Department of Primary Industries and Regional Development



Protect Grow Innovate

# Horticulture and greenhouse gas emissions

The Western Australian horticulture industry generated an annual gross value of about \$1.6 billion in 2021-22.

Emissions from the horticulture industry are low compared to WA's other major agricultural industries, so becoming carbon neutral is more feasible.

# 2020 horticulture industry snapshot

Total emissions from the horticulture industry were estimated to be around 0.10 Mt  $CO_2e$  in 2020.

Major emissions sources include energy use (46%), agricultural soils (21%), urea (8%), liming (14%), and indirect emissions from fertilisers (9%) and chemicals (2%).



Estimated emissions from WA's horticulture industry by source in 2020

# **Mitigation challenges**

Horticulture is already exposed to market pressures to reduce the emissions associated with its products. Challenges include:

- resources to support industries to verify emissions assessments to respond to market pressures
- the costs associated with water use efficiency, irrigation and electrification will take time and investment
- low soil carbon sequestration potential due to low clay and organic matter on Swan Coastal Plain.

# Horticulture industry emission sources

Emissions are classified as Scope 1,2 and 3. The scopes are:

**Scope 1:** All emissions on-farm from horticulture production.

- Scope 2: Emissions from electricity.
- **Scope 3:** Emissions associated with producing inputs, both pre-farm and post-farm.



2020 estimated emissions from the horticulture industry \*Only pre-farm scope 3 emissions are included here.

# DPIRD horticulture emission research priorities

- Providing detailed industry-level life-cycle analyses for annual and perennial horticultural produce.
- Economic analysis of return on investment for energy efficiency small engines for irrigation and heating/cooling systems.
- Collaborating with farmers to develop 'future farms' to reduce inputs and water use smart technologies to lower on-farm emissions.
- Demonstrating profitable uses of horticultural residues and waste.
- Helping minimise food and farm waste through research, new technology and education/training.

# Ways to reduce emissions from horticulture

- Implement best-practice soil Invest in on-farm renewable management
- Improve fertiliser use efficiency
- Adopt lower-emissions fertilisers and crop varieties
- Invest in new precision technologies

- energy
- Electrify machinery as WA's electricity grid decarbonises.
- Increase carbon sequestration (for example by planting trees and retaining native vegetation).

Developing knowledge of carbon accounting and benchmarking supports achieving reductions.

## More information

Subscribe to the Climate Resilience mailing list for updates on climate news, emissions and events.



# Future proofing regional WA

### Important disclaimer

The Chief Executive Officer of the Department of Primary Industries and Regional Development and the State of Western Australia accept no liability whatsoever by reason of negligence or otherwise arising from the use or release of this information or any part of it.

Copyright © State of Western Australia (Department of Primary Industries and Regional Development) 2024.

ABN: 18 951 343 745