

## Growing Australia's agricultural productivity through plant science technologies

- 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.
- 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.<sup>1</sup> Genetically modified (GM) canola and cotton crops have created billions of dollars of increased farm income since their introduction in 1996.<sup>2</sup>
- Creating resilient productivity growth in agriculture must continue to be a priority for the Australian Government. Agricultural productivity supports the farm sector as an important source of export revenue and underpins the production of fresh produce necessary to curb cost of living pressures faced by Australian families.
- Policy settings that support investment in the research, development, commercialisation and stewardship activities that are necessary to bring new plant science technologies to farmers will support growing agricultural productivity.

### CONTEXT OF REFORM OPPORTUNITIES

- The global pipeline for the development of new advanced agricultural technologies is lengthy, expensive and involves great commercial risk.
- The average investment from discovery to registration for crop protection products in major markets (USA and EU) exceeds US\$301 million over a period of 12.3 years.<sup>3</sup> For a biotechnology-derived genetic trait the cost is \$115 million over a period of 16.5 years.<sup>4</sup> Additional investment is then required to achieve regulatory approval for these products in Australia.
- Australia is an important but small value market for members of the global plant science industry equating to 1.5 - 3 per cent of global sales of crop protection products and 0.66 per cent of global GM crop plantings.
- The comparatively small returns available in the Australian weakens the market signals for investment in Australia, delaying the access Australian farmers have to these products.
- Policies that maintain high regulatory standards while supporting the investment required to bring plant science technologies to Australian farmers will promote growing our agricultural productivity. This includes improving intellectual protections for investment in developing and commercialising new technologies in Australia; increasing the timeliness, efficiency and predictability of science-based regulation; and incentivising effective fit for purpose industry stewardship initiatives.

## Strategic opportunities:

### CREATE A PATENT CREDIT SCHEME FOR PLANT SCIENCE TECHNOLOGIES

- Amend the *Patents Act 1990* (Cth) to create patent credit for crop protection chemicals and plant biotechnology traits to compensate for time lost in market under patent during mandatory pre-market regulatory assessment.

#### Problem

- The time lost in market while new plant science technologies undergo mandatory pre-market assessment erodes the value of patent protection for crop protection products and biotechnology traits in Australia.

<sup>1</sup> Deloitte Access Economics, 'Economic Contribution of Crop Protection Products in Australia', August 2023.

<sup>2</sup> Graham Brookes, 'Adoption and impact of genetically modified (GM) crops in Australia: 20 years experience', May 2016.

<sup>3</sup> AgBioInvestor, 'Time and Cost of New Agrochemical Product Discovery, Development and Registration' February 2024.

<sup>4</sup> AgBioInvestor, 'Time and Cost to Develop a New GM Trait', April 2022.

- 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. This creates costs to the farm sector through further investment to support off-label permits to access existing crop protection products and a loss of benefits that would otherwise be provided by biotechnology.
- Both delays in commercialisation of new technologies and partial registration create high opportunity costs in forgone productivity.

### Outcomes

- Reduced delays in the introduction of new plant science technologies into the paddock.
- Reduced partial registration supporting productivity in Australia's horticulture sector.
- Improved farm productivity, increased exports and resilient domestic fresh produce supply.

### FINALISE AGREED REFORMS TO THE NATIONAL GENE TECHNOLOGY SCHEME

- Prioritise legislation to amend the *Gene Technology Act 2000* (Cth) and develop risk tiered regulatory pathways to finalise implementation of the Third Review of the National Gene Technology Scheme.

### Problem

- The failure to implement agreed reforms identified by the Third Review of the National Gene Technology Scheme has impacted the viability of investing in the discovery and commercialisation of these technologies in Australia. These were endorsed by Government in 2018 and a Decision Regulatory Impact Statement outlining a preferred risk-proportionate model was adopted in July 2021.
- With the regulatory posture for genetic technologies globally moving to risk-proportionate frameworks, this has disadvantaged Australia as a destination for investment to support both agricultural biotechnology and synthetic biology applications that support the creation of new biomanufacturing industries.
- Ongoing delays in the work required to complete the reforms has exacerbated incentives to invest.

### Outcomes

- Similar reforms undertaken in Argentina in 2015-16 has resulted in a dramatic increase in biotechnology innovation.<sup>5</sup>
- Risk-tiered pathways will support the growth of investment in Australian synthetic biology and biomanufacturing industries, projected by CSIRO to grow to \$30 billion industry annually employing 50,000 Australians by 2040.<sup>6</sup>

### INCENTIVISE EFFECTIVE FIT FOR PURPOSE INDUSTRY PACKAGING STEWARDSHIP SCHEMES

- Establish a single, outcome-based national framework for packaging stewardship.
- Recognise accredited industry stewardship schemes as deemed compliance pathways.

### Problem

- Australia currently spends between \$10-12 billion a year producing packaging and a further \$2.6 billion managing its recovery and disposal. Yet 45 per cent of all packaging still goes to landfill.<sup>7</sup>
- Structural shortcomings in packaging stewardship impose unnecessary compliance burdens on all brand owners, with small and medium enterprises bearing the highest per unit -costs.<sup>8</sup>

### Outcomes

- Improved collection, recycling and use of recycled plastic in Australian packaging.
- Productivity gain through reduction in compliance hours.
- Available diversified recycled feedstock, reduced exposure to virgin-plastic and local processing jobs.

<sup>5</sup> John D Smith, 'Innovations in Bioengineering' (2020) 8 *Frontiers in Bioengineering and Biotechnology* 00303 <<https://doi.org/10.3389/fbioe.2020.00303>>.

<sup>6</sup> Commonwealth Scientific and Industrial Research Organisation (CSIRO), 'Australia's Synthetic Biology Roadmap' (March 2024).

<sup>7</sup> Accenture, "Costs and Incentives for a More Circular Packaging System," November 2021,

<sup>8</sup> The Senate Environment and Communications References Committee, "No Time to Waste: Waste Reduction and Recycling Policies", April 2025, 5, Australia.