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Australian Academy of Science submission to the inquiry into Food and Beverage Manufacturing in Australia

Australia's agricultural and food science research capability is central to the resilience of our food system to meet the challenges of a growing population, supply chain disruption and changes to the environment and biodiversity. Research underpins the innovation that supports Australia's food and beverage manufacturing industry to deliver economic, health and environmental outcomes.

Innovation and capacity-building would be supported by:

- Identifying ways for greater connectivity between agricultural food production industries and commercialisation opportunities through innovative research.
- Strategies to ensure that the future workforce has the capacity and skills to secure food science research.
- Developing a national strategy that synthesises sector-wide agricultural and food policy mechanisms for long-term sustainable growth across the sectors.

Research capability underpins food system innovation

Food manufacturing in Australia depends on agricultural capacity for the raw materials necessary to meet domestic and international demands. The Australian agricultural industry has shown flexibility in responding to challenges like climate change, disease and supply chain disruption, but without a coordinated research and innovation system, further adaptation is limited.[1] Translating science into high-value nutrient-rich food or innovative manufacturing processes in Australia has historically been slow and challenging.

Understanding the multifaceted barriers to food security in Australia is required to provide the innovation and technological advancement needed to progress Australian food manufacturing.

The decadal plan for Australian Agricultural Sciences (2017-2026) called for the establishment of a national agricultural research translation and commercialisation fund to supplement current investments in agricultural research and move fundamental science to industry practice.[2] This fund would invest in promising agricultural discoveries and fast-track their commercialisation into Australian products and services in domestic and international markets. This fund could help address the identified gap in the pipeline between research capability and deployment in agricultural and manufacturing industries.

To achieve high levels of manufacturing, innovation throughout the supply and production chains is crucial. Globally, Food Innovation Hubs established by the World Economic Forum, such as the European Food Innovation Hub in the Netherlands, facilitate collaboration between food processing companies and academic institutions to drive innovation. Emulating this model by co-locating research organisations with industry partners would enhance efforts to connect the food science and agricultural research sector with other industries, helping foster sustainable food production.

Innovation is critical to decarbonise food production systems and move towards a circular economy, including for food packaging and waste. State and territory strategies should prioritise sustained, multidisciplinary research into decarbonising food production systems, alongside the infrastructure and behavioural change needed to move Australia towards a circular economy.

Addressing the workforce and skills requirements is key to Australia's food future

To meet Australia's future food manufacturing needs, a substantial and skilled workforce is essential. Of the seven agricultural and food science occupations listed in the Australian Government Skills Priority List, all seven have a reported shortage, or regional shortage of specialised workers.[3]

Further, the number of students graduating from tertiary agricultural courses is well short of what is required to address labour shortages in the sector.[4] An aging workforce, and surplus of six jobs for every agricultural graduate,[4] underscores the demand for skills in Australian food manufacturing and presents a risk to Australia's capability.

To address the ongoing skills shortage in agriculture and food science, clear pathways are needed for secondary students to transition from school into food technology and training opportunities. Understanding the education supply chain whereby students are trained and successfully contribute to agricultural and food sciences is key to ensuring the future workforce is equipped to boost Australia's food manufacturing capability well into the future.

Australia needs national coordination for food security

Improved synergy across the multiple government policies and programs[5] regarding agriculture and food would improve long-term strategies for food manufacturing security.

Australia lacks a national food strategy or mechanism to coordinate activities across the food sector. Multiple federal and state departments and agencies have made previous recommendations for a coordinated agricultural and food policy in Australian food production, processing, and supply. For example, the House of Representatives Standing Committee on Agriculture recommended the development of a National Food Plan and establishment of a National Food Council,[6] and in 2010 The Prime Minister's Science, Engineering and Innovation Council (PMSEIC) Expert Working Group on Australia and Food Security in a Changing World recommended establishing an Australian Food Security Agency.[7] Implementing a consolidated approach to agricultural and food policy would enable the Australian Government to better support innovation and sustainable growth in the sector.

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To discuss or clarify any aspect of this submission, please contact Mr Chris Anderson, Director Science Policy at Chris.Anderson@science.org.au.

References

1. Australian Academy of Science's national symposium (2024). Food Futures: Nourishing a Nation. https://www.science.org.au/news-and-events/news-and-media-releases/academys-national-symposium-on-food-futures-yields-fruitful-discussion
2. Australian Academy of Science (2017). Grow. Make. Prosper. The decadal plan for Australian Agricultural Sciences 2017-2026. https://www.science.org.au/support/analysis/decadal-plans-science/decadal-plan-agricultural-sciences-2017-2026
3. Australian Government, Jobs and Skills Australia (2023). Skills Priority List. https://www.jobsandskills.gov.au/data/skills-shortages-analysis/skills-priority-list
4. Prately J, Graham S, Manser H, Gilbert J (2022). The employer of choice or a sector without workforce? Australian Farm Institute. p32-42. https://researchoutput.csu.edu.au/en/publications/the-employer-of-choice-or-a-sector-without-workforce

5. The University of Sydney (2021). Food policy in Australia: The role of different Federal Government organisations. https://www.sydney.edu.au/charles-perkins-centre/our-research/politics-governance-and-ethics/food-governance.html
6. House of Representatives, Standing Committee on Agriculture (2023), Australian Food Story: Feeding the Nation and Beyond. https://www.aph.gov.au/Parliamentary_Business/Committees/House/Agriculture/FoodsecurityinAustrali/Report
7. PMSEIC (2010), Australia and Food Security in a Changing World. https://www.chiefscientist.gov.au/sites/default/files/FoodSecurity_web.pdf