Agriculture and land sector plan

Department of Agriculture, Fisheries and Forestry

December 2023

Australian Fresh Produce Alliance

Growing a healthier Australia

About the Australian Fresh Produce Alliance

The Australian Fresh Produce Alliance (AFPA) is made up of Australia's key fresh produce growers and suppliers. The members include:

- Costa Group
- Perfection Fresh
- Montague
- Pinata Farms
- Fresh Select
- Mackay's Marketing
- Driscoll's
- Australian Produce Partners
- Premier Fresh Australia
- Rugby Farming
- Freshmax
- Fresh Produce Group.

These businesses represent:

- half the industry turnover of the Australian fresh produce (fruit and vegetables) sector - $10 billion total
- a quarter of the volume of fresh produce grown in Australia - 1 million of the 3.9 million tonne total
- more than a third of fresh produce exports - $410 million of the $1.2 billion export total
- more than 1,000 growers through commercial arrangements, and
- more than 15,000 direct employees through peak harvest, and up to 25,000 employees in the grower network.

The key issues the AFPA is focusing on include:

- packaging and the role it plays in product shelf life and reducing food waste landfill,
- labour and the need for both a permanent and temporary supply of workers,
- market access to key export markets for Australian produce,
- product integrity both within and outside of the supply chain,
- pollination and research into alternative sources, and
- water security, including clear direction as to the allocation and trading of water rights.

The AFPA's aim therefore is to become the first-choice fresh produce group that retailers and government go to for discussion and outcomes on issues involving the growing and supply of fresh produce.

Products grown by AFPA Member companies include:

Apples	Blueberries	Fioretto	Onions	Salad leaf
Apricots	Broccoli	Green Beans	Oranges	Spinach
Asparagus	Broccolini	Herbs	Peaches	Strawberries
Avocado	Brussel Sprouts	Lemons	Pears	Sweet Corn
Baby Broccoli	Butternut Pumpkin	Lettuce	Pineapples	Table grapes
Baby Corn	Cabbage	Mandarins	Plums	Tomatoes
Bananas	Cauliflower	Mango	Potatoes	Water Cress
Beetroot	Celery	Mushrooms	Cucumber	Wombok
Blackberries	Cherries	Nectarines	Raspberries	

Summary

The horticulture industry is naturally positioned to be part of the solution to reducing Australia's emissions and the achievement of Australia's broader environmental ambitions. There are numerous opportunities to explore in horticulture, including better utilising existing assets such as orchids for carbon capture and sequestration. However, there is currently insufficient data to be able to accurately determine the industry's emissions profile, with available Australian data being incomplete and out of date. The absence of reliable data outlining the sector's emissions profiles creates immediate barriers to developing evidence-based policies and objectives. At this time, the horticulture industry must focus on improving data collection in relation to emissions in order to support both policy and commercial decision making.

The Australian fresh produce industry is currently experiencing one of its most difficult periods in history due to consecutive input cost increases, reduced productivity, and low farm gate margins. Resilience among businesses has been worn thin by successive challenges, including supply-chain and workforce disruptions and extreme weather events. These challenges, coupled with new regulatory and policy pressures on industry, are stretching the industry's capacity to adapt and also contributing to grocery price increases – a major driver of the cost-of-living issues being experienced by Australian households.

Despite this adversity, the Australian Fresh Produce Alliance's (AFPA) members remain committed to progressing and investing in key issues of industry significance, including research and analysis of the Australian horticulture sector's greenhouse gas emissions profile.

Reports commissioned by the AFPA confirm that Australia's horticulture sector represents a very small proportion of the agriculture industry's total emissions, however, there is insufficient data to develop an accurate and complete emissions profile of the sector. There has been no wide-scale study into the emissions contribution of Australian fruit production and only one major study on Australian vegetable production in 2008, however it did not consider a range of known sources of greenhouse gas emissions.

Furthermore, existing research on the horticulture emissions (in Australian and overseas) varies in the application of boundaries and methodologies for calculating emissions. Addressing this lack of consistency is the first step to realising opportunities around emissions and what role horticulture could realistically play with respect to reducing agriculture's emissions, and Australia's more broadly.

Without adequate horticulture emissions data to guide conversations and inform decisions, work on wide-scale reduction initiatives, investments and reporting is pre-emptive and unproductive. The data gaps and outdated research around horticulture's emissions need to be addressed to allow informed conversations, the development of evidence-based policies and to drive industry-wide action.

The AFPA, which represents half of the fresh produce sector by turnover value, is currently developing a framework for the capture and measurement of horticulture emissions, due for release in early 2024. The AFPA's intention is for this work to form the foundation of a collective effort by industry and stakeholders to achieve a better understanding of the horticulture sector's emissions profile. A better understanding of the sector's emissions profile will assist in identifying opportunities, forming considered and deliberative policy, and coordinating both public and private investment.

Another key factor to consider is the diversity of Australian horticulture – being the type of produce grown, the environment it is grown in, and how it is grown (i.e. open field, glasshouse, orchid or tunnel production types), as well as the range of businesses in the industry (their scale, sophistication, etc.). Horticulture's diversity will need to be accounted for when developing an effective emissions strategy.

The fresh produce industry also differs to other agriculture sectors, both in terms of production methodologies, and boundaries considered for greenhouse gas calculation methods, as many horticulture businesses are more vertically integrated and supply direct to consumer. This differs significantly from grain, cattle and dairy production in which there will be a more natural focus on a farm gate boundary. The horticulture industry will likely require a range of specific initiatives to be developed, that are tailored to its many subsectors, but can collectively deliver industry-wide results.

Overall, the horticulture sector is understood to be a small contributor to Australia's total greenhouse gas emissions; both within the agriculture sector and the broader economy. To that end, it is unlikely that the horticulture sector will be a source of substantial reductions in emissions.

In order to support any efforts in relation to decarbonisation, the horticulture industry must initially focus on the development of accurate and robust data that outlines the sector's emissions profile. Without this information, developing solutions, plans or targets are likely to result in minimal or adverse outcomes. With the development of this data, growers, retailers, governments, and other stakeholders, will be in a better position to define suitable courses of action that will deliver benefits to industry and the economy.

Recommendations

By incorporating these recommendations into the development of its policies, actions and objectives, the Government can ensure the horticulture sector remains viable and environmentally sustainability, to the benefit of the economy and Australian households.

The AFPA Recommends the Government:

1. recognise that the horticulture sector's greenhouse gas emissions are widely estimated to account for approximately 1.0% of agriculture's total emissions, and that major horticulture industry reductions will likely be achieved through improvements in energy and transport.

2. avoid any whole-of-agriculture targets or coupling horticulture with other sectors as part of developing its *Agriculture and Land Sectoral Plan* to prevent unrealistic or unachievable objectives being placed on horticulture producers in recognition and understanding of the sector's already small emissions footprint and, therefore, inability to deliver large-scale reductions.

3. recognise the economic strain on the producers and cost of living challenges facing Australian households, ensuring that policies and actions allow for a gradual transition to more sustainable practices and balance economic, social, and environmental objectives.

4. commit to ongoing consultation with industry on the development of the *Agriculture and Land Sectoral Plan,* including the release of a Draft Sector Plan for feedback.

Short-term – Support the horticulture sector to address its lack of data and the industry's development of a common greenhouse gas emissions accounting framework and calculator.

5. acknowledge the lack of data and evidence available to accurately determine the Australian horticulture industry's emissions profile is a major barrier to developing any polices, actions, or targets specific to the horticulture sector.

6. support the Australian Fresh Produce Alliance's ongoing effort to develop a common Greenhouse Gas Accounting Framework for use by Australian fresh produce producers, recognising it as a crucial step towards informed decision-making and progressing emissions reduction in the sector.

Medium-term – Develop evidence-based polices, actions and objectives to support broader government policy on emissions and explore opportunities for carbon sequestration.

7. based on future industry data, identify and allocate funding for comprehensive, targeted research on horticulture emission 'hot-spots' and sequestration opportunities, in an effort to develop an evidenced based approach to emissions management in horticulture.

8. develop evidence-based policies that consider the unique characteristics and diversity of the horticulture sector, including the diversity of produce, farming methods, and business types, and recognise the need for specific initiatives tailored to different subsectors within horticulture.

9. consider financial support mechanisms, to assist horticulture businesses in implementing more sustainable practices and managing emissions.

10. establish a framework for ongoing monitoring and evaluation of the effectiveness of implemented policies.

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1. Introduction

Australia's fresh produce sector plays an important economic and social role in our nation's health and prosperity. The sector is a major employer and economic driver, particularly in regional communities; provides an affordable and regular supply of nutritional, safe and fresh produce to Australian households, a major factor in the population's health and wellbeing; and underpins Australia's food security. A thriving and sustainable fresh produce sector is therefore vital to Australia's national interest.

The AFPA recognises that sustainability is about meeting the needs of the present without compromising the ability of future generations to meet their needs – producing fresh produce in a way that is economically, socially, and environmentally responsible to ensure the industry's ongoing viability. The AFPA supports an approach to sustainability that holistically balances economic, social, and environmental factors in decision-making, policies and practices, and considers the long-term outcomes and the consequences of today's actions.

2. Australia's Diverse Horticulture Industry

Horticulture is Australia's third largest agricultural sector by value and includes fruit, vegetables, nuts, flowers, turf and nursery products. The Horticulture sector underpins countless regional and rural communities across Australia, supporting local business and services through its direct and indirect employment and investments. Australia's fresh produce sector, fruit and vegetable production, is estimated to directly support between 65,500-80,000 full-time-equivalent positions.

Australia's diverse climactic regions enable more than 100 varieties of fruit and vegetable to be grown productively across the nation. The ability to grow a diverse variety of produce in Australia has created a diverse industry in many ways. For example, production techniques range from traditional open-field practices to modern, controlled indoor systems, depending on the produce, location and other factors. The most common categories of horticulture farms in Australia are orchards, row crops (typically vegetables), vineyards, covered crops, greenhouses and hydroponic and aquaponic systems. Within each of these categories would be subcategories of farm types depending on the produce, region and other factors.

Australian horticulture producing businesses are also very diverse. In 2021-22, the Australian Bureau of Statistics reported there was around 19,000 Fruit, Vegetable & Nut (Horticulture) Businesses. Over 60% of these businesses (~11,500) turned over between zero and $200,000 and 66% (~12,500) were classed as "non-employing", while at the other end over the scale, 1.3% of businesses (~250) turned over more than $10 million and only 0.25% (~50) employed more than 200 FTE. In plain terms, there is a large number of small businesses producing a relatively small amount of produce, and small number of large businesses producing a relatively large amount of produce, and thousands in between of varying size and sophistication.

This diversity in Australian horticulture – being the type of produce grown, the environment it is grown in, how it is grown, and the range of businesses in the industry (their commodities, scale, sophistication, etc.) – can create challenges to introducing effective industry-wide regulation, programs, and investment, without thorough consideration, development and consultation with industry.

When considering the horticulture industry's emissions, Government will need to consider industry's unique and diverse characteristics, both as a sector of agriculture, as well as within the horticulture sector itself, to be able to effectively develop policies and drive outcomes. It is likely that, once the necessary foundational work is completed, initiatives and support to drive change will need to be tailored to specific areas of focus, regions, categories (i.e. Apples, mushrooms, berries, leafy greens), etc., to achieve outcomes of significance. This is particularly true as horticulture's emissions are understood to be such a small portion of broader agriculture and economy wide emissions, that any improvements of scale will need to be achieved through a multitude of very targeted measures.

3. Immediate barrier to action - Lack of Horticulture Emissions Data

Over the past two years the AFPA has invested in research to develop an informed view on carbon emissions in the horticulture sector, the challenges to determining the sector's emissions profile, areas for attention and opportunities to progress. The two key pieces of work that have informed the AFPA's view and this submission are reports (detailed below) prepared by Equilibrium, a climate change and sustainability consultancy, that can be made available to Government upon request.

In summary, these reports found that, while the horticulture sector would represent only a small fraction (1-2%) of the Australia's agriculture industry emissions total, there was insufficient data to provide an accurate and complete assessment of the horticulture sector's emissions profile in Australia. Furthermore, the reports found that existing studies of the horticulture sector's emissions (in Australia and globally) vary in approach and methodology, that there is no common standard for accounting the sector's emissions and therefore collecting accurate data is a challenge.

The following sets out the key findings from both reports, additional details of note and the second report's findings on other country's emissions targets and initiatives.

3.1. Key research findings

Report 1: *Australian horticulture emissions in context: Detailed research, analysis and accounting of greenhouse gas (GHG) emissions from across the Australian horticulture sector – January 2023*

1. There is insufficient data available to provide an accurate and complete assessment of the industry's emissions profile.
2. Existing studies/reports vary in approach to measuring horticulture emissions – what's in-scope and/or methodologies used.
3. There has been no wide-scale study into the emissions contribution of Australian fruit production and only one on Australian vegetable production in 2008.
4. Sources of greenhouse gases produced on horticulture farms in Australia were suggested to be, on average, fuel and electricity use (70%); fertilizers and animal manures (20%), and waste and refrigerant loss to the atmosphere (10%) – though the primary data for this estimation was not available.

> *"In summary, the horticulture industry is likely to make up a small fraction of Australia's national greenhouse emissions inventory; but lacks primary, systematic analyses across multiple producers…to properly account for its contribution."*

Report 2: *Australian horticulture emissions in context: Comparative situational analysis of greenhouse emissions for the horticulture sector – March 2023*

1. There is global lack of industry-wide research into horticulture emissions and reporting.
2. There is a global lack of consistency to approaching the measurement of horticulture industry emissions, and no clear best practice methodology.
3. While a few countries have introduced specific incentives or requirements designed to reduce horticulture emissions, i.e. Netherlands providing tax incentives to glasshouse operators to switch to renewable energy sources, no country is significantly advanced in their policies and programs to wholistically reduce horticulture industry emissions or capitalise on the industry's natural advantages to contribute to a broader emissions reduction solution.

> *"(international) studies are varied in their approach and boundary employed (especially for fruit and vegetables) and there are no clear front-running countries or products across all analyses".*

3.2. Additional details

The first report *(Detailed research, analysis and accounting of greenhouse gas (GHG) emissions from across the Australian horticulture sector)* confirmed that available Australian data and research into horticulture emissions was insufficient to provide an accurate assessment of the industry's emissions profile.

Further, during the preparation of the report, it was identified that the few existing studies (on which previous assumptions were made) varied significantly in the methodologies used to measure horticulture emissions and boundaries (what was included and excluded as part of a horticulture emissions study) used. For example, the one substantial study of the vegetable sector's emissions undertaken in 2008 did not consider the transportation of inputs or outputs, electricity usage other than for irrigation and refrigeration, and several other known sources of greenhouse gas emissions.

There has also been no wide-scale study into the emissions contribution of Australian fruit production. The Australian Government's National (Emissions) Inventory only reports on horticulture's emissions specifically for the application of inorganic fertiliser.

Based on evidence available, key sources of emissions from horticulture production are believed to be:

- fuel and electricity (approximately 70%)
- nitrogenous fertilizers and animal manures
- waste and refrigerant loss to the atmosphere

The second report *(Comparative situational analysis of GHG emissions for the horticulture sector),* reviewed available data for several countries spanning all continents including trading partners and competitors, such as the USA, New Zealand, Chile, Peru, Japan and South Africa, as well as leaders in environmental policy, including the Netherlands and Canada. While the report includes emissions profiles for all countries' agriculture industries, reliable data specifically on horticulture greenhouse gas emissions was only available for two countries', Canada (estimated to be 2.3 million tonnes of carbon dioxide equivalent emissions [Mt CO2-e]) and Netherlands (~ 9 Mt CO2-e).

3.3. Findings on other country's emissions targets and initiatives.

The second report also investigated and provides information on agriculture and horticulture emissions targets. No country reviewed had a specific horticulture industry emissions reduction target. More broadly, the Canadian Government has announced its intention to introduce an agriculture target to reduce emissions from fertilizer by 30%, and, in April 2022, the Dutch Government introduced a range of sustainability subsidies and tax changes designed to accelerate its glasshouse horticulture sector's transition to renewable energy sources (instead of natural gas), with the goal of achieving climate neutrality by 2050. Of note, the Australian Department of Agriculture, Fisheries and Forestry conducted an international analysis of Government support for farmers in 2020 and found that across Europe approximately 20% of a farmer's income can be traced to government measures and subsidies, in some countries, like Norway, it is as high as 60% - this is in stark contrast to Australia, where just over 2% of farmer revenues is derived from government support. The absence of subsidies contributing to Australian farming revenue has helped to support an innovative and globally competitive industry, however challenges Australian producers when tasked with matching some international standards.

3.4. Conclusion on reports' findings

Given these findings, it is clear that the horticulture sector is not as progressed in the field of carbon accounting and decarbonisation as other agriculture sectors. The Australian horticulture industry lacks the necessary data to determine an accurate and complete emissions profile as studies to date are limited and inconsistent. This issue is not isolated to Australia, based on an assessment of several countries' industries, there is a general lack of data internationally on industry-wide horticulture emissions and no internationally consistent approach to how horticulture industry-wide emissions should be measured and reported.

Given the scarcity and inconsistency of horticulture emissions data in Australia and internationally, there is little evidence to support practical and meaningful emissions targets and reductions initiatives.

4. Developing Horticulture's Common GHG Emissions Accounting Framework

Based on the reports' findings (detailed in section 3 of this submission), the AFPA recognised that industry must address this gap in emissions data to ensure an emission reduction agenda can be progressed in an effective and pragmatic way.

As the reports also identified, harmonising how and what data is collected is a necessary first step to being able to commence farm level and supply-chain data capture and reporting.

In late 2023, the AFPA commenced a project to develop a "Common Green House Gas Accounting Framework" for the Australian fresh produce industry.

Australia's key fruit and vegetable producers have supported the development of the Framework, which is now in its final stages and on track for release in the first quarter of 2024.

The Framework provides a pre-competitive, common approach for fruit and vegetable producers to measure and report their GHG emissions in a consistent way. It has plain-English descriptions of each of the steps needed to account and report GHG emissions, and specific guidance relevant to the operations of horticulture producers.

The Framework is based on the *GHG Protocol Corporate Standard* and *Agricultural Guidance*. It has also been cross checked to *Agriculture Innovative Australia guidance for sectoral GHG reporting* to be as consistent as possible with future whole-of-agriculture industry reporting. This Framework also aligns with additional guidance, including Taskforce for Climate-related Financial Disclosures Project, GRI sustainability reporting standards and Science Based Target Initiatives.

The Framework provides guidance for horticulture producers on:

- System, operational and organisational boundaries, as well as base periods – providing clarity around what emissions should be counted, and how they are split between different business structures e.g. joint ventures, and other common questions.
- Considers a preferred calculation tool, approach and required data sources – i.e. the use of purchase and accounting records to calculate diesel emissions.
- Provides guidance templates for reporting, background and other supporting information.

The outcome of this Framework will be the ability of horticulture businesses to produce a true, fair and consistent inventory of their emissions, regardless of their commodities, corporate structures or activities.

The AFPA intend on making this framework broadly accessible to the entire industry and will look to further engage with Government on its use.

5. Balancing economic, social and environmental factors

The Government demonstrated in its discussion paper an appreciation for the need to develop a Plan that considers the industry's long-term viability, which is welcome, but it must also consider how any immediate decisions will impact a strained industry and grocery prices at a time when almost 4 million Australian households have been categorised as being food insecure, according to Foodbank Australia's 2023 Hunger Report.

The rising cost of living is the primary concern of Australians and, while the Government is taking steps to ease pressure and offer relief in several areas, increasing grocery prices remains a key issue. The link between grocery prices and the cost of producing fruit and vegetables is obvious. Over the past 24 months, production costs, including key inputs and labour, have increased significantly and are unlikely to fall in the near term, if ever. In addition, the regulatory burden being placed on industry has also increased substantially, leading to higher operational, administration and compliance costs, ultimately increasing fruit and vegetable prices.

As outlined previously in this submission, the resilience of the fresh produce sector is low, capital reserves have been drained by successive challenges since 2020 and there is little capacity to absorb additional costs without passing further increases onto consumers.

In preparing the Sectoral Plan, it's critical that Government take into consideration both the current strain on industry and Australian households. When formulating policies and objectives, the following factors should be considered:

1. **Initial Implementation Costs:** Introducing new technologies and sustainable practices to reduce emissions may entail significant upfront costs for producers.
2. **Operational Changes:** Adopting environmentally friendly practices may require adjustments to existing farming methods. These changes could impact production efficiency, potentially influencing the overall supply of certain crops and products, which in turn may affect prices.
3. **Transition Period:** During any transition phases towards more sustainable practices producers may experience decreases in yield and productivity. This temporary period of adaptation could influence the supply chain, impacting prices until efficiency is regained.
4. **Financial Support for Farmers:** The government should explore financial support mechanisms such as grants to support industry lower its emissions. This support could be targeted at key inputs, including energy, to help maintain the viability of fruit and vegetable production.

6. Conclusion

The horticulture sector makes an essential contribution to the nation's economic prosperity, food security, and overall well-being. Generations of horticulture producers have practiced sustainable farming through responsible environmental stewardship, including the sustainable use of natural resources, and following ethical business practices focused on supplying Australian consumers with a reliable, safe, and healthy range of fresh produce.

The industry is facing an unprecedented series of challenges, including disruptions in supply chains and labour, extreme weather events, and escalating production costs. These challenges have resulted in a tangible impact on Australian households, reflected in the rising grocery prices. As the Government develops the *Agriculture and Land Sector Plan*, it must prioritise the ongoing viability of the horticulture sector.

Acknowledging the lack of sufficient data to determine the sector's emissions profile, the Government should actively support initiatives that address this data gap. This support is crucial for making informed decisions and developing evidence-based policies and objectives.

The AFPA supports the Government's endeavours to create a sustainable operating environment through the reduction of Australia's emissions. The AFPA has demonstrated this support by taking proactive steps to developing a common Greenhouse Gas Accounting Framework for horticulture producers, due for release in early 2024. This framework aims to provide a foundational tool for capturing and measuring horticulture emissions consistently, fostering a collective understanding of the sector's profile.

This Framework is an essential first step to enable any kind of evidenced based decision-making related to horticulture production emissions. Once foundational data has been collected, opportunities and challenges to reducing emissions in the horticulture sector will become more apparent; the AFPA will then seek to work with Government to achieve meaningful emissions reduction through tailored, sector-specific initiatives and investments that recognise the unique characteristics of, and diversity within, Australian horticulture.

Ultimately, industry-wide advancements in emissions reduction will be dependent on industry, retailers, government, and other key stakeholders taking a pragmatic and collective approach to overcome challenges and realise opportunities that support a more sustainable and resilient future for Australian horticulture production.