



Agriculture Industry Snapshot for Planning Western Plains Sub Region

August 2020

The value of agricultural production in the Western Plains Sub Region (WP) was over \$355m from broadacre cropping, livestock for meat and wool. (ABS 2015/16). The WP is expansive and sparsely populated, being 128,650 km² with 15,000 people. However, it produced \$196m of GVP from broadacre crops, \$105m from beef and lamb and \$46m from wool. Agriculture and agricultural product manufacturing employ a large percentage of people across the Western Plains (ABS 2015/16).

The Western Plains has the advantage of landscapes and climate that supports broadacre cropping and livestock production. The Sub Region must manage challenges of a dispersed population and large distances from markets and climatic extremes. Despite these challenges, the Western Plains has potential to grow and continue to support the profitable agricultural sector that helps underpin the Western Plains Sub Region 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 Western Plains Sub Region 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 Western Plains Sub Region's 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 Far West 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 Western Plains Sub Region

Agriculture is a key industry for the Western Plains economically and for the scenic and environmental qualities of the rural lands where agriculture is undertaken. The area is particularly important for beef, sheep and wool, horticulture, and cropping.

The Sub Region is 128,650 km² in area and incorporates land in the Barwon, Macquarie, Warrego and Darling river systems: Bourke, Brewarrina, Cobar and Walgett Shire Councils.

Industry	Gross Value of Production (\$)	% share of WP total	Number of businesses	% share of NSW
Broadacre crops	\$196.7m	55.3%	172	3.9%
Beef	\$66.3m	18.6%	339	2.6
Sheep meat	\$39.3m	11.1%	381	5.4%
Wool	\$46.5m	13.1%		4.9%
Hay	\$2.6m	0.7%	26	0.8%
Goat meat	\$1.1m	0.3%	43	16.5%
All other agriculture	\$4.1m	0.7%		0.09%
Total	\$1,772.9m	100%		2.7%

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

In 2015-16, broadacre crops was the dominant industry in terms of GVP, contributing \$196 million (ABS), being 55% of the Western Plains GVP and 3.92% of NSW GVP. The Sub Region also produced \$46 million from wool, 7.83% of NSW's production, and 13% of NSW's beef and lamb (ABS, 2016).

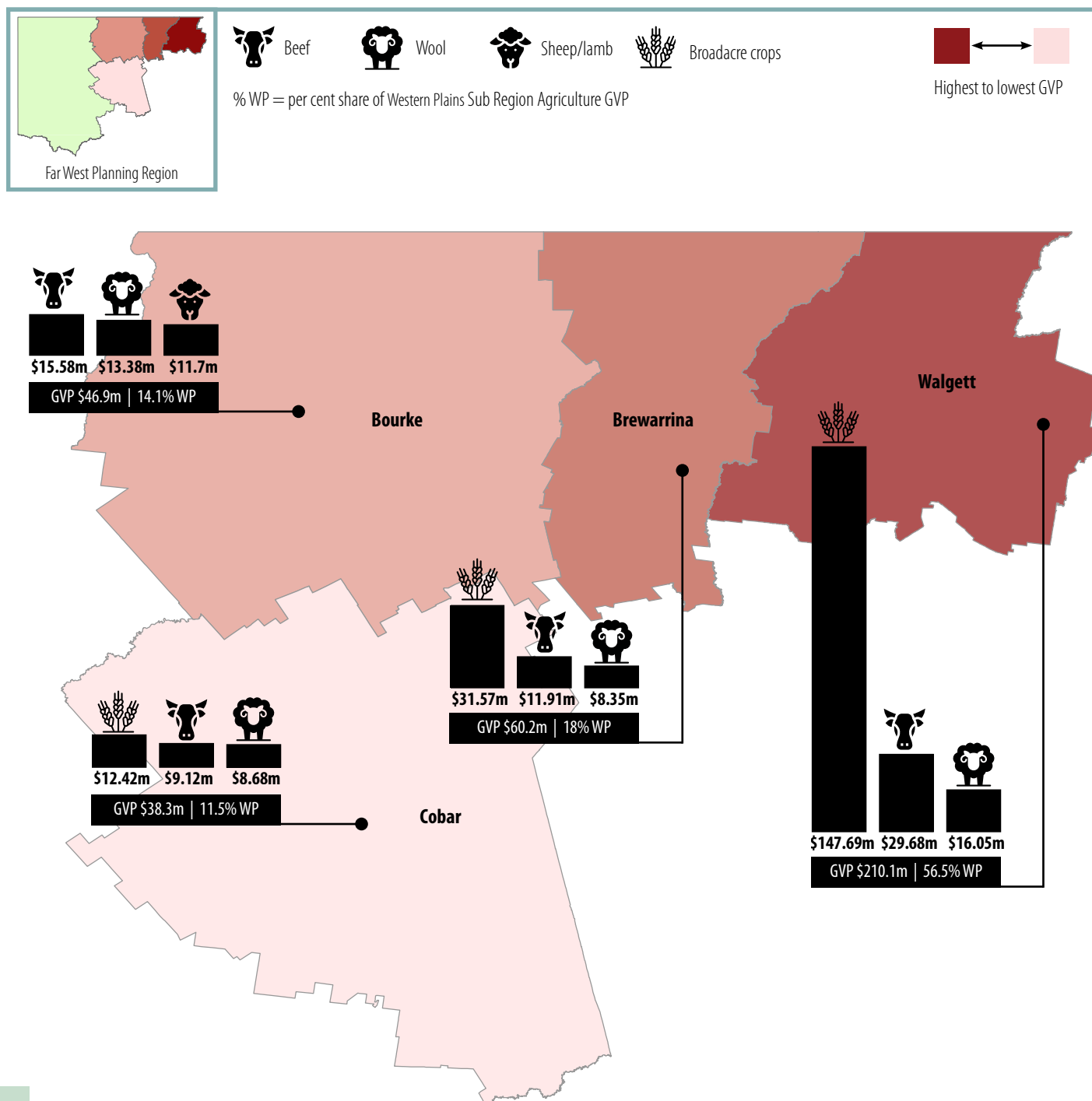
Goat production had a GVP of \$1.1m in 2015/16. This is considered to be a low estimate of the value of this industry. However, the industry has since grown with national goatmeat exports valued at \$235.7m in 2019, up 29% on 2018 (MLA, 2020).

Employment

Agriculture employs over 885 people across the Western Plains Sub Region (ABS, 2015/16). The biggest employer is sheep, cattle and grain farming (78.5%). The LGAs with the highest agriculture employment are Walgett (59.7%) and Cobar (25.4%) 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.

Local government distribution

The following map shows the local government areas (LGA's) in the region and agricultural GVP. The Western Plains also supports a broad range of related businesses such as agricultural suppliers, advisory services, processing, retail, transport, logistics and warehousing.





Agricultural highlights of the Western Plains Sub Region

This section highlights the prominent industries for the Western Plains.



Broadacre crops

The production of both irrigated and dryland cotton lint is the highest value cropping system in the Sub Region. It is largely due to production in the Walgett Shire, where it is primarily under irrigation although dryland cotton is grown in favourable conditions. Cotton is also grown in the Brewarrina and Bourke LGAs under irrigation on the Darling River system. Walgett also grows a variety of other dryland crops that include wheat, with chickpeas and faba beans becoming more important in addition to cereal grains. Forage sorghum is also produced in the area as is hay (highest GVP is in Walgett LGA). The majority of hay produced in the Sub Region is derived from cereal crops, which indicates the reliance on rainfall, or irrigation. The production of hay also underpins associated livestock enterprises on-farm.

Soil type and associated water-holding capacity are key elements to successful cropping in the Western Plains. Grains Research Development Corporation (GRDC) (2019) showed that the cropping regime in Walgett LGA emphasises the role of zero till and controlled traffic, along with land cover crops as essential to more successful crop growth. The availability of water for dryland and irrigated cropping is key to being able to grow the variety of crops in the area.

Climate change and ongoing variability will be an ongoing adaptation challenge for the industry. Growers make the most of the paddock environment and encourage conditions to maximise water storage and management in the soil. (Morvenvale, 2020 blog, GRDC 2013) Technology and knowledge of cropping systems, water holding capacity, management of soils to retain water, and crop types and varieties are key areas required to be able to crop in this area.

Industry requirements

Reliable transport networks are important to move crop product from farms to silos and onto ports, and inputs such as labour, seed, machinery etc. Broadacre cropping also relies on large tracts of land to deal with modern machinery and achieve economies of scale. Grain and oilseed production is the basis for many other agricultural and secondary industries in the Western Plains Sub Region and beyond. Improving technologies are increasing the ability of the industry to deal with both climate and market changes.



Livestock production - beef, lamb and wool

The grazing of sheep and cattle are the main livestock enterprises conducted in this Sub Region. Wool and meat production on the rangelands known as the 'pastoral zone' relies on native grasslands and shrublands. The enterprises are highly variable in response to the variability in climate especially rainfall, soil moisture and native vegetation type. There has been a shift from wool sheep to meat sheep in recent times (principally Dorpers and managed goats) (URS, 2015). There has also been a modest increase in the number of cattle grazed in the Sub Region. This has been noted as an important way in sustaining grazing businesses in the Western Division as a whole (URS, 2015).

The grazing pressure of livestock and other pressures from non-domestic grazing animals (kangaroos, goats, rabbits) contribute to stock density and vegetation management issues.

Kangaroos in particular have a major impact on pasture management and production. Currently the commercial kangaroo industry that assists in managing kangaroo populations is also uneconomic due to processing and demand (WRI, 2016) making it more difficult for producers to manage. Wild dog predation also requires careful management to avoid major production losses.

Meat and fibre production have competitive advantages due to expansive areas and the warm dry climate, which decrease disease susceptibility resulting in lower chemical use. This also provides opportunity for regional branding for organic or 'rangeland' production (WRI, 2016). The Walgett LGA also supports a number of smaller sheep and cattle feedlots that support the finishing of stock, utilising local grain production.

Industry requirements

The livestock industry needs unconstrained land with access to transport links and reliable water supply. Graziers also need ability to manage pest species on farm to reduce competition for pasture. Value adding opportunities are limited in the Sub Region but need to be maintained to capitalise on locational advantages of rangeland production that result in market demand.



Rangeland goats

Goat meat production is a growing industry in the Bourke and Cobar local government areas as well as the Far West Sub Region. More than 95% of goat meat in Australia is exported, with NSW significantly contributing to the processing in other states and national export. Goat prices have been stable due to strong export demand hence contributing to the growth of this industry. The Meat and Livestock Association's (MLA) goat meat supply trends report (February 2019) using 2017/18 data showed that the largest goat supply came from the National Livestock Identification System (NLIS) areas around Broken Hill as well as Bourke and Cobar (that are in the Western Plains Sub Region). Producers in these areas predominantly operate harvest enterprises, capturing goats from the wild population. DPI (2018) reported the farm gate value of the rangeland goat industry has increased to an estimated \$102m in the 2016 calendar year that includes the Far West Sub Region, and the adjacent Western Plains Sub Region. The Western Research Institute estimated the value of the industry in the Far West Region was \$64.96m in goat sales in 2016, so this indicates that about \$35m from the Western Plains Sub Region.

In a survey of producers conducted during 2017, only 20% of producers in these areas reported operating a managed or semi managed enterprise.

The MLA reported that about half the goats supplied for processing from NSW entered the meat supply chain through a depot (central wholesaling), and the other half were directly to abattoirs. Less than 1% were sourced through saleyards. DPI figures indicated that there was a 20% reduction in goat abundance between 2016/17 and 2017/18 (DPI, 2018). 50% of NSW goats produced in that financial year were processed in Victorian abattoirs, with 30% processed in Queensland. The rest were processed in both NSW and South Australia. It is reported that 73,982 goats were processed in NSW during the 2019/2020 FY (Information supplied to DPI from Department of Agriculture, 2020).

This proportion may have changed with the opening of the new Bourke Small Stock Abattoir in early 2019, and the prevailing drought reducing numbers of rangeland goats and other small stock that has seen the Bourke abattoir temporarily close in mid 2019.

The Department of Primary Industries considers that the goat meat industry is more advanced in its supply chain and market development, and now supports the industry's transition to an activity managed production system. This will also assist to improve resource management across the rangelands particularly in managing total grazing pressure and issues associated with vegetation decline, native animal decline, erosion. There are currently a number of projects that seek to improve data and supply forecasting, on farm productivity and grazing management in the goat industry that DPI and other collaborators are contributing to collection of data.

Both Cobar and Bourke Shires recognise the value of the goat meat industry to their areas. The Cobar Local Strategic Planning Statement (2020) also notes that goat depot development and ancillary transport services play a future role in the expansion of the goat industry in the Shire.

Locational requirements are similar to those of other livestock industries.



Western Plains assets for Agriculture

Competitive strengths of the Sub Region include:

- The scale, diversity and productivity of agricultural lands.
- Water supply provided by the Barwon-Darling and Macquarie river systems.
- Carbon farming opportunities.
- Good road transport networks with the Mitchell, Kamilaroi, Castlereagh and Barrier Highways providing the main access in and out of the Sub Region, linking with other regions and towns such as Dubbo and Griffith.
- The rail network connecting Cobar with Dubbo and Walgett to Narrabri link in the north west.



Supporting industries and infrastructure

The Western Plains has a comprehensive range of support services and infrastructure, processors, transport and logistics, professional services and farm supplies. 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.



Value-adding industries

- Darling River Meats located at North Bourke is a recently opened small stock multi species abattoir.
- There are also two cotton gins in Bourke - one operated by Namoi Cotton and the other Northy Cotton Gin is owned by Bengerang Ltd.
- Walgett, Cryon, Merrywinebar and Burren Junction also have Graincorp silo facilities. Grainflow also has a grain storage and handling facility located in the Walgett area.



Biophysical characteristics

The Walgett, Bourke and Brewarrina Shires are predominantly in the Darling Riverine Plains bioregion that consists of flat alluvial land comprising a drainage system with current and former river channel and floodplain features (National Parks and Wildlife Service 2003, Department of Planning, Industry and Environment website). Sandy soils are found along older stream beds and locally derived dunes. Texture contrast soils are found on the margins and the plains are dominated by clay soils. Hindle et al (2000) identified the highly agriculturally valuable lands are present in the Walgett Shire and contribute to an important agricultural land resource.

To the north and north west of Bourke is the Mulga lands bioregion consisting of horizontal cretaceous sandstones and claystones with more recent silcrete deposits and alluvial fans of the Paroo and Warrego river systems. The plateau and tablelands of these formations have shallow stony red brown loams with texture contrast soils downslope. In areas of sandstone there are red earths and siliceous sands. The alluvial areas include grey and brown cracking clays with sand deposition. The main vegetation consists of mulga communities that are used for rangeland grazing.

Cobar LGA is predominantly on the Cobar Penplain that also borders the Darling Riverine Floodplain to the north into Bourke LGA (Department of Planning, Industry and Environment website). It is described as a low undulating plain with rolling down and flat plains punctuated by stony ridges and ranges. The soils are described as shallow red soils and aeolian sands. The bioregion has been modified with grazing resulting in woody weed encroachment, and reduced grazing potential. There is a small area of Brigalow Belt South that intrudes into small parts of the far north of the Walgett and Brewarrina Shires. The region contains a number of rivers that traverse these areas. The Gwydir River joins the Barwon above Collarenebri in the northern part of the Walgett Shire. The Namoi River joins the Barwon River at Walgett, with the Macquarie River joining that Barwon River to the south western part of the Walgett LGA. The Bogan and Culgoa Rivers join the Barwon above Bourke to become the Darling River (Murray Darling Basin Authority).



Climate

Bourke and Cobar LGAs are in the Western NSW regional weather district (BOM, 2019) and have a hot semi-arid climate, with an average annual rainfall total of 295.3mm at Bourke and 388.8mm average annual rainfall at Cobar. The western part of the Brewarrina Shire also is included in this description.

The Western NSW region weather and climate guide (2019) shows over the last 30 years that the area is:

- having relatively stable annual rainfall
- dry years have occurred nine times and wet year 10 times
- monthly rainfall distribution has changed but no consistent pattern in the area
- rainfall is unreliable year around
- Bourke is noted as having more rainfall in June, November and December but with decreases in January, March and August over the last 30 years
- temperatures have also increased in summer, with more days consecutively over 42 degrees, with evaporation also increasing in January and February.

The eastern part of the Brewarrina LGA and Walgett LGA are in the North West climatic region. The average annual rainfall is 409.9mm at Brewarrina. Walgett has a significantly higher rainfall at 477.1mm average per annum. The BOM regional weather and climate guide for the last 30 years note that:

- rainfall has decreased in autumn and spring
- summer rainfall is more reliable
- an autumn break occurs in late May (for Walgett)
- spring frost are more common and occurring later
- there have been more hot days and more consecutive days over 38 degrees.



Challenges for agriculture in the Western Plains Sub Region

Challenges for agriculture are connected to climate change, biosecurity, commodity prices and access to markets outside the region.

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



Climate change

The Western 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 and agricultural/horticultural industries. Rainfall is projected to decrease over spring by 2030 but is expected to increase in autumn by 2030. Across the Western Plains summer rainfall is expected to increase by 2030 and 2070. Climate models indicate both wetter and drier scenarios for annual rainfall with the range of change -13% to +17% by 2030 and -12% to +17%.

Severe fire weather is projected to increase in the Sub-region by 2030 mainly in summer and spring (NSW Office of Environment and Heritage, 2014). These changes will have implications for animal and plant agricultural systems, particularly as temperature increases.

Drought conditions directly affect dryland crops and reduce water availability for irrigation. The WP 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.



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 rangelands, 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.



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. Further detail can be found in the [NSW Government Right to Farm Policy](#).





Opportunities for agriculture in the Western Plains Sub Region

Agriculture supports a supply chain that generates substantial productivity and employment across local, regional and national scales. The Far West Regional Plan 2036 sets out a range of actions that Councils can implement to encourage diversification, investment in freight and logistics and value adding. This section identifies the practical land use planning approaches and opportunities for agriculture and some planning considerations to help implement them.



Diversification and value-adding

The Far West Regional Plan 2036 identifies the need for diversification and expansion of agricultural commodities and value-adding. Access to transport links to Parkes, Dubbo and subsequently Sydney, Port Kembla and Newcastle are important to maximise opportunities.

Carbon farming is also becoming a significant land use in the Bourke and Cobar LGAs. More than 200 registrations exist that promote the sequestration of carbon by regeneration of native vegetation. By reforestation through native seed growth and rootstock regeneration by the removal of grazing, the landholders receive carbon payments through a long term agreement. It often results in destocking, with an opportunistic time for some grazing in some of the agreements. The Carbon agreements are with the Commonwealth Government. This provides an alternative income for landholders especially in areas of where grazing potential is limited by woody weed occurrence. (Western Local Land Services website).

Recently, applications for carbon farming projects through Crown Lands administration have slowed down primarily because the price of carbon credits has fallen. From the 120 applications approved since 2014 all have been in Cobar and Bourke LGA. The reason being is that on Western Lands leases there are still only two approved carbon farming methodologies that can be applied and these are suited to the woody vegetation in those LGAs. All carbon farming projects require the consent of the Minister (as owner of the land) to the carbon farming project before they are registered on title. The department does alter the lease conditions of every affected lease to reflect the existence of the project and that all liabilities rest with the leaseholder not the Crown but it leaves the purpose as grazing as the leaseholder can still graze these areas. (S. Hawke, pers com).

Agriculturally based tourism is also highlighted as a key diversification of agribusiness in the Bourke and Brewarrina areas (Bourke LSPS, 2019 and Brewarrina LSPS, 2020). Experiential tourism and farm stay accommodation are areas that are identified as being areas of potential growth in these shire areas.

Planning levers for diversification and value adding

- Review local plans to remove barriers to diversification and the location of value adding industries.
- Promote and encourage co-location of advanced and related value-added industries to reduce impacts on the supply chain and minimise land use conflict.
- Encourage and facilitate investment in value added manufacturing industries and the agricultural supply chain by critical infrastructure and development from incompatible development.
- 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.

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 sets out the framework and expectations for preparation of local land use strategies in the Sub Region. 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 such as lifestyle subdivision and housing.

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](#).

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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