



HORTICULTURE INNOVATION AUSTRALIA LIMITED

SUBMISSION TO

THE STANDING COMMITTEE ON AGRICULTURE AND WATER RESOURCES' INQUIRY

GROWING AUSTRALIAN AGRICULTURE TO \$100 BILLION BY 2030

14 OCTOBER 2019



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Summary

The Standing Committee on Agriculture and Water Resources is leading an inquiry into the opportunities and impediments facing Australia's primary production sectors in realising the goal of growing Australian agriculture to \$100 billion by 2030. To contribute to the conversation, in this submission Horticulture Innovation Australia Limited (Hort Innovation) outlines what it considers to be the key impediments and opportunities for the horticulture sector in contributing to this target, and provides a picture of the current status in line with the five pillars of the National Farmers' Federation's *2030 Roadmap - Australian Agriculture's Plan for a \$100 Billion Industry*¹: Customers and the value chain; Growing sustainability; Unlocking innovation; Capable people and vibrant communities; and Capital and risk management.

Some of the key takeaways from this submission include:

- The Australian horticulture sector is poised to be a strong contributor to the 2030 target, with the sector's farm gate production having the potential to increase to between \$20 and \$30 billion by 2030.
- There are strong opportunities for the horticulture sector, wider agriculture sector and the Australian Government to seize upon to grow the value of Australian agriculture and to realise a multitude of benefits, from the community to country level.
- Challenges range from smaller hurdles to national- and sometimes global-scale challenges. A particular and growing area to look at includes how public/private partnerships can be best optimised, including through the RDC model. Industry unity and collaboration will also be key to realising strong growth.

Introduction

Horticulture Innovation Australia Limited is the grower-owned not-for-profit Research and Development Corporation (RDC) for Australia's horticulture sector, servicing 37 horticulture industries and some 12,000 Australian businesses that produce fruits, nuts, vegetables and amenities such as turf and nursery products.

Horticulture is currently Australia's second largest agricultural sector by value, having experienced growth in value of 40 per cent over the five years to 2017/18.

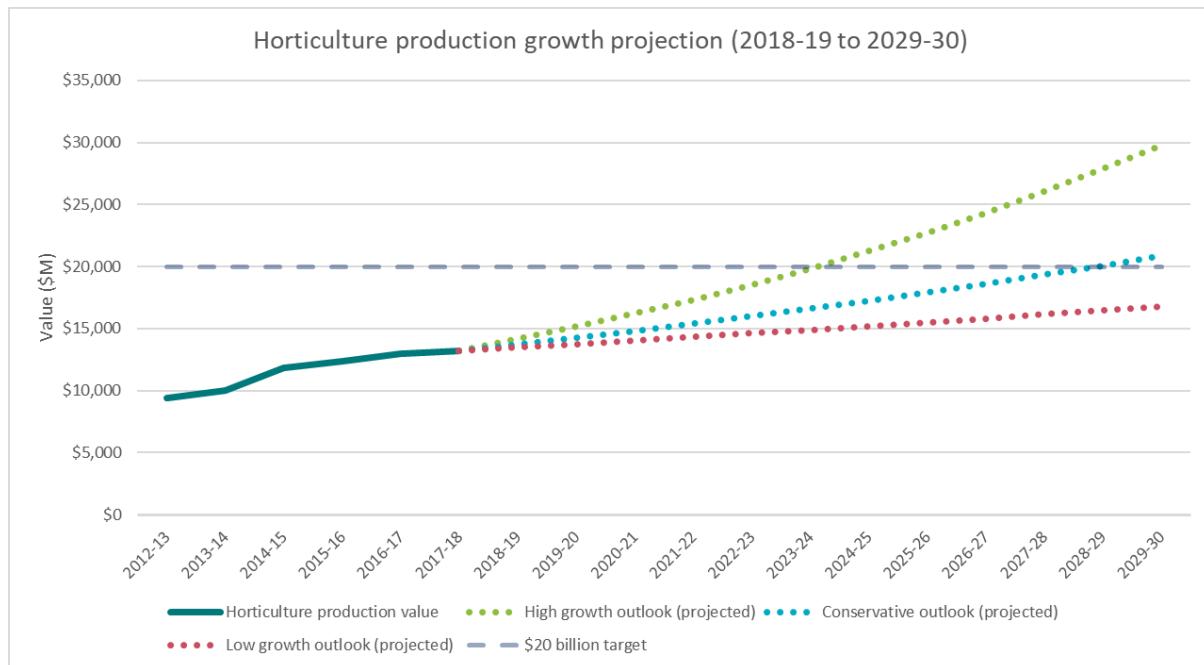


Each year, Hort Innovation delivers up to 600 projects across research, development, extension, marketing and trade to drive a healthy and prosperous Australia. Hort Innovation achieves this through collaboration with farm businesses as well as representative groups such as the National Farmers' Federation; all levels of government; fellow RDCs; education and training providers; value chain partners; local and global research and technology companies; and the wider community. In 2018/19, Hort Innovation invested more than \$122 million in levies, Australian Government contributions and co-investment dollars on behalf of the sector.

Investments delivered through Hort Innovation are key to unlocking growth. A recent independent project impact assessment revealed Hort Innovation is delivering a financial return of up to 400 per cent on investments.ⁱⁱ Further project success is illustrated through high-profile and multi-industry initiatives such as the SITplus sterile Queensland fruit fly effort, which featured a \$2.35 million Rural R&D for Profit grant in 2015 to develop the release guidelines at its foundation. Today, SITplus is a \$60 million multi-partner initiative that includes a factory in South Australia that produces 20 million flies per week, with satellite pupae rearing hubs in Victoria and New South Wales. The technology is already being used to combat incursions in South Australia. On top of managing a pest that is costing an estimated \$300 million annually in lost produce and markets nationally, this project also has flow-on benefits such as strengthening Australia's export reputation.

Work being delivered through Hort Innovation has helped position horticulture as the fastest growing agricultural sector in Australia.ⁱⁱⁱ Data projections suggest the sector could grow from \$13.2 billion in farm gate production to up to \$30 billion by 2030 (Figure 1, below), and conservatively reach \$20 billion by 2030. To achieve that result, a combination of continued RDC investment and the optimisation of existing project outputs is needed. Threats to growth, such as regulatory issues facing technology and labour shortages, also need to be addressed. The current status of industry, impediments to growth and opportunities – including case studies – are detailed in the next section of this submission.

Figure 1 *High, conservative and low growth outlook to 2030*



Opportunities and impediments for the growth of Australia's horticulture sector

The following is set out in line with the five pillars of the National Farmers' Federation's *2030 Roadmap - Australian Agriculture's Plan for a \$100 Billion Industry*.^{iv}

1. Customers and the value chain

Australia's horticulture sector is enjoying a number of benefits that contribute to its success internationally and domestically.

CURRENT STATUS: Horticulture is in the box seat when it comes to macro trends, such as plant-based diets and plant-based food packaging. In terms of trade, our horticulture industry boasts a global reputation and trust in our products that has been developed through strong food safety track records and adhering to stringent regulatory frameworks. We are positioned closer than our competitors to Asia, and we have solid post-harvest logistics and supply chain drivers, which provide a good route to market. Locally, Australian consumers also show confidence and support for Australian-grown products.



IMPEDIMENTS: The Australian horticulture sector also has a number of weaknesses. Much of the sector maintains a domestic focus (with only 11 per cent of volume being exported),^v with prices controlled by the major retailers. Trade can be impacted upon by a lack of export readiness and an inconsistency in the supply of produce to markets. Australia is also essentially a small player on a global stage, with limited resources, market access and narrow trade set-up investment potential. On top of that, there is also a lack of strategy around provenance and storytelling.

Further potential impediments to growth include the US-China trade war, and foreign currency exchange rates impacting on competitive trade capabilities. Biosecurity is also a threat, with the changing regional prevalence of pests and more international trade presenting challenges. Policing of quarantine controls on international arrivals remains inadequate at some entry points.

OPPORTUNITIES: Retail and value chain opportunities abound in horticulture, with plenty of scope to tap into consumer trends such as veganism, food waste reduction and consumption of convenience foods. One example of an investment delivered through Hort Innovation that has spurred significant consumer and investor interest is the development of broccoli powder through an investment with the CSIRO that looked at options for minimising vegetable waste. The powder has been used in coffee to raise awareness and has gained international attention. The powder is ideal for use in fortifying everyday food products. This is just a glimpse of what can be achieved in the food waste minimisation space. Increased adoption by growers of innovative methods and technologies would also enhance production potential.

E-commerce is also an area that is underutilised in the horticulture sector. Online sales models for business growth will arm horticulture businesses with more flexibility in pricing and a strong platform from which to highlight their provenance and farm stories.

In trade, there is scope to work with trade authorities and horticulture industries to maximise opportunities in existing markets. On top of that, optimising existing partnerships with government trade authorities will also bring greater returns for growers. Hort Innovation already plays a strong role in assessing market access priorities, and work in this space was recently enhanced after Hort Innovation and Austrade signed a Collaboration Agreement which allows Hort Innovation to access Austrade services without fee-recovery for certain activities.

2. Growing sustainability

Increasingly, consumers and company investors are asking for evidence that sustainable and ethical practices are used by the producers of the food they consume or the companies they invest in.

CURRENT STATUS: Most Australian horticulture producers are in the industry for the long haul and are keen to do what's good for their land and crops to protect their longevity. Continuously adopting environmentally responsible tools and systems, such as soil health and water efficiency measures, is commonplace. According to the [Bureau of Meteorology](#), Australia also has six climatic regions, which support crop variability, and the large array of horticulture products available to grow provides ample flexibility to transition between commodities to follow growth in demand, value and volume. The Australian Bureau of Statistics identified the Australian horticulture industry as having the highest water efficiency of all agricultural industries, returning \$6,200 of value per megalitre used in Gross Value of Production (GVP) terms.

IMPEDIMENTS: There are various challenges to realising sustainable practices across the horticulture sector. Competition for water and water availability is an issue, particularly in the Murray Darling Basin and in drought affected areas. The cost of production – including labour, water, energy and access to inputs – also has an impact on business. Another issue is that yield potential is often not maximised and we are not keeping pace with global competitor levels. On top of that, while many Australian producers and industries are now participating in sustainability reporting, there is no coordinated framework across horticulture as a whole.

Climate change, limited access to labour, and a production-driven approach that fails to consider oversupply are further threats to the growth of the horticulture sector.

OPPORTUNITIES: The potential to develop sustainability in the horticulture sector is significant. There is capacity to leverage existing partnerships that Hort Innovation has with overseas research agencies and universities to contribute to 'Centre of Excellence' precincts and share global sustainability learnings with industry.

Developing Northern Australia as a new climatic growing zone for horticulture would also be beneficial, given its environmental advantage of water availability. Meanwhile, labour issues could be addressed through the development and execution of a fit-for-purpose horticulture labour strategy.

Helping industry access the latest research on protected cropping should also be a priority, given the capacity for this style of production to be environment controlled. Hort Innovation is already



delivering various learnings in this space, including a [National Vegetable Protected Cropping Centre](#) with Western Sydney University at its Hawkesbury Campus. The Centre features a custom glasshouse that includes research to secure the highest possible commercial yields with minimal energy, labour, nutrients and water inputs, plus effective pollination methods.

Existing research and development that supports sustainability in industry could also be expanded. For example, the [Soil Wealth and Integrated Crop Protection initiative](#), being delivered by Hort Innovation using vegetable industry levies and funds from the Australian Government, has proven a success – with 25 per cent of the industry engaged directly, and 80 per cent of those people reporting they make better-informed decisions as a result of the initiative. There is scope to further increase engagement with vital projects such as these.

3. Unlocking innovation

Innovation has always been at the forefront of Australian agriculture. The opportunities of digital agriculture or ‘agtech’ are known, however there has been quite a fragmented approach, with agtech solutions often looking for a problem/opportunity, rather than a problem/opportunity being identified and then a tailored solution being developed.

CURRENT STATUS: Unlocking innovation for horticulture has been a long-standing tradition in farming communities who are themselves innovative by nature. The horticulture sector has had significant corporate investment in innovative technologies, which is enhanced by the continued corporatisation of the sector. Large multi-national, publicly listed companies along with larger family businesses are driving innovative farming practices, underpinned by significant government support for innovation through the RDC framework, delivering high-value outcomes for the sector.

IMPEDIMENTS: The horticulture sector experiences the same issues as the wider agriculture sector, with a lack of cohesion or single farmer voice for the sector. Duplication of effort in research and development also occurs across states due to the federated model. The low connectivity of much of regional Australia impacts on the effectiveness of digital transformation which, along with a lack of data integrity and visibility, results in a non-data-driven culture. The National Horticulture Research Network (NHRN), of which Hort Innovation is a member, is a good initiative to drive collaboration to reduce duplication which could be enhanced to achieve greater results. Commercialisation of innovative technologies has been a challenge in the horticulture sector due to the limited capacity and culture of the service providers involved, driven by the inability to ‘sell the value proposition’ to the grower. A plan for unlocking innovation in Australia would provide opportunities for



collaborative development, for example the Dutch model where industry, research providers and government work together to identify issues and opportunities to attract and retain innovation.

OPPORTUNITIES: There are significant opportunities for the horticulture sector to enhance economic prosperity and importantly meet the global food challenge, driven by existing sophisticated farming infrastructure that can readily accommodate new technologies, especially involving the intensification of production (for example, through protected cropping). Some examples of Hort Innovation investments that are driving innovation for positive results in yield optimisation and consistency include work to support the almond industry in developing new high-density growing systems, with similar work for the summerfruit industry via the [Stonefruit Field Laboratory](#). Breeding, evaluating and supporting industry in adopting new varieties is also a key area of investment for Hort Innovation, with a recent iteration of the National Strawberry Varietal Improvement Program delivering 12 new varieties that now capture a large share of the market, with the program having delivered a benefit-cost ratio of 3.5 to one for industry. Hort Innovation also supports a range of extension and communication projects to assist in the upskilling of growers in new technologies and to enhance understanding and adoption of innovation, including through the internationally renowned [Future Orchards technology-transfer and extension program](#).

Global partnerships with industry, universities, government and commercial entities will ensure global learnings and innovations are realised for the Australian market. Finally, to maximise the impact of new technologies and minimise duplication, a more coordinated approach for R&D across States/Territories and industries should be a key focus.

4. Capable people and vibrant communities

Farming communities are the lifeblood of the agriculture sector, and our horticulture industries contribute greatly to the prosperity and wellbeing of people living in regional areas, as well as the Australian urban population and international consumers of our horticultural produce.

CURRENT STATUS: There is an enduring culture of resilience in Australian farming communities. This resilience continues to be tested through drought, bushfire emergencies and other challenges. It is imperative that we recognise the importance of these communities, and to support and celebrate regional Australia through its successes and challenges to keep our agricultural prosperity as a nation alive. It is vitally important that the resilience of our farming communities is not taken for granted. Government support provided to the horticulture sector, and other agricultural sectors, through the RDC framework is nation-building. Through this mechanism, all taxpayers are contributing to the



fortune of Australian agriculture, and the model encourages public good across innovation and skills development. In 2017/18, some 72,800 people were employed in the Australian horticulture sector in approximately 11,490 horticultural businesses around the country.^{vi}

IMPEDIMENTS: The challenges encountered by farming communities, including lack of adequate digital connectivity and regional infrastructure, result in a lack of attractiveness of the sector to the next generation. The size of Australia, and distances between regional communities and urban centres, adds to the isolation and lack of connection. Succession planning in family-owned farming operations is often a challenge in the horticulture sector and attracting new entrants to careers in agriculture across a vast array of disciplines is impacted on by existing tertiary education funding mechanisms and structures, particularly for post-graduate work. Further, lack of consumer/voter education regarding the benefits and needs of a thriving horticulture and wider agriculture sector leads to a disconnect between the needs of regional communities and policy and planning decision making. Increased urbanisation in areas adjacent to our major cities is replacing quality horticultural land. On top of that, extension and adoption need greater investment and refocus, with a dedicated unit being established in Hort Innovation now to address this issue. State agencies, in particular, also need to focus on ensuring research findings can be applied on-farm. A lack of funding over the past decade has affected productivity, and with the rapid advancement of new, disruptive technologies, that is a concern.

OPPORTUNITIES: Research and development opportunities need to be continually pursued to support the future of the horticulture sector and, in return, vibrant regional horticultural communities. Hort Innovation's leadership initiatives are an example. As just one illustration, Women's and Young Grower Industry Leadership and Development Missions have been funded by Hort Innovation using the vegetable levy and Australian Government contributions, with the 2016-2018 iteration of the initiative producing a benefit-cost ratio of two to one through supporting better decision making, more integrated and profitable supply chains, and better allocation of public RD&E resources. It also increased capacity of industry in leadership and advising on public policy.

In terms of the role of the consumer in the health and wellbeing of our farming communities, provenance is a megatrend that horticulture can capitalise on through improving the traceability of our regional produce. Showcasing the breadth of the industry to attract and retain talent in regional communities is also a key opportunity, which can be enhanced through unlocking the power of the Australian media to communicate that horticulture is a major contributor to the Australian economy and the wider agricultural sector. Improving the health and wellbeing of all Australians is a lasting



priority in which the horticulture sector can play a significant role. Hort Innovation investment utilising nursery levy funds and Australian government co-investment through the 'Where should all the trees go?' initiative (investigating the impact of tree canopy coverage on socio-economic status and wellbeing in local government areas) delivered a social and environmental impact by identifying priority areas and associated actions for increased biodiversity through urban greening in local government areas. Continued education of health professionals, food service professionals and consumers on the nutritional value and importance of horticultural produce is also key.

5. Capital and risk management

Horticulture farming businesses face many inherent risks in production and throughout the supply chain. As a result, risk awareness among producers is acute and activity in risk mitigation is well established. The horticulture sector is ripe for continued and increased commercial investment.

CURRENT STATUS: The horticulture sector is in a period of significant growth, presenting a strong value proposition for investors. With a blue-chip investment status, horticulture is poised to follow the growth experienced in recent years. Collaboration facilitated through Hort Innovation's structure as the RDC for some 37 industries enhances the ability for identification of common issues impacting on sector growth and the opportunity to address these matters co-operatively. The potential to attract significant commercial investment to enable growth is high.

IMPEDIMENTS: The current process for release of Australian Government co-investment funds needs to adapt to work with the risk requirements of commercial investors, if these opportunities are to be maximised. There is a lack of understanding by international investors of the levy/government contribution system and the ability for Hort Innovation to secure attractive international funding is compromised by the need to adhere to the 'one size fits all' mechanism to attract government co-investment. Further, any diversion of government funds away from support for horticulture would have a severe impact on investment for growth of the sector. Additionally, university funding mechanisms and drivers do not align with the levy funding mechanism and drivers. In terms of the wider horticulture sector, the aging population of growers is a weakness of the industry, as is a lack of qualified/commercial capability in some industries. Further, a fragmented farmer voice can lead to a lack of collaboration and clarity of messaging to potential investors. A lack of perceived importance of horticulture to the Australian economy can exacerbate these factors. Measures to address these situations are closely linked to the measures required to address impediments under pillar four of the National Farmers' Federation's *2030 Roadmap*.



OPPORTUNITIES: There are significant opportunities for public/private partnerships to attract commercial funds for investment in horticulture research and development, extension, marketing and trade. An example of successful public/private partnership is Hort Innovation's partnership with Lendlease and others through the Hort Frontiers Green Cities Fund, which explored the influence of green roofs and walls in improving the performance of demountable structures. The work was a stepping stone for engaging the construction industry with the benefits of horticulture industries, and among the initial completed Green Cities Fund investments to demonstrate a successful and beneficial partnership between private enterprise and Hort Innovation on behalf of the sector.

Increased private sector investment will enable the expansion of the horticulture sector's trade strategy and aspirations and increase the focus of investment on longer-term initiatives to drive enduring growth for the sector. Continued multi-industry investments across RDCs will also optimise the use of funds to benefit many agricultural sectors. [The Plant Biosecurity Research Initiative](#) involves all plant RDCs with the aim of pooling resources and stamping out duplication. Meanwhile, recent investment in horticulture operations by international superannuation funds provides the opportunity for learnings as to how the industry can attract other investors to the sector. Global research partnerships also have the benefit of introducing new innovations for the benefit of the horticulture sector. For example, back in 2016 Hort Innovation signed a Memorandum of Understanding with the Indian Council of Agricultural Research. With India one of the leading countries using stingless bees in crop pollination, that relationship is now feeding into the Australian horticulture industry's exploration of these bees as alternative pollinators, through Hort Innovation's Hort Frontiers Pollination Fund.

ⁱ [2030 Roadmap – Australian Agriculture's Plan for a \\$100 Billion Industry](#), National Farmers' Federation 2018

ⁱⁱ [Hort Innovation's impact assessment work](#) (excerpt from the *Hort Innovation Company Annual Report 2018/19*)

ⁱⁱⁱ [Agriculture – a \\$100b sector by 2030?](#), AgriFutures 2019

^{iv} [2030 Roadmap – Australian Agriculture's Plan for a \\$100 Billion Industry](#), National Farmers' Federation 2018

^v [The Australian Horticulture Statistics Handbook 2017/18](#), Hort Innovation 2019

^{vi} *Agricultural commodity statistics 2018*, ABARES 2018 and *Agricultural Commodities 2017-18* (cat no 7121.0), ABS 2019