industries and other agricultural enterprises such as meat processors, machinery and irrigation suppliers, mechanics, transport, rural suppliers, agronomic and veterinary services, livestock marketing agents and wool brokers.

The Central West Slopes and Plains is serviced by major saleyard facilities at Dubbo and Forbes which have weekly sales. The Dubbo Regional Livestock Markets are the biggest in NSW with 193,788 cattle yarded in 2018/19 (Meat and Livestock Australia 2019). 1.47 million sheep were sold in 2017/18. The Dubbo saleyards also contribute $75.6 million in total annual output and supports 320 full time equivalent positions according to economic modelling by the AEC Group (https://www.dubbo.nsw.gov.au/Livestock/student-info). Forbes Central West Livestock Exchange yarded 65,974 head of cattle in 2018-9. The facility also trades sheep, lamb and pigs. (http://www.forbeslx.com.au/).

Cattle processors are also located outside the Sub Region at Cowra. Australian Pet Brands processes livestock for pet food in Dubbo and employs 140 full time staff. Meat product manufacturing and allied industries employs a significant number of people in Dubbo.

Wool

Wool is produced in all LGAs, with the Lachlan and Dubbo Regional Council having the highest gross value of production. Overall wool production has declined since 1992 but plateaued in 2016. The Central West Slopes and Plains contributed $191m in wool in 2015/16. Wool is also often part of mixed farming operations that also support cropping, as well as meat production. There are more opportunities with newer sheep breeds offering 'dual purpose' wool and meat, which is also a way of adapting to changing markets and climatic conditions.

Industry requirements

Wool growing is a specialised industry that has a specific set of biophysical (land and climate), labour, management and animal husbandry requirements to meet market specifications. Finer wool enterprises take advantage of lighter soil types at higher elevations, and rainfall areas to produce a premium product particularly to the east of the Sub Region and adjoining the Central Tablelands Sub Region. Each wool-producing district has ancillary industries including wool brokers and shearing contractors.

Woolerina is a small specialist merino textile and manufacturing company based in Forbes, producing high quality Merino clothes and accessories. (https://www.woolerina.com.au/).

Vegetables

Lachlan, Dubbo Regional and Forbes Councils dominate in the gross value of vegetable production, mainly melons and pumpkins. Dubbo Regional Council also produces sweet corn, cauliflower, cabbages and carrots mainly based on the Bell and Macquarie alluvial areas.

Industry requirements

Vegetable production is reliant on irrigation and tends to be located on farms close to the rivers comprising medium to very high capability land, on slopes less than 10 degrees (RCMG, 2016). Wade (2005) notes the favourable climate especially for warm season vegetables in the Sub Region is also important. The Sub Region also offers opportunities for vegetable cropping to take advantage of the suitable lands along rivers and the future access to markets.

The Sub Region also contains some specialised related industries such as Narromine Transplants. This 61 hectare nursery is one of the largest containerized tree, fruit and nut seedling growers in Australia. It has the capacity to supply up to 18 million tree seedlings annually. it employs about 14 people. (https://transplants.com.au/). Enza Zaden Pty Ltd Australia has a (research station based in Narromine undertaking breeding programs for onion, cauliflower, broccoli, lettuce and pumpkin. The seed is sold domestically and internationally. The advantage of Narromine is that 2 generations of crop can be grown per year shortening the breeding time. It employs about 30 people.

(https://www.enzazaden.com/this-is-enza-zaden/enza-zaden-worldwide/AU?country=AU)

Dairy industry

Dairying is important in the Central West Slopes and Plains, generating $33,770,505m GVP in 2016. The Forbes LGA generates about half of this with other council areas including Dubbo, Lachlan, and Parkes also contributing over $2m GVP. There are other small-scale dairying activities that take place in all LGAs. Moxey's Dairy is a 5,500 head housed system in the Forbes LGA, owned by Australia Milk Holdings, employing up to 250 people. The Little Big Dairy, located at Rawsonville between Dubbo and Narromine on the Macquarie River, is both a dairy farm that milks 800 Holsteins but also is a small-scale manufacturer of the milk on site producing various types of single source milk and cream. The milk is sold both locally and as far as Sydney. The family owned operation continues to explore new ways to offer milk products and extend their market. They employ 30 people in their operations.

Industry requirements

The dairy profile of the Central West Region (2012) identifies the following locational requirements that related to Forbes Council as :

- moderate to high soil fertility found on alluvial plains
- water from subsurface or river sources within 5km
- reliable power
- access to high quality feed and grain sourced locally
- ready access to the Sydney Market through road infrastructure.
- properties that allow the management of environmental/ amenity impacts.

These factors can also be extended to other council areas on the Macquarie River system. The Little Big Dairy in Dubbo also processes its milk on site for distribution in the local area and region (and beyond) that provides an alternative to sending raw milk directly to processing in Sydney. For example, the Blue Sky cheese factory in Mendooran uses milk from the Little Big Dairy in Dubbo.

Central West Slopes and Plains Sub Region assets for agriculture

The Central West Slopes and Plains has ideal growing conditions with evenly distributed rainfall combined with suitable soils, excellent land capability, and access to water resources for irrigation enabling highly productive farms to prosper. The Central West Slopes and Plains has a history of primary production with established farming systems, services, labour supply, infrastructure and practiced farm operators. The Central West Slopes and Plains also has a geographical advantage given its proximity to Newcastle and Sydney and access to Brisbane; traversed by major national road and rail routes (DPIE, 2017).

Farming in the Central West Slopes and Plains provides benefits and opportunities for both producers and urban populations. By sustaining agriculture near regional cities such as Dubbo there are farming advantages such as market differentiation and alternative income streams, access to labour, processors and materials, and opportunities to produce higher value commodities which benefit from market proximity (reduced food miles and spoilage). There are some areas where non-agricultural land uses such as lifestyle subdivision and housing affect farming enterprises, however in most cases Councils support the development of intensive and extensive farming systems through planning instruments.

There are consistent trends across the Sub Region that have 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 both broadacre and more intensive 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.

Competitive strengths include:

- The scale, diversity and productivity of agricultural lands.
- Water supply provided by the Macquarie, Bogan, Castlereagh and Lachlan rivers, Burrendong Dam on the Macquarie River and Wyangala Dam on the Lachlan River.
- Potential for a range of crops and livestock production systems.
- Good road transport networks with the Newell, Golden, Mitchell, Oxley, Mid-Western and Castlereagh highways providing the main access in and out of the Central West Slopes and Plains, linking with the Hunter Valley, Sydney and Brisbane.
- The existing rail network extending through Dubbo, Narromine and Parkes linking with Sydney and Newcastle is used to export grain from the Sub Region to international markets.
- The currently project to construct the Inland Rail (Melbourne-Brisbane) Project will improve freight efficiency to both Melbourne and Brisbane ports. There are opportunities identified to increase the options for freight in this Sub Region that will have agricultural advantages.
- The Parkes Special Activation Precinct is also a NSW Government led project that seeks to create jobs associated with the existing and new opportunities that the inland rail project will bring in Parkes. Part of this will include the access of the agricultural sector to freight operations and new markets.

Supporting industries and infrastructure

The Central West Slopes and Plains has a comprehensive range of support services and infrastructure, processors, transport and logistics, professional services and farm supplies in the larger centres. Before agricultural produce makes it to market, there are inputs such as fertiliser, fuel, technical support services such as agronomists, vets and mechanics, processing facilities, transport and infrastructure, etc. There is also substantial movement of produce within the Sub Region supplying grain to intensive animal producers and moving livestock to processing plants. The interactions of these agricultural industries with their secondary industries is a critical consideration in planning for agricultural land uses.

Climate

The climate changes from a warm temperate to hot dry climate from the east to west (Andrews, 2016). Rawson (2016) noted the marked gradation in annual average rainfall from approximately 700-750mm in the east to less than 450mm to the west and north west. It was also noted the reliance of the western lands on river flows from the east especially for irrigation water. Dubbo has an annual average rainfall of about 570mm with a relatively even distribution apart from a slight summer increase. Areas to the north such as Coonamble have more of a summer increase while Grenfell in the south has a slight winter dominance. In summer, average temperatures are warm (26-28°C) and winters mild (12-14°C). Average maximum temperatures in summer are hot, up to 34°C in the west and in winter, average minimum 4-6°C (OEH, 2014). Frosts occur across the plains in winter while in summer, hot days (over 35°C) can number over 50 west of Nyngan.

The Bureau of Meteorology summarises the climate for the Sub Region over the last 30 years (Central West Slopes and Plains Regional Weather and Climate Guide):

- annual rainfall has been relatively stable
- dry years have occurred 11 times and wet years have occurred seven times
- rainfall has decreased in the autumn and spring months
- summer rainfall has been reliable; autumn has been unreliable
- dry years have occurred 11 times and wet years have occurred seven times
- the autumn break typically occurred by the start of June around Gilgandra, Dubbo and Nyngan, not until later in June around Forbes, and late June to early July around Condobolin in the southwest
- spring frosts have been more common and have been occurring later
- there have been more hot days, with more consecutive days above 38 °C.

Landscape features

Rawson (2016) outlines the five landscape units that make up the Central West area, being the Western plains, Floodplain, Northern slopes, Southern slopes and Lachlan plains. More information on these landscape units is provided in Appendix 1.

Irrigation - Macquarie Valley

The Macquarie River is the dominant water supply in the region, Burrendong Dam is the major dam located upstream of Wellington, with the river flowing through Dubbo, Narromine and Warren before it forms the effluent stream area of the Macquarie Marshes. There are 7 private off-river water schemes in the Macquarie System:

- Narromine
- Trangie-Nevertire
- Tenandra
- Buddah Lake
- Marthaguy
- Nevertire
- Greenhide.

Together these irrigation schemes account for approximately 40% of all the licensed irrigation entitlements in the catchment. The largest of the irrigation areas are Narromine and Trangie-Nevertire, both established in 1970 following completion of Burrendong Dam. The Narromine scheme covers 120km^2 and services 90 properties via 350km of channel. The Trangie-Nevertire scheme covers 102km^2 and services 66 farms via 250km of channel (Green et al, 2011)

Smaller tributaries such as the Bell, Little and Talbragar rivers also support areas of irrigation. Groundwater is also an important water source for irrigation in the area. In the Macquarie Valley this is used to support both urban and rural water supplies. The main area of groundwater use is west of Narromine (RCMG 2016).

Irrigation - Lachlan Valley

The Lachlan River is regulated by the Wyangala Dam located upstream of Cowra. The Jemalong Irrigation district located at Forbes delivers about 35,000Ml of water per year to 100 entities for irrigation over 96,000ha of farming land (Jemalong Irrigation). The opportunities for greater water security on the Lachlan River has recently been announced with the raising of the Wyangala Dam wall that will increase the capacity of the dam by 53% (Water NSW, 2019).

Challenges for agriculture in the Central West Slopes and Plains Sub Region and planning levers

Challenges for agriculture are connected to climate change, reliable telecommunications technology, commodity prices and in some areas, land use conflict and 'right to farm'. Development unrelated to agriculture such as housing creates land use conflict where expectations of amenity are not met, in turn placing pressure on producers to adjust their normal practices. This competition for land has a real potential in the Sub Region for dislocation and transfer of agriculture (particularly intensive agriculture) to other areas.

Agricultural land is a finite resource, even in the Central West Slopes and Plains where decades of land fragmentation has created undersized rural holdings which are mostly used for lifestyle purposes. This gradual process has displaced intensive industries such as dairies, piggeries and orchards, and affected broadacre cropping and livestock grazing in more contested areas.

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, 2005). 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 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 agricultural industries to quickly respond to market forces. Intensive agricultural 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 impacts of the 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 minimising 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. For example, with population growth and change, there will be pressure to use rural land on the edge of urban areas to accommodate residential development and other urban land uses. Competition for rural land on which agriculture can occur can lead to increased land prices and uncertainty for agricultural industries and investors. This often results in dislocation and transfer of agriculture to other areas, sometimes at great personal cost to producers and their industry.

Planning solution

Planning controls which limit the range of permissible non-agricultural land uses in rural zones can prevent the encroachment of urban land uses on agricultural industries. Planning controls which require adequate buffer distances between land uses can also mitigate potential impacts on and from agricultural land uses. With land use conflict being largely driven by the divergence in knowledge, expectations and activities of rural neighbours, particularly between new residents and traditional rural landholders, collaboration and networking becomes critically important to addressing changing social landscapes (Askland et al 2019). Council help facilitate this education process. Clear and robust strategic planning policy and land use strategies are important to guide future urban growth to locations where it will not have adverse impacts on agriculture.

Land fragmentation

Rural zoned land for agriculture (Primary Production -RU1, Rural landscape - RU2 and Rural Small Holdings -RU4 zones) make up approximately 93% of the Central West Slopes and Tablelands Sub Region.

Analysis of the rural zoned land in the Region found that:

- 13% is comprised of lots between 1 and 5 hectares in size
- 20% is between 5 and 20 hectares
- 12% is between 20 and 40 hectares
- 20% is between 40 and 100 hectares
- 35% is greater than 100 hectares in size.

Areas near urban settlements experience pressure for lifestyle subdivision, usually involving agricultural land. While there would appear to be ample land available, it is important that urban development does not compromise productive potential. As noted, 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. Expansion of agricultural operations in a fragmented rural landscape often means significant investment to purchase additional land. When additional land is not available for expansion producers usually increase productivity via intensification of operations, a process which can increase the potential impacts on nearby non-agricultural land uses or require significant investment to mitigate potential impacts.

Planning solution

Planning policy which sets an appropriate minimum lot size for a dwelling house 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 dwelling houses in highly productive rural areas.

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 in that Sub Region 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 locality. 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.

Other challenges

Climate Change

The Central West Slopes and Plains is expected to experience an increase in all temperature variables (average, maximum and minimum) by 2030. Summer temperatures are projected to increase by 0.7°C in 2030 and 2.1°C by 2070. Minimum temperatures are projected to increase by 0.7°C by 2030 and 2.1°C by 2070. Changes in cold nights are important in the maintenance of natural ecosystems ad agricultural/horticultural industries.

The number of hot days (over 35°C) is projected to increase on the western plains by another 10-20 days by 2030 and 30-40 by 2070 with increases most pronounced in spring and summer. Minimum temperatures are projected to increase across the Sub Region. Prolonged periods of hot days increase the incidence of illness and death amongst vulnerable people and adversely affect ecosystems.

Rainfall is projected to decrease over spring by 2030 but is expected to increase in autumn by 2070. Across the Central West Slopes and Plains winter rainfall is expected to decrease by 2030. Climate models indicate both wetter and drier scenarios for annual rainfall with the range of change -12% to +11% by 2030 and -10% to +22%.

Drought conditions directly affect dryland crops and reduce water availability for irrigation. The Central West Slopes and Plains will also experience an increase in the accumulation of the number of day degrees (a measure of heat accumulation throughout a growing season). Higher temperatures will extend the length of the growing season. However, warmer temperatures also accelerate the rate of crop development and could potentially shorten the time to maturity, reduce water use efficiencies resulting in reduced yields.

The impacts of climate change highlight the need to protect land for its future productive capacity particularly where there is a combination of biophysical assets such as water, topography and soils. The Central West Slopes and Plains Sub Region supports high value agriculture now and will be important to sustain production of more specialised agricultural and horticultural enterprises into the future. Farm adaptation options are already being developed with industry development such the Grains Research and Development work on farming systems (Crimp and Howden 2019), and the cotton industry (Cotton Research and Development Corporation, 2020). A critical concern to irrigated agriculture is securing water for production in terms of quality, quantity and delivery.

Biosecurity

Rural land in the Sub Region is exposed to pests and diseases that could threaten agriculture, the environment and community safety. Biosecurity hazards are managed by the NSW Government through Local Land Services. 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 (crops) may become more vulnerable to insect and disease outbreaks as the efficacy of current control measures are altered.

The combination of urban areas, open farmland, forested areas and water sources results in serious pests such as foxes, wild dogs, pigs, cats, rabbits and goats. Numerous pest plants are already in the landscape and have a large impact on remnant vegetation and rural land. Land fragmentation resulting in small lot sizes in some areas means it is more difficult for an agricultural producer to control the activities occurring within the necessary biosecurity buffer. Biosecurity resilience will depend on operational factors and this can result in increased costs for the producer.

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, ethical land and livestock management and adherence to best practice operations to minimise potential environmental impacts. Producers can help to protect their 'social licence' through open communication and education and positive contributions to their communities. Connecting with local markets and demonstrating low food miles and the importance of local food security can assist in maintaining a 'social licence' for agriculture. 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.

Opportunities for agriculture in the Central West Slopes and Plains Sub Region and planning levers

The Central West Slopes and Plains' agricultural industries are recognised as one of the key industries in the Central Orana Regional Economic Development Strategy and Western Plains Regional Economic Development Strategy (State of NSW, Department of Premier and Cabinet 2018). The competitive advantages of the Central West Slopes and Plains are topography, fertile soils, access to irrigation water, areas of unconstrained land and systems in place for efficient production of high-quality crops and livestock. Other opportunities are for research to increase innovation and technology with producers through the Trangie Agricultural Research Centre and Charles Sturt University. The creation of a logistics cluster at Parkes and improved road access, growth in value adding and manufacturing, improved energy, water and telecommunications infrastructure are identified as opportunities for the Sub Region.

The diversified economy based on agriculture has benefits for Central West Slopes and Plains' urban and rural communities. Urban areas benefit from agriculture through ecosystem services, employment, scenic values, 'green space', value-adding (processing, renewables), education, research and food provenance. Agriculture supports a supply chain that generates substantial productivity and employment across local, sub regional and national scales.

This section identifies the practical land use planning approaches and opportunities for agriculture in the Sub Region and some planning considerations to help implement them.

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 intensifying. Commercially viable intensive agricultural operations in the Central West Slopes and Plains include horticulture, poultry, pigs and livestock lot feeding. Most intensive agricultural operations need to establish infrastructure requiring significant capital investment. To secure this capital and see a return on the investment, businesses need certainty that production will be unencumbered by land use planning changes for a minimum of approximately 25 years.

Further growth of intensive animal and plant production is feasible in the Central West Slopes and Plains, such as poultry, piggeries and cattle feedlots, as well as a range of horticultural crops in outdoor and controlled environment glasshouses. 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.

Planning levers to support intensification

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. Rural land use strategy development is key to understanding the needs of various agricultural industries and investigating opportunities and mechanisms to support intensive agricultural industries 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

The need for fresh food to be available locally for the health of the community is a key opportunity for the Central West Slopes and Plains. There are marketing opportunities for food producers to leverage the benefits of local food production to differentiate their product in the market. Population and markets in NSW and beyond are expected to continue growing by 2050, and the expected population of the broader Sub Region and nearby regions will increase and sustain demand for local food and fibre. Global markets will also continue to demand Australian produce. In combination these factors will lead to a higher value of agricultural production in the Sub Region.

Planning levers to increase food security

a. Strategic planning for rural land must ensure productive land is identified and protective mechanisms provided through the planning framework to enable provision for expansion of urban farms for intensive production, food security and education purposes.

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

Diversification and value-adding

Access to transport links to Sydney and Newcastle and favourable biophysical assets of rainfall, water, productive soils and farming infrastructure means that the Central West Slopes and Plains is well positioned to capitalise on growing community interest in food provenance and agri-tourism. The Central West and Orana Regional Plan 2036 and Central Orana and Western Plains Regional Economic Development Strategies all identify the need for diversification and expansion of agricultural commodities to include agri-tourism, boutique and artisan produce, and value adding.

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. The Sub Region provides an opportunity to promote NSW's 'clean and green' production to the world through the high levels of tourism by the Sub Region.

Planning levers for diversification and value adding

a. Farmers markets ('markets' as defined by the Standard Instrument LEP) should be permissible and encouraged by councils in appropriate urban and open space zones.

b. Agri-tourism (farm stays, bed and breakfast accommodation) should be associated with and complement the continued agricultural production on the land.

c. Agri-tourism should be directed away from intensive agricultural operations or precincts.

Non-planning levers for diversification and value adding

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

e. 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.

f. Farmers markets could prioritise locally grown or made produce to support local growers.

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 Central West and Orana Regional Plan 2036 sets out the framework and expectations for preparation of local land use strategies in the Sub Region. 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.

Local environmental plan

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:

- Seek a locality mapped as state significant agricultural land with restrictions on fragmentation and development for non-agricultural purposes.
- 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 landowners.

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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Appendix 1

Landscape units of the Central West Slopes and Plains and climate change impact and adaptation (from Rawson, 2016)

Local landscape unit	LGA	Geology and soils	Vegetation	Agricultural use	Climate change and adaptation
Western Plains	Bogan (west) Lachlan (north)	Eastern edge of Cobar Peneplain with fragile red soils, sodicity.	Semi-arid shrubby woodlands, grassy woodland and grasslands.	Sheep and cattle grazing with improved and unimproved pastures, opportunistic cropping.	Hottest and driest area of region. Projections to highest temperatures and rainfall deficits. Maintain water and shade for stock.
Floodplain	Bogan (east), Coonamble, Warren, Narromine, Gilgandra (far western section)	Alluvial plain of Bogan, Macquarie and Castlereagh rivers. Some sodic soil areas west of Collie. Duplex soils at Marra Creek.	Floodplains and swamps of the Macquarie Marshes, and other river reaches. Semi-arid grassy woodlands and shrubby woodlands, grassy woodlands and grasslands.	Contains area of highly productive cropping and grazing lands, including cereal and cotton production.	Northern area has a subtropical climate that will shift towards summer dominance. Need to consider groundcover management. Southern two thirds of the area require revegetation and shade considerations for higher temperatures.
Northern Slopes	Warrumbungle, Gilgandra northern part of Dubbo Regional Council area (above Wellington)	Rolling hills, ridges, and slopes with minor flood plains of the Castlereagh and Talbragar rivers. More productive soils on volcanic and alluvial area, with sandy soils in the Castlereagh valley.	Dry sclerophyll forests with good representation in reserves and on private lands.	Contains areas of highly productive cropping mainly cereals on flatter lands. Grazing areas also important.	Shift to summer/autumn rainfall with more intense storms in summer and higher temperatures. Enhanced fire risk.
Southern Slopes	Northern part of Lachlan and Parkes, southern part of Narromine and Dubbo Regional Councils.	Bogan, Bell and Macquarie rivers with more confined flood plains. Variety of geological zones including Cowra trough and Molong rises, with volcanic and metasedimentary rocks supporting a variety of soils. Sodic soils between Tullamore and Peak Hill are prone to surface sealing and erosion.	Dry sclerophyll forest and semi-arid shrubby woodlands in the western areas, Grassy woodland and grasslands. Heavily cleared in areas.	Grain fed beef cattle, sheep and wheat enterprises.	Increasing temperatures, seasonality shifts will see the already hot and relatively dry western third of the landscape will become more marginal for agricultural production especially for cropping. Water and shad will be increasingly important for stock.
Lachlan Plains	Weddin, Forbes and Lachlan	Lachlan River and its tributaries support a wide range of productive areas with clay based soils. Ephemeral lakes in the area.	Extensively cleared areas of dry sclerophyll forest and semi-arid shrubby woodland to the west. Remnants on hard rock ridges and in national parks.	Lachlan system supports a wide range of cropping especially wheat and barley and some vegetables. Canola and lupins also grown in Weddin area. Grazing also common in area, with a major dairying enterprise, and Merino studs. Cotton is an emerging industy in Lachlan Shire.	High temperatures and a shift form a slight winter dominance in rainfall to a slight summer/ autumn dominance will impact winter cropping. Soil moisture will be an issue. Grazing stock will need more shade protection and access to water.

Appendix 2

Further details on Central West Slopes and Plains Sub Region major agricultural industries

Distribution of broadacre cropping production by LGA

LGA	Gross value of production ($m)	% share of CWSP broadacre cropping
Bogan	$82.9m	8.7%
Coonamble	$84.3m	8.9%
Dubbo Regional	$29.7m	3.1%
Forbes	$86.5m	9.1%
Gilgandra	$66.6m	7.0%
Lachlan	$152.8m	16.1%
Narromine	$125.7m	13.2%
Parkes	$99.0m	10.4%
Warren	$87.9m	9.2%
Warrumbungle Shire	$45.9m	4.8%
Weddin	$88.9m	9.4%
Total	**$950.2m**	**100%**

Distribution of sheep and lamb meat production by LGA

LGA	Gross value of production ($m)	% share of CWSP sheep/lamb
Bogan	$12.9m	8.7%
Coonamble	$9.5m	6.4%
Dubbo Regional	$23.8m	15.9%
Forbes	$12.9m	8.6%
Gilgandra	$9.5m	6.4%
Lachlan	$20.6m	13.8%
Narromine	$8.3m	5.5%
Parkes	$15.4m	10.3%
Warren	$10.8m	7.2%
Warrumbungle Shire	$13.3m	8.9%
Weddin	$12.5m	8.4%
Total	**$149.5m**	**100%**

Distribution of beef production by LGA

LGA	Gross value of production ($m)	% share of CWSP beef
Bogan	$23.9m	7.1%
Coonamble	$44.3m	13.1%
Dubbo Regional	$40.7m	12.0%
Forbes	$33.9m	10.0%
Gilgandra	$16.2m	4.8%
Lachlan	$30.9m	9.1%
Narromine	$16.2m	4.8%
Parkes	$9.6m	2.9%
Warren	$27.0m	8.0%
Warrumbungle Shire	$88.5m	26.2%
Weddin	$7.2m	2.1%
Total	**$338.4m**	**100%**

Distribution of wool production by LGA

LGA	Gross value of production ($m)	% share of CWSP wool
Bogan	$15.7m	8.2%
Coonamble	$11.8m	6.1%
Dubbo Regional	$31.7m	16.5%
Forbes	$17.1m	8.9%
Gilgandra	$11.9m	6.2%
Lachlan	$25.5m	13.3%
Narromine	$11.0m	5.7%
Parkes	$19.1m	9.9%
Warren	$13.4m	7.0%
Warrumbungle Shire	$18.6m	9.7%
Weddin	$16.0m	8.3%
Total	**$191.7m**	**100%**

Distribution of dairy production by LGA

LGA	Gross value of production ($m)	% share of CT hay
Coonamble	$0.9m	2.8%
Dubbo Regional	$7.3m	21.5%
Forbes	$18.0m	53.2%
Gilgandra	$1.3m	3.9%
Lachlan	$2.4m	7.2%
Narromine	$0.4m	1.1%
Parkes	$2.2m	6.4%
Warren	$0.5m	1.5%
Warrumbungle Shire	$0.3m	0.9%
Weddin	$0.5m	1.6%
Total	**$33.9m**	**100%**

Distribution of vegetable production by LGA

LGA	Gross value of production ($m)	% share of CT dairy
Dubbo Regional	$1.5m	9.6%
Forbes	$0.8m	5.0%
Lachlan	$12.6m	80.4%
Parkes	$0.7m	4.5%
Warren	$0.0m	0.0%
Weddin	$0.0m	0.1%
Total	**$15.7m**	**100%**

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