CropLife Australia

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Select Committee on Productivity in Australia

1 INTRODUCTION

CropLife Australia (CropLife) is the national peak industry organisation representing the agricultural chemical and plant biotechnology (plant science) sector in Australia. CropLife represents the innovators, developers, manufacturers, formulators and suppliers of crop protection products (organic, synthetic and biological based pesticides) and agricultural biotechnology innovations. CropLife's membership is made up of both large and small, patent holding and generic, Australian and international companies. Accordingly, CropLife advocates for policy positions that deliver whole of industry and national benefit. CropLife Australia is a member of CropLife Asia and part of the CropLife International Federation of 91 CropLife national associations globally. Our focus is specifically on sustainable environmental land management and an Australian farming sector that is internationally competitive through globally leading productivity and sustainability practices. Both of these outcomes are achieved through access to the world-class technological innovation and products of the plant science sector.

The plant science industry contributes to the nation's agricultural productivity, environmental sustainability and food security through innovation in plant breeding and pesticides that protect crops against pests, weeds and disease. More than $31 billion of the value of Australia's agricultural production is directly attributable to the responsible use of crop protection products, while the plant science industry itself directly employs thousands of people across the country.[1]

CropLife appreciates the opportunity to make a submission to the *Select Committee on Productivity in Australia*.

2 AGRICULTURAL PRODUCTIVITY FOR A THRIVING REGIONAL AUSTRALIA

Agriculture is a foundational industry in Australia's regions. Good harvests and good seasons are the backbone of local economies, with farm resilience in tough seasons essential to community viability.

Policies that support accelerating productivity growth in agriculture are essential to enhancing the welfare of the Australia's regional communities.[2] They enable farmers to

1 Deloitte Access Economics. *Economic Contribution of Crop Protection Products in Australia*. August 2023. https://www.croplife.org.au/resources/reports/economic-contribution-of-crop-protection-products-in-australia/.

2 Prepared by ACIL Allen Consulting. *The intersection of agriculture and regional development: A framework and case studies*. Wagga Wagga: AgriFutures, 2021. https://agrifutures.com.au/wp-content/uploads/2021/07/21-069.pdf.

invest in technological adoption that delivers the production that supports farm incomes, underwrites investment in agricultural supply chains and delivers food supply that places downward pressure on food prices.

Importantly, agricultural productivity growth achieved through the adoption of technologies developed by the plant science industry also delivers improved environmental outcomes.

Case Study: Water Use Efficiency

The Grains Research and Development Corporation's Water Use Efficiency Initiative identified the use of herbicides during summer fallow resulted in an average 60 per cent increase in seasonal water use efficiency and returned farmers on average $5.60 for every dollar they invested in weed control.[3]

The Productivity Frontier of Australian Agriculture

Australian farmers have proven time and time again they are at the leading edge of farm practice change.[4] They are early adopters, using data-backed practice change to increase yield, improve environmental outcomes, and become more resilient to Australia's unique weather conditions.

In broadacre cropping, eighty per cent productivity gains since 1977-78 have been driven by technology.[5] Importantly, the technologies embedded within crop protection products and agricultural biotechnology traits have enabled farmers to implement practice change innovation. This is most observable through the broadscale adoption of no-tillage and minimum-tillage farming across the Australian broadacre cropping sector.

No till farming across much of Australia's cropping region is enabled by the use of herbicide weed control over summer fallow periods. This practice has increased the productivity of Australian farmers in the face of climate change by improving water use efficiency and

3 Grains Research and Development Corporation (GRDC), *Investing in Water Use Efficiency Yields Results,* https://groundcover.grdc.com.au/__data/assets/pdf_file/0016/608011/GRDC_IMPACT_WaterUseEfficiency_CaseStudy.pdf

4 A Read, J Rollan, C Creed and J Fell. *Sustainability and agri-environmental indicators – international comparisons*. Canberra: ABARES Insights, 2023. https://www.agriculture.gov.au/abares/products/insights/environmental-sustainability-and-agri-environmental-indicators.

5 N Hughes, K Lawson, A Davidson, and T Jackson. *Productivity pathways: climate-adjusted production frontiers for the Australian broadacre cropping industry*. Canberra: ABARES, 2011. https://researchportalplus.anu.edu.au/en/publications/productivity-pathways-climate-adjusted-production-frontiers-for-t/.

decreasing yield sensitivity to drought conditions.

Farmers are increasingly adopting GM crops to support moisture retention, pest management and improved crop rotation. Newer plant varieties are being developed through the use of new breeding techniques that will tolerate harsher environments, require less fertiliser and deliver unique foods to provide health and convenience to consumers. These innovations will add to the suite of technologies to drive new productivity growth in Australian agriculture.

The benefit these technological inputs provide to the productivity of Australian agriculture can be seen in the strength of productivity growth in the cropping sector compared to the rest of broadacre agriculture (see Figure 1). Growth in this sector has been driven by the adoption of science-based farming practices. This practice change has supported yield growth, improved resilience in drier periods through no-till farming, improved weed control to conserve soil moisture and retain soil nutrients, while also preventing losses due to crop disease and pest infestation.

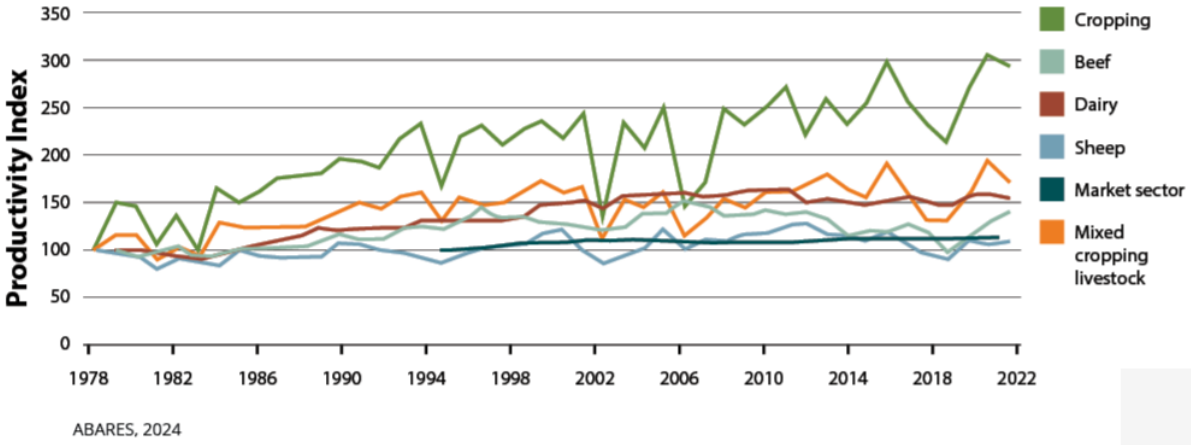

Figure 1: Productivity by farm type. Source ABARES

Agricultural productivity supports export income

Australian agriculture continues to be an important source of export revenue in the economy, with exports of more than $80 billion contributing over twelve per cent of exports of goods and services in 2024-25. These export earnings are an important source of economic prosperity for our nation's agricultural regions.

Agricultural exports rely on Australian farmers being able to compete in international markets against agricultural commodities grown elsewhere in the world. Productivity growth that supports farmers to produce more with less on less land is an essential to maintaining the international competitiveness of our farm sector. The adoption of

technologies developed by the plant science industry, namely crop protection products and plant varieties bred using agricultural biotechnology, have been an important component of growing and maintaining this competitiveness.

Stabilising and growing farm output also supports complementary investment in the supply chains and logistics operations necessary for farm production and for transporting and processing agricultural commodities for domestic use and export markets. These investments support jobs and community wellbeing throughout regional Australia.

However, productivity growth across the sector faces headwinds created by climate change, escalating research and development costs, and restrictions on new technologies. Defending historic productivity gains and delivering new productivity growth is reliant on farmers having access to new plant science technologies early in their life cycle.

Agricultural productivity supports food affordability

The cost of food at the checkout is a pain point for households under financial stress. Grocery prices are consistently one of the main cost-of-living concerns raised by respondents to SEC Newgate's Mood of the Nation report and price rises in fruit and vegetables led food inflation across much of FY2024-25.[6] Inflation in the cost of fresh produce, which is the result of tightness of supply and demand for fresh produce in Australia, erodes the purchasing power of real wages across the economy. It is not possible to produce many fruit and vegetable crops without the use of crop protection products,[7] meaning that the technologies of the plant science industry are indispensable to creating downwards pressure on food prices.

The geographic concentration of Australia's production of fruit and vegetables contributes to a fragility that can upset the balance between supply and demand in the market. This means that a failure to manage the impact of localised pests, weeds and disease can materially impact supply, creating the potential for volatility in the market that contributes to inflationary pressures upon the cost of living. It is important that horticultural producers have access to products that manage both existing production constraints as well as new

6 SEC Newgate, *Mood of the Nation*, September 2025, https://www.secnewgate.com.au/wp-content/uploads/2025/09/SEC-Newgate-Mood-of-the-Nation-Report-September-2025.pdf. Australian Bureau of Statistics (ABS). *Monthly Consumer Price Index Indicator*. Canberra, 2025. https://www.abs.gov.au/statistics/economy/price-indexes-and-inflation/monthlyconsumer-price-index-indicator; and AUSVEG. *Pricing and inputs: July 2025*. Melbourne, 2025. https://ausveg.com.au/article/pricing-and-inputsjuly-2025/.

7 Deloitte Access Economics. *Economic Contribution of Crop Protection Products in Australia*. August 2023. https://www.croplife.org.au/resources/reports/economic-contribution-of-crop-protection-products-in-australia/.

and emerging risks.

Access to new plant science innovation in horticultural production enables farmers to expand existing growth into new and alternative high value crops. Increased volumes of production supports investment across the value chain and provides the opportunity to grow export markets for horticultural produce. The combination of improved productivity and enhanced market access for horticultural produce supports farm incomes for these producers, facilitating new investment into production while delivering increased domestic supply of fresh produce.

As such, productivity growth across Australia's horticultural commodities is not only important to curbing the impact of food inflation on household budgets but also in ensuring a fair return to our nation's farmers.

Agricultural Productivity Supports the Natural Environment

A recent independent technical review into Australia's climate smart agricultural practices found the adoption of advanced plant science innovations has enabled productivity growth in Australian agriculture while reducing its greenhouse gas emissions and environmental impact.[8] As such, it is important that Australia's approach to delivering policies that support environmental outcomes in agriculture, including climate adaptation and greenhouse gas mitigation, support producers and environmental land managers to access to new productivity enhancing innovations.

Agricultural inputs, especially gene technology and modern pesticides, are crucial to maintaining and increasing agricultural output in the face of climate change challenges. Overwhelmingly, the weight of scientific evidence does not support claims that suggest a shift away from these technological inputs in agricultural systems will support a potential reduction in GHG emissions. The analysis that is used by those advocating these solutions overlook a crucial aspect and do not fully capture the complexity of the situation. Namely, that low input agricultural systems come at a cost of a 35 per cent decline in production compared to 2010 levels.[9]

Such an outcome would deteriorate global food production and food stocks. This not only risks outcomes opposite to the Paris Agreement's stipulation that the development of a low emissions environment should not threaten food production but also presents perverse global outcomes for food system emissions. For example, a study that undertook a global consequential lifecycle analysis of conventional and organic farming systems in the UK

8 J Rochecouste, *Climate-smart agriculture: Australian sustainable farming practices enabled by plant science innovation – An independent technical review*, November 2025.

9 Xavier Poux and Pierre-Aubert Aubert, 'An Agroecological Europe in 2050: Multifunctional Agriculture for Healthy Eating', IDDRI, 1 January 2014, https://www.iddri.org/en/publications-and-events/study/agroecological-europe-2050-multifunctional-agriculture-healthy-eating.

concluded the following:

> *"... widespread adoption of organic farming practices would lead to net increases in GHG emissions as a result of lower crop and livestock yields and hence the need for additional production and associated land use changes overseas. It is not obvious how additional overseas land could be found, without expanding the existing area of tilled land by ploughing up grassland."*[10]

With Australian food production providing a critical contribution to global food security,[11] it is important that policy settings that promote agriculture's contribution to an Australian net zero economy consider any consequential impacts on global food production. As outlined above, any reductions in Australian productivity related to reducing our agriculture industry's net emissions may perversely result in an increase of GHG emissions related with global agriculture. This is due to the shift in agricultural production from Australia to elsewhere in the world and the GHG emissions related to the necessary conversion of land from native vegetation to land suitable for cropping or grazing.[12]

This indeed was the scenario considered by CSIRO as part of its examination of the potential of the Australian grain industry's ability to mitigate its GHG emissions. The study found that under current technology scenarios, any net reductions were most likely to be accompanied by reductions in production, with consequential food-based emissions generated elsewhere exceeding the reductions made in Australia. Because of the relatively low GHG emissions intensity of Australian production, these impacts are more acute due to the combination of emissions arising from deforestation and increased emissions intensity of production elsewhere.[13]

3 PLANT SCIENCE INNOVATION AND AGRICULTURAL PRODUCTIVITY

Crop protection products

The control of weeds, insect pests and disease made possible through the use of crop protection products is integral to the productivity of Australian agriculture. $31.6 billion of Australia's agricultural output in 2020-21 was directly attributable to the use of crop protection products. This accounted for 73 per cent of the total value of crop production in that year.[14]

10 Laurence G. Smith et al., 'The Greenhouse Gas Impacts of Converting Food Production in England and Wales to Organic Methods', *Nature Communications* 10, no. 1 (22 October 2019): 4641, https://doi.org/10.1038/s41467-019-12622-7.

11 Canberra, 'Australian Food Story: Feeding the Nation and Beyond', text (Parliament of Australia, House of Representatives), Australia, accessed 11 December 2023, https://www.aph.gov.au/Parliamentary_Business/Committees/House/Agriculture/FoodsecurityinAustrali/Report.

12 Sevenster et al., 'Australian Grains Baseline and Mitigation Assessment'.

13 Ibid.

14 Deloitte Access Economics, 'Economic Contribution of Crop Protection Products in Australia', August 2023, https://www.croplife.org.au/resources/reports/economic-contribution-of-crop-protection-products-in-australia/

The total cost of weeds across Australia is estimated at over $5 billion.[15] Chemical control costs across broad acre cropping enterprises combined with production losses among grain, beef and wool industries make up most of these expenditures. Aggregated across the six major Australian grain crops in 2013, the estimated annual loss of food crop quantity and quality due to insect pests totalled $359.8 million annually.[16] Finally, losses of both quantity and quality of food crops due to infection by various fungal, bacterial and viral plant diseases in Australian grain crops are valued at between $920 million to $1 billion per annum – an $80 million increase since 2010.[17]

Like farmers, Australia's environmental land managers, such as parks and wildlife services, rely on the use of modern, safe and innovative crop protection products to effectively defend and protect natural environment from threats. Environmental management is critical for maintaining Australia's precious and unique ecosystems, as well as minimising the risk and severity of natural disasters. In 2006, the (former) New South Wales Department of Environment and Conservation listed weeds and pests as second only to habitat loss as a cause of biodiversity decline.[18]

Case Study: Efficient management of public land

Boroondara Council recently concluded a no-glyphosate trial along Gardiners Creek in Melbourne. Over the two-year period, the Council found that without the use of crop protection products, the creek experienced much higher weed loads, even in drier weather, with native vegetation forced to compete for nutrients with invasive species.[19]

The Council also had significantly higher labour costs associated with the trial. More manpower and more hours were needed to abate the weed growth along the creek. The trial saw an increased risk of injury to council employees, given that more physically repetitive and laborious management practices were needed to replace pesticide use. One worker suffered a repetitive stress injury from brush cutting. In the first year, 3,000 additional hours were spent managing the weeds, at an extra cost of nearly $30,000.

15 Deloitte Access Economics, 'Economic Contribution of Crop Protection Products in Australia', August 2023, https://www.croplife.org.au/resources/reports/economic-contribution-of-crop-protection-products-in-australia/; and Oerke E.C. Crop losses to pests. J. Agric. Sci. 2006;144:31–43.

16 Dave A. H. Murray, Michael B. Clarke and David A. Ronning, *The current and potential costs of invertebrate pests in grain crops* (GRDC Report, 2013) https://grdc.com.au/resources-and-publications/all-publications/bookshop/2013/02/the-current-and-potential-costs-of-invertebrate-pests-in-grain-crops.

17 https://www.ccdm.com.au/about/

18 A Coutts-Smith and P Downey. "The impact of weeds on threatened biodiversity in New South Wales". *CRC for Australian Weed Management Technical Series*, No 11 (2006). https://researchprofiles.canberra.edu.au/en/publications/the-impact-of-weeds-on-threatened-biodiversity-in-new-south-wales/. NSW National Parks and Wildlife Service, *Weed Management Strategy,* https://environment.nsw.gov.au/publications/weed-management-strategy.

19 Urban Biodiversity and Revegetation Team at Boroondara Council. *No Glyphosate Trial along Gardiners Creek*. Boroondara Council, November 2025. https://www.boroondara.vic.gov.au/your-council/news-and-media/boroondara-news/no-glyphosate-trial-along-gardiners-creek.

Case study: Protecting Australia's native vegetation

The Blackberry bush (Rubus fruticosus aggregate) is an invasive weed first introduced to Australia in the mid-1800s. Blackberry is a serious issue across Australia, with infestations notoriously difficult to remove, requiring an integrated approach with spraying, slashing, burning, grazing and biological control.

Infestations rampage natural vegetation in parks and forests, providing habitat for vermin, reducing food sources for native fauna, disrupting water sources and driving erosion. For farmers, Blackberry bushes can also substantially affect the productivity capacity of land, reducing profitability.

As the Blackberry bush is a significant threat to Australia's biodiversity, the managers of public and private land across Australia rely on access to effective herbicides to prevent the spread. Successful interventions have restored creeks, bought beloved fauna like echidnas and bird life back to desolated areas, and helped native seeds germinate and revegetate.[20]

Invasive weeds and other pests can have major negative impacts on Australia's natural environment as they damage the diversity and balance of ecosystems. These changes threaten the survival of many native plants and animals as weeds compete for space, moisture, nutrients and sunlight. Weeds can also harbour vermin, exacerbating pest issues.

Managing these impacts is a major cost for Australia's environmental managers. Researchers at CSIRO and Flinders University demonstrated that invasive plants are the costliest pests in Australia, costing $200 billion since 1960.[21] In 2020, the Invasive Species Council's report 'Glyphosate: A Chemical to Understand' highlighted that herbicides offer the only really effective option for removing invasive weeds from Australia's bushland reserves. It concluded that, without them, most of the remaining indigenous vegetation in Australia would decline in both quantity and quality. [22]

Weeds and pests can become resistant over time to crop protection products. The key to managing resistance is the adoption of diverse weed, insect pest, and disease management tactics. The implementation of this in both farming and environmental land management systems relies on access to a range of effective crop protection products that can be applied

20 Victorian Blackberry Taskforce. *Tackling Blackberry: Six Successful & Compelling Case Studies*. Victoria: 2017. https://irp.cdn-website.com/dbc3316d/files/uploaded/VBT_CaseStudies2017.pdf

21 Corey J A Bradshaw and others, 'Detailed Assessment of the Reported Economic Costs of Invasive Species in Australia', *NeoBiota*, 67 (29AD), 511–50 <https://doi.org/10.3897/neobiota.67.58834>.

22 T Low. *Glyphosate: A Chemical to Understand*. Fairfield: Invasive Species Council, 2020. https://invasives.org.au/wp-content/uploads/2020/11/Glyphosate-A-Chemical-to-Understand.pdf.

in combination or rotation. Delays in the introduction of crop protection products with new modes of action (ie, the biochemical mechanism by which a pesticide causes growth to cease in target organisms) place more pressure on the efficacy of existing products and increase the risk of resistance.

Cost effective and efficient land management requires careful rotation of products to minimise developing resistance. This necessitates a fast and efficient regulator to ensure land managers have access to the widest range of safe, effective tools and can use contemporary science to manage pests, weeds, and diseases.

Agricultural biotechnology

GM crops, an application of modern agricultural biotechnology, play a crucial part in boosting agricultural productivity. They represent the next natural stage in centuries of plant breeding innovation. Their use is a step along the same path of technological innovation that led to Australian agricultural inventions such as the combine harvester and the adaptation of wheat varieties to the Australian environment that began with William Farrer's *Federation*.

The utilisation of GM crops has delivered significant productivity and environmental sustainability improvements in farming. Over 400 million hectares of GM crops have been cultivated worldwide since 1996 and over 1 trillion meals containing GM food ingredients have been consumed globally. GM crops are the most tested and regulated food product in history. There are no substantiated scientific reports of any food safety issues related to the consumption of genetically modified crops, nor any unexpected effects on ecosystems.

The development, planting and consumption of an approved GM crop is safe. Every scientific and regulatory body that has examined the evidence has arrived at the conclusion that GM crops and the foods they produce are as safe as their conventional counterparts. This includes the World Health Organization, the Australian Academy of Science, the European Commission, the American National Academy of Sciences and the Royal Society of Medicine.

GM crops have also helped farmers financially. Globally, GM technology directly increased farm income by US$18.2 billion in 2016,[23] with over half the gains going to farmers in developing countries.[24] According to the meta-analysis published by Klumper and Qaim, GM crops have reduced pesticide use by 37 per cent, while increasing crop yields by 22 per

23 *Brookes and Barfoot (2018) Op. Cit.*
24 *ISAAA (2019) Op. Cit.*

cent and increasing farmer profits by 68 per cent.[25]

GM crops under research and development in Australia will help our farmers address the unprecedented challenges they are facing in a changing climate. GM traits being investigated at the national level will be crucial tools for farmers to combat drought, soil acidity and/or salinity, as well as emergent diseases. There is also considerable Australian research into GM traits that will bring health benefits to consumers, such as healthier starches and oils modified to be lower in saturated fats and with improved cooking qualities.

The opportunity for biotechnology traits will only grow more important under climate change scenarios, characterised by hotter and drier production environments. A climate change risk assessment undertaken by the Commonwealth Bank in 2019 identified that biotechnologies, such as GM, can increase the climate resilience of crops, including pasture crops, by up to 40 per cent over the next 40 years.[26]

Importantly, the impact of climate change on the environment will also reduce the ability for nature-based solutions to sequester carbon across the landscape.[27] Through agricultural biotechnology innovation, the plant science industry can breed plants that are adapted to these environmental conditions to improve the ability for vegetative and soil sequestration.

Likewise, next generation plant breeding techniques or new breeding techniques (NBT) alongside conventional genetic modification (GM) have already provided enormous benefit to Australian farmers' efforts as part of their sustainable agricultural practices. Where supported by appropriate regulatory frameworks, these NBTs, which are based on the application of genome editing to develop plant varieties that are indistinguishable from conventionally bred plants, have been integrated into modern breeding programs. Their use is an essential tool of modern science that supports the acceleration of the breeding cycle, facilitating an increase in genetic gain (more yield), improved climate change adaptation and reduced farm inputs requirements. Importantly, speeding up the breeding cycle also offers the ability to integrate consumer focused traits that improve nutrition, health and wellbeing.

25 *Klümper, W. and Qaim, M., (2014). 'A meta-analysis of the impacts of genetically modified crops'. PloS one, 9(11), p.e111629.*

26 ' 2019 Annual Report' (CommBank, 2019), https://www.commbank.com.au/about-us/investors/annual-reports/annual-report-2019.html.

27 Sarah E. McDonald et al., 'Grazing Management for Soil Carbon in Australia: A Review', *Journal of Environmental Management* 347 (1 December 2023): 119146, https://doi.org/10.1016/j.jenvman.2023.119146.

Case study: GM and Genome Editing protecting Cavendish Bananas

Cavendish bananas are the most important banana variety in the world, accounting for 50 per cent of all banana production due to their predictability in agronomic management, consistent yield and fruit quality, ripening and shelf life. As well as being a highly nutritious fruit, these qualities also allow the bananas to be sold at low cost, making them even more favourable among consumers.

However, it is susceptible to the soil-borne fungus Fusarium wilt tropical race 4 (TR4), also known as Panama disease. It can remain in the soil for over 40 years and there is no effective control for it. Due to the low fertility and long generation times of conventional breeding with bananas, exploitation of resistance genes that have been identified in banana varieties has been slow. Gene editing offers a very promising alternative strategy for the improvement of commercial TR4 banana varieties.

In 2017, the Queensland University of Technology (QUT) revealed they had developed and grown genetically modified (GM) Cavendish bananas resistant to TR4. The development of the TR4 resistant line then led to a partnership with US-based international fresh fruit and vegetable leader, Fresh Del Monte, which has enabled the researchers to use the gene editing tool CRISPR to develop a non-genetically modified variety of Cavendish that will also be resistant to TR4. The crop is currently in the sixth year of field trials in the Northern Territory.

4 IMPACT ON GLOBAL COMPETITIVENESS AND INVESTMENT INCENTIVES

Crop protection: Market thinness and regulatory failures

The state of the global plant science industry is one that is being shaped by intense competition with the backdrop of increasing complexity in developing new crop protection technologies for the market.[28] The cost of research and development has skyrocketed in

28 T Sparks and R Bryant 'East meets west: regional impact on agrochemical discovery and innovation', *Pest Management Science,* 2021, Vol 77, Issue 10; S Powels, 'Herbicide discovery through innovation and diversity', *Advances in Weed Science,* 2022, 40 (Spec1):e020220074.

the past few decades driven by growing difficulties associated with identifying and screening new compounds.[29]

In 1995, it took the assessment of 52,500 compounds to develop one effective new pesticide chemical active constituent. It now requires the assessment of more than 160,000 compounds and expenditure of more than $400 million ($301m USD) over a 12-year period to bring just one successful pesticide to product launch in the major markets of the EU and North America. More than one-third of this cost directly relates to compliance with regulation and registration requirements.[30] Additional investment is then required to conduct Australian relevant trials and to fund the regulatory framework through cost recovery for the APVMA prior to Australian farmers obtaining access to a new pesticide technology.

At the same time, there has been growth in global capacity to produce crop protection compounds that are no longer protected by patent, driving growth in the market for generic crop protection products.[31]

These pressures mean that global firms investing in R&D to produce new crop protection technologies are being strategic about the investments they make to commercialise new products in specific markets. As a result, priority is given to those jurisdictions that will make a more significant contribution to creating a commercial return on the high upfront investment already made.

Australia is an important but small value market for members of the global plant science industry equating to 1.5 to 3 per cent of global sales of crop protection products. The comparatively small returns available in the Australian market weakens the market signals for investment, delaying the access Australian farmers have to these products. This is particularly the case for crops with smaller volumes of production, including many horticultural crops, or for the control of minor pests, weeds or diseases.

These factors have resulted in an environment where a decision to invest in releasing a new crop protection product in Australia is made in competition with making a comparable investment elsewhere in the world. This directly places our national interest in competition with the countries our farmers compete against in export markets. Policies and regulation that maintain high standards, while supporting investment from plant science innovators,

29 P McDougall. *The Cost of New Agrochemical Product Discovery, Development and Registration in 1995, 2000, 2005-8, and 2010-2014.* Pathhead, Scotland: CropLife International, 2016. https://croplife.org/wp-content/uploads/2016/04/Cost-of-CP-report-FINAL.pdf; and R Nishimoto, 'Global trends in the crop protection industry', *Journal of Pesticide Science,* 2019, 44 (3), p.141.

30 https://croplife.org/wp-content/uploads/2024/02/Time-and-Cost-To-Market-CP-2024.pdf

31 S Thomas, 'The Four Forces Reshaping the Crop Protection Industry and What Comes Next', *Upstream Ag Insights*, https://upstream.ag/.

are required to bring plant science technologies to Australia early in their commercial lifecycle. These settings are essential to protecting and lifting our nation's agricultural productivity and ensuring the international competitiveness of Australian farmers.

Gene Technology: Outdated regulatory settings inhibiting research and investment

Australia was once a global leader in gene technologies, empowered by contemporary, effective regulation. However, failure to ensure that policy settings continued to reflect the settled science of the safety of genetic technologies has resulted in a forfeiture of this position. As a result, we are no longer seen as a more favourable nation for investment in the research and commercialisation of agricultural biotechnology.

This failure is most evident in the unfinished reforms identified within the Third Review of the National Gene Technology Scheme. Despite the review commencing in 2017, the inability to implement the intent of the recommended reforms has meant that the regulatory effort required by the Scheme is no longer proportionate with risk. Additionally, the lack of certainty created by these delays has led to an environment unconducive to commercial investment in bringing these newer technologies to market.

Australia needs to take urgent action to avoid being left behind. The protracted and unresolved regulatory review process has dramatically undermined the confidence required by members of the plant science industry to commercially invest in Australia. As the regulatory framework also underpins other biotechnology applications, the delay is also impeding the growth of our broader bioeconomy. At the same time, international jurisdictions have updated their gene technology regulatory frameworks to better reflect the settled science of the safety of biotechnology. As a result, farmers in other countries have access to new, more efficient technologies while they continue to be unavailable to Australian farmers.

The eight-year delay has meant that technologies that were new, emerging and unfamiliar to regulators in 2017 are now well tested and trusted internationally. CRISPR technology and genomic editing was relatively new in 2017 and so approached with sensible regulatory caution. These are now established technologies with their application extensively studied. As a result, the detailed body of research that reliably describes the risk profiles of these technologies has underpinned the development of risk proportionate regulatory stances globally. In these jurisdictions, genomic editing approaches used to breed plants that are indistinguishable from conventionally bred plants have been an important tool to speeding up plant adaptation to increase yield, improve sustainability and deliver consumer-based

traits.

Alongside these global developments, in 2025 Food Standards Australia and New Zealand (FSANZ) made an update the Australian and New Zealand Food Standards Code which amended the definition of genetically modified foods. This decision followed a detailed scientific risk assessment which identified that there was no justification for regulating food developed using a majority of genomic editing techniques as "*genetically modified food*". Accordingly, the definition was limited to organisms with novel DNA in their genome.[32]

Despite the progress of science in the intervening years, excluding the operation of a narrow exemption for the use of SDN-1 made in 2019, the National Gene Technology Framework continues to treat genomic editing in the same manner as it did in 2017.

The prolonged delay means that Australia's regulation of gene technology perpetuates a layer of red tape that is unnecessary to meet the scheme's objectives of protecting the health and safety of people and to protect the environment. It has resulted in the scheme being increasingly out of step with the direction of regulation globally and is now even unaligned with Australia's food regulation. This is impeding improved agricultural productivity, enhanced environmental sustainability and the delivery of varieties of fruit and vegetables with enhanced nutritional profiles.

Unfortunately, to date the Department of Health, Disabilities and Ageing (DHDA) has shown an inability, or an unwillingness, to steward the agreed reforms to support these regulatory objectives.

By comparison, similar reforms undertaken in Argentina in 2015-16 have resulted in a dramatic increase in biotechnology innovation.[33] Argentinian biotechnology industries have been supported to grow through risk-tiered pathways. Implementing risk tiering in Australia, as recommended by the Third Review, will support the growth of investment in Australian synthetic biology and biomanufacturing industries. With the right policy and regulatory settings, the Australian industry, could grow to a $30 billion industry employing over 50,000 Australians by 2040.[34]

However, failure to implement the agreed reforms identified by the Third Review of the National Gene Technology Scheme has impacted the viability of investing in the discovery

32 Food Standards Australia New Zealand, 'Proposal P1055 – Definitions for gene technology and new breeding techniques', https://www.foodstandards.gov.au/food-standards-code/proposals/p1055-definitions-for-gene-technology-and-new-breeding-techniques

33 A Whelan, P Gutti, and M Lema. Gene Editing Regulation and Innovation Economics. *Frontiers in Bioengineering and Biotechnology* 8 (2020). https://doi.org/10.3389/fbioe.2020.00303.

34 Commonwealth Scientific and Industrial Research Organisation (CSIRO) and Main Sequence Ventures. *Synthetic Biology: National Progress Report*. Canberra: 2023. https://www.csiro.au/en/work-with-us/services/consultancy-strategic-advice-services/csiro-futures/future-industries/synthetic-biology-roadmap.

and commercialisation of these technologies in Australia. The recommendations were endorsed by Government in 2018 and a Decision Regulatory Impact Statement outlining a preferred risk-proportionate model was adopted in July 2021.

While DHDA has placed a partial consultation draft bill and a consultation paper for regulatory amendments on exhibition, the reforms proposed only represent modest progress that miss the heart of the Review's vision. While the intended introduction of risk tiering is an important step forward, the scheme will not adequately provide Australia with a future-proofed regulatory framework. The continuation of process-based triggers, as opposed to an outcomes-based system, needlessly burdens innovators. As it stands the proposed amendments will not adequately implement all the agreed recommendations. Furthermore, the definitions governing the organisms under the framework remain overly restrictive, limiting innovation and the integration of emerging technologies.

Specifically, DHDA has proposed the inclusion of 'novel dealing' as a regulatory trigger within the authorisation pathways as part of the proposed amendments to the Gene Technology Regulations 2001. DHDA do not propose a definition for 'novel', nor have they sought to deal with the ambiguity created by the utilisation of novel as a regulatory trigger in other international jurisdictions or FSANZ's use of 'novel DNA'. This risks unnecessary divergence, regulatory inefficiency and ongoing uncertainty for both regulators and proponents, precisely at the time industry and government are seeking to reduce excessive regulatory burden.

The implementation delay has left the Scheme lagging in numerous areas of accumulated scientific evidence, undermining Australia's global reputation as a leader in agricultural innovation and biotechnology investment. This stagnation has led to the delayed introduction of advanced biotechnologies essential for the agricultural sector's sustainability and growth.

5 RECOMMENDATIONS TO SUPPORT AGRICULTURAL PRODUCTIVITY

In its inquiry report *Creating a more dynamic and resilient economy*, the Productivity Commission, outlined the value of creating a regulatory stewardship culture across Australian regulators and departments responsible for regulatory policy.[35] This is particularly relevant in the context of the regulatory systems for agricultural chemicals and biotechnology. Many of the stresses on regulatory efficiency are symptomatic of a system

35 Productivity Commission. *Creating a more dynamic and resilient economy (Inquiry Report)*, pg. 50-51.

disconnected from its role in promoting a dynamic and resilient agricultural system.

Create a patent credit scheme for plant science innovations

Global headwinds are likely to result in fewer new products registered in Australia, with these registrations likely to be made with a narrower range of uses on label. This will have negative impacts on yield, weather and climate resilience, employment, and productivity in agriculture, with flow on impacts to domestic supply of food and agricultural exports.[36] Australia's agricultural innovation ecosystem depends on timely access to new technologies that improve productivity, sustainability, and resilience in food and fibre production. However, the structure of Australia's intellectual property (IP) system does not adequately account for the realities of bringing agricultural chemical and crop biotechnology products to market in a small and highly regulated jurisdiction.

The plant science sector is subject to mandatory, rigorous, and science-based regulatory approval processes administered by the APVMA and the OGTR. These processes, while essential for ensuring safety and efficacy, can span multiple years, during which time patent-protected technologies are denied access to the market. This pre-market barrier results in the real erosion of patent value. During the regulatory review period, patent time continues to lapse, but the innovator is prevented from generating any commercial return. This reduces the effective patent life and undermines the incentive to invest in Australian-specific research and development.

Rising costs in research and development means global firms are being more selective about where they register their products, how Australia will feature in the global commercialisation of a new product, and which crops they will seek a registered use for. These decisions are based on 'return on investment' calculations, in each country, for each crop. In this context, a patent credit scheme would make Australia a far more attractive investment opportunity to commercialise new products in. By improving the investment incentives, Australia will encourage more products to be registered, more quickly, for more uses.

New crop protection products have a range of important benefits. New technology and scientific progress are enabling recent innovations to more efficiently increase productivity on farms, increase crop resiliency, and reduce food inflation costs for consumers.

36 Mandala Partners. *An Australian patent credit system: Boosting investment and innovation in agriculture*. Canberra: June 2023.

There are also substantial environmental and profitability benefits; newer crop protection products tend to have more precise chemistries and lower use rates. This helps improve environmental outcomes whilst reducing overall input costs for farmers.

While a similar scheme operates in Australia for the pharmaceutical industry, the concept has not been extended to the plant science industry. This is despite the added complexities in regulation which require environmental field trialing, creating longer assessment timelines. Nor does it account for the additional risk and opportunity cost created by the seasonal nature of agriculture, which means a delay in approval may in turn cause a delay in commercialisation until the following season. This could be a delay of up to 12 months.

Australia's IP framework; however, offers such extensions only for pharmaceutical patents under section 70 of the *Patents Act 1990*, despite agricultural and biotechnology products undergoing similarly intensive regulatory scrutiny. This inconsistency disadvantages the plant science industry. It discourages the Australian launch of new technologies, reduces onshore research, and creates a market environment less favourable to innovation compared to international peers.[37]

Patent term extensions and enhanced data protection provisions are essential reforms to ensure that the Australian market remains attractive to global innovators and that farmers gain access to the tools they need to remain internationally competitive. A credit scheme would increase the likelihood of timely product launches and support greater investment by companies developing transformational technologies that will support productivity growth in the agricultural industry.[38]

In doing so, an Australian patent credit scheme would work to prevent the high opportunity costs of foregone production currently borne by Australian farmers when crop protection products available elsewhere in the world do not have specific permitted uses in Australia.[39] In turn, this supports Australian agricultural exports to remain competitive.

This is particularly acute for minor uses and specialty crops, which are already under-served. The absence of patent term extension for highly regulated crop protection products presents a structural disincentive to investment. The result is a thinning innovation pipeline, delayed or forgone product launches, and reduced access to technologies that support productivity, environmental outcomes, and food security.

In particular, the development of an Australian patent credit scheme for plant science

37 ibid.
38 W Chancellor and C Boult. *Australia's farm productivity slowdown – why it matters, and what it means for policy makers*.
39 Grain Producers Australia. "Preliminary submission to the Independent Review of Pesticides and Veterinary – Medicines Regulatory System in Australia".

technologies would complement the "springboarding reforms" introduced by the 2012 Raising the Bar reforms. It would do this by supporting the commercial feasibility of bringing new and transformative technologies to market, while still facilitating generic competition at the conclusion of the protected patent period. Australia represents a small share of the global agricultural technology market. The cost of regulatory compliance in this environment makes product development and commercialisation less attractive, especially when coupled with uncompensated patent erosion.

This reduces the incentive for global innovation companies to invest in Australia resulting in delays in the registration of new plant science technologies and in partial registration of new crop protection products. This means that product uses or biotechnology traits that support specialty crops, such as high value horticulture, are not registered.

A patent system that recognises the specific commercial realities of Australia's plant science sector is essential. Patent term extensions and enhanced data protection are practical, internationally validated mechanisms to address market thinness and regulatory-induced delays.[40]

Improve on-time performance by the APVMA

Australia's agricultural chemicals regulator, APVMA, is world class. It produces technically proficient and trusted assessments. Every application is rigorously assessed to ensure they are safe to use and present no unacceptable risk to applicators, consumers, the community as a whole, the environment or Australia's domestic and international trade of agricultural produce.

However, these assessments must also be efficient so that the Australian economy can benefit from continued application of contemporary technologies as well as from emerging technological and scientific advancements. This is acknowledged within Section 1A of the *Agricultural and Veterinary Chemicals Code Act 1994* (Agvet Code), which sets out that one of the public policy objectives of the Agvet Code is to support the wellbeing of the economy and primary production. This objective is achieved by operating as a well-functioning regulatory system that supports the viability and competitiveness of farmers through facilitating access to chemical products that can be safely used.

Since September 2022, the on-time registration of new products and uses (major pesticide applications) has been deprioritised by the APVMA. This has resulted in a consistent drop

40 Organisation for Economic Co-operation and Development (OECD). "Guidance Document on Regulatory Incentives for the Registration of Pesticide Minor Uses." *Series on Pesticides and Biocides*, no. 63 (September 2014). https://doi.org/10.1787/9789264221710-en.

in on-time performance for this category over the period, with the APVMA's most recent performance report showing only 58.9 per cent of major pesticide applications (also known as technical applications) were assessed on-time.[41]

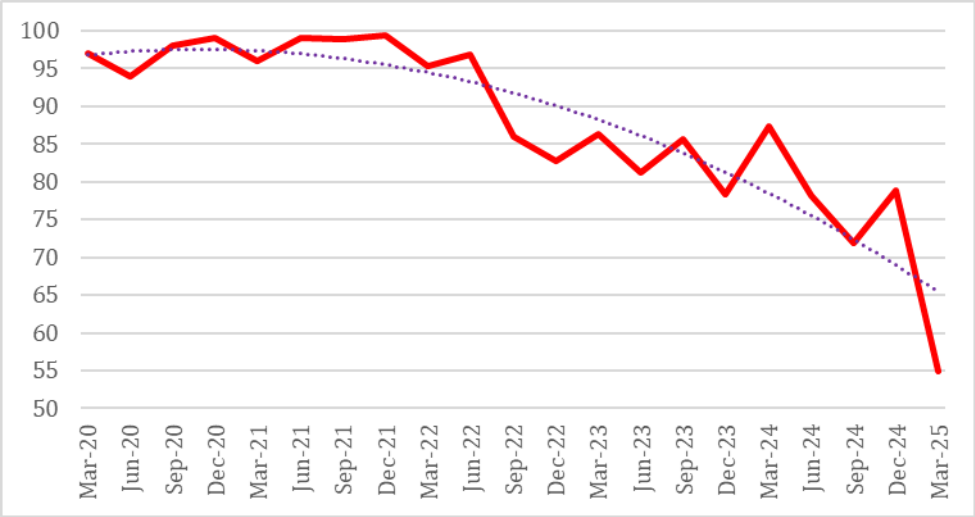

Figure 1: APVMA On-time performance - Major Pesticide Applications 2020 - 2025

The current delays and unpredictability, coupled with the ever-looming threat of substantially increased regulatory costs, have already begun to dissuade registrants from seeking registration of new, innovative products and uses in Australia. This includes the cancellation of some projects.

Compounding this issue, from the Financial Year 2023-24, the APVMA Board has used its Corporate Plan to reduce the regulator's KPI for total on-time assessment performance to 90 per cent of its legislated timeframes. With this measure aggregated across technical and non-technical assessments, the KPI is even further diluted as a measure of the APVMA's ability to facilitate the delivery of new safe and effective crop protection technologies to farmers.

The cost of these assessment delays on productivity cannot be overstated. Historically, delays of lesser magnitude and duration than those experienced in this current state have cost the farming sector hundreds of millions of dollars. Following detailed analysis undertaken in 2019, Grains Producers Australia reported as much as $500 million in direct losses to productivity resulted from delayed access to three new, novel chemistries which were available to their overseas competitors.[42]

41 Australian Pesticide and Veterinary Medicines Authority (2025) *September 2025 performance report* https://www.apvma.gov.au/about/accountability-and-reporting/performance-statistics/september-2025-performance-report

42 Grain Producers Australia. "Preliminary submission to the Independent Review of Pesticides and Veterinary – Medicines Regulatory System in Australia".

This $500 million accounts for just a small handful of products that were only delayed for a season. By comparison, CropLife has recently identified that the cumulative delays in assessment, above and beyond statutory time limits, currently faced by its members add up to a combined total of nearly 40 years. This includes delays that are frequently exceeding 18 months. Given the seasonality of farming, this means that new technologies are not reaching the farm gate until two to three seasons after they were scheduled for launch.

Case Study: Regulatory delay directly causing reduced investment

Global innovator companies have publicly stated a withdrawal from research and development, as well as commercialisation activity in New Zealand due to delays in regulatory approval. Reporting in NZ Farmer Weekly and The Post outline that these decisions have included not bringing new actives into New Zealand and the shutting down of research facilities.

Options are already available to the APVMA to immediately improve its on-time assessment without compromising safety or scientific integrity. These include the enhanced use of regulatory technologies, such as computer aided decision making and an improved integration of independent experts into the APVMA's assessment pipeline as external scientific reviewers. Likewise, the APVMA should be actively looking to increase its reliance on the assessments of trusted international regulators in its regulatory decision making.

To assist the APVMA to return to the statutory intent of the regulatory scheme, the Board should reinstate its on-time performance indicator to 100 per cent of assessments completed on time in accordance with statutory timeframes. Returning this measure as the key indicator of the regulator's performance will provide the APVMA Board and Management with a clear metric on whether the agency is effectively identifying and seizing the strategic opportunities available to it to create and deliver maximum public value.[43] It would also create the imperative to examine what management initiatives are available that would deliver on-time regulatory assessment in a manner that does not detract from the necessity of also delivering against the APVMA's other regulatory functions.

43 John Braithwaite, 'Responsive Excellence', a paper prepared for the Penn Program on Regulation's Best-in-Class Regulator Initiative (June, 2015). Available at https://www.researchgate.net/publication/304570291_Responsive_Excellence

Implement the recommendations to the Third Review of the National Gene Technology Scheme

As outlined elsewhere in the submission, the failure to implement the recommendations made in the Third Review of the National Gene Technology Scheme has impacted the investment needed to deliver enhanced productivity through agricultural biotechnology. As part of ensuring the framework remains appropriately agile and supports future innovation, the review made recommendations to update definitions within the *Gene Technology Act* and to develop a risk tiered system. In particular, the recommendation around updating regulations points to the need for changes to definitions to take into account relevant domestic reviews.

> ***Recommendation 4:*** *The Review recommends updating, where required, the existing definitions in the Gene Technology Act 2000 (Cth), to clarify the scope of regulation in light of ongoing technical advances. Any changes to definitions should take into account concurrent work, including relevant domestic reviews and ongoing work internationally*

Concurrent with the commencement of the Third Review, FSANZ commenced a review of food derived using new breeding techniques, which are underpinned by the use of genomic editing. At the completion of this review in 2019, FSANZ initiated a proposal to amend the definitions of '*food produced using gene technology*' and *'gene technology'* in the Food Standards Code. This work culminated in 2025, when FSANZ with the concurrence of the Food Ministers' meeting, approved new definitions that set a threshold for food produced using gene technology to have 'novel DNA in its genome'.

For clarity, novel DNA is now defined in the Food Standards Code as DNA that:

> *(a) a person has inserted into the genome of an organism, cell or cells; and*
> *(b) is:*
> *(i) DNA from a species that is not a crossable species;*
> *(ii) DNA that:*
> *(A) is from a crossable species; and*
> *(B) contains a coding region that was rearranged or recombined prior to the insertion referred to in paragraph (1)(a);*
> *(iii) DNA that is not from an existing species.*[44]

Similar regulatory developments have progressed over the same time in in Canada,[45] or by

[44] Australia New Zealand Food Standards Code (Cth), Standard 1.1.2 – Definitions, s 1.1.2–17

[45] Food and Drug Regulations, CRC, c 870, div 28.

way of precisely articulated regulatory triggers, such as in Brazil,[46] are now used in the regulation of new breeding techniques.

In CropLife's view, the absence of comparable definitional alignment represents a missed opportunity to promote regulatory harmony across Commonwealth frameworks. Given the extensive scientific analysis and public consultation already undertaken by FSANZ across Australia and New Zealand, duplicating this discussion within the Scheme risks unnecessary divergence, regulatory inefficiency and ongoing uncertainty for both regulators and proponents.

CropLife therefore considers that the most appropriate way to amend the scheme to bring about the intent of Recommendation 4 would be for an amendment to Schedule 1 of the Gene Technology Regulations 2001 that exempts organisms that do not contain 'novel DNA' as defined in the Australia New Zealand Food Standards Code.

End cost shifting of public good activities onto the private sector

The APVMA is the only pesticide regulator in the OECD entirely funded by industry fees and levies. This full cost recovery model, combined with Australia's relatively small market, discourages global innovators from registering new technologies for Australian farmers. The result is an undermining of the international competitiveness of Australia's agricultural exports.

The current lack of global competitiveness for product development and commercialisation in Australia is evidenced by the number of new products bought to Australia. In the period of 2012-2019, 25 new products were registered in USA, whereas only 13 were registered here in Australia. [47]

The funding structure limits the regulator's ability to deliver on the public policy objectives set out in Section 1A of the Agvet Code, which prioritise farmer access to safe and effective agricultural innovations through an efficient regulatory system. The APVMA, which delivers trusted, technically proficient assessments, has cost recovery arrangements that require industry to bear the full cost of all of the regulator's activities, including those that deliver public good; such as compliance, monitoring for illicit products and vendors, chemical

[46] Comissão Técnica Nacional de Biossegurança (CTNBio), Resolução Normativa No 16/2018 (Brazil).

[47] Grain Producers Australia. "Preliminary submission to the Independent Review of Pesticides and Veterinary – Medicines Regulatory System in Australia." *Issues Paper Review of the Agvet Chemicals Regulatory System Future Reform Opportunities (*2020).

reconsideration and enforcement. As a result, Australia has similar regulatory costs (application fee, registration renewal fee and levies) on a dollar for dollar basis, as those in the United States and Europe, despite being a much smaller market. This is a major disincentive to invest in bringing products to Australia.

Comprehensive public funding would significantly reduce barriers to market entry for smaller registrants and facilitate the deployment of new products tailored for lesser grown crops and smaller industries. It would also support the registration of products developed by Australian businesses. This would enhance the ability of the regulatory framework to meet its public policy objectives of facilitating productive outcomes that support the international competitiveness of Australian primary producers and their contribution to the Australian economy.

Such a position is supported by the Productivity Commission's (PC) observations in its Final Report from its inquiry "*Creating a more dynamic and resilient economy*", where it concluded regulators need funding to be able to provide public good activities. Its report recognised the perverse incentive of full cost recovery models for regulators, including the lowering of commercial investment and reducing growth, competition and innovation. The PC proposed developing alternative funding, such as appropriation, to fund public good activities and avoid the perverse outcomes otherwise borne by the economy.[48]

The Australian Government is presently developing a new sustainable funding model for the APVMA, with government statements indicating that the development of the model is the opportunity to consider whether the current approach of cost recovery is delivering good policy outcomes as well as sufficiently resourcing the APVMA.

Comprehensive public funding that funded public good activities would allow industry recovered funds to be spent on delivering regulatory assessment. This would speed up regulatory assessment timelines, alleviate cost-recovery burdens on investing companies, reduce barriers for smaller registrants, and support innovation for minor crops and niche industries. All of which will drive productivity-enhancing private investment in Australia.

CropLife recommends that the Government fund the APVMA's public benefit functions in line with its own cost recovery guidelines. According to recommendations provided to the Department of Agriculture, Fisheries and Forestry in 2023,[49] an additional $8.4 million annually would fully support the APVMA's public good functions, including compliance, enforcement, and chemical reconsideration.

Appropriation should be a tool used to support public-good functions (for example the

48 Productivity Commission 2025, *Creating a more dynamic and resilient economy*, Inquiry report no. 109, Canberra,; available at <https://www.pc.gov.au/inquiries-and-research/resilient-economy/>.

49 K Matthews. *Future Structure and Governance Arrangements for the Australian Pesticides and Veterinary Medicines Authority (APVMA)*.

APVMA's compliance, chemical reviews, horizon scanning functions) so these do not rely solely on applicant fees in thin markets.

Public funding for the APVMA would also align it with other Australian regulators that already receive public funding:

- The Office of the Gene Technology Regulator (OGTR) receives over $8 million annually via appropriation.
- The Therapeutic Goods Administration (TGA) receives $15 million annually to support its public good activities.

Improve access to "minor use" crop protection tools

Driving growth and resilience in Australia's horticulture sector provides great benefit to Australia's national interest. As outlined elsewhere in this submission, increasing the supply of fresh fruit and vegetables grown in Australia will both enhance food security and bring downwards pressure on cost of living. Additionally, growth in high value horticulture exports is an integral pillar in the agriculture industry working towards sustaining its goal of becoming a $100 billion industry.

Yet horticulture is currently hampered by ineffective policy settings. Undue regulatory burden imposes an unfair delay and impediment on the productivity enhancing tools needed by the sector. For high value horticulture ventures to be profitable and attractive, Australia's agricultural chemical policy settings must facilitate the necessary investment to ensure new crop protection technologies are accessible to Australian horticultural producers.

The horticulture sector has an additional impediment due to the ineffective structure of Australia's Minor Use and Speciality Crops process. Production horticulture often relies on Minor Use and Speciality permits to enable product use on many of its crops, which are not grown in the same quantity as others (i.e. broadacre cropping). Manufacturers of agricultural chemicals rarely make applications for the registration of minor and specialty uses (including emergency use) due to the disproportionate cost compared to the small increases in revenue. Applications for minor and specialty use permits are predominately made by farming sector groups, or individual farmers, seeking permission to use an existing crop protection product for an off-label use.

While the Department of Agriculture, Fisheries and Forestry administers an assistance grant program that seeks to support access to priority uses of agvet chemicals, this is proving to be an inefficient allocation of funds. Specifically, the grant program has failed to achieve the

registration of these uses on label. As such, redirecting funds from the grant process towards a revamped Agricultural Collaborative Forum initiative for Minor Uses and Specialty Crops would be a more efficient option for Government to support enduring access to available safe crop protection tools. The forum would assist rural Research and Development Corporations in generating data required to support applications to the APVMA to gain, maintain or broaden access to priority minor uses of agricultural chemicals.

Previous iterations of this forum were highly impactful. In 2020 ABARES estimated an average return of $117 for every government dollar invested. The forum is necessary to alleviate market failure created by the smallness of the market for these specific chemical product uses. In doing so, it will provide more pest management options for small to medium scale farming sectors. This will be essential if Australia is to increase its production of higher value horticultural crops.

By redirecting existing funding for the existing grants program to the Agricultural Collaborative Forum Initiative for Minor Uses and Specialty Crops the benefit can be created in a budget neutral fashion. It will result in more horticulture commodities having access to the inputs they need to increase yield and productivity on farms.

Eliminate duplicative biosecurity import conditions (BICON)

The Department of Agriculture, Fisheries and Forestry's (DAFF) BICON permitting system imposes duplicative requirements on refined organic chemicals used in crop protection products. Despite decades of safe importation and repeated assessments confirming their low biosecurity risk, these compounds remain subject to permit applications unless covered by a Goods Determination. This includes commonplace substances such as amino acids, glucose, pectin, and cellulose.

The system has created backlogs and unpredictable delays over the past four years, causing permits to expire before renewals are processed. In practice, this has forced exporters to ship consignments back overseas (commonly to New Zealand) for re-importation under a valid permit, at the cost of tens of thousands of dollars and months of delay. This increases costs for farmers, disrupts supply chains, and discourages companies from expanding portfolios to include newer, biologically derived crop protection products.

This regulatory burden could be resolved through the expansion of the "List of Approved Ingredients for Goods with an Environmental End Use" to incorporate low-risk refined organic chemicals already identified by the regulator. This would eliminate unnecessary duplication, free resources to focus on genuine risk, and restore supply chain predictability

for plant science companies and Australian farmers.

While this solution was identified by industry to DAFF in 2023, progress towards gazetting these changes is slow.

Example of Inconsistent and Unnecessary Red Tape: Citric Acid and Xanthan Gum

Citric acid and Xanthan gum are used in crop protection products. Xanthan gum is a thickening agent but it is also a food additive. Similarly, citric acid is a buffering agent / pH adjuster but it is also a flavouring or preservative agent in food.

If these compounds are present in bioremediation, stockfeed, and fertilizer, no permit is required.

However, if the same two compounds are used in crop protection products, the BICON system indicates that "Prior to the importation of goods into Australian territory, a valid import permit issued by the Department of Agriculture, Fisheries and Forestry is required." This is despite both being listed on the "List of Approved Ingredients for Goods with an Environmental End Use, Biological Cleaning Agents, Odour Neutralisers or Sanitisation Products" – which should be enough for them to be allowed without any special permit.

These chemicals are already allowed to be imported freely to Australia, without a BICON permit, yet perverse legislation is driving up costs to both importers and farmers, despite being deemed to pose no biosecurity risk.

Support industry-based packaging stewardship

A clear example of regulatory duplication and inconsistency can be found in the treatment of packaging stewardship under the *National Environment Protection (Used Packaging Materials) Measure 2011* (NEPM). Despite the existence and strong industry-participation in outcomes-driven and industry-led national programs (such as drumMUSTER and bagMUSTER, which operate to high environmental and governance standards) business are often required to comply with overlapping or inconsistent state-based requirements. This results in multiple layers of reporting and verification that add cost and complexity without materially improving environmental outcomes.

The current national packaging regulatory reform process provides an opportunity to resolve these inefficiencies. At present, the co-regulatory arrangements under the NEPM allow business to either report directly to the states and territories or join the Australian Packaging Covenant Organisation (APCO). For businesses operating across multiple jurisdictions, this model is both ineffective and duplicative, as each jurisdiction applies

different reporting templates and stewardship targets. In practice, this not only increases administrative burden and cost, but also results in inconsistent data sets that cannot be meaningfully aggregated. Compounding this problem, state and territory regulators are not adequately resourced to carry out compliance monitoring or enforcement, meaning that free-riding persists and overall outcomes are weak.

While in theory, the co-regulatory framework should support industry to manage this duplication between state requirements, the prescription of APCO as the sole mandated vehicle for packaging stewardship under the NEPM has failed. In the absence of recognition of fit for purpose industry stewardship schemes, the model has created a regulatory burden without beneficially contributing progress towards packaging stewardship targets.

The independent review of the NEPM clearly noted APCO's lack of effectiveness in driving meaningful outcomes. The model has created high transaction costs for businesses seeking to meet their obligations. Industry frustration with APCO's performance was evident in its recent consultation on its EPR approach for packaging stewardship. Strong pushback from across the supply chain led APCO to postpone and revisit its proposed model, demonstrating the limited confidence industry holds in APCO's approach and governance.

By contrast, programs like drumMUSTER and bagMUSTER already provide transparent data, robust governance, and demonstrable recovery outcomes. A centralised, nationally recognised reporting mechanism that accredits such programs, rather than leaving stewardship obligations tied to a single ineffective body, would remove duplication, increase transparency, and restore industry confidence.

Aligning with comparable international standards for packaging recovery and recycled content would also allow Australian producers to demonstrate compliance once, rather than navigating a patchwork of inconsistent requirements.

Addressing the NEPM's inefficiencies is both straightforward and high impact. By harmonising packaging stewardship regulation across jurisdictions, and ensuring recognition of existing and effective programs, governments could significantly reduce compliance burden while accelerating progress toward Australia's packaging circularity and waste reduction targets.