SUMMARY

DRAFT NORTH CENTRAL VICTORIA REGIONAL SUSTAINABLE AGRICULTURE STRATEGY

Purpose: Productive farming whilst protecting the natural resource base.

Environmental improvement  Profitable and productive agriculture  Enhanced social capacity  Climate change resilience
Introduction

Agriculture in north central Victoria continues to undergo rapid change. This is due to factors that include:

- increasingly variable climate
- declining soil health
- water reform and irrigation modernisation
- technological advances
- consumer demand for quality food, organic product, and high animal welfare standards.

The timing of the release of this draft Strategy coincides with high commodity prices, increasing demand for product, an unprecedented level of interest in investing in Australian agriculture, and a buoyant Victorian agricultural community that is positive about its future.

The Strategy draws on the experiences and feedback of hundreds of land managers who have participated in sustainable agriculture programs in north central Victoria over the past ten years. Experienced practitioners, both from private industry and government programs, have also contributed in providing well-rounded perspectives.

The Strategy aims to strengthen the future of agriculture by being able to 'achieve land protection and secure the natural resource base by increasing the adoption of sustainable agricultural practices'.

Sustainable agriculture

'Sustainable agriculture' means different things to different people. The Strategy describes, but does not define, sustainable agriculture. It advocates farming for Australian conditions in order to move towards greater sustainability. The natural resource base includes major assets such as vegetation, soil, and water. To be sustainable an agricultural system must be ecologically healthy.

Moving towards greater sustainable agriculture requires our region’s land managers to collectively reconsider current practices. Rethinking our agricultural practices requires us to consider the constraints that could prohibit us from a long-term sustainable future. It is vital to talk with land managers in order to understand what is important to them for the long-term health of the environment and for the benefit of current and future generations.

Practices that degrade the natural resource base and cause off-site impacts need to be mitigated so that we enhance our local environment and regenerate our agriculture.
**Community capacity**

This Strategy is founded on the principle that given appropriate support the community has the capacity and is prepared to make the hard decisions necessary to achieve a more sustainable future. Actions identified within this Strategy are designed to lead to improved agricultural sustainability that will benefit land managers, agricultural industries, rural communities, consumers, and the natural environment.

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**Project Steering Committee’s Vision**

‘The Strategy provides a framework for achieving a fully functioning regional agricultural sector driven by a healthy, knowledgeable and capable farming community. It will help secure the future of agricultural lands and protection of the natural resource base on which agriculture depends. It will result in healthy soils, increasing food security, improved agricultural enterprise viability, and grow the region’s contribution to the economic output of Australia’s agriculture.’
A Framework for increasing the adoption of sustainable agriculture practices

Each person’s journey to sustainable agriculture is different. The path can best be determined by asking: ‘Where am I currently in terms of sustainable agriculture and can I do better?’ Farming is a complex business. There are four key considerations which guide the answers to this question:

• Is the farm suitably productive over the long-term to generate wealth and be economically viable?
• Are the farming practices environmentally sound by enhancing the natural resource base and minimising off-site impacts?
• Are the farming practices socially acceptable and do we have adequate social capacity and knowledge?
• Will the farm be resilient to variable climatic conditions and change whilst maintaining productive capacity?

This Strategy’s adopts a framework that any individual land manager can use to help determine their progress along the continuum to sustainable agriculture (see Figure 2).

Figure 2. The Regional Sustainable Agriculture Strategy’s Framework
The Strategy encourages land managers to ask themselves: ‘Where am I currently in terms of sustainable agriculture and can I do better?’

**Sustainable agriculture scenarios**

An individual’s journey towards achieving their definition of sustainable agriculture will differ in both the approach taken and the timeframe. The ongoing change required to achieve sustainable agriculture comprises three levels of magnitude.

1. **Paradigm shift:** farming for Australian conditions
   - This involves significant change to traditional farming practices (i.e. a move away from high input cropping and grazing system to a low input grazing system based on native grasses).

2. **A mid-level change:** farming towards sustainability
   - This involves moderate changes and a targeted approach to address priority issues (i.e. increasing soil carbon through sub-soil manuring).

3. **Incremental change:** adapting farming systems
   - This involves making small changes and allows for adaptation to uncontrollable influences (i.e. climate change, commodity price) but the risk to sustainable agriculture can still occur (e.g. soil loss).

The Strategy recognises each farmer will decide on their own journey.

**Constraints to sustainable agriculture**

The pursuit of sustainable agriculture requires an understanding of the constraints or threats confronting land managers. How land managers are affected by these constraints depends largely on their enterprise mix, their approach to managing risk, their debt level, and access to information about mitigation options to lessen the potential impact.

Some of the constraints are out of the control of land managers, but recognising them, and planning how to deal with them, is important to the viability of the region’s agriculture in the future. These include:

(a) Soil health
(b) Climate change
(c) Ageing land manager population
(d) Markets
(e) Energy and fertiliser deficits
(f) Water availability and quality
(g) Farm business planning and debt
(h) Ready access to technology.

**Understanding land managers**

Eighty seven per cent of the region is privately owned, so improving the health of land, water and biodiversity in north central Victoria requires the cooperation of land managers. Achieving greater adoption of sustainable agricultural practices requires understanding the issues facing land managers, knowing the opportunities and challenges, and targeting the actions that will lead to practice change.

Undertaking a regular, repeatable and longitudinal survey will provide important qualitative and quantitative data on practice change.

2015 will be the benchmark survey year for the Strategy. To be truly representative of the region, the strategy must embody the directions and strategic intent of the key agricultural stakeholders:

- Land managers
- Industry and service providers (private and public)
- Agencies and departments
- Government: federal, state and local.

The survey will provide information on what land managers across 13% of the state are thinking and doing, providing unique opportunities for both the community and government.
North Central Victoria is agriculturally diverse. In 2012 the total area of agricultural production was 1.7 million ha. Broadacre cropping and mixed farming takes place on 87% of land used for agriculture (around 1.48 million ha). The gross value of agricultural production (GVAP) in North Central Victoria was around $1.4 billion in 2012 up from $1.1 billion in 2001.

Based on GVAP grain is the region’s largest sector, followed by dairy, livestock and the intensive animal industries. Wheat generated $166 million in 2012 or 15% of the value of the Victorian crop. In 2012 the dairy industry generated $316 million in gross value of milk, representing around 13% of the state’s gross value. Horticulture accounted for around 10% of the region’s GVAP in 2012.

**Table 1. GVAP of agricultural industries in North Central Victoria (2001 and 2012) and the farming area by industry (2012)**

<table>
<thead>
<tr>
<th>Industry</th>
<th>GVAP $M 2001</th>
<th>GVAP $M 2012</th>
<th>Area of farms ‘000 Ha 2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grains</td>
<td>348</td>
<td>368</td>
<td>723</td>
</tr>
<tr>
<td>Dairy</td>
<td>272</td>
<td>316</td>
<td>93</td>
</tr>
<tr>
<td>Cattle (beef)</td>
<td>125</td>
<td>136</td>
<td>190</td>
</tr>
<tr>
<td>Wool</td>
<td>83</td>
<td>121</td>
<td>562</td>
</tr>
<tr>
<td>Sheep (meat)</td>
<td>8</td>
<td>64</td>
<td>562</td>
</tr>
<tr>
<td>Fodder crops</td>
<td>65</td>
<td>82</td>
<td>121</td>
</tr>
<tr>
<td>Perennial horticulture</td>
<td>51</td>
<td>101</td>
<td>11</td>
</tr>
<tr>
<td>Annual horticulture</td>
<td>50</td>
<td>39</td>
<td>3</td>
</tr>
<tr>
<td>Intensive animals</td>
<td>114</td>
<td>166</td>
<td>&lt; 1000</td>
</tr>
<tr>
<td>Totals</td>
<td>1117</td>
<td>1393</td>
<td>1,700</td>
</tr>
</tbody>
</table>
Environmental stewardship

Re-establishing landscape vegetation connections between significant habitat is an important element of a sustainable agricultural future.

The region’s land managers are recognised as some of the most successful and innovative growers of food and fibre. They are also passionate about improving the condition of the natural resources on which they rely. Landcare was founded in the region in 1986 and there are now 160 Landcare groups across north central Victoria.

The region’s land managers are at the frontline of protecting and enhancing the region’s high priority natural assets by undertaking conservation activities such as no-till cropping, fencing out livestock from waterways and wetlands, planting cover crops, and integrating crop and pasture rotations. They are also leaving priority areas such as riparian zones and native grasslands to naturally regenerate. This protects biodiversity and makes these areas available for future generations to enjoy.

Many land managers are also moderating their use of nutrients, fertilizers, pesticides and insecticides. They are increasingly using soil tests and monitoring farming practices to inform how much, when and where to apply inputs. Not only does this reduce the impact of agriculture on the environment but is also a smarter use of resources that helps improve profitability.
Agriculture zones of North Central Victoria

For the purpose of this Strategy, the region is divided into four broad agricultural zones. The zoning recognises the main agricultural land uses so that land managers can be provided with information that is factual and relevant to each zone. Any actions undertaken can be tailored to meet the land and water management challenges and provide opportunities relevant to each zone.

Dryland Cropping Zone

- 76% of land used for dryland cropping (2012)
- Production levels and crop area remained steady
- Farm businesses increasing in size of holding and GVAP
- Cereals (wheat, barley, and oats) are the main crops
- Advances in wheat yield have slowed over past 15 years
- No-till and reduced tillage widely adopted reducing the risk of wind and water erosion.

Mixed Farming Zone

- 67% of land used for livestock grazing and 20% used for cropping (2012)
- Sheep numbers have decreased, but gross value of sheep meat has increased over last ten years
- Cattle numbers fell continuously during the extended dry period, but have since recovered
- Little consolidation of livestock farms. Range of farms by business size and area has changed little since 2001
- A marked increase in smaller beef farms (< 50 ha) in the highlands, including Daylesford and Kyneton areas.

Irrigated Farming Zone

- 46% of land is irrigated pasture and cropping. A further 38% mixed is irrigated farms (2012)
- Land managers deal with risk by opportunistic irrigation (availability, commodity price) and property amalgamation
- Dairying generates over 20% of the total GVAP in north central Victoria from 5% of the land area; and
- Uses 55% of the irrigation water in the region.
- Irrigated mixed farms (crops, fodder and pastures for grazing beef cattle and sheep) use 40% of the region’s irrigation water. These farms have contracted due to water trade. Significant areas of land are now dryland or are only opportunistically irrigated
- Perennial horticulture generates around 7% of the total GVAP in the region from 1% of the land area and approximately 5% of the irrigation water use.

Lifestyle Farming Zone

- 50% of land use is livestock grazing. Many farms are categorized as lifestyle grazing
- 10% of the zone is commercial forestry
- Native vegetation comprises 20% of the land area and is predominantly on public land
- 17% of land is classified as Infrastructure (roads, railways, buildings and urban areas).
North Central Regional Sustainable Agriculture Strategy actions

The Strategy provides a framework for progressing agricultural sustainability throughout the region. It proposes changes to regional agricultural practices that increase productivity, achieve environmental improvement, enhance social capacity and make farming systems more resilient to climate change.

Table 2 outlines the region’s natural resource assets, the pressures that agricultural practices put on the condition of these assets, and a range of strategic responses that may reduce the pressures.
### Table 2. Regional assets, pressures, state of NRM assets and possible strategic responses

<table>
<thead>
<tr>
<th>Regional Assets</th>
<th>Pressure</th>
<th>Impact</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land and Soils</td>
<td>Market forces, global competitiveness</td>
<td>Reduced GVAP and productivity from agriculture</td>
<td>Market adjustment by individual businesses with regard to scale, labour efficiency and succession based on a farm business plan. Increase productivity per ha, yields/quality/returns</td>
</tr>
<tr>
<td></td>
<td>Overgrazing</td>
<td>Reduced soil quality and increased erosion risk</td>
<td>Manage stocking levels to land capability and seasonal conditions, altering grazing regimes (shift towards more rotational / managed grazing)</td>
</tr>
<tr>
<td></td>
<td>Land use conflict – agriculture and residential / industry</td>
<td>Loss of ‘right to farm’</td>
<td>Ensure valuable agricultural land is protected and developed to its maximum agricultural potential</td>
</tr>
<tr>
<td>Dryland salinity and sodicity.</td>
<td></td>
<td>Reduced soil quality</td>
<td>Perennials on recharge areas and discharge area treatment (apply gypsum, maintain groundcover)</td>
</tr>
<tr>
<td>Wind &amp; water erosion of soils</td>
<td></td>
<td>Soil loss and declining fertility</td>
<td>Maintain ground cover, reduce tillage</td>
</tr>
<tr>
<td>Weeds - herbicide resistance in dryland cropping</td>
<td></td>
<td>Increased prevalence of weeds</td>
<td>Integrated weed management approach (multiple approaches to weed control)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Change cropping rotations if appropriate</td>
</tr>
<tr>
<td>Soil health including structure &amp; acidity</td>
<td></td>
<td>Reduced soil quality</td>
<td>Retain crop residues to improve soil carbon condition, apply appropriate ameliorants such as lime where economic. Carbon retained to hold water</td>
</tr>
<tr>
<td>Irrigation salinity &amp; sodicity</td>
<td></td>
<td>Reduced soil quality within irrigation districts</td>
<td>Irrigate low salinity class soils, revegetate discharge areas, Improve water use efficiency &amp; drainage, Irrigation application methods matched to crop and soil type.</td>
</tr>
<tr>
<td>Waterways, Floodplains and Wetlands</td>
<td>Rainfall runoff contains high sediments, nutrients or pollutants</td>
<td>Reduced water quality of rivers and wetlands</td>
<td>Implement current recommended practices to reduce water quality risks – buffers, reduce fertiliser, control soil erosion</td>
</tr>
<tr>
<td></td>
<td>Irrigation runoff contains high sediments, nutrients or pollutants</td>
<td>Reduced water quality of rivers and wetlands</td>
<td>Implement current recommended practice - tail water reuse, fencing off, appropriate fertiliser &amp; dairy effluent management. Ensure drains are managed for rainfall runoff only and not irrigation runoff discharge</td>
</tr>
<tr>
<td></td>
<td>Runoff - intensive animal industry</td>
<td>Reduced water quality of rivers and wetlands</td>
<td>Implement current recommended practice - surface water runoff capture &amp; reuse etc</td>
</tr>
<tr>
<td></td>
<td>Inappropriate structures/ earth moving on floodplain/drains</td>
<td>Altered flooding and drainage patterns</td>
<td>Ensure compliance with floodplain management strategies</td>
</tr>
</tbody>
</table>
The 2012 gross value of agricultural production in North Central Victoria was around $1.4 billion

<table>
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<tr>
<th>Regional Assets</th>
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<th>Impact</th>
<th>Responses</th>
</tr>
</thead>
</table>
| Consumptive water available for irrigation | Market forces, water trade removing water from less profitable industries | Reduced GVAP, profitability and productivity from irrigated agriculture | Market adjustment by individual businesses with regard to scale, water and labour efficiency, succession  
Lift productivity per megalitre use (water use efficiency)  
Upgrade irrigation services – public supply system & on-farm |
| Agricultural livestock and crop health  | Agricultural: pest and diseases                                           | Reduced biosecurity status; Reduced animal and crop health; loss of export markets | Biosecurity controls; Surveillance; Control programs, Biosecurity education on farm.                                                                                                                                                                                                                                             |
| Natural biodiversity                    | Natural environment: pest plants and animals                              | Decline of bioregions due to pest plants or pest animals from agriculture | Monitoring and control of pest plants and animals, listed species                                                                                                                                                                                                                                                                       |
|                                         | Fragmentation of biodiversity                                            | Decline in biodiversity resilience                                     | Re-establish landscape vegetation connections between significant habitat                                                                                                                                                                                                                                                                |
|                                         | Inappropriate clearing                                                  | Decline in the area and extent of native vegetation                   | Awareness of landholder obligations. Compliance.                                                                                                                                                                                                                                                                                      |
| Atmosphere                              | High greenhouse gas emissions                                            | Climate change - lower winter rainfall / irrigation allocations, higher temperatures, higher fire risk & more extreme weather events | Reduce emissions  
Mitigate impacts through improving water use efficiency for both dryland and irrigated agriculture, shade & shelter for livestock. Capture CO₂ in carbon farming; Adaptation to new climate, improve nitrogen use efficiency |
|                                         | Odour from intensive animal industries                                  | Increase in land use conflicts due to odour                            | Current recommended practices to reduce odour. Ensure appropriate siting of intensive animal industries and rural residential areas                                                                                                                                                                                                 |
| People in agriculture                   | Profitability, wages, skills, labour efficiency, succession, young farmers | Change in the profile of people in agriculture                         | Skills and training programs. Farmer health & safety programs, support services, infrastructure. Low interest rate loans to encourage young farmers |
This North Central Victoria Regional Sustainable Agriculture Strategy is an initiative of the North Central Catchment Management Authority (CMA) in partnership with the region’s agricultural community and is supported by the Victorian Department of Economic Development, Jobs, Transport and Resources.

The Draft North Central Regional Sustainable Agriculture Strategy is open for public comment until Monday 14 September.

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