Trends in Irrigation Development on the Murray and Lower Darling (Baaka) River Systems
We acknowledge the First Peoples of the Millewa-Mallee, the Latji Latji and Ngintait as the Traditional Owners and Custodians of the Country we are on today. We pay our respects to Elders past and present of the First Peoples of Millewa-Mallee, and the ancient connection they hold with their Country.
Who and what?

- Community organisation (not-for-profit)
- Mapping irrigated land use data since 1997 (continuous)
- Utilised by land and water managers including:
  - Irrigators, industry groups, local, state and federal government agencies/bodies, educational institutions, other interested parties
  - Informs decision-making and complements other studies
- This study commissioned by MDBA to compile irrigated land use data:
  - from 2003 to 2021
  - for the Lower Murray-Darling region of Vic, NSW and SA
Study Areas

Phase 1: 2003-2021 (VIC/NSW/SA)

Phase 2: 2021 (VIC/NSW)
The journey...
1887: Mildura
1890: Curlwaa
1909/10: Merbein, Pomona
1920's: Coomealla, Nyah, RedCliffs
1947: Euston, Robinvale
1997 irrigation area: 92,600 ha
2003 irrigation area: 106,800 ha
Irrigation development 2003 to 2021
VIC/NSW/SA

2003 irrigation areas: 194,715 ha

2009 irrigation area: 225,740 ha (+31,025 ha)

2015 irrigation area: 232,810 ha (+7,070 ha)

2021 irrigation areas: 243,605 ha (+10,795 ha)

13,610 ha retired 2018-21
For the LMD (Phase 1) study area ...

- Irrigation footprint expanded by 25% (+48,890 ha):
  - from 194,715 ha in 2003 to 243,605 ha in 2021
- Permanent plantings increased (net) by 37% from 2003-2021 (+35,575 ha)
- Seasonal plantings decreased (net) by 34% from 2003-2021 (-26,285 ha)
- Most irrigated horticulture is located in Victoria (42%)

- Each state experienced highest growth at different times
- Highest average annual growth rate (permanent plantings) was in Victoria (2003-09)
For the LMD (Phase 1) study area ...

Permanent plantings:

- Highest growth period was 2018-2021
- Drip irrigation was dominant 2003-2021
- Almonds were dominant in 2021, replacing wine grapes

Seasonal plantings:

- Highest net decrease in growth period was 2003-2009
- Overhead irrigation was dominant in 2021, replacing surface irrigation
- Field crops (e.g. fodder, pasture, cotton*) remained dominant over vegetables 2003-2021
Net change in permanent plantings

2003-2009: +15,285 ha
- almonds
- olives

2009-2012: -1,330 ha
- table grapes
- almonds
- wine grapes
- olives

2012-2015: -1,420 ha
- table grapes
- almonds
- wine grapes
- citrus

2015-2018: +11,095 ha
- almonds
- table grapes
- wine grapes
- stone fruit

2018-2021: +11,945 ha
- almonds
- table grapes
- wine grapes
- stone fruit
- dried grapes
516% increase (37,815 ha) in almond plantings, from 7,330 to 45,145 ha
179% increase (2,890 ha) in olive tree plantings, from 1,615 to 4,505 ha
66% increase (5,100 ha) in table grape plantings, from 7,720 to 12,820 ha
43% decrease (26,755 ha) in field crops, from 62,815 to 36,060 ha
16% decrease (8,235 ha) in wine grape plantings, from 51,850 to 43,615 ha
49% decrease (3,095 ha) in dried grape plantings, from 6,360 to 3,265 ha
-535% increase (22,250 ha) in almond plantings, from 4,155 to 26,405 ha
-396% increase (2,990 ha) in olive plantings, from 755 to 3,745 ha
-78% (4,690 ha) increase in table grape plantings, from 6,010 to 10,700 ha
-50% (2,465 ha) decrease in dried grape plantings, from 4,920 to 2,455 ha
-46% (7,045 ha) decrease in wine grape plantings, from 15,410 to 8,365 ha
- **29,100%** increase (7,275 ha) in almond plantings, from 25 to 7,300 ha

- **13%** increase (805 ha) in wine grape plantings, from 6,160 to 6,965 ha

- **72%** decrease (23,960 ha) in field crops (summer/winter) from 33,240 to 9,280 ha

- **43%** decrease (510 ha) in dried grape plantings, from 1,200 to 690 ha
- 263% increase (8,290 ha) in almond plantings, from 3,150 to 11,440 ha
- 35% increase (2,115 ha) in vegetable crops, from 6,000 to 8,115 ha
- 65% decrease (1,010 ha) in stone fruit plantings, from 1,565 to 555 ha
- 26% decrease (3,515 ha) in field crops, from 13,705 to 10,190 ha
- 7% decrease (1,995 ha) in wine grape plantings, from 30,280 to 28,285 ha
Irrigation methods (LMD)

Permanent plantings

- Dripers have increased in dominance since 2003
- All other irrigation methods have declined
- Trend consistent across all states

Seasonal plantings

- Overhead sprinklers now dominant (replaced surface in 2021)
- Some variances between states
Land use change

2009
Mallee dryland paddock

Same site in 2021
Irrigated horticulture
Irrigation growth (LMD)

- Permanent
- Seasonal
- Vacant P
- Vacant S
Distribution of land use

2003

Permanent: 49%
Seasonal: 39%
Vacant P: 1%
Vacant S: 10%

2021

Permanent: 54%
Seasonal: 21%
Vacant P: 6%
Vacant S: 19%
Irrigation growth trends (states)

Permanent plantings

VIC: 58% increase
NSW: 68% increase
SA: 10% increase
Irrigation growth trends (states)

Seasonal plantings

VIC: 5% decrease
NSW: 70% decrease
SA: 7% decrease
## Irrigation footprint

### From 2018 to 2021:

<table>
<thead>
<tr>
<th>Region</th>
<th>Change</th>
<th>Expansion</th>
<th>Retired</th>
<th>Net change</th>
</tr>
</thead>
<tbody>
<tr>
<td>LMD Vic</td>
<td>+3%</td>
<td>+3,310 ha</td>
<td>-535 ha</td>
<td>+2,775 ha</td>
</tr>
<tr>
<td>LMD NSW</td>
<td>-15%</td>
<td>+5,480 ha</td>
<td>-13,960 ha</td>
<td>-8,480 ha</td>
</tr>
<tr>
<td>LMD SA</td>
<td>+3%</td>
<td>+3,170 ha</td>
<td>-270 ha</td>
<td>+2,900 ha</td>
</tr>
<tr>
<td>LMD total</td>
<td>-1%</td>
<td>+11,960 ha</td>
<td>-14,765 ha</td>
<td>-2,805 ha</td>
</tr>
</tbody>
</table>
Permanent plantings from 2003 to 2021

Average ha/year:

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>LMD VIC</td>
<td>+2,515</td>
<td>-117</td>
<td>+57</td>
<td>+1,455</td>
<td>+1,158</td>
<td>+1,264</td>
</tr>
<tr>
<td>LMD NSW</td>
<td>+106</td>
<td>-38</td>
<td>-135</td>
<td>+893</td>
<td>+1,842</td>
<td>+462</td>
</tr>
<tr>
<td>LMD SA</td>
<td>-73</td>
<td>-288</td>
<td>-395</td>
<td>+1,350</td>
<td>+982</td>
<td>+250</td>
</tr>
<tr>
<td>LMD total</td>
<td>+2,548</td>
<td>-443</td>
<td>-473</td>
<td>+3,698</td>
<td>+3,982</td>
<td>+1,976</td>
</tr>
</tbody>
</table>
In the Lower Murray-Darling region:

- Irrigated horticulture
- Permanent plantings
- Seasonal plantings

Permanent plantings:

- Highest growth period
- Dominant irrigation method
- Dominant crop

Seasonal plantings:

- Highest net decrease period
- Dominant irrigation method
- Dominant crop

- Each state experienced highest growth rates at different times
- Ongoing mapping of irrigation land use data supports decision-making now and in the future

2018-2021
Drip
Almonds (winegrapes)

2003-2009
Overhead (surface)
Field crops
More information

For the full report:
**Phase 1 report: Irrigated crop area data for the Lower Murray-Darling 2003 to 2021** ([mdba.gov.au](http://mdba.gov.au))

For mapping requirements:

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To support ongoing data collection by community organisations, informing policy and decision-making:

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