



PARLIAMENT OF AUSTRALIA

Australian Food Story: Feeding the Nation and Beyond

Inquiry into food security in Australia

House of Representatives

Standing Committee on Agriculture

November 2023

CANBERRA

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Foreword

Despite Australia being one of the most food secure countries in the world, recent developments both at home and abroad have shown that food security presents real and growing challenges to the nation. Food security is already a challenge for many in our community—particularly those on lower incomes and in remote communities. COVID-19 and recent flood events both impacted the integrity of the food supply chain. The war in Ukraine has driven up grain prices and the cost of energy and fuel. Outbreaks of Foot and Mouth Disease and Lumpy Skin Disease in Indonesia have highlighted biosecurity risks to our food system—as has the arrival of Varroa mite on Australia’s shores. Food security is not something that any of us can take for granted. It requires ongoing attention from industry, the community and governments.

The report’s key recommendation is the formulation of a comprehensive National Food Plan, with clear objectives and measurable targets set out in regular updates and action plans. The national food plan will engage the whole food system, from paddock to plate and beyond. It will deal with the production and distribution of food, supply chain resilience, access to food, good nutrition (diet and health), and the management and disposal of food waste and other waste products. It will address the health implications of the food system. It will also address the national security implications of food security—identifying and addressing vulnerabilities, particularly regarding food system infrastructure and vital inputs. The plan will be overseen by a Minister for Food, residing in the portfolio of the Prime Minister and Cabinet. The Minister will be supported by a National Food Council, made up of industry and community experts, to advise the Minister for Food on matters pertaining to the food system, and support the development, implementation, monitoring and evolution of the National Food Plan. As part of this process, the food supply chain should be mapped and vulnerabilities in the supply chain identified and addressed.

While Australia broadly speaking produces far more food than it consumes, there are two production sectors that require attention from government—dairy and seafood. The ongoing decline in raw milk production needs to be addressed. Australia needs a strong dairy industry for nutritional and food security. Australia is heavily dependent on imports to meet its demand for seafood, while having potentially rich sources of untapped seafood resources available to it. A specific strategy for expanding the seafood sector must be developed to optimise resource use while ensuring the economic and environmental sustainability of the industry.

Innovation has the capacity to improve, and in some directions revolutionise, the production of food. There are real opportunities for value adding within the food supply chain, increasing food security and economic development. Opportunities for expanding innovation and value adding in food production must be pursued, with a view to increasing productivity and enhancing food security. New industries—such as alternative proteins, protected cropping and vertical farming—have the capacity to enhance food security while promoting economic

development and increased employment. Governments at all levels should commit to supporting these new industries.

There are significant challenges around the cost and availability of inputs to food production and distribution, such as fuel, energy, labour and fertiliser. These challenges around the cost and availability of inputs have the capacity to undermine food security. Local manufacturing of inputs has the capacity to significantly improve food security and should be pursued wherever it is economical to do so. There needs to be a focus on skills development and encouraging people to see the wide range of careers available in the food sector—especially those at the cutting edge of technical and scientific innovation. Food production is much more than growing crops, even when you are growing crops.

Addressing food waste is a key aspect of improving food security. Tonnes of food worth billions of dollars goes to waste every year. Finding ways to prevent food waste and better utilise waste food is critical. There are significant opportunities both to prevent waste, through more efficient supply chains; and better utilise waste food, including through novel foods, animal feed and bioenergy. Better connecting vulnerable food consumers with the supply chain through food donation is one means of achieving this. The Committee has recommended a number of measures to better manage food waste.

Climate change represents a real threat to Australia's food security. The Government must meet this threat by continuing to support research and development that will reduce agricultural emissions and improve the environmental sustainability of agricultural production. The work of Sea Forest (emissions reduction in cattle) and the Mulloon Institute (landscape restoration) highlight the possibilities of meeting the challenges of climate change through innovation. These examples of applied research show what can be achieved; but they also highlight the barriers to change, both in terms of access to funding and blind spots in policy making. Governments at all levels should work to ensure that such innovation is encouraged and supported by government policy.

Biosecurity threats represent a real and significant risk to Australia's food security. Australia has some of the best biosecurity systems and protocols in the world, but nearly every major agriculture industry is vulnerable to a major pest or disease outbreak. Australia must continue to have strict biosecurity systems and protocols to provide the food sector with the highest level of protection possible. The Government must ensure that biosecurity is adequately funded, and that everyone understands their responsibility for protecting Australia from pest and disease incursions.

Food insecurity is a major challenge for Australia. Despite producing more food than we consume, food insecurity affects significant portions of the population. Resources need to be applied to measuring the extent of the problem and identifying sustainable solutions. A wide range of solutions are available, including better education around food and nutrition, providing school meals, increased research in the nexus between food and health, and the development of local and community food networks that support improved access to healthy food. In addition to this, remote communities in Australia's north face a set of unique challenges brought about by isolation, inadequate infrastructure, and the impacts of the wet season. Resolving these challenges requires investment by governments in community specific solutions.

In conclusion, I would like to thank all those who have contributed to the inquiry. The Committee received a great deal of high-quality evidence from across the nation from people committed to the food security of the nation from a range of perspectives. In particular, I would like to thank the individuals and organisations that hosted the Committee at various sites around the country and who provided insights into their contributions to the food security of Australians. I also thank my Committee colleagues and the secretariat for their enthusiasm and hard work during the inquiry and for their contribution to the report.

Meryl Swanson MP

Chair

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This committee is supported by staff of the Department of the House of Representatives.



Terms of reference

The House of Representatives Standing Committee on Agriculture will inquire into and report on strengthening and safeguarding food security in Australia, including examining:

- National production, consumption and export of food;
- Access to key inputs such as fuel, fertiliser and labour, and their impact on production costs;
- The impact of supply chain distribution on the cost and availability of food; and
- The potential opportunities and threats of climate change on food production in Australia.



Abbreviations

ABARES	Australian Bureau of Agricultural and Resource Economics and Sciences
ACCC	Australian Competition and Consumer Commission
ACCUs	Australian Carbon Credit Units
ACT	Australian Capital Territory
ADPF	Australian Dairy Products Federation
AEA	Approved Employers of Australia
AFGC	Australian Food and Grocery Council
AFPA	Australian Fresh Produce Alliance
AFSA	Australian Food Sovereignty Alliance
AGPS	Australian Government Publishing Service
AHFSDC	Australian Household Food Security Data Coalition
ALPA	Arnhem Land Progress Aboriginal Corporation
ALRTA	Australian Livestock and Rural Transporter's Association
AMSANT	Aboriginal Medical Services Alliance Northern Territory
ANU	Australian National University
APC	Alternative Proteins Council
APIA	Australian Poultry Industry Association
APL	Australian Pork Limited
ARC	Australian Research Council
ARENA	Australian Renewable Energy Agency
ASF	African Swine Fever
ASIO	Australian Security Intelligence Organisation

ASLCG	Australian Security Leaders Climate Group
BITRE	Bureau of Infrastructure and Transport Research Economics
CBD	Central Business District
CEAT	Centre for Entrepreneurial Agri-Technology
CEBRA	Centre of Excellence for Biosecurity Risk Analysis
CEO	Chief Executive Officer
CO ₂	Carbon Dioxide
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DAFF	Department of Agriculture, Fisheries and Forestry
EA	East Arnhem
EFA+	enhanced economic and financial analysis
ENSO	El Niño – Southern Oscillation
ERF	Emissions Reduction Fund
EU	European Union
FAO	United Nation Food and Agriculture Organisation
FGSG	Food and Grocery Sector Group
FIAL	Food Innovation Australia Limited
FMD	Foot-and-Mouth Disease
FRDC	Fisheries Research and Development Corporation
FSANZ	Food Standards Australia New Zealand
GDP	Gross Domestic Product
GFSI	Global Food Security Index
GM	Genetically Modified
GST	Goods and Services Tax
HFSSM	Household Food Security Survey Module

HILA	Horticulture Industry Labour Agreement
HWV	Harvest Work Visa
IFAD	International Fund for Agricultural Development
IPM	Integrated Pest Management
JEV	Japanese encephalitis virus
KIA	Kimberley Agricultural Investments
LGA	Local Government Area
LSD	Lumpy Skin Disease
MLA	Meat & Livestock Australia
NACCHO	National Aboriginal Controlled Health Organisation
NAFTI	Northern Australia Food Technology Innovation project
NFF	National Farmers' Federation
NFSCA	National Food Supply Chain Alliance
NGOs	Non-Government Organisations
NHMRC	National Health and Medical Research Council
NLP	National Landcare Program
NSW	New South Wales
NT	Northern Territory
PALM	Pacific Australia Labour Mobility
PPE	Personal Protective Equipment
QFF	Queensland Farmers' Federation
Qld	Queensland
RASS	Remote Air Services Subsidy Scheme
R&D	research and development
RD&E	research, development and extension
RMAC	Red Meat Advisory Council

RMIT	Royal Melbourne Institute of Technology
ROI	Return on Investment
SA	South Australia
SDWK	Shire of Derby-West Kimberley
SDGs	Sustainable Development Goals
SIA	Seafood Industry Australia
SWEK	Shire of Wyndham-East Kimberley
TAFE	Technical and Further Education
TSS	Temporary Skills Shortage visa
TSBE	Toowoomba and Surat Basin Enterprise
UK	United Kingdom
UN	United Nations
US	United States
USDA	United States Department of Agriculture
UTAS	University of Tasmania
VET	Vocational Education and Training
VFF	Victorian Farmers Federation
WA	Western Australia
WHO	World Health Organisation

List of recommendations

Recommendation 1

- 2.56** The Committee recommends that the Australian Government, in consultation and cooperation with State and Territory Governments, relevant industries, sectors and the community, develop a comprehensive National Food Plan providing for the food security, including nutritional security, of the nation and its people. The National Food Plan must have clear objectives and measurable targets set out in regular updates and action plans, and subject to regular review.

Recommendation 2

- 2.57** The Committee recommends that the Australian Government appoint a Minister for Food, within the portfolio of the Prime Minister and Cabinet, with responsibility for the development and implementation of the National Food Plan, regular monitoring and updating of the plan, and accountability for achieving outcomes and targets under the plan.

Recommendation 3

- 2.58** The Committee recommends that the Australian Government appoint a National Food Council, made up of industry and community experts, to advise the Minister for Food on matters pertaining to the food system, and support the development, implementation, monitoring and evolution of the National Food Plan. The National Food Council is to be supported by expert committees covering sectors including but not limited to:
- production;
 - transport and logistics;
 - retail;
 - health and nutrition;
 - defence;
 - education;
 - access to food;
 - environmental sustainability;
 - waste management; and

- Indigenous communities.

Recommendation 4

3.134 The Committee recommends that the Australian Government, as part of the National Food Plan, and in conjunction with industry, develop a specific strategy for reinvigorating the Australian dairy industry, one which lifts profitability and production while addressing the economic and environmental sustainability of the industry, and identifies the resources and pathways required to achieve this.

Recommendation 5

3.135 The Committee recommends that the Australian Government, as part of the National Food Plan, and in conjunction with industry, develop a specific strategy for expanding the seafood sector, one which optimises the use of resources while ensuring the economic and environmental sustainability of the industry.

Recommendation 6

- 3.136** The Committee recommends that the Australian Government:
- make the Food and Grocery Code of Conduct mandatory;
 - review the Competition and Consumer Act 2010 to ensure fair practices between different actors in the food supply chain and prevent unconscionable conduct; and
 - institute regular Australian Competition and Consumer Commission reviews of perishable food supply chains.

Recommendation 7

3.137 The Committee recommends that the Australian Government, as part of the National Food Plan, develop a specific strategy for expanding innovation and value adding in food production, with a view to enhancing commercial opportunities for Australian industry and enhancing food security.

Recommendation 8

3.138 The Committee recommends that the Australian Government, as part of the National Food Plan, develop mechanisms to promote innovation in food production.

Recommendation 9

- 4.66** The Committee recommends the Australian Government, in conjunction with State and Territory Governments and industry, develop agriculture job hubs and a regional network engagement and implementation plan.

Recommendation 10

- 4.67** The Committee recommends the Australian Government, in conjunction with State and Territory Governments and local government, explore options for the development of urban agriculture, in particular as a means for developing skills and encouraging careers in agriculture.

Recommendation 11

- 4.68** The Committee recommends the Australian Government, in conjunction with industry, review current administration and reporting requirements for seasonal and harvest work employers, with the view to reducing the administrative burden and making use of overseas labour more accessible.

Recommendation 12

- 4.69** The Committee recommends the Australian government support the development and expansion of the domestic production and manufacturing of essential inputs, such as fertiliser and agricultural chemicals.

Recommendation 13

- 4.70** The Committee recommends the Australian Government, in conjunction with State, Territory and Local governments, develop a strategic plan to protect agricultural land from urban sprawl and utilisation for non-agricultural purposes.

Recommendation 14

- 5.107** The Committee recommends that as part of the development of a National Food Plan, the Australian Government coordinate with industry in the development of a National Food Supply Chain Map, identifying:
- where products are grown or produced and in what quantity;
 - how they are transported;
 - where they are processed;
 - what the major transport routes are;
 - the main centres for the collection and distribution of product;

- where transport routes are vulnerable; and
- what happens if they are cut.

This map should also identify key inputs and vulnerabilities to lack of supply.

The Australian Government should consider options for technical innovation in the collection, access to and dissemination of this information and data.

Recommendation 15

5.108 The Committee recommends that as part of the development of a National Food Plan, the Australian Government develop a transport resilience plan focussed on food security, including the optimal location of distribution centres.

Recommendation 16

5.109 The Committee recommends that the Australian Government implement the recommendations of the Productivity Commission calling for the repeal of Part X of the Competition and Consumer Act 2010 and the development of a mandatory container terminal operator code.

Recommendation 17

5.110 The Committee recommends that the Australian Government review the mandatory port code covering grain ports.

Recommendation 18

5.111 The Committee recommends that the Australian Government incorporate measures to eliminate food waste into the proposed National Food Plan, including:

- A national public education campaign aimed at the elimination of household food waste.
- Repurposing food waste—for example as animal feed or processed food.
- Supporting food donation.
- Establishing regional food hubs.
- Better management of the cold chain.
- Improving data sharing across the food supply chain.
- Increasing federal funding for the food relief sector.
- Creating a circular economy.

Recommendation 19

5.112 The Committee recommends that the Australian Government provide an incentive through the tax system for those who donate food or related services, based on the Food Waste Tax Incentive developed by KPMG and the Fight Food Waste Cooperative Research Centre.

Recommendation 20

5.113 The Committee recommends that the Australian Government work with industry to develop a viable system for the recovery and recycling of plastic packaging.

Recommendation 21

5.114 The Committee recommends that the Australian Government, in conjunction with the food industry, review the application of 'best before' and 'use by' dates on food, and consider the use of QR codes on packaging to provide relevant information to consumers.

Recommendation 22

5.115 The Committee recommends that the Australian Government develop and fund a research program focussed on the development of a circular food economy.

Recommendation 23

6.102 The Committee recommends that the Australian Government support early adopters of emissions reduction technologies in agriculture through the mechanism of notices of intent, to ensure they remain eligible for Australian Carbon Credit Units under the Emissions Reduction Fund.

Recommendation 24

6.103 The Committee recommends that the Australian Government work with industry and other stakeholders to develop standard definitions of natural capital and develop natural capital markets.

Recommendation 25

6.104 The Committee recommends that the Australian Government develop a funding stream for long-term, public-interest RD&E which promotes the environmental sustainability of agricultural production.

Recommendation 26

6.105 The Committee recommends that the Australian Government work with State and Territory Governments to ensure the financial viability of landscape restoration projects either through co-contributions from government or grant funding that defrays the development costs.

Recommendation 27

6.106 The Committee recommends that the Australian Government develop a public education campaign to inform people of their biosecurity responsibilities and what they can do to protect the food system from possible incursions, with a focus on individuals or organisations interacting with Australia's international borders.

Recommendation 28

6.107 The Committee recommends that the Australian Government ensure that funding for biosecurity reflects the responsibilities and benefits of biosecurity for all stakeholders and the importance of biosecurity to the nation as a whole.

Recommendation 29

7.69 The Committee recommends that the Australian Government conducts surveys of household food insecurity every 3 years using the United States Department of Agriculture Household Food Security Survey Module (HFSSM) as a model.

Recommendation 30

7.70 The Committee recommends that the Australian Government, in conjunction with the State and Territory Governments, develop a school curriculum for food and nutrition education, including the universal development of basic cooking skills.

Recommendation 31

7.71 The Committee recommends that the Australian Government, in conjunction with the State and Territory Governments, consider the feasibility of introducing a schools meals program.

Recommendation 32

7.72 The Committee recommends that the Australian Government develops protocols that allow the Australian Research Council and the National Health

and Medical Research Council to cross fund research examining food, health and nutrition.

Recommendation 33

- 7.73** The Committee recommends that as part of the development of a National Food Plan, the Australian Government facilitate the development of:
- Improved nutritional and dietary guidance.
 - Community projects designed to improve localised food systems and food security.
 - Supply networks aimed at local production, procurement, distribution and sale of fresh and nutritious food, especially by institutions such as hospitals, aged-care facilities and schools.
 - Programs aimed to educate groups within communities about affordable, options to access (or grow), prepare, cook and share nutritious food.

Recommendation 34

- 7.74** The Committee recommends that as part of the development of a National Food Plan, the Australian Government:
- Recognize the special circumstances of remote communities, including Indigenous communities, in the food supply chain.
 - Make provision for a more decentralised model of distribution in regions containing remote communities.
 - Acknowledge community stores as an essential community service.
 - Provide subsidies for community stores in remote locations so they can provide fresh food in regular quantities at an affordable price.
 - Amend the funding and governance of the Remote Air Services Subsidy Scheme to prioritise the efficient and affordable delivery of fresh fruit and vegetable to wet-season impacted communities.

Recommendation 35

- 7.75** The Committee recommends that the Australian Government assess progress towards implementing the recommendations made in the House of Representatives Standing Committee on Indigenous Affairs' 2020 report on food pricing and food security in remote Indigenous communities.



1. Introduction

- 1.1 Australia has long considered itself a food secure nation, but recent events have led to questions about the validity of this assumption. The outbreak of COVID-19 led to empty supermarket shelves. Illness, lockdowns and border closures led to labour shortages along the supply chain. The dislocation of international trade led to periodic shortages of key inputs, such as the infamous AdBlue shortage.
- 1.2 Other events have drawn out other issues. Conflict in Ukraine has created shortages of grain that have driven up prices globally. Fuel and energy prices have jumped. This has led to sustained food price inflation.
- 1.3 The outbreak of Foot and Mouth Disease and Lumpy Skin Disease in Indonesia has highlighted the vulnerability of our food producing industries to biosecurity risks. The arrival of Varroa mite in Australia has demonstrated that these risks are not just hypothetical. Then there are the broader challenges of climate change to food production and food insecurity within the Australian population.
- 1.4 The purpose of this report is to identify and address some of these challenges and examine ways to strengthen and safeguard Australia's food security. It will do so by focusing on several key areas:
 - Food production, consumption and trade;
 - Access to key production inputs and their impact on production costs;
 - The food supply chain and its vulnerabilities, including managing food waste;
 - The issues of climate change and biosecurity; and
 - Addressing food insecurity.
- 1.5 The report will also examine the need for a national food security strategy or plan.

What is food security?

- 1.6 The generally accepted definition of food security is that established by the United Nation Food and Agriculture Organisation (FAO), which states:

Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and health life.¹

¹ Department of Agriculture, Fisheries and Forestry, *Submission 116*, p. 5; ABARES 2020, *Australian food security and the Covid-19 pandemic*, Australian Bureau of Agricultural and Resource Economics and Sciences, Canberra, p. 4.

- 1.7 Underpinning this definition are four pillars—availability, access, utilisation and stability:
- Availability: Having a quantity and quality of food sufficient to satisfy the dietary needs of individuals, free from adverse substances and acceptable within a given culture, supplied through domestic production or imports.
 - Access: Having personal or household financial means to acquire food for an adequate diet at a level to ensure that satisfaction of other basic needs are not threatened or compromised; and that adequate food is accessible to everyone, including vulnerable individuals and groups.
 - Utilisation: Having an adequate diet, clean water, sanitation and health care to reach a state of nutritional well-being where all physiological needs are met.
 - Stability: Having the ability to ensure food security in the event of sudden shocks (e.g. an economic, health, conflict or climatic crisis) or cyclical events (e.g. seasonal food insecurity).²
- 1.8 Two additional pillars have been proposed—agency and sustainability:
- Agency: Individuals or groups having the capacity to act independently to make choices about what they eat, the foods they produce, how that food is produced, processed, and distributed, and to engage in policy processes that shape food systems. The protection of agency requires socio-political systems that uphold governance structures that enable the achievement of Food Security and Nutrition for all.
 - Sustainability: Food system practices that contribute to long-term regeneration of natural, social and economic systems, ensuring the food needs of the present generations are met without compromising the food needs of future generations.³
- 1.9 It is these elements which constitute food security, and their absence can or does signal food insecurity.

Conduct of the Inquiry

- 1.10 The inquiry was referred to the Committee by the Minister for Agriculture, Fisheries and Forestry, Senator the Hon Murray Watt, on 24 October 2022. A copy of the terms of reference can be found on page xiii.
- 1.11 Over the course of the inquiry, the Committee received 188 submissions. A list of submissions is at Appendix A.

² HLPE. 2020. *Food security and nutrition: building a global narrative towards 2030*. A report by the High Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security, Rome, p. 10. See also Department of Agriculture, Fisheries and Forestry, *Submission 116*, p. 5.

³ HLPE. 2020. *Food security and nutrition: building a global narrative towards 2030*. A report by the High Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security, Rome, p. 10. See also Sustain, *Submission 72*, p. 4; Deakin University, *Submission 31*, p. 2; Menzies Centre for Health Governance, *Submission 41*, pp. 2–3.

- 1.12 Other publications, documents and supplementary material were received as exhibits. A list of these exhibits is at Appendix B.
- 1.13 The Committee undertook a program of public hearings and site visits. Between November 2022 and August 2023 the Committee held 24 public hearings, including hearings in interstate capitals. Details of the public hearings, including a list of witnesses, are at Appendix C.
- 1.14 In addition, the Committee conducted numerous site visits across the country, meeting with a range of industry and community organisations and inspecting the operations of a number of enterprises. These included:
- Tassal's Feed Centre in Hobart, rendering plant at Triabunna, and salmon pens at Okehampton Bay, Tasmania.
 - Sea Forest's seaweed beds in the Mercury Passage and *Asparagopsis* plant at Triabunna, Tasmania
 - The South Australian Produce Market at Pooraka, SA.
 - Epicurean Food Group's exotic mushroom farm and processing facility at the former General Motors Holden site at Elizabeth, SA.
 - Meeting with representatives of the Northern Adelaide Plains Food Cluster, City of Playford, and Regional Development Australia Barossa Gawler Light Adelaide Plains, at the Virginia Horticulture Centre, to discuss the work of the Northern Adelaide Plains Food Cluster.
 - P'Petual Holdings' greenhouse facilities at Buckland Park, SA.
 - Uleybury Wines, Uleybury, SA.
 - Torrens Valley Orchards' packing facilities at Gumeracha, SA.
 - The Greenspace ESG macrofarm and microfarm at Darling Harbour, Sydney.
 - Toowoomba and Surat Basin Enterprise (TSBE), Toowoomba, Queensland.
 - The Story Fresh processing facilities and farm at Cambooya, Queensland.
 - Wellcamp Airport, Wellcamp, Queensland.
 - JBS Foods Beef City feedlot and meat processing plant at Purrawunda, Queensland.
 - CBH Group's Metro Grain Centre in Forrestfield, WA.
 - Meeting with the representatives of the Fitzroy Crossing community and Shire of Derby-West Kimberley (SDWK) to discuss food security in Fitzroy Crossing.
 - Gogo Station, WA.
 - Shire of Wyndham-East Kimberley (SWEK), Kununurra, WA.
 - Ord River Irrigation Area, WA.
 - Kimberley Agricultural Investments (KIA), Kununurra, WA.

- Western Australian Department of Primary Industries and Regional Development Kununurra research station.
- Meeting with representatives of SWEK and the local business and community leaders to discuss the economic development of the East Kimberley region.
- Mulloon Institute, Mulloon Creek, NSW.

Structure of the report

- 1.15 This report consists of seven chapters including this introduction.
- 1.16 Chapter 2 explores the need for a National Food Plan in Australia. It discusses the institutional framework to support it, the ground it should cover, and identifies some Australian and international strategies that have embodied or contributed to national food planning. Further information on the Australian strategies can be found in Appendix D, and the international strategies in Appendix E.
- 1.17 Chapter 3 addresses the question ‘are we food secure?’ It examines the production, consumption and export of food across the economy, then sector by sector, while noting some of the challenges to production faced by individual sectors. The chapter then discusses the role of exports in food security, issues around farm viability, and some of the innovations in food production that can buttress food security in Australia and globally, such as alternative proteins, protected cropping and vertical farming.
- 1.18 Chapter 4 explores the key inputs used in Australia’s food production and their potential to impact on the production and availability of food. It discusses the importance of key inputs, such as labour, fuel and fertiliser. It examines the vulnerabilities and risks associated with reliance on imported inputs. It then considers issues around local inputs such as energy and water, and the need to protect productive agricultural land.
- 1.19 Chapter 5 discusses the food supply chain, in particular its vulnerabilities. It examines the lessons from the COVID-19 pandemic, issues around transport networks, the importance of distribution centres, and the special circumstances of remote communities in northern Australia. It also explores the need for a national food supply chain map to locate the production and distribution elements of the food system and identify weaknesses. The chapter then focuses on the end of the supply chain—food waste and potential solutions, including the creation of a circular economy.
- 1.20 Chapter 6 discusses climate change and biosecurity. It examines the threat and potential impacts of climate change on food security, as well as options for adaptation and innovation that will allow the agriculture sector to reduce emissions, sequester carbon, and adopt approaches that will make the farm sector more resilient. It also explores the challenge of biosecurity—potential threats and the cost of incursions, how biosecurity will be impacted by climate change, and the complex issue of how biosecurity is funded.

- 1.21 Chapter 7 examines food insecurity in Australia, including its origins and impacts, the importance of nutritional education and awareness, and particular challenges for Indigenous and remote communities. Responses to food insecurity in Australia are also discussed.

Acknowledgements

- 1.22 The Committee would like to thank everyone who provided written submissions, attended public hearings, and hosted the Committee on site visits. The Committee is particularly grateful for the efforts of everyone who took time out of their days to host the Committee at various sites around the country and the insights this provided into the work of businesses and organisations in providing for the food security of Australians.



2. A national food security strategy

- 2.1 This chapter explores the need for a National Food Plan in Australia. It discusses the institutional framework to support it, the ground it should cover, and identifies some Australian and international strategies that have embodied or contributed to national food planning.

Introduction

- 2.2 Australia is regarded as one of the most food secure nations in the world. Despite this, Australia is ranked 22nd on the Global Food Security Index 2022. The main reason for this ranking is the absence of a coherent national policy addressing food security.¹ The lack of a coherent policy and the need for a national food plan was highlighted in evidence presented to the Committee.
- 2.3 The Australian Institute of Food Science and Technology emphasised the size and complexity of Australia’s food and grocery policy and regulatory system—‘involving 10 Governments and at least 20 Departments developing policy and regulations as well as numerous agencies responsible for enforcement’—with regulation touching a broad range of areas from paddock to plate. It noted that the ‘development of food policy and regulation is hampered by different jurisdictions having different expectations and institutional arrangements’, and that ‘each of these agencies imposes regulatory requirements on the food system that place a burden on the ability of business to achieve and maintain sustainable growth’.²
- 2.4 The National Food Supply Chain Alliance identified existing and emerging threats to Australia’s food supply chain.³ These include extreme weather events, rising costs, freight and supply disruptions, labour shortages, market concentration and biosecurity; and the deficiencies, risks and vulnerabilities within the supply chain exposed by COVID-19. It highlighted the lack of coordination within government, with no single agency responsible for the whole supply chain and no clear leadership from any one agency.⁴
- 2.5 The Alliance believes that to prepare and plan for disruptions, ‘government and industry must work together to fully understand the complexities of our food system and how specific events might impact the various links in the food supply chain’. The

¹ Professor Johannes le Coutre, Professor of Food and Health, University of New South Wales, *Committee Hansard*, 6 July 2023, p. 10.

² Australian Institute of Food Science & Technology, *Submission 85*, p. 9.

³ National Food Supply Chain Alliance, *Submission 49*, pp. 2–3.

⁴ Mr Richard Forbes, Chief Executive Officer, Independent Food Distributors Australia, *Committee Hansard*, 8 March 2023, p. 1.

Alliance recommended that 'Australia urgently establish a National Food Security Plan to reduce the impact of disruptors on the nation's food industry as well as trying to help reduce the impact on the Australian consumer'. The Alliance further noted that 'despite countless reports and research in recent decades, Australia has so far failed to produce a nationally co-ordinated, cross-portfolio assessment of risks to Australia's food supply chain along with measures to mitigate those risks'.⁵

- 2.6 There was widespread support for a national food security plan or strategy. Cancer Council Australia recommended the development of a comprehensive Food Systems and Food Security Plan.⁶ The Victorian Farmers Federation emphasised the need for a risk assessment 'across agriculture and the supply chain', and the development of 'a nationally coordinated food security plan, which would be undertaken with a whole of government approach'.⁷ Seafood Industry Australia called for a cohesive National Food Security Strategy aligned with other government policies and objectives, stating that the strategy 'must work to underpin the efforts of federal, state and local governments as well as public, private and civil society sectors in addressing national food security challenges'.⁸ The Australian Retailers Association also encouraged collaboration between government, agencies and industry to develop a national food security roadmap.⁹

What should a national food security strategy do?

- 2.7 While there is broad agreement that a national food security strategy is required, the proposals suggested by various stakeholders, perhaps inevitably, emphasise different aspects of food security.
- 2.8 The National Food Supply Chain Alliance envisaged the development of a National Food Security Plan 'be undertaken between the Australian Government and the Food Industry with input from state and territory governments and relevant NGOs'. It would be a whole of government initiative, working across all relevant portfolios. In addition, an Industry Advisory Group would be created, based on the Food and Grocery Sector Forum (an information sharing network under the Department of Home Affairs). The Industry Advisory Group would identify all relevant industry stakeholders to help mitigate current and emerging risks to Australia's food system. It would also play a major role in the design and implementation of the Plan.¹⁰
- 2.9 This proposal was endorsed by the National Farmers' Federation (NFF). It proposed that the National Food Security Plan be informed by an Australian Agriculture Supply Chain Resilience Framework. This would be an industry-led, holistic, agricultural supply chain resilience project 'to identify and provide solutions to the myriad of risks and vulnerabilities that may prohibit Australia's long-term food supply and

⁵ National Food Supply Chain Alliance, *Submission 49*, p. 3

⁶ Cancer Council Australia, *Submission 56*, p. 4.

⁷ Victorian Farmers Federation, *Submission 110*, p. 3.

⁸ Seafood Industry Australia, *Submission 125*, p. 9.

⁹ Australian Retailers Association, *Submission 140*, p. 3.

¹⁰ National Food Supply Chain Alliance, *Submission 49*, p. 3.

contribution to global food security'.¹¹ The framework would 'incorporate and consolidate the substantial work already done in this space and include analysis of risks across relevant input and post-farmgate supply chains'. The framework would respond to changes in supply chain risks as proposed solutions are implemented and new challenges arise.¹²

- 2.10 AUSVEG also endorsed the concept of a National Food Security Plan,¹³ as did Seafood Industry Australia.¹⁴ The Australian Dairy Products Federation (ADPF) recommended a National Food Security Resilience Plan, which would encompass all agri-food businesses along the supply chain—farmers and processors, distributors, retailers and consumers—to 'identify and manage the cross-section of issues contributing to securing Australia's food supply today and into the future'.¹⁵ The Australian Retailers Association sought to 'encourage collaboration between government, agencies and industry to develop a national food security roadmap, potentially through the Food and Grocery Sector Group under the auspices of the Home Affairs Trusted Information Sharing Network'.¹⁶
- 2.11 Other stakeholders took a broader approach to a food security policy and plan, seeking engagement from stakeholders other than government and industry, and drawing on perspectives from across the entire food system.
- 2.12 The Menzies Centre for Health Governance at the Australian National University (now known as the Australian Research Centre for Health Equity) argued for a systems-based human rights approach to food security. It proposed:
- ...a comprehensive, human rights-based Food System and Food Security Policy/Strategy, in collaboration with key stakeholders (Aboriginal and Torres Strait Islander communities, culturally and linguistically diverse groups, civil society, health, environment, research, small-scale food producers, social and community services) and drawing on international examples that is underpinned by the right to food.¹⁷
- 2.13 In addition, the government would develop an action plan to implement the strategy, with clear objectives and measurable targets, identifying the responsibilities of the different levels of government. An ongoing dedicated Food Fund would 'support activities across diverse sectors conducted by all levels of government, non-government organisations and civil society'. First Food Security (the food security of infants and young children) would be an integral part of the food system and strategy, while First Nations Peoples would be leaders in policy- and decision-making in relation to land and ecosystem management for food security.¹⁸

¹¹ National Farmers' Federation, *Submission 103*, p. 24.

¹² National Farmers' Federation, *Submission 103*, p. 24.

¹³ AUSVEG, *Submission 99*, p. 8.

¹⁴ Seafood Industry Australia, *Submission 125*, p. 10.

¹⁵ Australian Dairy Products Federation, *Submission 136*, p. 3.

¹⁶ Australian Retailers Association, *Submission 140*, p. 3.

¹⁷ Menzies Centre for Health Governance, *Submission 41*, p. 8.

¹⁸ Menzies Centre for Health Governance, *Submission 41*, p. 8.

2.14 The Australia's Right to Food Coalition took a similar stance. It proposed the development of a comprehensive Australian Food Security and Food Systems Plan, serviced and monitored by a Food Policy Council. It stated that the plan 'would need to be uniquely collaborative and take a cross-government approach', including 'not only Agriculture, but also Planning, Health, Water, Environment, Family and Social Services, with representatives from relevant NGOs and people with lived experience of food insecurity'. In addition, 'this approach would need to be mirrored at State and Local Government levels and with clearly outlined responsibilities'. The national body would:

- Take responsibility for comprehensive monitoring of food security, to build a nuanced understanding of the prevalence, drivers, and risks.
- Use this information to develop contingency planning to better prepare for future shocks including pandemics, impacts of climate change (drought, severe weather events), and fuel or supply shortages.
- Incorporate the expertise and lived experiences of food insecurity, including First Nations and other community representatives. Ensure that targets are set, and that funding and resources are made available so that governments at all levels can be held accountable.
- Make funding available for programs to be conducted at a local level to develop local food hubs and shorten supply chains; and
- Work with local councils to strengthen laws to allow better control of healthy food environments.¹⁹

2.15 In addition, the Australian Government would:

- Legislate for the Right to Food in Australia.
- Institute regular data collection on Food Security using the United States Department of Agriculture (USDA) Household Food Security Survey Module.
- Consider nominating a position of Minister for Food.
- Explicitly include health outcomes in planning documents and agricultural policy.
- Maintain the GST exemption for fresh fruit and vegetables.²⁰

2.16 Sustain, a national body and registered health promotion charity focused on designing and building sustainable food systems, called for government collaboration with key stakeholders—including 'Aboriginal and Torres Strait Islander communities, culturally and linguistically diverse groups, civil society, health, environment, research, non-industrial food producers, social and community services'—to develop a comprehensive Food Systems and Food Security Plan. A Food Systems and Food Security Council, representing all government departments and the stakeholders listed above, would have responsibility for implementing and reporting on the Plan, which would have clear objectives and measurable targets, indicating the

¹⁹ Australia's Right to Food Coalition, *Submission 148*, p. 8.

²⁰ Australia's Right to Food Coalition, *Submission 148*, p. 9.

responsibilities of the different levels of government. Sustain advocated for a dedicated Food Security and Food Systems Fund ‘to support activities across diverse sectors conducted by all levels of government, non-government organisations and civil society’. It also proposed using the USDA 18-item Household Food Security Survey Module to obtain regular and consistent data on food insecurity in Australia.²¹

2.17 Several stakeholders outlined processes through which a strategy could be formulated. The University of Melbourne proposed a National Food Security Plan, underpinned ‘by the right to food, a human right included in the Universal Declaration of Human Rights, and recognised in the International Covenant on Economic, Social and Cultural Rights, ratified by Australia’. It proposed the development of a plan guided by an independent Food Advisory Board, established under proposed Food Security legislation. Membership of the Food Advisory Board would ‘include individuals with diverse experiences, knowledge and backgrounds in the food and agriculture system’, including Traditional Owners, members from civil society organisations and academics. The Food Advisory Board would support the development of the National Food Security Plan by:

- Providing expert advice, and reviewing data and evidence on the root causes, challenges and solutions to food insecurity and food-related issues in Australia.
- Engaging and consulting with government, industry, academic and civil society stakeholders to inform the development of the Plan.
- Identifying outcomes and indicators for achieving food security, aligned with United Nations Sustainable Development Goals (SDGs).
- Proposing funding mechanisms to support implementation of the Plan.

2.18 Under the Melbourne University proposal, the aims of the plan would be to ‘establish long term goals and objectives for achieving food security for all in Australia’. It would:

- Identify integrated strategies and actions across Commonwealth, state and territory government portfolios to achieve food security and related outcomes. Portfolios include, but are not limited to health, environment, agriculture, water, climate change, economic development, finance, education and skills, social services, infrastructure, energy, rural development, and emergency management.
- Have regard to climate impacts on the food system, and other shocks and stresses that affect food systems, such as pandemics and global conflicts.
- Establish an evaluation, monitoring and reporting framework with specific and measurable targets for the outcomes of the National Food Security Plan.
- Identify governance arrangements for implementation of the National Food Security Plan.²²

²¹ Sustain, *Submission 72*, p. 5.

²² University of Melbourne, *Submission 34.1*, p. 6.

- 2.19 A similar proposal was put forward by the Australian Institute of Food Science and Technology. It recommended that the Australian Government work with food system stakeholders to establish an industry-led, food system strategic advisory body, chaired at the Ministerial level, to develop a National Food Plan that:
- prioritises and guides activities supporting Australia's food system;
 - identifies and drive programs so that Australia's food system is supported as a cohesive, nationally important whole; and
 - guides government on all aspects of policy that impacts Australia's food system.²³
- 2.20 A similar approach was outlined by Ms Caitlin McConnel, a lawyer and farmer from Queensland, who proposed the establishment of an independent review into the Australian food system, for the purposes of:
- giving findings on Australia's food system, based on a review of existing national or international strategies, governance models, policies, reports, recommendations, or roadmaps;
 - preparing a draft National Food Security Strategy; and
 - recommending whether a statutory office should be established to provide impartial advice to government on threats to Australia's food security.
- 2.21 The proposed National Food Security Strategy would:
- use the UN Sustainable Development Goals as a guide;
 - have regard to the fundamental role food, water, and natural resources play in satisfying fundamental human needs;
 - strengthen and safeguard Australia's domestic food security, and global export capabilities;
 - inform the development of long-term economic strategies, plans, and policies across all Commonwealth ministerial portfolios; and
 - mitigate the effect of climate change through interaction with efforts made by complementary sectors' efforts to avoid/minimise the impacts to human rights and national security.²⁴
- 2.22 The independent reviewer would be external to government with experience across the law, agriculture and complementary sectors, and experience in corporate governance, international relations, and people management.²⁵ In addition, the independent reviewer would be assisted by an Independent Advisory Board to ensure that multiple sectors of government (local, State and Territory, and Commonwealth) interact with scientific, traditional, Indigenous, and business disciplines; and that:

²³ Australian Institute of Food Science & Technology, *Submission 85*, p. 3.

²⁴ Ms Caitlin McConnel, *Submission 77.1*, p. 3.

²⁵ Ms Caitlin McConnel, *Submission 77*, p. 28.

the proposed National Security Strategy is based on the interaction between food, water, and natural resources with complementary sectors such as healthcare, energy and natural resources, Indigenous affairs and land use, climate change and natural disaster mitigation, competition and trade, education, finance, transport, planning and development.²⁶

- 2.23 Ms McConnel ultimately saw the National Food Security Strategy being overseen by an independent statutory authority, ‘much like ASIO, where a Director-General would provide impartial advice to government, through a Minister for Food’. An Independent Advisory Board, ‘in similar or varied form to that established for the purposes of the independent review’, would assist the statutory authority.²⁷

Minister for Food

- 2.24 Part of the food policy framework presented to the Committee was the need to appoint a Minister for Food. The University of Melbourne suggested that appointing a Minister for Food would ‘improve government accountability and responsibility for ensuring the food security of Australians’.²⁸ Dr Rachel Carey highlighted the gap in accountability for ensuring that people have sufficient access to food in Australia:

We have agriculture policy that looks at food production and we have health policy, which I would argue focuses primarily on food safety and increases in people's consumption of healthy foods, particularly fruit and vegetables, for instance; but there's this gap in terms of ensuring that people actually have access to sufficient food. Of course, that is becoming a very significant gap at the moment in the context of increasing food insecurity.²⁹

- 2.25 Dr Carey believed that ‘a minister for food particularly needs to focus on access to food’.³⁰

- 2.26 While not advocating any particular machinery of government changes, the CSIRO highlighted the current dispersion of food policy across portfolios and the need for greater coordination across government in dealing with issues around food.³¹ Likewise, the Australian Institute of Food Science and Technology highlighted the difficulties in dealing with multiple departments across multiple levels of government:

From a food perspective, we're dealing with at times up to 10 different governments, 20 different departments and 20 different parts of various policymakers and so on. Each of those is setting their own agendas. It would be really good to have something that went across the whole board. This is the idea

²⁶ Ms Caitlin McConnel, *Submission 77.1*, p. 6.

²⁷ Ms Caitlin McConnel, *Submission 77.1*, p. 6.

²⁸ University of Melbourne, *Submission 34*, p. 1.

²⁹ Dr Rachel Carey, Senior Lecturer in Food Systems, School of Agriculture, Food and Ecosystem Sciences, University of Melbourne, *Committee Hansard*, 4 August 2023, p. 10.

³⁰ Dr Rachel Carey, Senior Lecturer in Food Systems, School of Agriculture, Food and Ecosystem Sciences, University of Melbourne, *Committee Hansard*, 4 August 2023, p. 10.

³¹ Dr Michael Robertson, Director, CSIRO Agriculture and Food, *Committee Hansard*, 16 June 2023, p. 34.

of potentially having a minister for food who would help to coordinate what is happening within the food industry.³²

2.27 Ms Emma Germano, President of the Victorian Farmers Federation, expressed the hope that a Minister for Food would take some of the politics out of policy while creating advocacy across the food system network. Ms Germano told the Committee:

The most frustrating thing from an advocacy perspective is when you are going to one minister who is going to understand what you are talking about, but they've got to go and have a fight with a minister from within their own party. That then leads to all sorts of issues with regard to which faction they belong to, what the relationship between the ministers is, the particular thing we're talking about at a particular point in time and whether or not it suits the political narrative. I think that, yes, it would be very valuable to have a ministry that is dedicated to food security and supply chains and that can think about it from that holistic point of view rather than this agricultural lens.³³

2.28 The University of Melbourne observed that the ministerial portfolio for food was best located in the Department of the Prime Minister and Cabinet, 'as the portfolio will require policy coordination across many other departments whose decisions and actions affect food systems and food security'. It indicated that the key considerations in the implementation of a food portfolio are that:

- The portfolio should facilitate a whole of government 'food systems' approach to the governance of food security in Australia; that is, effective co-ordination across the many departments which take decisions that influence food security and other food system outcomes in Australia.
- The focus of the portfolio should extend beyond food production to consider all six dimensions of food security – availability, access, sustainability, stability, agency and utilisation.
- The portfolio should focus on the whole food supply chain from production to consumption and utilisation of food waste resources and the actions that can be taken across food supply chains to promote food security.³⁴

2.29 Ms Caitlin McConnel agreed, advocating for both a Minister for Food and the portfolio's place within the Department of the Prime Minister and Cabinet.³⁵

2.30 Ms Pieta Bucello, from Cardinia Shire Council, supported the concept of a food ministry and national strategy from the perspective of local government. Ms Bucello observed that 'at a local government level, we do need to work in partnership with

³² Dr Michael Depalo, Board member, Australian Institute of Food Science & Technology Limited, *Committee Hansard*, 16 June 2023, p. 19.

³³ Ms Emma Germano, President, Victorian Farmers Federation, *Committee Hansard*, 9 August 2023, p. 6.

³⁴ University of Melbourne, *Submission 34.1*, p. 4.

³⁵ Ms Caitlin McConnel, private capacity, *Committee Hansard*, 10 July 2023, p. 11.

other levels of government to be able to support our communities'. Furthermore, Ms Bucello stated that:

If there was a minister for food or a minister for food and nutrition, it might change that thinking around the outcome that we're actually trying to achieve when we grow food. It's about providing nutrition and food for people and for health and wellbeing. I am supportive of that, and I think it would be really beneficial to see that policy framework at the federal, state and local government level that talks to all of the different parts of the food system, not just production but how food is transported and consumed; then, of course, there is the recycling of the nutrients back into the system, because the waste component is also really important. Yes, I think that would be a really valuable piece of work.³⁶

2.31 According to the University of Melbourne, the responsibilities of a Minister for Food should include:

- Ensuring preparation of a National Food Security Plan, which has regard to the Human Right to Food.
- Ensuring the National Food Security Plan is reviewed and updated every 5 years.
- Accountabilities for monitoring and achieving food security outcomes and targets.³⁷

Policy through the food security lens

2.32 Contributors to the inquiry highlighted the need for government policy to be developed through a food security lens, with food security informing the development of policy across the whole of government.

2.33 The University of Melbourne observed that 'Australian government policy-making related to food security has primarily focused on increasing food production (the availability dimension of food security), with a particular emphasis on growing food exports'. Historically, the Australian Government has had little policy focus on the nation's domestic food supply or on other dimensions of food security, such as ensuring food access, stability or sustainability. The University noted that 'policy to promote food security needs to take a "whole of government" and "food systems" approach',³⁸ stating:

The food security of Australians is therefore influenced by government policy and decisions taken across multiple policy portfolios, including agriculture, environment, water, health, social services, transport and trade. When we consider food access as a feature of food security, the latter is also informed by public health and welfare policies and related income payments. If decisions in

³⁶ Ms Pieta Bucello, Coordinator, Health and Social Planning, Cardinia Shire Council, *Committee Hansard*, 11 August 2023, p. 8.

³⁷ University of Melbourne, *Submission 34.1*, p. 5.

³⁸ University of Melbourne, *Submission 34*, p. 3.

these policy portfolios are taken without regard to their impact on food systems and food access, it can lead to unintended and adverse outcomes for food security.³⁹

- 2.34 The University of Melbourne also argued that ‘policy to promote food security in Australia should also be grounded in recognition of the human right to food’. It indicated a need to ‘legislate the human right to food in Australia, so that it can be legally enforced and embedded in policy to promote food security’.⁴⁰
- 2.35 In a similar vein, Ms McConnel observed that to date most policies have been developed within policy siloes, whereas ‘food security and the issue of food equity touches on every single ministerial portfolio’.⁴¹ Ms Emma Germano, President of the Victorian Farmers Federation, argued that ‘we should be looking at the impact of every policy we have in Australia—social policy, environmental policy, energy policy and trade policy—through the lens of food security. enforced and embedded in policy to promote food security’.⁴²
- 2.36 The Australian Food Sovereignty Alliance also advocated for developing policy through a food systems lens, stating:

A food systems lens highlights the multiple activities and actors within the food system that can be targeted for government intervention (e.g., food production, distribution, retail, and consumption), as well as the need to tackle the full range of drivers of unsustainable, unhealthy, and inequitable food systems, including those that lie outside the food system itself. It draws attention to need to consider the interconnections between the issues this inquiry is concerned with, including food security, managing the impact of climate change on the food system, and limiting the impact the food system has on the environment, and the need to address these issues in a synergistic way – rather than in departmental or policy “silos”.⁴³

Food security through the health lens

- 2.37 Cancer Council Australia urged the application of ‘a health lens to all policy where food systems and food security are integrated into all relevant areas of government policy’.⁴⁴ The Cancer Council called for more than a food security plan, seeking a ‘comprehensive food and nutrition strategy for Australia’ within which a food security plan or strategy would fit. The Cancer Council stated, ‘that would ensure that everyone had access to healthy food and would structure our food system in a way that prioritised the production of healthy and affordable foods for all people.’⁴⁵

³⁹ University of Melbourne, *Submission 34*, p. 4.

⁴⁰ University of Melbourne, *Submission 34*, p. 4.

⁴¹ Ms Caitlin McConnel, private capacity, *Committee Hansard*, 10 July 2023, p. 10.

⁴² Ms Emma Germano, President, Victorian Farmers Federation, *Committee Hansard*, 9 August 2023, p. 2.

⁴³ Australian Food Sovereignty Alliance, *Submission 147*, p. 8.

⁴⁴ Cancer Council Australia, *Submission 56*, p. 5.

⁴⁵ Ms Clare Hughes, Chair, Nutrition, Alcohol and Physical Activity Committee, Cancer Council, *Committee Hansard*, 2 June 2023, p. 26.

- 2.38 Similarly, Dietitians Australia called for ‘a National Nutrition Policy and implementation plan which prioritises public health across all food systems and food security for all Australians’.⁴⁶ It urged a coordinated whole-of government approach ‘to support national, state and local governments to work together with non-government organisations and civil society’. The National Nutrition Policy would address ‘unhealthy food environments, reduce the incidence, prevalence and cost of diet-related health problems and promote health and wellbeing’. It would also look to ‘provide food and nutrition security for all Australians with a commitment to equitable action’. The policy would operate across government, involving departments beyond health, ‘and consider the role of sectors such as agriculture and trade’.⁴⁷

Food security as national security

- 2.39 Some stakeholders highlighted the national security dimension of food security. The University of Sydney observed that ‘with continuing geopolitical instability and accelerating climate change, having resilient and sustainable food supply chains is essential for Australia’s economic and national security’.⁴⁸
- 2.40 Investment firm Longreach Maris observed the intimate connection between food security and national security. It noted recent US Government policy ‘to ensure that America has access to safe, affordable food, that America’s producers are able to get their goods to market, and that the American food system is better prepared for threats that may harm production and cause shocks to the cost or availability of food’.⁴⁹
- 2.41 Ms Caitlin McConnel highlighted the absence of food security from national security policy and planning, despite acknowledgements by policy makers of the national security implications of threats to food security, especially from climate change.⁵⁰ Ms McConnel’s submissions highlighted the need to place food security within a national security context.⁵¹
- 2.42 In its submission, Agsecure observed that ‘the national security dimensions of agriculture and food production must be considered by governments, communities, and businesses, ensuring that appropriate measures are implemented to protect Australia’s resilient food system’.⁵² The national security threats identified by Agsecure included the threat to stability and order posed by food insecurity internationally, the hazards of cyber-attack or biosecurity incursions, or disruption to trade and supply chains, especially for critical inputs. It noted that:

Agriculture is a microcosm of Australia’s strategic vulnerabilities; its heavily trade exposed, vulnerable to supply chain shocks and lives with the threat of

⁴⁶ Dietitians Australia, *Submission 39*, p. 2.

⁴⁷ Dietitians Australia, *Submission 39*, p. 3.

⁴⁸ University of Sydney, *Submission 152*, p. 2.

⁴⁹ Longreach Maris, *Submission 114*, p. 7.

⁵⁰ Ms Caitlin McConnel, *Submission 77*, pp. 17–22.

⁵¹ Ms Caitlin McConnel, *Submission 77.1*, p. 4.

⁵² Agsecure & Saba Sinai, *Submission 180*, p. 2.

devastating climate and biosecurity risks every day. It offers key lessons on preparedness and resilience for the rest of the nation.⁵³

- 2.43 Agsecure stressed that food production is ‘much more valuable than just a 2% contributor to GDP, or an employer of 1.6 million people. Food itself is “fundamental”.’⁵⁴
- 2.44 Focusing on the interplay of domestic policies upon food security and thus national security, Ms Germano told the Committee:

When we're thinking about whether or not we should underground powerlines, at no point has anybody said to the community, 'Well, we actually need to consider national security when we put this infrastructure in place.' I think we take it for granted that there is no notion of national security and how food security links into that. I think the government could start by making a food security statement about what it acknowledges is necessary and pledges to do with regard to the impact of all those policies. I could go through a list. I could say a thousand different things that the government could be doing. But the very first thing is starting by committing to the fact that food security is part of our national security and that there will be a consideration for food security in every single policy that is put forward.⁵⁵

Food Strategies and Reports

Australia

- 2.45 As set out in the introduction, Australia does not have a national food plan or food security strategy. While there have been several attempts to create definitive policies at national and state level, there has been no sustained effort at implementing a coherent policy. It has been observed that the ‘absence of a contemporary national strategy has contributed to significant policy gaps, patchy implementation and the largely ad hoc approach of successive Australian governments to improving diet quality’.⁵⁶
- 2.46 Examples of policies and strategies that have previously informed food policy in Australia include:
- The Australian *Food and Nutrition Policy* 1992.
 - The *National Food Plan* 2013.
 - The 2022 NSW Legislative Assembly Committee on Environment and Planning report on *Food Production and Supply in NSW*.

⁵³ Agsecure & Saba Sinai, *Submission 180*, p. 4.

⁵⁴ Agsecure & Saba Sinai, *Submission 180*, p. 4.

⁵⁵ Ms Emma Germano, President, Victorian Farmers Federation, *Committee Hansard*, 9 August 2023, p. 7.

⁵⁶ Nichols, T., M. Craike, I. Thevios & R. Calder, 2020. *Nutrition policy in Australia: adopting a harm minimisation approach*. Policy evidence brief 2020-01. Mitchell Institute, Victoria University. Melbourne, p. 12.

- CSIRO’s 2023 report—*Reshaping Australian Food Systems*.
- Cardinia Shire *Community Food Strategy 2018–26*.

2.47 A brief overview of these policies shows that the first two policies under previous governments have now been discontinued. The NSW Legislative Assembly Committee report addresses many of the same issues raised in the current inquiry, but without the national focus. The CSIRO report is designed to inform national policy and should be considered part of the current policy matrix that will inform future actions. The Cardinia Shire strategy is an example of local government action—a document that can inform, and ultimately be informed by, a national food security strategy. Further information on the strategies can be found in Appendix D.

2.48 Some stakeholders specifically commented on the *National Food Plan 2013*, with mixed responses. For example, Professor Danielle Gallegos, representing the Public Health Association of Australia, observed that the plan ‘had a very strong focus on production, which of course is absolutely vital, but it needs to be much broader than that’. From her perspective, any plan needs ‘to look at the supply chain, right from paddock to plate, and to focus on the plate aspect’. For Professor Gallegos, a core element ‘of any national food and nutrition plan would be that we embed co-design with communities into that plan, in particular with Indigenous communities, so that we can provide food sovereignty as well’.⁵⁷

2.49 On the other hand, Ms Caitlin McConnel, while acknowledging the age and limitations of the National Food Plan, regarded it as ‘a critical foundation’ for a future food strategy. She believed that ‘it’s important that we don’t reinvent the wheel’, that any review of food policy ‘would have regard to what has already been recommended or implemented’.⁵⁸

International approaches

2.50 In recent years, several countries have developed food policies which could inform the development of policy in Australia. In 2019, the Canadian Government released the *Food Policy for Canada*. In 2022, the Government of the United Kingdom released its food policy after the release of two extensive reports reviewing the UK food system. Meanwhile, the Scottish Government has been on a journey of policy development resulting in the passage of legislation that provides for the development of food plans and the creation of a Food Commission. These policies address many of the issues raised in this inquiry and demonstrate the complex and coordinated responses required to meet the food security needs of the people. Further information about these international strategies can be found in Appendix E.

⁵⁷ Professor Danielle Gallegos, Subject Matter Expert, Food and Nutrition Special Interest Group, Public Health Association of Australia, *Committee Hansard*, 2 June 2023, p. 26.

⁵⁸ Ms Caitlin McConnel, private capacity, *Committee Hansard*, 10 July 2023, pp. 10–11.

Committee Comment

- 2.51 The Committee agrees with many of the stakeholders who articulated a need for a national food plan. The evidence before the Committee and the international examples suggest that a comprehensive and inclusive plan, achieving broad and deep collaboration across the food system, is required. All areas of government policy must be able to be seen through a food policy lens—the impact of food policy on other areas of government and the impact of other policies on the food system must be identified and acknowledged. Also required is an institutional framework which can formulate and deliver the plan.
- 2.52 A national food plan needs to engage the whole food system, from paddock to plate and beyond. It needs to deal with the production and distribution of food, supply chain resilience, access to food, good nutrition (diet and health), and the management and disposal of food waste and other waste products. It needs to deal with the food system across jurisdictions and different levels of government. It must focus on the food system at a national level but provide the means for greater engagement in the food system at the community level. As shown by Cardinia Shire's *Community Food Strategy*, local government has a potentially substantial role to play in the development of the food system at a local level.
- 2.53 A national food plan needs to be able to identify and address the health implications of the food system. It also needs to address the national security implications of food security—identifying and addressing vulnerabilities, particularly regarding food system infrastructure and vital inputs. A national food plan must have clear objectives and measurable targets set out in regular updates and action plans. It should also take account of, but not be bound by, the extensive work done in Australia and overseas, to develop comprehensive food policies and plans. The policies developed in Canada, the United Kingdom and Scotland provide useful guides to the development and implementation of national food policy and plans.
- 2.54 The Committee also agrees with those stakeholders who proposed the creation of a Minister for Food. The Committee considers that a minister with specific responsibility for oversight of the food system, the creation and oversight of a national food plan, and a coordinating role for the food system across government, is required. This minister should sit within the Prime Minister's portfolio, where it will be able to coordinate the activities of different agencies across the entire food system.
- 2.55 The Committee notes that in several jurisdictions advisory councils have been created or proposed to assist government in the development of food plans, oversee the implementation of those plans, and provide expert advice to government across the gamut of the food system. Given the breadth and complexity of the food system, it may be that the best coverage is achieved by having a single food system council covering the entire food system supported by expert committees focused on individual areas. These areas could include production, transport and logistics, retail, health and nutrition, defence, education, access to food, environmental sustainability, waste management (including utilisation of waste products) and Indigenous communities (for example access to food, health and nutrition, and the development

of food systems based on Indigenous knowledge). A key focus, of course, must be the economic viability of food producers.

Recommendation 1

2.56 The Committee recommends that the Australian Government, in consultation and cooperation with State and Territory Governments, relevant industries, sectors and the community, develop a comprehensive National Food Plan providing for the food security, including nutritional security, of the nation and its people. The National Food Plan must have clear objectives and measurable targets set out in regular updates and action plans, and subject to regular review.

Recommendation 2

2.57 The Committee recommends that the Australian Government appoint a Minister for Food, within the portfolio of the Prime Minister and Cabinet, with responsibility for the development and implementation of the National Food Plan, regular monitoring and updating of the plan, and accountability for achieving outcomes and targets under the plan.

Recommendation 3

2.58 The Committee recommends that the Australian Government appoint a National Food Council, made up of industry and community experts, to advise the Minister for Food on matters pertaining to the food system, and support the development, implementation, monitoring and evolution of the National Food Plan. The National Food Council is to be supported by expert committees covering sectors including but not limited to:

- production;
- transport and logistics;
- retail;
- health and nutrition;
- defence;
- education;
- access to food;
- environmental sustainability;
- waste management; and
- Indigenous communities.



3. Food production, consumption and export

Introduction

3.1 This chapter addresses the question ‘are we food secure?’ It examines the production, consumption and export of food across the economy, then sector by sector, while noting some of the challenges to production faced by individual sectors. The chapter then addresses the role of exports in food security, issues around farm viability, and some of the innovations in food production that can buttress food security in Australia and globally, such as alternative proteins, protected cropping and vertical farming.

Are we food secure?

3.2 The question of how food secure Australia is depends to some degree on individual perspective. In April 2020, in response to the COVID pandemic, ABARES produced an analysis of food security in Australia which described Australia as ‘one of the most food secure countries in the world’. It found that:

- Despite temporary shortages of some food items in supermarkets caused by an unexpected surge in demand, Australia does not have a food security problem.
- Australia is one of the most food secure nations in the world, with access to a wide variety of healthy and nutritious foods.
- Australia produces much more food than it consumes, exporting around 70% of agricultural production.
- We do not produce everything we eat, with imports accounting for around 11% of food consumption by value.
- The majority of food and beverage imports are processed products (including frozen vegetables, seafood products, and beverages), along with small amounts of out-of-season fresh produce. Disruptions to these imports would be unlikely to have any impact on Australian food security.¹

¹ ABARES 2020, *Australian food security and the Covid-19 pandemic*, Australian Bureau of Agricultural and Resource Economics and Sciences, Canberra.

- 3.3 A different view on the question comes from the Global Food Security Index (GFSI), an analysis of food security on a global scale. The 11th edition of the GFSI in 2022² highlighted a deterioration in the global food environment, making it vulnerable to shocks. This followed big gains in global food security from 2012 to 2015, with overall GFSI scores jumping six per cent. However, structural issues in the global food system led growth to slow subsequently, and for the past three years the trend in the overall food security environment has reversed.
- 3.4 In 2022, the GFSI was dragged down by falls in two of its strongest pillars—affordability and food quality and safety—and saw continued weakness in its other two pillars—availability, and sustainability and adaptation. In particular, affordability, the top-scoring pillar, was dragged down by sharp rises in food costs, declining trade freedom and decreased funding for food safety nets.
- 3.5 Eight of the top ten performing countries in 2022 come from high-income Europe, led by Finland (with a score of 83.7), Ireland (scoring 81.7) and Norway (scoring 80.5). These nations score strongly on all four pillars of the GFSI. Japan (scoring 79.5) and Canada (scoring 79.1) round out the remainder of the top ten. The difference between the top performing country and the country at the bottom of the ranking has continued to widen since 2019, reflecting the inequity in the global food system.
- 3.6 Nations where farmers had access to agricultural inputs and financial products, where governments invested in R&D and innovative technology and had a strong supply chain infrastructure, were more likely to have higher global food security scores. Indeed, access to these agricultural inputs were some of the biggest gainers in the index since 2019, especially commitments to empowering female farmers (jumping 18.4%) and access to agricultural technology, education and resources (up by 10.1%).
- 3.7 Australia ranked 22nd, with an overall score of 75.4. Individual scores were:
- Affordability - 93.3
 - Availability - 61.1
 - Quality and Safety - 84.0
 - Sustainability and Adaptation - 58.8
- 3.8 The National Farmers' Federation (NFF) emphasised Australia's high levels of production and exports—enough food to feed 75 million people each year—as evidence of Australia's food security.³ In a similar vein, the University of Western Australia stated:

Despite being the driest human inhabited continent in the world, and with a limited proportion of land suitable for agriculture, Australia is blessed with a variety of different climates, meaning that our country can produce a range of

² Global Food Security Index 2022, <Global Food Security Index (GFSI) (economist.com)>. Accessed 9 October 2023.

³ National Farmers' Federation, *Submission 103*, p. 6.

agricultural products. Our agricultural sector makes good use of the available land, resulting in Australia not only being able to produce enough food for its own population, but also to be a major exporter of food and other agricultural products. Australian agriculture currently feeds 26 million people at home and about 50 million people overseas.⁴

- 3.9 Despite this, a number of stakeholders identified a significant and growing problem with food insecurity. Dr Rachel Carey, of the University of Melbourne, highlighted the narrative in Australia ‘that we’re a food secure country because we produce and export a lot of food’.⁵ She noted, however, that ‘food security is also fundamentally about food access and particularly people’s ability to afford access to sufficient healthy and culturally appropriate food’.⁶ On that score, Australia was less food secure:

The latest State of food security and nutrition in the world report released by the Food and Agriculture Organisation of the United Nations recently estimates that, between 2020 and 2022, around 11 per cent of Australians were either severely or moderately food insecure. A report released by Foodbank Australia last year estimated that the rate of food insecurity was considerably higher.⁷

- 3.10 Farmer and lawyer, Ms Caitlin McConnell, noted that the United Nations had recognised Australia as a food insecure country, both in terms of vulnerabilities in Australia’s food systems infrastructure and logistics supply chains, and ‘in respect of our response to and the effect of natural disasters associated with climate’.⁸

- 3.11 Dr Steven Lapidge, Chief Executive Officer of Fight Food Waste Ltd, highlighted the measures of food security based on production, stating:

Australia produces enough food to feed 75 million people each year, three times our population, and according to the Global Food Security Index, we are one of the most food secure countries in the world. We’re also currently ranked first for food affordability in the world, something that many consumers would disagree with.⁹

- 3.12 Dr Lapidge observed, however, that ‘it is only when food rescue agencies are no longer required that Australia and Australians can truly call themselves food secure’.¹⁰

⁴ University of Western Australia, *Submission 4*, p. 1.

⁵ Dr Rachel Carey, Senior Lecturer in Food Systems, School of Agriculture, Food and Ecosystem Sciences, University of Melbourne, *Committee Hansard*, 4 August 2023, p. 8.

⁶ Dr Rachel Carey, Senior Lecturer in Food Systems, School of Agriculture, Food and Ecosystem Sciences, University of Melbourne, *Committee Hansard*, 4 August 2023, p. 8.

⁷ Dr Rachel Carey, Senior Lecturer in Food Systems, School of Agriculture, Food and Ecosystem Sciences, University of Melbourne, *Committee Hansard*, 4 August 2023, p. 8.

⁸ Ms Caitlin McConnel, *Committee Hansard*, 10 July 2023, p. 12.

⁹ Dr Steven Lapidge, Chief Executive Officer, Fight Food Waste Ltd, *Committee Hansard*, 20 April 2023, p. 21.

¹⁰ Dr Steven Lapidge, Chief Executive Officer, Fight Food Waste Ltd, *Committee Hansard*, 20 April 2023, p. 22.

3.13 The Committee is conscious of these different perspectives, and that raw production figures alone do not denote food security. The Committee will examine the issue of food insecurity more closely in Chapter 7, while dealing with the aggregate issues of production and consumption here.

Food production and consumption

3.14 A key element of food security is the production and consumption of food, including imports and exports. ABARES has released reports analysing production and consumption patterns across the economy. ABARES research highlighted shifting patterns of demand related to population growth, income growth, changes in tastes and preferences, and changes in food prices. In its 2017 report on food demand in Australia,¹¹ ABARES noted that:

- The domestic market is important for Australia's food producers including farmers, food processors and food service providers.
- By value, around two-thirds of Australia's food production is used in the domestic market.
- Food imports have become more important, particularly for processed food, but still account for a relatively low share of household food consumption (15 per cent in 2015–16).
- Food is a major expenditure category for households in Australia. The three top food expenditure categories are: meals out and fast foods; meat, fish and seafood; and fruit and vegetables.
- Food expenditure per person tends to be higher, on average, for households with higher incomes.
- The food industry supplies a broad range of food products and services in response to food demand in different segments of the domestic market.

3.15 The report noted that imports have become a progressively more significant source of food for the household sector, although most food consumed in Australia is produced in Australia:

- Food imports increased from \$4 billion in 1989–90 to \$14 billion in 2015–16.
- Overall, the share of imports in household food consumption increased from 8 per cent in 1989–90 to 15 per cent in 2015–16.
- Food imports mainly comprise processed food products—processed food imports increased from \$3 billion (90 per cent of total food imports) in 1989–90 to \$13 billion (92 per cent) in 2015–16.

¹¹ Hogan, L 2017, *Food demand in Australia: Trends and food security issues*, ABARES Research Report 17.7, Canberra.

- In 2015–16, Australia was a significant net importer in six categories: seafood; processed fruit and vegetables; soft drink, cordials and syrups; confectionary; bakery products; and oils and fats.¹²
- 3.16 A second report on trends in Australia’s food market from 2018¹³ noted that between 1988–89 and 2016–17:
- indicative food production increased from \$65 billion to \$117 billion, an average increase of 2.1 per cent a year;
 - household food consumption expenditure increased from \$49 billion to \$92 billion, an average increase of 2.3 per cent a year;
 - net food exports increased from \$16 billion to \$25 billion, an average increase of 1.5 per cent a year (in 2015–16 prices);
 - food exports increased from \$20 billion to \$39 billion (2.4 per cent a year), or from 30 to 33 per cent of indicative food production; and
 - food imports increased from \$4 billion to \$14 billion (4.8 per cent a year), or from 8 to 15 per cent of food consumption.
- 3.17 Estimated growth in the volume of household food consumption was found to have been relatively consistent in recent decades, averaging 2.4 per cent a year over the period 1988–89 to 2016–17, but key drivers have changed:
- Between 1988–89 and 2009–10, key drivers were population growth (55 per cent of food demand growth), income growth (42 per cent), and changes in tastes and preferences (9 per cent), partly offset by higher real food prices (-7 per cent).
 - Between 2009–10 and 2016–17, key drivers were population growth (64 per cent of food demand growth), changes in tastes and preferences (20 per cent), lower real food prices (10 per cent) and income growth (6 per cent).
 - Growth estimates for the volume of food consumption per person (1.0 per cent a year between 1988–89 and 2016–17) should be interpreted with caution and may indicate there has been some switching toward higher-priced food types.
 - The share of meals out and fast foods in total food expenditure increased from 25 per cent in 1988–89 to 31 per cent in 2009–10 and 34 per cent in 2015–16, the latest year available.
- 3.18 The report estimated that Australia’s household food consumption expenditure would increase from \$92 billion in 2016–17 to \$165 billion in 2049–50, an average increase of 1.8 per cent a year, comprising 1.3 per cent for population growth and 0.5 per cent for growth in household food expenditure per person. Reliable food quality was likely to increase the willingness of people to pay a price premium (all else constant).

¹² Hogan, L 2017, *Food demand in Australia: Trends and food security issues*, ABARES Research Report 17.7, Canberra.

¹³ Hogan, L 2018, *Food demand in Australia: Trends and issues 2018*, ABARES Research Report 18, Canberra, pp. 1–2.

Production and consumption by sector

- 3.19 This section provides key Australian agricultural industry profiles, and a summary of the food and grocery manufacturing sector. It includes data on production, consumption, exports and imports, and a summary of the main challenges facing the various sectors.

Dairy

- 3.20 In 2021–22, Australia’s dairy industry produced around 8.5 billion litres of milk from 1.34 million cows, worth \$4.9 billion in farmgate value.¹⁴ This was the industry’s lowest figure since at least 1996–97,¹⁵ and according to Australian Dairy Farmers Ltd, this decline commenced following deregulation in 2000,¹⁶ as well as a move away from exporting bulk commodity dairy products.¹⁷ The decline is attributed to a range of factors, including ‘rising input costs consistently eroding profitability, lack of productivity growth, decline in export market share, social licence challenges, change in consumer preferences and production systems and climate change’.¹⁸
- 3.21 The Australian Dairy Products Federation (ADPF) advised that in September 2020, the dairy industry launched the Australian Dairy Plan with a view to making the industry more profitable and confident into the future. The ambition was to increase milk production to at least 9.6 billion litres in 2024–25, creating around \$500m in additional value at the farmgate. The ADPF reported that ‘unfortunately, the increase in raw milk production has not eventuated despite record high farmgate milk prices being paid to farmers’.¹⁹
- 3.22 In contrast, global milk production has risen, with Asia being the biggest milk-producing region (42 per cent of the share total in 2018); Australia accounted for around 2 per cent.²⁰ Milk and dairy products are produced nationwide. Victoria dominates in the production of milk (60 per cent), followed by New South Wales (12 per cent) and Tasmania (10 per cent).²¹
- 3.23 The dairy processing sector creates \$16 billion in revenue annually, contributing \$12.4 billion to gross domestic product.²² This more than triples the value of raw milk between farmgate and the consumer.²³ There are about 200 processing companies,²⁴ although ten dairy manufacturers process most of the milk.²⁵

¹⁴ Australian Dairy Farmers Ltd, *Submission 67*, p. 10; Australian Dairy Products Federation, *Submission 136*, p. 21.

¹⁵ Australian Dairy Farmers Ltd, *Submission 67*, p. 11.

¹⁶ Australian Dairy Farmers Ltd, *Submission 67*, p. 5.

¹⁷ Australian Dairy Farmers Ltd, *Submission 67*, p. 14.

¹⁸ Australian Dairy Farmers Ltd, *Submission 67*, p. 5.

¹⁹ Australian Dairy Products Federation, *Submission 136*, p. 13.

²⁰ Australian Dairy Farmers Ltd, *Submission 67*, p. 11.

²¹ Australian Dairy Farmers Ltd, *Submission 67*, p. 10.

²² Australian Dairy Products Federation, *Submission 136*, p. 8.

²³ Australian Dairy Products Federation, *Submission 136*, p. 7.

²⁴ Australian Dairy Farmers Ltd, *Submission 67*, p. 10.

²⁵ Australian Dairy Products Federation, *Submission 136*, p. 8.

- 3.24 Australians consume around 93 litres of milk per capita, which represents a recent slight decline. Domestic consumption trends differ between types of dairy products, reflecting changes in consumer tastes and food trends. For instance, plant-based alternatives are becoming popular, such as alternative milks.²⁶
- 3.25 Globally, Australia ranks fourth in the dairy trade and holds a five per cent share after New Zealand, the European Union and the United States.²⁷ In 2021–22, our dairy products exports totalled \$3.8 billion, with 85 per cent directed to Asian markets.²⁸ Almost \$1.4 billion or a third of our dairy exports went to Greater China (37 per cent), one of our fastest growing export markets by volume.²⁹ Japan (11 per cent), Indonesia (8 per cent), and Singapore and Malaysia (6 per cent each) are Australia's other strongest export markets for dairy products.³⁰
- 3.26 Imports of dairy products represented the equivalent to 19% of Australian milk production in 2021–22. New Zealand accounted for approximately 50 per cent of Australia's imports, followed by the EU (27 per cent) and US (17 per cent).³¹ This is up from 9% in 2006–07. This trend is expected to continue, with dairy imports increasing to over 25 per cent of production by 2030.³²
- 3.27 The dairy sector faces a range of challenges, but probably none greater than raising the level of raw milk production. As the ADPF put it:
- Australia currently produces enough milk to meet domestic demand for drinking milk, with excess and imported product enabling manufacturers the choice to divert milk into higher value dairy products.
- But as raw milk production continues to decline and input costs continue to rise, the risk and reliance on imported dairy products could escalate and hence a need to balance and solve for both. This lends to the question 'what is the ideal level of "self-sufficiency" to best manage dairy production costs and remain cost competitive, while assuring security of supply?'³³

Red meat and live exports

- 3.28 Australia's red meat and livestock industry turnover was \$67.7 billion in 2020–21, covering livestock production (\$35 billion), processing (\$19.2 billion) and wholesale and retail sales (\$13.5 billion). The industry comprises 76,000 businesses. Australia's cattle herd numbers totalled 24.4 million head; the sheep flock 68 million head (June 2021). The largest beef producers are located in Queensland (50 per cent), New South Wales (20 per cent) and Victoria (20 per cent). In comparison, Queensland is

²⁶ Australian Dairy Farmers Ltd, *Submission 67*, p. 13.

²⁷ Australian Dairy Farmers Ltd, *Submission 67*, p. 13.

²⁸ Australian Dairy Products Federation, *Submission 136*, p. 21.

²⁹ Australian Dairy Products Federation, *Submission 136*, pp. 10, 22.

³⁰ Australian Dairy Products Federation, *Submission 136*, p. 10; Australian Dairy Farmers Ltd, *Submission 67*, p. 13.

³¹ Australian Dairy Products Federation, *Submission 136*, p. 10.

³² Australian Dairy Products Federation, *Submission 136*, p. 13.

³³ Australian Dairy Products Federation, *Submission 136*, p. 21.

home to a small number of sheep (sitting at 3 per cent like Tasmania), with most located in New South Wales (36 per cent) and Victoria (23 per cent).³⁴ Australians are some of the largest consumers globally of beef and sheep meat, consuming 19.2 kilograms of beef and 5.9 kilograms of sheep meat annually per capita.³⁵

- 3.29 In 2021-2022, red meat and livestock exports equalled around \$17 billion.³⁶ The live export sector specifically is estimated at over \$1 billion per year.³⁷ Australia exports about 70 per cent of its red meat to over 100 export destinations.³⁸ Australia exports beef mainly to Japan, China, Korea and the United States; sheep meat to the United States and China in particular; and goatmeat, especially to the United States.³⁹ Live exports are a significant part of Australia's red meat trade. Australia mainly exports cattle to Indonesia, Vietnam and China; sheep to Kuwait, Israel, the United Arab Emirates and Oman; and goats to Malaysia.⁴⁰
- 3.30 Australia has 1.5 per cent of the global cattle herd and 5 per cent of the global sheep flock. It is the fourth largest beef exporter after Brazil, India and the United States, and the largest global exporter of sheep meat and goat meat.⁴¹ In 2021, half of Australia's top-ten beef export markets relied on it for over 34 per cent of their yearly imports; for Japan and Indonesia this reliance exceeded 40 per cent of annual imports. Australia and New Zealand are the only major suppliers of sheepmeat globally, and many countries rely on Australia for their imports. For example, Australia supplied 78% of sheepmeat and 85% of goatmeat imported into the United States in 2021.⁴²
- 3.31 The main potential impediments to production for the red meat sector are labour shortages, production costs, biosecurity, natural disasters and the cessation of live exports.⁴³

Chicken meat

- 3.32 In 2021–22, the Australian chicken meat industry had an estimated gross value of production of \$2.97 billion and retail value of \$6.6 billion.⁴⁴ In the previous year, the industry in Australia produced around 1,366,000 tonnes of chicken meat from 700,600,000 birds.⁴⁵ Almost 70 per cent of Australia's chicken is produced by Ingham's and Baiada Poultry situated across Australia, with four medium-sized

³⁴ Red Meat Advisory Council, *Submission 117*, p. 2.

³⁵ Red Meat Advisory Council, *Submission 117*, p. 3.

³⁶ Red Meat Advisory Council, *Submission 117*, p. 3.

³⁷ Australian Livestock Exporters' Council, *Submission 57*, p. 1.

³⁸ Red Meat Advisory Council, *Submission 117*, p. 2.

³⁹ Red Meat Advisory Council, *Submission 117*, p. 3.

⁴⁰ Australian Livestock Exporters' Council, *Submission 57*, p. 1.

⁴¹ Meat & Livestock Australia, *Submission 115*, p. 2; Red Meat Advisory Council, *Submission 117*, p. 2.

⁴² Red Meat Advisory Council, *Submission 117*, p. 6.

⁴³ Red Meat Advisory Council, *Submission 117*, pp. 3–5.

⁴⁴ Australian Chicken Meat Federation, *Submission 51*, p. 3.

⁴⁵ Ingham's Group, *Submission 137*, p. 8.

companies being the other main producers.⁴⁶ As urbanisation increases, the industry is becoming more regionally-based.⁴⁷

- 3.33 Of the 1.3 billion kilograms of chicken that Australian producers generate each, 97 per cent is for domestic consumption.⁴⁸ Chicken is the most popular meat consumed by Australians, with almost 70 per cent of Australians eating chicken at least twice a week.⁴⁹ Per capita, Australians eat around 50 kilograms of chicken annually, far exceeding pork as the next most popular meat nationally, with an annual per capita consumption of 28 kilograms.⁵⁰ Chicken accounts for about 45 per cent of all meat protein consumed by Australians.⁵¹
- 3.34 As domestic consumption and demand are high and on the rise, Australia has a modest export profile.⁵² It is estimated that by 2030, to feed our growing population, Australia's chicken meat production will need to increase by 200 million kilograms (around 100 million birds) above current capacity, to 1.56 billion kilograms, to maintain self-sufficiency.⁵³ This will require substantial additional investment in infrastructure, machinery, transport, labour and birds.⁵⁴
- 3.35 The Australian Chicken Meat Federation stated that 'the projected increases in consumer demands for chicken meat may be difficult to meet unless urgent action is undertaken to shore up Australia's food security and supply chain resilience'.⁵⁵ It concluded that 'to ensure that Australia's food security goals continue to be met to 2030 and beyond, any food security and resilience strategy must focus on how to incentivise industry investment to grow domestic production capacity in chicken meat'.⁵⁶ The Ingham's Group emphasised the importance of energy security and the security of the grain supply to the future of the industry.⁵⁷

Eggs

- 3.36 Australia produces around 6.3 billion eggs per year. On an average day, Australians collectively consume about 17.3 million eggs. Eggs are predominantly produced in Queensland, New South Wales and Victoria.⁵⁸ Australia does not import eggs due to risks of disease; and has limited egg exports, mainly to Singapore, the United Arab Emirates and the Philippines.⁵⁹ Egg Farmers of Australia identified the principal

⁴⁶ Ingham's Group, *Submission 137*, p. 8.

⁴⁷ Ingham's Group, *Submission 137*, p. 7.

⁴⁸ Australian Chicken Meat Federation, *Submission 51*, p. 4.

⁴⁹ Australian Chicken Meat Federation, *Submission 51*, p. 3.

⁵⁰ Australian Chicken Meat Federation, *Submission 51*, p. 3.

⁵¹ Ingham's Group, *Submission 137*, p. 8.

⁵² Australian Chicken Meat Federation, *Submission 51*, p. 7.

⁵³ Australian Chicken Meat Federation, *Submission 51*, p. 6.

⁵⁴ Australian Chicken Meat Federation, *Submission 51*, p. 6.

⁵⁵ Australian Chicken Meat Federation, *Submission 51*, p. 6.

⁵⁶ Australian Chicken Meat Federation, *Submission 51*, p. 7.

⁵⁷ Ingham's Group, *Submission 137*, pp. 5, 10–12.

⁵⁸ Egg Farmers of Australia, *Submission 14*, pp. 5–6.

⁵⁹ Egg Farmers of Australia, *Submission 14*, p. 6.

impediments to production being high input costs and the planned phase-out of caged egg production.⁶⁰ It observed that:

Earlier this year the cost of started pullets (young laying hens) had increased 20%, fuel prices jumped 25%, feed grain costs rose by 45%, and the cost of canola oil had climbed 141% per tonne.⁶¹

Pork

- 3.37 The Australian pork industry comprises pig production, primary and secondary processing, and wholesale. It contributes around \$5.3 billion in gross domestic product annually to our national economy. In 2021, around 443,000 metric tonnes of pork were produced in Australia. The industry is predominantly regionally based in Queensland, Victoria and South Australia. Around 279,000 sow herds are kept in approximately 4,300 registered sites across Australia.⁶²
- 3.38 Around 706 million pork meals are produced in our country annually, and Australians consume on average 10.8kg of fresh pork each.⁶³ Ninety per cent of pork production is for domestic consumption.⁶⁴ Pork is the most popular meat in the world, and the total value of our exports is approximately \$173 million per year. Almost one third of these exports go to Singapore, making up over 12 per cent of its total pork supply. The pig industry in Western Australia is particularly invested in this export market.⁶⁵
- 3.39 Australian Pork Limited (APL) highlighted a number of potential impediments to production, stating that ‘consistency of regulation, investment in biosecurity mechanisms, support for labour force initiatives and key strategic infrastructure investments’, were crucial to the future of the industry.⁶⁶ APL also highlighted competition from imports, noting that:
- Unlike many Australian livestock industries, the pork industry faces significant competition from imported pork products with approximately 80% of the ham and bacon consumed by Australians daily derived from imported pork.⁶⁷
- 3.40 In response, APL urged the implementation of the recommendations of the 2021 *Evaluation of Country of Origin Labelling reforms* report, produced by Deloitte for the Department of Industry, Science, Energy and Resources.⁶⁸

⁶⁰ Egg Farmers of Australia, *Submission 14*, p. 6.

⁶¹ Egg Farmers of Australia, *Submission 14*, p. 6.

⁶² Australian Pork Limited, *Submission 138*, p. 7.

⁶³ Australian Pork Limited, *Submission 138*, p. 7.

⁶⁴ Australian Pork Limited, *Submission 138*, p. 8.

⁶⁵ Australian Pork Limited, *Submission 138*, p. 11.

⁶⁶ Australian Pork Limited, *Submission 138*, p. 3.

⁶⁷ Australian Pork Limited, *Submission 138*, p. 8.

⁶⁸ Australian Pork Limited, *Submission 138*, p. 8. See also https://www.industry.gov.au/sites/default/files/2022-06/iga_evaluation_of_country_of_origin_labelling_reforms.pdf. Accessed 13 October 2023.

Seafood

- 3.41 The seafood industry includes wild catch, aquaculture and post-harvest sectors.⁶⁹ Australians consume seafood from wild catch (commercial, recreational, and Indigenous customary fishers), aquaculture production and imported seafood.⁷⁰ The Australian seafood industry has a gross value of production of over \$3.15 billion annually, representing 10 per cent of national agricultural production.⁷¹ Australia annually produces around 1.5 billion seafood meals.⁷²
- 3.42 While Australian production has grown 25 per cent since 2000,⁷³ and Australia exports a variety of premium products, such as rock lobster, premium tuna species and abalone,⁷⁴ domestic production is actually declining as a proportion of consumption and Australia imports significant quantities of seafood.⁷⁵ Total annual domestic production is 317,400 tonnes harvested (wet weight), while imports are 207,000 tonnes product weight (at sale) out of total domestic supply of 366,615 tonnes product weight. Around 42,000 tonnes per annum are exported.⁷⁶ Imports contribute 72% of Australia's seafood meals.⁷⁷
- 3.43 Production from wild catch fisheries has plateaued 'due to reduced access to productive fishing areas, marine spatial squeeze, climate change impacts and the rising cost of key inputs'.⁷⁸ The Fisheries Research and Development Corporation (FRDC) advised that around 50% of Australia's local sustainable capture fishery resources are unharvested, and undervalued. It indicated that potential production could more than double the current national catch (an increase over current catches of about 124%), although potential increases varied among individual species and fisheries.⁷⁹ For example, it was estimated that additional gross value of production from fully harvesting a selection of 11 underutilised species in NSW waters was around \$85 million per year.⁸⁰
- 3.44 The fastest growing food production sector in Australia and globally is aquaculture.⁸¹ In Australia, the proportional value of seafood production attributed to aquaculture has grown from 29 per cent (2000–01) to 56 per cent (2020–21).⁸² Aquaculture is the biggest contributor to the growth in value of Australia's seafood industry, and is

⁶⁹ Seafood Industry Australia, *Submission 125*, p. 2.

⁷⁰ Fisheries Research and Development Corporation, *Submission 75*, p. 10.

⁷¹ Seafood Industry Australia, *Submission 125*, p. 2.

⁷² Seafood Industry Australia, *Submission 125*, p. 2.

⁷³ Seafood Industry Australia, *Submission 125*, p. 3.

⁷⁴ Fisheries Research and Development Corporation, *Submission 75*, p. 11.

⁷⁵ Seafood Industry Australia, *Submission 125*, p. 3.

⁷⁶ Seafood Industry Australia, *Submission 125*, p. 6.

⁷⁷ Fisheries Research and Development Corporation, *Submission 75*, p. 9.

⁷⁸ Seafood Industry Australia, *Submission 125*, p. 3.

⁷⁹ Fisheries Research and Development Corporation, *Submission 75*, p. 9.

⁸⁰ Fisheries Research and Development Corporation, *Submission 75*, p. 32.

⁸¹ Seafood Industry Australia, *Submission 125*, p. 2.

⁸² Seafood Industry Australia, *Submission 125*, p. 6.

predicted to continue expanding, with salmonids, prawns and abalone contributing to this increase and presenting strong export opportunities.⁸³

- 3.45 Seafood Industry Australia (SIA) emphasised the need to boost local production to meet expected increases in global consumption in order to protect Australia's food security. It stated:

With global consumption of seafood expected to increase by 20% by 2030 it is imperative that we increase local production of seafood to meet this demand and ensure that access to domestically produced seafood remains available and affordable to the Australian community. This will require support for both the wildcatch and aquaculture sectors of the Australian seafood industry.⁸⁴

- 3.46 To maintain seafood production, SIA highlighted the need for security of access to fisheries,⁸⁵ access to labour,⁸⁶ access to fuel and energy,⁸⁷ and strong biosecurity.⁸⁸ With regard to the workforce challenges, SIA noted that:

The current Australian workforce cannot fulfil the ongoing requirements of the wild-catch, aquaculture and post-harvest sectors. In addition, the expansion rates of the aquaculture and postharvest sectors forecast over the next 12 to 18 months will worsen the already tough labour situation.⁸⁹

- 3.47 SIA also emphasised the nutritional importance of seafood, citing research that Australians, on average, need to increase their seafood consumption by 40% to meet dietary recommendations. SIA observed that 'increased seafood consumption requires increasing national seafood production volumes and improving the resilience supply and value chains to the community'.⁹⁰

Grains

- 3.48 Globally, we have the highest wheat production per capita.⁹¹ In 2021–22, Australia produced a record crop of approximately 67.4 million tonnes.⁹² The industry's value for that period was estimated at \$27.5 billion.⁹³ The winter crop production included a record return of 36.3 million tonnes for wheat, with barley at 13.7 million tonnes and canola at 6.4 million tonnes.⁹⁴ In the previous season, Australian grain production provided \$13.8 billion in gross value of production to our economy.⁹⁵

⁸³ Seafood Industry Australia, *Submission 125*, p. 6; Fisheries Research and Development Corporation, *Submission 75*, p. 13.

⁸⁴ Seafood Industry Australia, *Submission 125*, p. 6.

⁸⁵ Seafood Industry Australia, *Submission 125*, p. 12.

⁸⁶ Seafood Industry Australia, *Submission 125*, p. 20.

⁸⁷ Seafood Industry Australia, *Submission 125*, p. 23.

⁸⁸ Seafood Industry Australia, *Submission 125*, p. 25.

⁸⁹ Seafood Industry Australia, *Submission 125*, p. 21.

⁹⁰ Seafood Industry Australia, *Submission 125*, p. 9.

⁹¹ GrainGrowers, *Submission 61*, p. 6.

⁹² Grain Trade Australia, *Submission 96*, p. 1.

⁹³ Grain Trade Australia, *Submission 96*, p. 1.

⁹⁴ Grain Producers Australia, *Submission 129*, p. 2.

⁹⁵ GrainGrowers, *Submission 61*, p. 5.

- 3.49 Australia's grain exports generally far surpass domestic consumption. In 2021–22, domestic demand for grain totalled 17 million tonnes; whereas Australia's grain exports were around 45.4 million tonnes.⁹⁶ By 2030, however, annual grain exports are predicted to reduce from 60 per cent to 53 per cent of total production, while the domestic market for cereal grains will take up an additional 6 per cent of annual production.⁹⁷ Australia mainly exports grain within the Asia-Pacific region.⁹⁸
- 3.50 Australia does import some grain products—food and ingredients that Australia either does not produce or does not produce in sufficient quantities to meet demand. For example, Australia imports around 900,000 tonnes of soymeal as a protein source for animal stock feed, mainly for pig and poultry production. In times of severe drought the supply chain is able to reverse to allow for the import of grains.⁹⁹
- 3.51 In terms of domestic consumption of grains, about 35 per cent of national wheat production goes towards domestic flour production. A significant portion of the crop is use for animal food, both cattle and poultry, making a significant contribution to domestic meat production.¹⁰⁰
- 3.52 The main impediments to production are reliable and economical access to inputs such as fuel, chemicals and fertiliser; biosecurity; and climate change.¹⁰¹ GrainGrowers advised that:
- Crucially, climate change is already impacting growers, resulting in changed planting times and cropping regions, earlier and longer frost windows, greater pest and disease risk, and significant fluctuations in weather patterns such as the recent bushfires and drought.¹⁰²
- 3.53 GrainGrowers indicated that 'maintaining the domestic and global competitiveness of Australian grains while reducing emissions and increasing carbon sequestration is a key ambition of the industry'.¹⁰³

Horticulture

- 3.54 Horticulture comprises fruit, vegetables, nuts, flowers, turf and nursery products.¹⁰⁴ Horticulture is Australia's third largest agricultural sector and the fastest growing, with production value growing by 23 per cent over the five years leading up to 2020–21.¹⁰⁵ The total value of Australia's horticulture industry was \$15 billion in 2020–21, which accounted for 20 per cent of agricultural production.¹⁰⁶ During that period, Australia

⁹⁶ Grain Trade Australia, *Submission 96*, p. 1.

⁹⁷ Grain Producers Australia, *Submission 129*, pp. 2–3.

⁹⁸ GrainGrowers, *Submission 61*, p. 6.

⁹⁹ Grain Trade Australia, *Submission 96*, p. 3.

¹⁰⁰ Grain Producers Australia, *Submission 129*, p. 2.

¹⁰¹ GrainGrowers, *Submission 61*, pp. 7–11.

¹⁰² GrainGrowers, *Submission 61*, p. 10.

¹⁰³ GrainGrowers, *Submission 61*, p. 10.

¹⁰⁴ Hort Innovation, *Submission 105*, p. 2.

¹⁰⁵ Hort Innovation, *Submission 105*, p. 2.

¹⁰⁶ Hort Innovation, *Submission 105*, p. 2.

produced an estimated 6.6 million tonnes of horticultural produce.¹⁰⁷ The industry is forecast to produce at least \$20 billion by 2030.¹⁰⁸

- 3.55 Our horticultural exports are worth \$2.4 billion annually. On average, we export around 11 per cent of total horticulture production by tonnage, although the amount varies greatly between different products. If production continues on the current trajectory, Australia will have an excess supply of around 500,000 tonnes, worth \$1.2 billion, by 2030. Imports of fresh produce were estimated at \$1 billion in 2020–21, mostly fruit and nuts counter-seasonal to Australian production.¹⁰⁹
- 3.56 A major component of horticulture is vegetable production. The vegetable industry produces some 3.72 million tonnes of produce valued at \$4.8 billion, with 210,000 tonnes worth \$275 million going to export.¹¹⁰ With an industry focus on the domestic market, Australia exports only around six per cent of vegetable production, to over fifty markets. Key markets include Singapore, the United Arab Emirates, Malaysia, Hong Kong, Thailand and Indonesia.¹¹¹
- 3.57 A key issue around vegetable production is low and declining consumer demand. Australians have about 2.4 serves of vegetables daily, instead of the recommended 5 serves. Since 2001, Australians are consuming half a serve less of vegetables per day, equalling 13 kilograms annually per capita. This equates to an annual loss of \$1.2 billion at the farmgate and has serious implications for the health and nutrition of the average Australian.¹¹²
- 3.58 The main potential impediments to production faced by the horticulture sector are market transparency,¹¹³ input costs—particularly fertilisers,¹¹⁴ labour shortages,¹¹⁵ and biosecurity.¹¹⁶ Finding ways to better avoid or use waste from horticultural production was also identified as a major issue facing the industry.¹¹⁷

Food and grocery manufacturing

- 3.59 Australia's food and grocery manufacturing sector is our biggest national manufacturing sector—32 per cent of total manufacturing turnover—accounting for an annual turnover of \$133 billion in 2020–21. The sector comprises over 16,000 Australian and multinational businesses of all sizes. It employs 272,000 people, with almost 40 per cent of these being in regional and rural Australia.¹¹⁸

¹⁰⁷ Hort Innovation, *Submission 105*, p. 3.

¹⁰⁸ Hort Innovation, *Submission 105*, p. 2.

¹⁰⁹ Hort Innovation, *Submission 105*, p. 3.

¹¹⁰ AUSVEG, *Submission 99*, p. 3.

¹¹¹ AUSVEG, *Submission 99*, p. 18.

¹¹² AUSVEG, *Submission 99*, p. 8.

¹¹³ AUSVEG, *Submission 99*, pp. 9–10; Growcom, *Submission 130*, p. 9.

¹¹⁴ Hort Innovation, *Submission 105*, p. 5; Growcom, *Submission 130*, pp. 7, 11.

¹¹⁵ AUSVEG, *Submission 99*, pp. 11–15; Growcom, *Submission 130*, p. 8.

¹¹⁶ Hort Innovation, *Submission 105*, p. 7; AUSVEG, *Submission 99*, pp. 15–16; Growcom, *Submission 130*, p. 9.

¹¹⁷ Hort Innovation, *Submission 105*, p. 7; AUSVEG, *Submission 99*, p. 17.

¹¹⁸ Australian Food and Grocery Council, *Submission 128*, p. 2.

- 3.60 The sector is engaged in both imports and exports. Exports of food and grocery products accounted for \$36.7 billion in 2018–19.¹¹⁹ The food and beverage sector recorded a net trade surplus of \$9.3 billion (8 per cent of turnover) in 2021, a decline from the previous five-year average of \$12 billion (11 per cent of turnover). The trade surplus is underpinned by the meat processing industry, which contributes \$13 billion to the total. In contrast, seafood processing, other food product manufacturing and soft drinks, cordial and syrup manufacturing have the largest trade deficits of \$1.2 billion, \$1.3 billion, and \$1.1 billion, respectively.¹²⁰
- 3.61 Food and beverage imports totalled \$19.1 billion in 2020–21, growing at a 3-year compounded annual growth rate of 4.9 per cent. Fruit and vegetables processing (\$3.0 billion), other food product manufacturing (\$2.6 billion) and seafood processing are the largest importing industries contributing to 38 per cent of food and beverage imports.¹²¹ The top four sources for food and beverage were New Zealand (\$2.7 billion), the United States (\$1.8 billion), China (\$1.2 billion) and Thailand (\$1.2 billion).¹²²
- 3.62 In addition, the food manufacturing sector is critically reliant on imports for specialist ingredients and other components of food (food additives, colourings, flavourings and processing aids),¹²³ and packaging.¹²⁴ The Australian Food and Grocery Council noted that while there were opportunities to manufacture some of these key inputs in Australia, many popular foods and beverages would always be reliant on imports to meet domestic needs. The Council recommended that ‘the critical role imports of some foods, food ingredients and other inputs play in Australia’s food security at present and into the future’ be recognised, and that ‘a “whole of value chain” approach to policy assessments’ be adopted.¹²⁵
- 3.63 The Australian Food and Grocery Council also noted, however, that Australia was heavily reliant on China for ingredients and packaging inputs for food and beverage manufacturing, with China being ‘the top supplier of almost half of the critical inputs and is in the top four for inputs except for some agricultural and refined commodities’.¹²⁶ The Council recommended that the Australian Government ‘develop a comprehensive policy framework supporting food and beverage manufacturers to develop sourcing strategies which diversify the sources from which they obtain key inputs for their manufacturing’.¹²⁷

¹¹⁹ Australian Food and Grocery Council, *Submission 128*, Attachment 1, Sustaining Australia: Food and Grocery Manufacturing 2030, p. 4.

¹²⁰ Australian Food and Grocery Council, *Submission 128*, p. 17.

¹²¹ Australian Food and Grocery Council, *Submission 128*, p. 16.

¹²² Australian Food and Grocery Council, *Submission 128*, p. 17.

¹²³ Australian Food and Grocery Council, *Submission 128*, p. 13.

¹²⁴ Australian Food and Grocery Council, *Submission 128*, p. 19.

¹²⁵ Australian Food and Grocery Council, *Submission 128*, p. 9.

¹²⁶ Australian Food and Grocery Council, *Submission 128*, p. 20.

¹²⁷ Australian Food and Grocery Council, *Submission 128*, p. 20.

Feeding the world?

- 3.64 Despite Australia’s significant food surplus relative to population and our high level of exports, the evidence presented to the Committee highlighted the fact that in global terms Australia is a relatively small producer—we cannot feed the world. Tony Mahar, CEO of the NFF, stated:

I suppose the final point I would make is that, in the scheme of things, we’re a reasonably small producer. You might think that we’re a large exporter of wheat or beef or other products, but on the global scene we are still quite a small producer when you look at countries like Ukraine, Russia, China or India. Part of that comparison is their production capabilities. So that’s worth bearing in mind as well.¹²⁸

- 3.65 Australia’s focus was producing premium products for export markets and leading new technology and innovation within agriculture.¹²⁹ Ms Victoria Taylor, of the Centre for Entrepreneurial Agri-Technology, stated that ‘we will always be a high-cost nation; we will always be in premium markets; we will probably not feed the world; but if we’ve got a highly nutritious, clean, green product, perhaps that’s a point of difference, if we have the incentives to go that way’.¹³⁰ Professor Tony Bacic, of La Trobe University, noted that we should be the premium provider of high quality foods to the Asia-Pacific region. Professor Bacic observed that ‘we will never be the food bowl, but we will be the quality provider because we have a regulatory system, a well trusted, clean and green thing’.¹³¹ The Australian Food Sovereignty Alliance suggested that:

The productivist and export focus is often framed within a moralising discourse that Australian agriculture is ‘feeding the world’. Yet, the reality is that exports are directed not to countries suffering widespread food insecurity, but rather the ‘highest value markets in developed economies and to the middle classes in developing countries’.¹³²

The role of exports in Australian food security

- 3.66 Nonetheless, exports were seen as vital to Australia’s food security. The Australian Fresh Produce Alliance (AFPA) noted that ‘while it might sound counterintuitive to the concept of the food security inquiry, better trade market access for our sector is so critical because it actually underpins this broader business productivity and

¹²⁸ Mr Tony Mahar, Chief Executive Officer, National Farmers’ Federation, *Committee Hansard*, 15 February 2023, p. 5.

¹²⁹ Mr Kade Denton, General Manager, Trade and Economics, National Farmers’ Federation, *Committee Hansard*, 15 February 2023, p. 5.

¹³⁰ Ms Victoria Taylor, Chair, Governance Committee, Centre for Entrepreneurial Agri-Technology, *Committee Hansard*, 24 March 2023, p. 21.

¹³¹ Professor Tony Bacic, Director, La Trobe Institute for Sustainable Agriculture and Food, La Trobe University, *Committee Hansard*, 4 August 2023, p. 2.

¹³² Australian Food Sovereignty Alliance, *Submission 147*, p. 24.

sustainability at a farm level'.¹³³ Ms Claire McClelland, AFPA CEO, told the Committee 'that increase in exports is absolutely critical not only for the growth of our industry but also because it enables businesses to then reinvest in the regional communities in which they operate, to become more efficient, to become more sustainable and resilient in what they're doing'.¹³⁴ From AFPA's perspective, the critical issue was market access:¹³⁵

Increasing Australia's fresh produce exports through improved technical market access must be viewed as a positive for food security. Fresh produce exports play an important role in Australia's food security because access to export markets provides premium pricing to growers, which enables scaling and investment in produce businesses, and the regional communities in which they operate. The result of improved exports is possible to see in the domestic market with improved capacity, capital and consistent supply of domestic product. Improved technical market access, and the subsequent trade that will flow from this, is critical in safeguarding Australia's fresh produce industry.¹³⁶

3.67 Fruit and vegetable growers, Costa Group, also emphasised this point. It stated that:

Fresh produce exports (and exports from other agricultural sectors including meat and dairy) play an important role in Australia's food security, because without the opportunity to export fresh produce and attract premium pricing, there would not be anywhere near the level of investment that occurs in domestic fresh produce production and therefore supply and food security.¹³⁷

3.68 Costa Group highlighted the importance of trade and market access in the citrus industry, explaining:

The logic of this can be seen in what the citrus industry has done over the last 20 years. The investment that has occurred in the industry has been of scale and essentially came about not because of opportunities in the domestic market, but because of opportunities to sell premium Australian grown product into export markets, including Japan, China and United States. The industry has also benefited greatly from free trade agreements with these particular countries. As a consequence of this, there has also been a resultant benefit for the domestic market, in that the industry has the capacity and capital to supply domestic consumption, and therefore contribute to our food security. Without this, more fresh produce would need to be imported, contributing to a decline in food security.¹³⁸

¹³³ Ms Claire McClelland, Chief Executive Officer, Australian Fresh Produce Alliance, *Committee Hansard*, 26 May 2023, p. 20.

¹³⁴ Ms Claire McClelland, Chief Executive Officer, Australian Fresh Produce Alliance, *Committee Hansard*, 26 May 2023, p. 20.

¹³⁵ Ms Claire McClelland, Chief Executive Officer, Australian Fresh Produce Alliance, *Committee Hansard*, 26 May 2023, p. 20.

¹³⁶ Australian Fresh Produce Alliance, *Submission 135*, p. 2.

¹³⁷ Costa Group, *Submission 47*, pp. 6–7.

¹³⁸ Costa Group, *Submission 47*, pp. 6–7.

- 3.69 The NFF argued that ‘we must dispel the narrative that Australia’s export capacity in some way undermines domestic food security’.¹³⁹ Rather, it explained, ‘it is our export capacity that enables the long-term profitability of Australia’s agricultural sector, and hence our ability to continue to produce food for domestic consumption’.¹⁴⁰ The NFF asserted that ‘the ability of farmers to access export markets at prices competitive with international counterparts is key to the ongoing viability and profitability of our sector’.¹⁴¹
- 3.70 The Department of Agriculture, Fisheries and Forestry (DAFF) agreed, noting that even in years of drought Australia’s strong position as a food producer had held. Domestic consumption had remained stable while exports varied ‘absorbing the ups and downs in annual production associated with Australia’s variable climate and seasonal conditions’.¹⁴² DAFF observed that ‘despite food consumption remaining relatively stable through years of below average agricultural production, domestic prices for specific food products may increase slightly’.¹⁴³

Keeping farms viable

Farm viability and profitability

- 3.71 A key element of food security is the viability and profitability of farm businesses. The NFF argued that Australia’s farmers were ‘ultimately responsible for Australia’s continued and sustainable food security’ and that ‘without viable and profitable farm businesses, Australia’s food production capacity would collapse’.¹⁴⁴ NFF CEO Tony Mahar told the Committee:

...we must protect the viability of Australian farm businesses by addressing the increasing cost of critical inputs, the efficiency of Australia’s freight and logistics systems and the significant competition issues in the agricultural supply chain.¹⁴⁵

- 3.72 The NSW Farmers’ Association indicated that ‘a minimum condition for Australia to continue to be a relatively food secure nation is a profitable agriculture industry’.¹⁴⁶ Profitability allows growers to attract private investment, have access to credit and confidence to invest in their own business. It also allows farmers to ‘attract a productive workforce and invest in sustainable land management practices’.¹⁴⁷ This,

¹³⁹ National Farmers’ Federation, *Submission 103*, p. 10.

¹⁴⁰ National Farmers’ Federation, *Submission 103*, p. 10.

¹⁴¹ National Farmers’ Federation, *Submission 103*, p. 18.

¹⁴² Department of Agriculture, Fisheries and Forestry, *Submission 116*, p. 8.

¹⁴³ Department of Agriculture, Fisheries and Forestry, *Submission 116*, p. 8.

¹⁴⁴ National Farmers’ Federation, *Submission 103*, p. 24.

¹⁴⁵ Mr Tony Mahar, Chief Executive Officer, National Farmers’ Federation, *Committee Hansard*, 15 February 2023, p. 1.

¹⁴⁶ Mr John Lowe, Chair, Business, Economics and Trade Committee, NSW Farmers Association, *Committee Hansard*, 6 July 2023, p. 11.

¹⁴⁷ Mr John Lowe, Chair, Business, Economics and Trade Committee, NSW Farmers Association, *Committee Hansard*, 6 July 2023, p. 11.

in turn, makes Australian agriculture 'internationally competitive and more resilient to shocks, leading to more stable prices for consumers'.¹⁴⁸

- 3.73 The Victorian Farmers Federation (VFF) highlighted the impact of input costs on farm viability, including local government rates and necessary inputs such as energy and water. It urged priority for 'coherent and cohesive plans to provide water and energy to the nation in a mutually beneficial relationship with farmers'.¹⁴⁹ VFF President, Ms Emma Germano, highlighted the difficulties associated with transitioning to renewable energy on-farm when she stated that:

There has to be that commercial incentive. What is the expression? It's good to go green, but you can't go green when you're in the red. Farmers have to be profitable enough.¹⁵⁰

- 3.74 The NSW Farmers' Association identified a range of systemic issues which impact farm viability and profitability:

- Input costs which are increasing at a faster rate than prices, reducing the profitability of food producers and their ability to make productivity-enhancing investments.
- A decreasing number of agricultural professionals entering the workforce, lack of available and fit-for-purpose training services, and immediate labour shortages.
- Insufficient development and uptake of agtech due to poor rural and remote connectivity and stagnating research, development, and extension spending.
- Market power imbalances which lead to producers bearing an unfair amount of risk, information asymmetries, and inability to make productivity-enhancing investments.
- Inefficient ports and supply chains which decrease the international competitiveness of producers and lower farmgate prices.
- A biosecurity system which is reactive in the face of an increasingly high risk profile.
- A lack of long-term, strategic investment and assistance for agriculture to reach net zero emissions.
- High levels of food waste at the farmgate caused by issues further up the supply chain such as restrictive quality specifications by retailers.
- Impositions on landholders and regional communities from large scale renewable developments and transmission lines without any assistance for producers to adopt renewable energy solutions.
- Increasing frequency of natural disaster events such as droughts and floods.

¹⁴⁸ Mr John Lowe, Chair, Business, Economics and Trade Committee, NSW Farmers Association, *Committee Hansard*, 6 July 2023, p. 11.

¹⁴⁹ Victorian Farmers Federation, *Submission 110*, p. 2.

¹⁵⁰ Ms Emma Germano, President, Victorian Farmers Federation, *Committee Hansard*, 9 August 2023, p. 8.

- Producers bearing the costs of managing the environment while the benefits accrue to others in the supply chain.¹⁵¹

3.75 Some of these issues are addressed below.

Consolidation—benefits and drawbacks

3.76 Industry consolidation, in both the farm sector and downstream industries, has significant implications for food security. Ms Germano told the Committee that ‘where we see the consolidation of farms, which is happening, I think, at a rate of nine per cent attrition of farmers per annum in Victoria, that doesn’t necessarily mean that production levels are dropping’.¹⁵² Concentration also had the potential advantage of giving growers greater leverage in the marketplace. She stated:

As we see that consolidation of farms, the power in the supply chain will start to shift. Where you end up with a small concentration of producers of a particular product, they do end up having more leverage in the supply chain with their customers. That, of course, comes with risks that we don’t fully understand. We do need to have strong competition laws in the country.¹⁵³

3.77 Consolidation also had its downsides, however, impacting the social fabric of rural communities. Ms Germano observed that:

If we are starting to change the fabric of our regional communities and the number of people who are working, living, going to school, using hospitals et cetera because of that consolidation, that has outcomes.¹⁵⁴

3.78 Mr Jordan Brooke-Barnett, CEO of AUSVEG SA, told the Committee that farm consolidation was ‘both a good and a bad thing’.¹⁵⁵ He explained:

The good thing is you’re getting economies of scale, you’re having 20 smaller potato produces going into a 40 million state-of-the-art pack house. I think we’re down to four or five major packing sheds. The risk you have with the expectations at the moment, the challenges of increasing costs and an inability to pass them through the supply chain, is that, if you lose one of the big players in some of these commodities, you might deal with some really significant [supply] shortages.¹⁵⁶

3.79 Mr Brooke-Barnett observed that ‘every year or two you get a big grower who falls over, and that potentially causes issues’.¹⁵⁷ Then there were floods in Ballarat and Tasmania which caused processing potato shortages. Consolidation had made

¹⁵¹ NSW Farmers’ Association, *Submission 143*, p. 2.

¹⁵² Ms Emma Germano, President, Victorian Farmers Federation, *Committee Hansard*, 9 August 2023, p. 5

¹⁵³ Ms Emma Germano, President, Victorian Farmers Federation, *Committee Hansard*, 9 August 2023, p. 5

¹⁵⁴ Ms Emma Germano, President, Victorian Farmers Federation, *Committee Hansard*, 9 August 2023, p. 5

¹⁵⁵ Mr Jordan Brooke-Barnett, Chief Executive Officer, AUSVEG SA, *Committee Hansard*, 20 April 2023, p. 18.

¹⁵⁶ Mr Jordan Brooke-Barnett, Chief Executive Officer, AUSVEG SA, *Committee Hansard*, 20 April 2023, p. 18.

¹⁵⁷ Mr Jordan Brooke-Barnett, Chief Executive Officer, AUSVEG SA, *Committee Hansard*, 20 April 2023, p. 18.

markets 'fundamentally less secure than the old market where you'd have capacity in each state and a bunch of smaller growers'.¹⁵⁸ He cautioned:

So we have to be really careful about eroding our grower base, particularly in the non-commodity crops, the ones that are fresh produce to market. I assume dairy will be in a similar space with a perishable product that's going direct to market. It's a real challenge, and it's something that I worry about.¹⁵⁹

3.80 The NFF noted that 'there has been consolidation in the farm sector, but there is still a long tail of small and medium-sized family farms, which we're big supporters of'.¹⁶⁰ The NFF's main concern was concentration in the downstream supply chain.¹⁶¹ Mr Kade Denton, from the NFF, explained:

What we've seen in the last decade or two decades is that you are getting a greater concentration of firms within industries, especially within the agriculture supply chain. That's a problem for inputs and outputs in the ag sector. Specifically in the context that you've touched on, it's the opportunities and the availability of firms that farms can sell to and distribute their product, whether that's domestically or internationally. That is becoming a problem.¹⁶²

3.81 The NSW Farmers' Association also raised concerns about 'the concentration of our downstream processes: abattoirs, food processors, wholesalers, supermarkets'.¹⁶³ Mr John Lowe, Chair, of the Association's Business, Economics and Trade Committee, stated:

As you go down the system to retail, that system is getting narrower and narrower all the time. So we've got a problem that if you're not happy with one buyer, you've got very little option to go anywhere else.¹⁶⁴

3.82 He continued:

Regardless of what the demand is at the consumer level, and at the moment we believe they're hurting quite well as well, we've got inability to move product through the chain. There's just not the capacity. And if you're a meat processor and you're getting a good return on your works, why would you try to get it through faster if that's going to change the price dynamics?¹⁶⁵

¹⁵⁸ Mr Jordan Brooke-Barnett, Chief Executive Officer, AUSVEG SA, *Committee Hansard*, 20 April 2023, p. 18.

¹⁵⁹ Mr Jordan Brooke-Barnett, Chief Executive Officer, AUSVEG SA, *Committee Hansard*, 20 April 2023, p. 18.

¹⁶⁰ Mr Tony Mahar, Chief Executive Officer, National Farmers Federation, *Committee Hansard*, 15 February 2023, p. 3.

¹⁶¹ Mr Tony Mahar, Chief Executive Officer, National Farmers Federation, *Committee Hansard*, 15 February 2023, p. 3.

¹⁶² Mr Kade Denton, General Manager, Trade and Economics, National Farmers Federation, *Committee Hansard*, 15 February 2023, p. 3.

¹⁶³ Mr John Lowe, Chair, Business, Economics and Trade Committee, NSW Farmers Association, *Committee Hansard*, 6 July 2023, p. 13.

¹⁶⁴ Mr John Lowe, Chair, Business, Economics and Trade Committee, NSW Farmers Association, *Committee Hansard*, 6 July 2023, p. 13.

¹⁶⁵ Mr John Lowe, Chair, Business, Economics and Trade Committee, NSW Farmers Association, *Committee Hansard*, 6 July 2023, p. 13.

- 3.83 The NFF believed there were implications for the resilience of the supply chain in the concentration of industries, highlighting the failure of Scott's Refrigerated Logistics as an example of the risks associated with industry consolidation. Mr Mahar stated:

There are efficiencies as you get more investment in the supply chain, and that can lead to consolidation. But what we've found is that with pre-farmgate, post-farmgate and up to the retail level logistics, there are issues when things go wrong because of the consolidation. So we do want to make sure that we've got the right settings in place from a competition and legislation point of view but also the framework and investment in infrastructure that goes with the supply chain.¹⁶⁶

- 3.84 The NFF concluded that:

Existing competition laws and regulations allow supermarkets, processors, input providers and other firms to leverage their market power to the detriment of farmers. Australian farmers have little influence on the price of produce in the market. This leaves many farm businesses economically vulnerable...

The implications for the availability of food are serious. To maintain our production capacity, farm businesses must remain profitable and operate in competitive environments.¹⁶⁷

The duopoly

- 3.85 The most problematic example of industry concentration from the point of view of other actors in the supply chain is the retail duopoly of Coles and Woolworths. Mr Richard Forbes, CEO of the Independent Food Distributors Australia, argued that the level of retail concentration in Australia was unprecedented, stating 'we have a duopoly in place that has 80 per cent of the fresh food market. The nearest two supermarkets globally have 45 per cent of the market.'¹⁶⁸

- 3.86 The impacts of this were being felt across the sector. For example, Growcom argued that 'the highly concentrated market share in the Australian system gives the duopoly a high degree of bargaining power in commercial negotiations with suppliers'.¹⁶⁹ It asserted 'that this concentrated marketplace and lack of transparency has made it increasingly difficult for growers to receive a competitive and sustainable price for their goods'.¹⁷⁰ It concluded that 'the size and power disparity between these supply chain actors and farm businesses creates significant bargaining power issues and empowers anti-competitive behaviour'.¹⁷¹

¹⁶⁶ Mr Tony Mahar, Chief Executive Officer, National Farmers' Federation, *Committee Hansard*, 8 March 2023, p. 4.

¹⁶⁷ National Farmer's Federation, *Submission 103*, p. 19.

¹⁶⁸ Mr Richard Forbes, Chief Executive Officer, Independent Food Distributors Australia, *Committee Hansard*, 8 March 2023, p. 6.

¹⁶⁹ Growcom, *Submission 130*, p. 9.

¹⁷⁰ Growcom, *Submission 130*, p. 9.

¹⁷¹ Growcom, *Submission 130*, p. 9.

- 3.87 The Menzies Centre for Health Governance noted that the duopoly had placed producers in the position of being 'price takers' rather than 'price makers' and that this system 'masks the true cost of food'.¹⁷² It also allowed retailers to dictate matters 'such as cosmetic standards for fresh produce, which is contributing to unnecessary food losses before food has even left the farm gate'.¹⁷³
- 3.88 A similar point was made by the University of Adelaide, which noted that the duopoly was able 'to force the adoption of standards well before government regulations stipulate',¹⁷⁴ one example being the sale of caged eggs. Coles and Woolworths planned to stop selling caged eggs by 2025, despite the national plan stipulating 2036. This gave producers 'little choice but to follow the shopping markets' timeline'¹⁷⁵. The University observed that 'long-term planning and strategic trend analysis is essential to negate any widespread industry and production shocks'.¹⁷⁶
- 3.89 The NSW Farmers' Association highlighted a lack of transparency in the supply chain—the inability to discern prices and costs within the supply chain. It urged greater transparency 'in where those prices are and what the profit margins are along that supply chain',¹⁷⁷ the ability to see the 'price spread'—the 'difference between the retail price and the farm gate price'.¹⁷⁸ They noted that:
- One really interesting line from the dairy market inquiry, which was about 2016, was that there is simply no correlation between the retail price and the farm gate price. There just seems to be very little link there.¹⁷⁹
- 3.90 In contrast, retailer Woolworths argued that it was often responding to competitive pressure from other retailers, telling the Committee that 'we are constantly in a situation where we're trying to get the balance right between being competitive in a marketplace and supporting our suppliers and obviously supporting our other stakeholders'.¹⁸⁰ With regard to its costs, Woolworths explained:
- A primary driver of shelf price inflation has been the higher wholesale prices we are paying to suppliers for goods. About 70c of every dollar spent in our stores goes to the cost of goods and transport. A further 25c goes to team wages, electricity and other operational running costs – leaving less than 5c in every dollar as our operating profit before tax and interest.¹⁸¹

¹⁷² Menzies Centre for Health Governance, *Submission 41*, p. 5.

¹⁷³ Menzies Centre for Health Governance, *Submission 41*, p. 5.

¹⁷⁴ University of Adelaide, *Submission 38*, p. 1

¹⁷⁵ University of Adelaide, *Submission 38*, p. 1

¹⁷⁶ University of Adelaide, *Submission 38*, p. 1.

¹⁷⁷ Ms Kathryn Rankin, Acting Head of Policy and Advocacy, NSW Farmers Association, *Committee Hansard*, 6 July 2023, p. 13.

¹⁷⁸ Mr Brendan O'Keeffe, Economist, NSW Farmers Association, *Committee Hansard*, 6 July 2023, p. 13.

¹⁷⁹ Mr Brendan O'Keeffe, Economist, NSW Farmers Association, *Committee Hansard*, 6 July 2023, p. 13.

¹⁸⁰ Mr Paul Harker, Chief Commercial Officer, Woolworths Supermarkets, Woolworths Group, *Committee Hansard*, 16 June 2023, p. 16.

¹⁸¹ Woolworths Group, *Submission 139*, p. 9.

Codes of conduct

- 3.91 The response of the farm sector to market concentration in the retail sector was to call for greater market transparency and for the Food and Grocery Code of Conduct to be made mandatory. The Food and Grocery Code of Conduct is a voluntary code prescribed under the *Competition and Consumer Act 2010*. It was introduced to improve standards of business behaviour in the food and grocery sector, including the conduct of retailers and wholesalers towards suppliers. The code does not override existing rules in the Australian Consumer Law.¹⁸²
- 3.92 AUSVEG, the peak body representing vegetable growers, argued that ‘there needs to be more control and visibility over the retailer and supplier relationships and dealings to ensure a fair negotiation system’.¹⁸³ It criticised the Food and Grocery Code of Conduct for lacking teeth. AUSVEG recommended developing an Unfair Practices Provision within the Competition and Consumer Act and making the Food and Grocery Code of Conduct mandatory, as well as investing in a marketplace transparency tool for the vegetable and potato industry.¹⁸⁴
- 3.93 Queensland Fruit and Vegetable Growers (formerly Growcom) and the National Retail Association also recommended mandating the Food and Grocery Code of Conduct.¹⁸⁵ The NFF recommended, as a way ‘to safeguard Australian farmers from unfair trading practices and enhance the competitiveness of perishable food markets’,¹⁸⁶ introducing a ‘Mandatory Code of Conduct for all commodities examined by the ACCC’.¹⁸⁷ It also recommended:
- An amendment of section 21 of the Australian *Competition and Consumer Act 2010* to specify characteristics which determine whether a behaviour is unconscionable.
 - Prohibitions on the use of unfair contract terms be strengthened.
 - That the ACCC consider instituting a regular review of perishable food supply chains.¹⁸⁸
- 3.94 The NFF argued that the issue of market concentration went beyond the supermarkets—that mandatory codes should cover any situation where there are large corporations or large players that have significant market concentration.¹⁸⁹
- 3.95 For its part, Woolworths note that its dealings with suppliers are strictly governed by the Food and Grocery Code of Conduct under the *Competition and Consumer Act*

¹⁸² ACCC, < <https://www.accc.gov.au/business/industry-codes/food-and-grocery-code-of-conduct>>. Accessed 10 October 2023.

¹⁸³ AUSVEG, *Submission 99*, p. 10.

¹⁸⁴ AUSVEG, *Submission 99*, p. 10.

¹⁸⁵ Growcom, *Submission 130*, p. 9; National Retail Association, *Submission 141*, p. 4.

¹⁸⁶ National Farmer’s Federation, *NFF Competition Policy*, November 2020, p. 2.

¹⁸⁷ National Farmer’s Federation, *NFF Competition Policy*, November 2020, p. 2.

¹⁸⁸ National Farmer’s Federation, *NFF Competition Policy*, November 2020, p. 2.

¹⁸⁹ Mr Kade Denton, General Manager, Trade and Economics, National Farmers Federation, *Committee Hansard*, 15 February 2023, p. 7.

2010, and that ‘all supplier cost increase requests are assessed carefully on their merits – balancing the need to offer affordable groceries to households while maintaining mutually viable supplier relationships’.¹⁹⁰

Food innovation

Opportunities for value adding

3.96 In its report *Sustaining Australia: Food and Grocery Manufacturing 2030*, the Australian Food and Grocery Council highlighted Australia’s transition from being a net exporter of high value-added food in 2001, to a net importer of high value-added food today. It observed that ‘this is in part the result of a loss of competitiveness, as well as consumer preferences for certain imported products’.¹⁹¹

3.97 The export of raw produce and the import of processed material made from Australian produce was seen as a distinct weakness in our food system. The University of Sydney noted, for example, ‘that alternate protein flours used in the alternative food sector are all imports from external countries, fetching up to \$8,000 per tonne of product’,¹⁹² while Australia’s raw grain used to make plant flours ‘often sells for less than \$600 per tonne’. Australia produces around 2.5 million tonnes of pulse seeds but still relies solely on imported pulse flours to produce foods in Australia. The University suggested that ‘our ability to maximise value will rely on onshore value enhancement prior to export of finalised products that attract much more value’.¹⁹³ It argued that:

The melding of primary production with manufacturing and value-added opportunities is the key to a more productive, profitable and resilient agricultural sector. Processes need to be in place to allow for the transport of primary goods, their processing and manufacturing into foods, and the coordinated distribution and sale to consumers in Australia and overseas.¹⁹⁴

3.98 The evidence presented to the Committee suggested that there were significant opportunities for value-adding in food production in Australia. Through its Northern Australia Food Technology Innovation project (NAFTI), Charles Darwin University ‘is investigating innovations in food processing and value-adding of agricultural produce in northern Australia’.¹⁹⁵ The focus is on shelf-stable foods using novel food processing technologies, with a view to achieving ‘regional value capture from low-value or out-of-specification agri-food produce’.¹⁹⁶

¹⁹⁰ Woolworths Group, *Submission 139*, p. 9.

¹⁹¹ Australian Food and Grocery Council, *Submission 128*, Attachment 1, *Sustaining Australia: Food and Grocery Manufacturing 2030*, p. 11.

¹⁹² University of Sydney, *Submission 152*, p. 3.

¹⁹³ University of Sydney, *Submission 152*, p. 3.

¹⁹⁴ University of Sydney, *Submission 152*, p. 5.

¹⁹⁵ Charles Darwin University, *Submission 168*, p. 5.

¹⁹⁶ Charles Darwin University, *Submission 168*, p. 5.

- 3.99 In Tasmania, research is looking at how produce that does not meet industry specification for sale can be value-added, such as turning fruit into beverages. The fruit industry, in particular, is investing in this space.¹⁹⁷
- 3.100 The Alternative Proteins Council suggested that with support, the alternative proteins sector had ‘the potential to contribute to food security in Australia and globally and economic growth’,¹⁹⁸ by ‘offering farmers a complementary addition to Australia’s food system, diversification with value-add in Australia and increasing choice to consumers to balance their dietary protein intake’.¹⁹⁹ It noted that currently plant protein ingredients are extracted from crops already grown in Australia, such as legumes, pulses and grains. It observed that ‘a huge opportunity exists to invest in local infrastructure with processing capacity enabling the value-add onshore’.²⁰⁰ These value-added ingredients would in turn ‘supply local plant-based alternative meat and non-dairy product manufacturing without the need to reimport ingredients processed offshore’.²⁰¹ The onshoring of ‘processing and production will support new business, create jobs while minimising supply chain risk and offer better environmental outcomes’.²⁰²
- 3.101 Mr Michael Toby, of fruit and vegetable growers Costa Group, cautioned against getting too carried away with opportunities for value adding. He stated:
- People often say, ‘Why don’t you turn waste or excess product into value-add goods, et cetera?’ The harsh reality is that most fresh produce growers are growing their product to sell as a fresh product because that is the way they maximise their pricing and returns. So there is little in the way of economic incentive or benefit to then try to set up some sort of structure and operation to make value-add product.²⁰³

New industries

Alternative proteins

- 3.102 Alternative proteins have been touted as a revolutionary innovation in food production. They consist of meat and dairy alternatives produced via plant-based proteins, cellular cultivation or precision fermentation.²⁰⁴
- 3.103 Plant-based protein technology transforms plant protein into meat substitutes without going through the animal. For example, v2food converted soy protein ingredients into

¹⁹⁷ Mrs Caroline Brown, Assistant Director, AgriGrowth Tasmania, Agriculture, Forestry and Water Strategic Business Unit, Department of Natural Resources and Environment, Tasmania, *Committee Hansard*, 12 April 2023, p. 5.

¹⁹⁸ Alternative Proteins Council, *Submission 123*, p. 8.

¹⁹⁹ Alternative Proteins Council, *Submission 123*, p. 8.

²⁰⁰ Alternative Proteins Council, *Submission 123*, pp. 10–11.

²⁰¹ Alternative Proteins Council, *Submission 123*, pp. 10–11.

²⁰² Alternative Proteins Council, *Submission 123*, pp. 10–11.

²⁰³ Mr Michael Toby, Corporate Affairs Manager, Costa Group Holdings Ltd, *Committee Hansard*, 4 August 2023, p. 18.

²⁰⁴ Alternative Proteins Council, *Submission 123*, p. 1.

plant-based protein foods such as mince, burgers and sausages, distributing their products through existing meat supply chains.²⁰⁵ v2food highlighted the sustainability of their production methods, observing that ‘the production of beef requires 20 times the land and water resources of plant protein crops such as soy and other legumes’.²⁰⁶ For v2food, the next phase of industry development was the switching to Australian-made and grown soymeal, processed locally, in collaboration with Australian grain growers, who would continue to supply ‘our livestock sector with stockfeed products (like soymeal and molasses), while also supplying the domestic and global consumer market with plant protein foods’.²⁰⁷

3.104 Cellular cultivation is the growing of animal cells outside of animal bodies—cultured meat. The process takes animal cells and grows them in tanks, ‘similar to beer tanks’,²⁰⁸ where they are ‘fed the same things cells in a body crave, including sugars, salts, and amino acids’.²⁰⁹ According to Vow, a Sydney-based company developing cultured meat products, cultured meat can be grown anywhere, in any season, using renewable energy, ‘greatly reducing the carbon footprint of new sources of food’.²¹⁰ Vow recommended:

- Supporting the development of domestic supply chains to enable biomanufacturing.
- Building up skills in biotechnology.
- Aligning policies with climate targets, prioritising sustainability and resilience goals and ‘specifically supporting the expansion of biomanufacturing facilities in Australia’.²¹¹

3.105 Precision fermentation is a process that produces complex organic molecules using programmed micro-organisms.²¹² Eden Brew is a company that uses precision fermentation to produce animal-free dairy. It noted that its production methods were capable of producing nutritionally superior milk products using less land and water and producing less emissions and waste. The key challenges for precision fermentation were:

- Research and development funding.
- Low fermentation capacity.
- Access to skilled labour/niche expertise.
- Access to feedstock.²¹³

²⁰⁵ v2food, *Submission 119*, p. 27.

²⁰⁶ v2food, *Submission 119*, p. 4.

²⁰⁷ v2food, *Submission 119*, p. 28.

²⁰⁸ Vow, *Submission 35*, p. 2.

²⁰⁹ Vow, *Submission 35*, p. 2.

²¹⁰ Vow, *Submission 35*, p. 2.

²¹¹ Vow, *Submission 35*, p. 3.

²¹² Eden Brew, *Submission 79*, p. 2.

²¹³ Eden Brew, *Submission 79*, p. 3.

- 3.106 Eden Brew sought support for research and development funding (including through tax incentives), development of fermentation and processing capacity, skills development, and policy support from governments.²¹⁴
- 3.107 According to the Alternative Proteins Council (APC), alternative proteins will improve food security for Australia ‘by diversifying the protein supply with a wider variety of alternative protein products that are complementary to traditional proteins’.²¹⁵ It would involve ‘building sovereign manufacturing capability, allowing value-add for Australian farmers and industry’,²¹⁶ and reduce reliance on imports of critical ingredients such as plant protein concentrates. Alternative proteins would be ‘sustainable, highly scalable and reliable’,²¹⁷ and offer consumers ‘new core foods’,²¹⁸ ensuring access to nutritious diets.²¹⁹
- 3.108 Plant protein products would also provide opportunities for Australian farmers ‘to supply their produce into a value-added domestic supply chain, rather than into the more volatile global commodity markets’.²²⁰ The APC described this as ‘particularly beneficial given that more than half of the value of Australian agricultural production comes from cropping’.²²¹
- 3.109 Environmental benefits of alternative proteins included significant reductions in water use per kilo of protein, and vastly reduced emissions.²²² The APC argued that:
- To meet climate and industrial output goals, we need additional sources of protein production on top of what today's industry can produce to secure our food systems for domestic consumption and international trade.²²³
- 3.110 The APC urged governments to support the development of the alternative proteins industry, including through investment in research and development, workforce investment, support for the food safety regulator FSANZ, and investment in industry infrastructure.²²⁴ Food Frontier identified the domestic processing capacity as ‘a significant bottleneck’,²²⁵ stating:
- It is estimated by industry that Australia will need at least 10 of these processing facilities to meet the projected global demand for locally grown plant proteins, and could support as many as 20 facilities. Local industry sources estimate that \$30 billion in processing infrastructure is required to be built globally in order to meet the current demand for processed plant proteins.²²⁶

²¹⁴ Eden Brew, *Submission 79*, p. 4.

²¹⁵ Mrs Kirsten Grinter, Chairperson, Alternative Proteins Council, *Committee Hansard*, 23 June 2023, p. 21.

²¹⁶ Mrs Kirsten Grinter, Chairperson, Alternative Proteins Council, *Committee Hansard*, 23 June 2023, p. 21.

²¹⁷ Mrs Kirsten Grinter, Chairperson, Alternative Proteins Council, *Committee Hansard*, 23 June 2023, p. 21.

²¹⁸ Mrs Kirsten Grinter, Chairperson, Alternative Proteins Council, *Committee Hansard*, 23 June 2023, p. 21.

²¹⁹ Mrs Kirsten Grinter, Chairperson, Alternative Proteins Council, *Committee Hansard*, 23 June 2023, p. 21.

²²⁰ Alternative Proteins Council, *Submission 123*, p. 7.

²²¹ Alternative Proteins Council, *Submission 123*, p. 7.

²²² Alternative Proteins Council, *Submission 123*, p. 11.

²²³ Alternative Proteins Council, *Submission 123*, p. 12.

²²⁴ Alternative Proteins Council, *Submission 123*, p. 13.

²²⁵ Food Frontier, *Submission 71*, p. 6.

²²⁶ Food Frontier, *Submission 71*, p. 7.

3.111 The APC also recommended ‘an over overarching plan to drive investment in alternative proteins’,²²⁷ stating:

A coordinated alternative proteins plan should be part of an Australian food security consideration and policy framework that outlines the national strategic position to ensure food security for the future.²²⁸

Protected cropping

3.112 Protected cropping, the growing of crops in controlled environments such as greenhouses, has a significant role to play in Australia’s food security. Bayer Australia observed that ‘protected growing environments have a critical role in meeting increased food demand by providing year-round affordable access to fresh fruits and vegetables using less land and resources’.²²⁹ It noted that protected cropping ‘can achieve optimal growing conditions through greater control over light, temperature, moisture, pest and disease management, as well as greater efficiency of natural resources such as water, fertilisers, and crop protection products’.²³⁰ It suggested that as protected cropping would be a key component of future food security, ‘government could consider mechanisms to assist farmers in incorporating water- and energy-efficient on-farm infrastructure to protect crops under increased threat of adverse weather’.²³¹

3.113 La Trobe University also highlighted the benefits of protected cropping. It allowed farmers ‘to optimise harvest times, reduce nutrient and watering regimes and respond quickly to pathogens, viruses and insects’.²³² The result was ‘a healthier, more sustainable, and productive crop’.²³³ La Trobe asserted that there are significant opportunities for protected cropping across Australia ‘and particularly in the Victorian food bowl incorporating Shepparton, Bendigo, Mildura and Swan Hill’.²³⁴ It noted that ‘the protected cropping industry is the fastest growing food producing sector in Australia, with a “farm-gate” value of \$1.3 billion and currently employs more than 10,000 people’.²³⁵

3.114 The Australian Fresh Produce Alliance (AFPA) also promoted protected cropping, including opportunities ‘for more effective rain harvesting and recycling’, which ‘reduced water costs and improved drought resilience’.²³⁶ AFPA noted that over time, many farmers of products including tomatoes, have moved production from field to

²²⁷ Alternative Proteins Council, *Submission 123*, p. 13.

²²⁸ Alternative Proteins Council, *Submission 123*, p. 13.

²²⁹ Bayer Australia, *Submission 100*, p. 9.

²³⁰ Bayer Australia, *Submission 100*, p. 9.

²³¹ Bayer Australia, *Submission 100*, p. 9.

²³² La Trobe University, *Submission 131*, p. 3.

²³³ La Trobe University, *Submission 131*, p. 3.

²³⁴ La Trobe University, *Submission 131*, p. 3.

²³⁵ La Trobe University, *Submission 131*, p. 3.

²³⁶ Australian Fresh Produce Alliance, *Submission 135*, p. 16.

protected cropping'.²³⁷ However, that transition was now threatened by 'skyrocketing input costs of power and gas'.²³⁸

- 3.115 The Committee visited the Northern Adelaide Plains Food Region, an area of intensive horticultural production. It was described by Mr Jordan Brooke-Barnett, CEO of AUSVEG SA, as the largest protected cropping district in the southern hemisphere, producing in excess of \$700 million per annum retail value of tomatoes, capsicums and other vegetable crops.²³⁹
- 3.116 The Committee also visited P'Petual Holdings, an industry pioneer in greenhouse farming and one of the largest greenhouse vegetable growers in Australia. It operates 12 hectares (120,000m²) of greenhouses utilising the latest specialised equipment, including a Climate Control Computer which controls the environmental factors during growing such as heating, fogging, irrigation, plant nutrition requirements and shading in the greenhouses. P'Petual also use an intensive Integrated Pest Management (IPM) program that uses beneficial bugs and organisms to control pests and stimulate healthy plant growth, minimising pesticide use. It uses water recycling, by capturing, sterilising and recirculating water not used by plants. P'Petual have invested in a CO₂ capture facility which catches the CO₂ produced from their heating system, thereby reducing carbon emissions. Once the CO₂ is captured, it is piped back into the greenhouse for increased plant growth and production.²⁴⁰
- 3.117 During the visit the Committee discussed some of the challenges for protected cropping, including the impact of flood and storms, labour shortages, retail competition and rising energy prices.

Vertical farming

- 3.118 Greenspace ESG Pty Limited is a vertical farming operation based in Sydney but also operating elsewhere.²⁴¹ Mr Nicolas Fox, Greenspace's Microfarm Operations Manager, explained their model:

Greenspace builds vertical hydroponic farms within underutilised spaces within cities or urban spaces, and then networked around those larger macro farms we have a smaller network of micro farms, which are small hydroponic cabinets that sustain plants that we place into there. The whole model is designed around growing produce sustainably and then distributing that produce within the local community, providing the local community with sustainable produce, living produce and highly nutritious produce.²⁴²

²³⁷ Australian Fresh Produce Alliance, *Submission 135*, p. 14.

²³⁸ Australian Fresh Produce Alliance, *Submission 135*, p. 14.

²³⁹ Mr Jordan Brooke-Barnett, Chief Executive Officer, AUSVEG SA, *Committee Hansard*, 20 April 2023, p. 15.

²⁴⁰ P'Petual Holdings <<https://www.ppetual.com.au/about-us>>. Accessed 12 October 2023.

²⁴¹ Greenspace ESG Pty Limited, *Submission 134*.

²⁴² Mr Nicolas Fox, Microfarm Operations Manager, Greenspace ESG Pty Ltd, *Committee Hansard*, 6 July 2023, p. 1.

3.119 Committee Members were given the opportunity to visit Greenspace's operations at Darling Harbour in Sydney. The central facility was a basement space in an office building that produced a range of microgreens in a controlled environment (the macrofarm), which were then distributed to cabinets located in client buildings (microfarms) where they could be directly accessed by clients.

3.120 The Greenspace system is able to guarantee the production and distribution of produce in an enclosed, climate-controlled environment, 365 days a year, with no impact from weather, and minimal impact from pests and diseases.²⁴³ The system uses between 70 per cent and 95 per cent less water than traditional farming and uses less power than an office space. Mr Fox observed that:

What we do to address that is the building where our macro farm is built is a six-star rated energy building. It's using renewable energy or it's offsetting the energy costs, going into sustainable business and so on.²⁴⁴

3.121 The key to the Greenspace model is it reduces food transport. Its goal 'is to have a macro farm and then surrounding that macro farm, within around 500 metres, we have a number of smaller micro farms that are in restaurants, offices or retail spaces and that provides local produce to that local community'.²⁴⁵ This both reduced emissions and maintained the freshness of the food. According to Greenspace, this model contributed to food security, by 'making a system that is actually truly sustainable, and making something that we know is climate positive instead of being climate negative and something that's taking away from the local environment'.²⁴⁶

3.122 Another example of Vertical farming visited by the Committee was the Epicurean Food Group exotic mushroom farm and processing facility at the former General Motors Holden site at Elizabeth, South Australia. The Epicurean operation is repurposing the former factory buildings as a high-tech mushroom farm and food production facility. It is designed to produce more than 20,000 tonnes of exotic mushrooms and mushroom products each year. A vertically integrated facility, it manages all operations in one location, from growing fungi in a lab to turning second-grade and surplus mushrooms into burgers using a high-tech commercial kitchen. The facility, when completed, will provide a consistent and valuable supply of locally grown premium mushrooms to supermarkets and restaurants which currently rely heavily on imported stock, with about 85 per cent of Australia's exotic mushroom supply coming from overseas. The operation will eventually include the production of mycoprotein (used in alternative meats) and mycelium (used in leather goods).

3.123 The benefits of vertical farming were noted by Professor Rachel Burton, of the University of Adelaide. Vertical farms allowed you to control the growing conditions of

²⁴³ Mr Nicolas Fox, Microfarm Operations Manager, Greenspace ESG Pty Ltd, *Committee Hansard*, 6 July 2023, p. 3.

²⁴⁴ Mr Nicolas Fox, Microfarm Operations Manager, Greenspace ESG Pty Ltd, *Committee Hansard*, 6 July 2023, p. 2.

²⁴⁵ Mr Nicolas Fox, Microfarm Operations Manager, Greenspace ESG Pty Ltd, *Committee Hansard*, 6 July 2023, p. 3.

²⁴⁶ Mr Nicolas Fox, Microfarm Operations Manager, Greenspace ESG Pty Ltd, *Committee Hansard*, 6 July 2023, p. 3.

whatever you grew—for example, in the Netherlands, where ‘they grow all their strawberries indoors because they can control the conditions’.²⁴⁷ But it was energy intensive, requiring research into efficient light sources and renewable energy to power it.²⁴⁸

- 3.124 Mr Michael Claessens, Executive Director of the Canberra Region Food Collaborative, highlighted the potential issues ‘around planning, legislation et cetera that prevent a lot of these things happening’. He stated:

At the time that planning regulations and legislation were developed, they didn't account for—well, certainly it would like to prevent piggeries being set up in CBDs, so you zone things. But it couldn't take account of modern technology like vertical farms, among other things. Intense agriculture, for instance, is restricted in the ACT. Technically, a vertical farm would be difficult to set up in a basement near the CBD somewhere, whereas in other cities around the world they've started to make those changes.²⁴⁹

Committee Comment

- 3.125 Australia is a food secure nation. It produces far more than it consumes across a wide variety of food commodities, and that is likely to remain the case for decades to come, climate change and population growth notwithstanding. Nonetheless, there are challenges facing the nation regarding food security. Perhaps the most significant challenge is that, even though Australia is undoubtedly food secure in aggregate, there are significant pockets of food insecurity within the Australian community. This is a challenge that governments and the community must address. This issue will be dealt with in more detail in Chapter 7.
- 3.126 There are also significant challenges around the cost and availability of inputs to food production and distribution, such as fuel, energy, labour and fertiliser. Without careful management, these challenges around the cost and availability of inputs have the capacity to undermine food security, at the very least by driving up prices and making food less accessible, at worst by potentially undermining whole sectors of industry. These challenges will be addressed in more detail in Chapter 4.
- 3.127 There are two production sectors that the Committee considers need particular attention from government. The first is dairy, where the continued stagnation or decline in the production of raw milk suggests an industry in crisis. Australia needs a strong dairy industry for nutritional and food security. As part of the comprehensive National Food Plan recommended in Chapter 2, a specific strategy for reinvigorating the Australian dairy industry should be developed, one which lifts profitability and

²⁴⁷ Professor Rachel Burton, Professor of Plant and Food Science, School of Agriculture, Food and Wine, University of Adelaide, *Committee Hansard*, 20 April 2023, p. 2.

²⁴⁸ Professor Rachel Burton, Professor of Plant and Food Science, School of Agriculture, Food and Wine, University of Adelaide, *Committee Hansard*, 20 April 2023, p. 2.

²⁴⁹ Mr Michael Claessens, Executive Director, Canberra Region Food Collaborative; and Chief Executive Officer, Regional Development Australia ACT, *Committee Hansard*, 14 June 2023, p. 2.

production while addressing the economic and environmental sustainability of the industry, and which identifies the resources and pathways required to achieve this.

- 3.128 The second sector of concern is the seafood sector. Australia is heavily dependent on imports to meet its demand for seafood, while having potentially rich sources of untapped seafood resources available to it. As part of the National Food Plan, a specific strategy for expanding the seafood sector should be developed, one which optimises the use of resources while ensuring the economic and environmental sustainability of the industry.
- 3.129 The Committee highlights the importance of exports to Australia's and the world's food security. While Australia cannot feed the world, we play an important part in the food security of other nations, particularly in the Asia-Pacific region. Our exports quite literally feed millions of people. In addition, our exports play an important role in the domestic market. Exports provide economies of scale which promote efficiencies in production. They provide outlets for excess production. They allow for product diversification and innovation to meet the needs of different markets. They also provide supply chains which can be reversed in the case of crisis, such as severe drought.
- 3.130 A critical factor in food security is the viability of the farm sectors. Farm businesses cannot provide food for the rest of Australia if they are not viable. There are a significant range of factors that can affect farm and sector viability, including input costs (see Chapter 4), supply chain disruptions and waste management (see Chapter 5), and issues around climate change and biosecurity (see Chapter 6). A key issue facing the farm sector is its relationship with other actors in the supply chain, particularly the supermarket duopoly. There are clear imbalances in market power between the farm sector and other sections of the supply chain, rendering our growers 'price takers' rather than 'price makers'. Theoretically this imbalance could be corrected through consolidation within the farm sector, but this presents risks and challenges of its own, not least being the hollowing out of rural communities.
- 3.131 While the Committee does not wish to demonise the conduct of any players within the food supply chain, and acknowledges the good work done by Woolworths and Coles to maintain the supply of food and groceries during the COVID-19 pandemic and recent weather-related crises, the Committee is satisfied that greater oversight of market relationships within the food chain is required. The Committee supports: making the Food and Grocery Code of Conduct mandatory; a review of the *Competition and Consumer Act 2010* to ensure fair practices between different actors in the food supply chain and prevent unconscionable conduct; and the institution of regular reviews of perishable food supply chains by the ACCC.
- 3.132 The Committee considers that government and industry should pursue opportunities for value adding within the food supply chain, both as a food security measure and an economic development imperative. The Committee proposes that, as part of the National Food Plan, a specific strategy for expanding innovation and value adding in food production be pursued, with a view to enhancing opportunities for Australian industry and enhancing food security.

3.133 The Committee has been impressed with the potential of new industries—such as alternative proteins, protected cropping and vertical farming—to enhance food security while promoting economic development and increased employment. The Committee believes that all levels of government should be active in finding ways to support these new industries, including innovations in urban planning.

Recommendation 4

3.134 The Committee recommends that the Australian Government, as part of the National Food Plan, and in conjunction with industry, develop a specific strategy for reinvigorating the Australian dairy industry, one which lifts profitability and production while addressing the economic and environmental sustainability of the industry, and identifies the resources and pathways required to achieve this.

Recommendation 5

3.135 The Committee recommends that the Australian Government, as part of the National Food Plan, and in conjunction with industry, develop a specific strategy for expanding the seafood sector, one which optimises the use of resources while ensuring the economic and environmental sustainability of the industry.

Recommendation 6

3.136 The Committee recommends that the Australian Government:

- **make the Food and Grocery Code of Conduct mandatory;**
- **review the *Competition and Consumer Act 2010* to ensure fair practices between different actors in the food supply chain and prevent unconscionable conduct; and**
- **institute regular Australian Competition and Consumer Commission reviews of perishable food supply chains.**

Recommendation 7

3.137 The Committee recommends that the Australian Government, as part of the National Food Plan, develop a specific strategy for expanding innovation and value adding in food production, with a view to enhancing commercial opportunities for Australian industry and enhancing food security.

Recommendation 8

3.138 The Committee recommends that the Australian Government, as part of the National Food Plan, develop mechanisms to promote innovation in food production.



4. Inputs

- 4.1 This chapter explores the inputs used in Australia’s food production and their potential to impact on the production and availability of food. It discusses the importance of key inputs, such as labour, fuel and fertiliser; the vulnerabilities and risks associated with reliance on imported inputs; issues around local inputs such as energy and water; and the need to protect productive agricultural land.

Vital inputs

- 4.2 Australia’s ability to produce food is dependent on the supply of critical agricultural inputs. This includes labour, energy, fertiliser, agvet chemicals, functioning freight and logistics, biosecurity, and land. The insecurity of supply of key inputs poses a substantial risk to Australia’s agricultural production capacity.
- 4.3 The Department of Agriculture, Fisheries and Forestry (DAFF) noted that there is a reliance on international markets and supply chains by Australian agriculture for a range of key inputs to agricultural production. Food production capability is impacted by changes in input prices and supply chain disruptions. DAFF stated that over the last two years the cost of fertiliser, chemicals, fuel, and labour has increased, increasing the cost of agricultural production. However, due to high production levels and high prices received for agricultural products, Australian farms generated record incomes on average in 2021–22.¹
- 4.4 The National Farmers’ Federation (NFF) emphasised that food production in Australia is dependent on the supply of critical agricultural inputs. It stated:
- Each input supply chain is plagued by different risks, and appropriate solutions to mitigate vulnerabilities will vary. However, the absence of any single input would pose a substantial if not disastrous risk to Australia’s domestic food security and contribution to global food security.²
- 4.5 A graph from DAFF’s submission shows the estimated aggregate farm cash costs of the key inputs used in farming operations.³

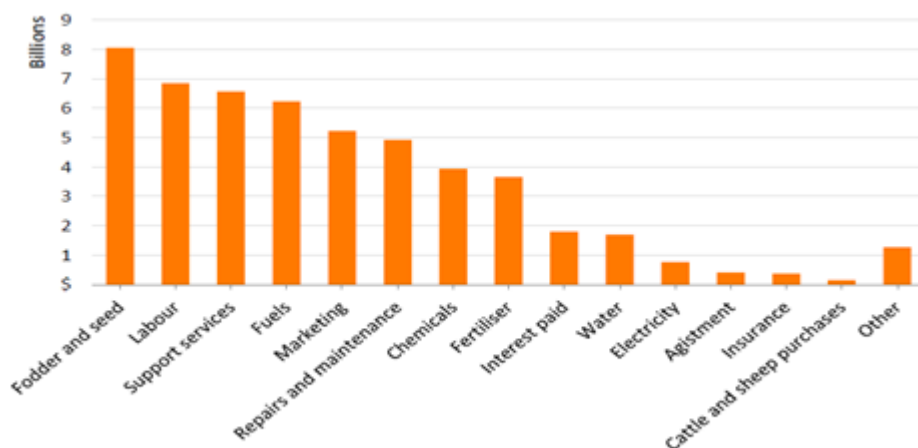
¹ Department of Agriculture, Fisheries and Forestry, *Submission 116*, p. 12.

² National Farmers’ Federation, *Submission 103*, p. 12.

³ Department of Agriculture, Fisheries and Forestry, *Submission 116*, p. 12.

Figure 4.1 Estimated aggregate farm cash costs, Australia, 2021-22

Figure 3: Estimated aggregate farm cash costs, Australia, 2021–22



Source: ABARES

Source: Department of Agriculture, Fisheries and Forestry, *Submission 116*, p. 12.

4.6 Key risks to critical agricultural inputs include:

- Global input shortages.
- Supply chain disruptions (i.e., freight, logistics, and lack of adequate supply chain efficiency/backlog compromising continued and timely input supply).
- Overreliance on overseas labour and expertise.
- Overreliance on the import of key inputs.
- Lack of input market diversification.⁴

4.7 Mr Tony Mahar, Nation Farmers' Federation CEO, stated that there are a number of actions Australia needs to take to safeguard our domestic food security, including ensuring timely access to critical inputs for farmers and addressing the increasing cost of critical inputs.⁵

Labour – problems and potential solutions

4.8 It is widely agreed that a primary risk to Australia's food security is access to both skilled and unskilled labour. This issue is of concern for both the food supply chain and the farm sector.

⁴ National Farmers' Federation, *Submission 103*, p. 12.

⁵ Mr Tony Mahar, Chief Executive Officer, National Farmers' Federation, *Committee Hansard*, 15 February 2023, p. 1.

4.9 Approved Employers of Australia (AEA) recognised that while traditional challenges of attracting and retaining workers are ongoing issues for the agriculture industry, the current labour shortages were severe, large scale and unlikely to be resolved without direct government intervention.⁶ According to AEA, labour shortages were one of Australia's most challenging economic problems. Labour costs represented the largest cost unit in fresh produce businesses, accounting for up to 60 per cent of the total cost of production in some instances. It noted that:

A lack of appropriate labour stifles business output and economic growth. For the horticulture industry, labour shortages can disrupt fresh produce supply, prevent the uptake of new technology and other advancements, and delay growth opportunities.⁷

4.10 Furthermore, the AEA argued that:

The development of a productive and returning workforce for the fresh produce industry is therefore critical in terms of ensuring productivity within the industry and efficient production of fresh produce. The horticulture industry is reliant on seasonal and temporary migrant workers to harvest crops.⁸

4.11 Similarly, the National Food Supply Chain Alliance (NFSCA) stated:

Australia's food supply chain has faced significant historical challenges attracting and retaining sufficient labour, with these issues pre-dating the COVID-19 pandemic. The workforce crisis in the food supply chain has been worsened by the pandemic, as the drop-off in global passenger movements has severed access to visiting workers from overseas.⁹

4.12 The NFSCA highlighted that Australian farms, processing facilities, and food and retail businesses are currently operating at reduced capacity and estimated that over 172,000 vacancies exist across the supply chain.¹⁰

4.13 This position was supported by the University of Melbourne, which observed the effect that labour shortages have had on various sectors, especially during the COVID-19 pandemic. The University highlighted reductions in fruit and vegetable production and processing (e.g. a lack of labour for fruit picking and warehouse workers), availability of transport and logistics services (lack of truck drivers) and retail services (e.g., slow restocking and sorting).¹¹

4.14 The Australian Fresh Produce Alliance (AFPA) viewed addressing access to suitable accommodation in key production areas as a key measure to support the industry's workforce development and improve employment opportunities. The AFPA stated:

⁶ Approved Employers of Australia Ltd, *Submission 12*, p. 1.

⁷ Approved Employers of Australia Ltd, *Submission 12*, p. 1.

⁸ Approved Employers of Australia Ltd, *Submission 12*, p. 1.

⁹ National Food Supply Chain Alliance, *Submission 49*, p. 2.

¹⁰ National Food Supply Chain Alliance, *Submission 49*, p. 2.

¹¹ University of Melbourne, *Submission 34*, p. 8.

While a national issue, the ongoing shortage (and rising cost) of accommodation in regional areas is a major inhibitor to attracting workers. Housing temporary harvest workers is a particular challenge in many growing regions. Solutions to the accommodation challenges in the horticulture sector must be nuanced and focus on delivering scaled, affordable, and fit for purpose accommodation.¹²

- 4.15 The NFF supports improvements to migration settings as a short-term solution to labour shortages but considers that a solution for long-term labour problems could be found through the VET sector and agricultural apprenticeships. It stated:

In the short term, the NFF supports an improvement to the migration settings and enabling broader participation in the workforce for all who are willing and able. Long-term productivity growth will be promoted by successfully skilling Australians through the reform of the VET sector and helping agriculture to be embraced as providing a modern, professional workplace and being an employer of choice. One potential avenue to achieve this would be developing a recognised agriculture apprenticeship seen in the 'traditional' trades.¹³

Overseas workers

- 4.16 The Pacific Australia Labour Mobility (PALM) scheme is a circular migration program with Pacific nations, designed with foreign aid objectives to fill workforce gaps in Australia's labour market.
- 4.17 The Australian Fresh Produce Alliance (AFPA) noted that migration plays a key role in the horticulture industry. The expansion of the PALM scheme from 8,000 workers to 20,000 workers in the horticulture industry over recent years clearly demonstrates the importance of migrant workers to the sector.¹⁴ There are now 37,000 PALM workers in Australia and 27,000 of these are employed in the horticulture sector, accounting for at least half of the industry's harvest workforce.¹⁵
- 4.18 The AFPA called for the expansion of the PALM scheme, coupled with a review of the industry's visa framework to ensure that the industry can access the right skills and people. It emphasised the need to support ongoing industry growth and continue to provide Australians with fresh fruit and vegetables.¹⁶
- 4.19 The AFPA highlighted industry support for the introduction of a Harvest Work Visa (HWV) to complement the PALM scheme and other visa pathways, including the Horticulture Industry Labour Agreement (HILA) and Temporary Skills Shortage (TSS) pathways. It concluded:

¹² Australian Fresh Produce Alliance, *Submission 135*, p. 12.

¹³ National Farmers' Federation, *Submission 103*, p. 13.

¹⁴ Australian Fresh Produce Alliance, *Submission 135*, p. 12.

¹⁵ Ms Claire McClelland, Chief Executive Officer, Australian Fresh Produce Alliance, *Committee Hansard*, 26 May 2023, p. 15.

¹⁶ Australian Fresh Produce Alliance, *Submission 135*, p. 12.

Acknowledging the need for migrant workers in the sector, a fit for purpose visa framework that offers appropriate pathways, protections and regulations is an important way forward in both addressing current workforce shortages, enabling workforce planning and filling skills gaps.¹⁷

- 4.20 AUSVEG also recognised that PALM workers have been important in filling the harvest workforce gaps, but highlighted difficulties in placing PALM workers due to the required nine-month minimum employment period. AUSVEG noted that a harvest period for a vegetable business often only extends for a few intense months, meaning it cannot provide work for all PALM workers outside of the harvest period. AUSVEG argued that the PALM scheme needed to evolve to meet growers' short harvest periods and for it to expand beyond the Pacific nations currently involved in the scheme to ensure a long-term sustainable program.¹⁸

Administrative burden

- 4.21 While the value of the PALM scheme was recognised, some stakeholders expressed concern at the administrative burden attached to the scheme and the restrictions this placed on accessing PALM labour. Ms Claire McClelland, CEO of AFPA, highlighted that alterations to policies and regulations related to labour can significantly influence employment processes and resources within the agriculture industry and, by association, Australia's food security and the price of groceries.¹⁹ Ms McClelland pointed out the recent changes to the PALM scheme as an example:

The changes to the deed and guidelines will affect the operations of the PALM scheme and, if unresolved, will likely reduce industries' access to a substantial source of harvest labour. Further, these changes do little to support and improve worker welfare outcomes; rather, they significantly raise the administrative burden on employers and the costs associated with employing under the scheme without improving worker wages or productivity. These changes are an example of where perceived minor tweaks in policy and programs can have a substantive impact on the industry, putting downward pressure on growers, pushing up costs to consumers and reducing our ability to continue to supply fresh and healthy food to all Australians.

- 4.22 Similarly, AEA supported improvements to administration processes noting that small and medium sized employers struggle to access the PALM scheme due to the administration burden. This had made the cost of the scheme prohibitive for employers.²⁰ Specifically, AEA stated:

The AEA supports high standards within the Scheme, while also supporting improvement to processes to make administration and management of the Scheme more efficient and cost effective. The focus must be on better outcomes

¹⁷ Australian Fresh Produce Alliance, *Submission 135*, p. 12.

¹⁸ AUSVEG *Submission 99*, p. 13.

¹⁹ Ms Claire McClelland, Chief Executive Officer, Australian Fresh Produce Alliance, *Committee Hansard*, 26 May 2023, p. 14.

²⁰ Approved Employers of Australia Ltd, *Submission 12*, p. 3.

not increasing levels of administrative burden from compliance. As industry we must work with you to improve program and compliance outcomes.²¹

Mobilising the local workforce

- 4.23 In addition to the benefits of migrant labour for the food industry workforce, evidence presented to the Committee highlighted opportunities for mobilising the local workforce, including the use of job hubs and urban farming.

Job Hubs

- 4.24 Having faced significant labour shortages during and after the COVID-19 pandemic, the Tasmanian Government has taken steps to access a reliable agriculture workforce, in particular seasonal workers post COVID-19. The Jobs Tasmania Strategic Plan 2021–2024 involves programs targeting employers and industry to attract and support training and workforce development. It includes a regional jobs network, featuring a collection of jobs hubs across Tasmania. The programs are designed to help connect businesses, stakeholders, and members of the community. Its focus is ‘on trying to get people who aren’t yet in the workforce into the workforce, but also to get different levels of government, as well as businesses, to come up with solutions and to connect them with, ultimately, employment’.²²
- 4.25 The Tasmanian Government reported success in attracting the local workforce to consider and seek work within the agriculture sector. This was achieved by working with industry around a local worker campaign. It stated:

When COVID actually occurred in Tasmania and we experienced these shortages, one of the things that government did was really look at trying to encourage the local workforce to get into the agricultural sector where they hadn’t considered that before. The government put a \$1.9 million package in place which had that real focus on working with industry around a local worker campaign. That was quite successful for us. We linked it to the Harvest Trail website and encouraged people to actually work in through that mechanism to encourage them to look for work in local areas.²³

Role of urban farming

- 4.26 There are many benefits of urban farming, not only in food production but also with career opportunities. Canberra urban farmer, Ms Fiona Buining, identified three kinds of urban farming programs and explained how they can benefit career choices and employment opportunities:

²¹ Approved Employers Australia Ltd, *Submission 12*, p. 3.

²² Ms Jenna Cairney, Acting Deputy Secretary, Business and Jobs, Department of State Growth, Tasmania, *Committee Hansard*, 12 April 2023, p. 3.

²³ Mrs Caroline Brown, Assistant Director, AgriGrowth Tasmania, Agriculture, Forestry and Water Strategic Business Unit, Department of Natural Resources and Environment, Tasmania, *Committee Hansard*, 12 April 2023, p. 3.

- Heart Programs – are paid farm training programs for people with multiple barriers to employment that transform lives through teaching them how to grow food. The employment rate of graduates is over 80% and there is a high return on investment (ROI). The farms provide an oasis and a new beginning, growing people and food.
- Farm incubators – Upon completion of initial farm training, aspiring farmers with a successful business plan join the incubator program where they have affordable access to land and other support to start their own farm enterprise. Incubators hatch successful farm businesses.
- Land-based practicums at universities – land-based courses, from 6 months duration, on existing university farms offering practical experience and training within a theoretical framework. Incorporating partner farms is highly recommended.²⁴

4.27 Ms Buining found that all three categories of enterprises ‘provided strong, well-defined vocational pathways with a demonstrable return on investment and high employment rates’. The programs ‘delivered on food justice, were inclusive, connected growers with the community, created a strong local food system and educated the community about the nutritional value of fresh food’. Ms Buining recommended that Heart Programs, Farm Incubators and Land-based Practicums ‘be established in our towns and cities across Australia’.²⁵

Skills development and education

4.28 The Tasmanian Government recognised the important role skilled labour plays across the entire agriculture industry, highlighting real skill shortages across Tasmania agriculture. The Tasmanian government understands that to build a skilled labour force, skills development and education is required, not only for employees but employers too.²⁶ Mrs Caroline Brown, Assistant Director, AgriGrowth Tasmania, explained:

We also looked very closely at some of the real skill shortages. It wasn't just about numbers but also skills: for example, artificial insemination technicians, shearers and those kinds of things. We worked really hard with industry to target some training programs that would work for them in the short, medium and longer term, so that building the knowledge and the additional training meant that, in

²⁴ Ms Fiona Buining, Submission 94, Attachment 1, 2020 Churchill Fellowship to investigate urban farm ventures that provide vocational pathways for aspiring food growers, p. 12.

²⁵ Ms Fiona Buining, Submission 94, Attachment 1, 2020 Churchill Fellowship to investigate urban farm ventures that provide vocational pathways for aspiring food growers, p. 78.

²⁶ Mrs Caroline Brown, Assistant Director, AgriGrowth Tasmania, Agriculture, Forestry and Water Strategic Business Unit, Department of Natural Resources and Environment, Tasmania, *Committee Hansard*, 12 April 2023, p. 3.

time, hopefully industries would become more self-reliant here in Tasmania rather than having to bring in those skills from interstate.²⁷

- 4.29 Sustain detailed how developing workers' skills and education through TAFE or VET agriculture programs can provide positive outcomes for employees and employers, as well as create workforce opportunities within regional communities.²⁸ Sustain urged better links between TAFE pathways and universities. This type of coordinated and integrated approach to vocational education, mentoring and pathways would 'boost workforce development and opportunities for regions and communities'.²⁹

Shifting the paradigm—agriculture is more than farming.

- 4.30 Critical to encouraging people to seek out careers in agriculture was shifting perceptions of what working in agriculture involves. Ms Margo Andrae, CEO of Australian Pork Limited, identified the difficulties posed in attracting workers into the meat processing industry. Firstly, the jobs are often in regional Australia, 'and trying to get people back into our regions is really tough'.³⁰ Secondly, meat processing is not seen as a 'sexy job'. Ms Andrae argued:

...we need to reframe how people see our processing plants; that they are a great part of our food supply chain...it's a great job with great conditions, and you can live in a great part of Australia as well.³¹

- 4.31 Mr Luke Bowen, CEO of Cattle Australia, argued that the opportunity to change people's perceptions of careers in agriculture were already there. Mr Bowen told the Committee, 'there's certainly a change in people's perception about agriculture and the opportunities that agriculture presents':

Agriculture isn't perceived as the person in the paddock, in the field type of thing. It's [an] incredibly diverse range of skills, and technology has ballooned to the point where it's bringing a new generation of people into things that never existed before. That's the big opportunity that it presents.³²

- 4.32 Likewise, Mr Tony Mahar, NFF CEO, highlighted the work being done to shift perceptions of what work in agriculture entails, communicating to both domestic and international workers 'the attributes of agriculture and living in rural and regional communities'.³³

²⁷ Mrs Caroline Brown, Assistant Director, AgriGrowth Tasmania, Agriculture, Forestry and Water Strategic Business Unit, Department of Natural Resources and Environment, Tasmania. *Committee Hansard*, 12 April 2023, p. 3.

²⁸ Sustain, *Submission 72*, p. 20.

²⁹ Sustain, *Submission 72*, p. 33.

³⁰ Ms Margo Andrae, Chief Executive Officer, Australian Pork Ltd, *Committee Hansard*, 22 March 2023, p. 6.

³¹ Ms Margo Andrae, Chief Executive Officer, Australian Pork Ltd, *Committee Hansard*, 22 March 2023, p. 7.

³² Mr Luke Bowen, Chief Executive Officer, Cattle Australia, *Committee Hansard*, 24 May 2023, p. 6.

³³ Mr Tony Mahar, Chief Executive Officer, National Farmers' Federation, *Committee Hansard*, 15 February 2023, p. 4.

Imported inputs

- 4.33 Australian agriculture relies heavily on international markets and supply chains for a range of inputs to agricultural production, food manufacturing and on-farm operations.³⁴ To generate high levels of production, farmers typically use large amounts of inputs including imported inputs such as fuel and fertilisers.³⁵ Nutrien Ag Solutions, a leading producer of farm chemicals, observed that without critical inputs such as fertilisers, seed, crop protection products and animal health products, yields would decline, dropping production capacities, resulting in a decline in industry values and economic contribution.³⁶
- 4.34 This reliance on international supply chains for essential inputs has been identified as a potential vulnerability in the food supply chain. For example, the NFF argued that ‘Australia’s access to many critical inputs continues to be at the mercy of geopolitical tensions and global supply disruptions, worsened by a general overreliance on imports from very few global trading partners’.³⁷ The NFF highlighted Australia’s heavy reliance on imported diesel to power on-farm activities, with 90% of the country’s liquid fuel sourced from overseas, and the near crisis over shortages of the diesel fuel additive AdBlue.³⁸
- 4.35 Regarding fertiliser imports, the CSIRO stated that:
- Australia uses about 5.4 million tonnes of fertilisers each year, of which 50 percent is manufactured in Australia (Fertilizer Australia, 2021). However, over 80 percent of nitrogen fertilisers are currently imported, which poses some risks for timely delivery and exposure to exchange rate fluctuations. Imports of crop protection products have increased more than 4-fold over the past 20 years, with the majority of these produced overseas.³⁹
- 4.36 The CSIRO noted that Australia relies on five trading partners for most of its nitrogen, phosphorus, and potassium fertiliser imports. It highlighted the need for growth in Australia’s sovereign capability for fertiliser manufacture to mitigate supply chain issues and rising costs.⁴⁰
- 4.37 The Australian Food and Grocery Council (AFGC) advised that the food manufacturing sector is ‘heavily dependent on a wide range of imported food ingredients’, including ‘food additives and processing aids, and other materials critical to the sector such as food packaging and personal protective equipment (PPE)’.⁴¹ The AFGC noted that along with additional costs, the COVID-19 pandemic had

³⁴ Department of Agriculture Fisheries and Forestry, *Submission 116*, p. 12.

³⁵ Farming for the Future, *Submission 89*, p. 6.

³⁶ Mr Tyson Cattle, Senior Manager, Government and Industry Affairs, Nutrien Ag Solutions, *Committee Hansard*, 26 May 2023, p. 22.

³⁷ National Farmers’ Federation, *Submission 103*, p. 12.

³⁸ National Farmers’ Federation, *Submission 103*, p. 14.

³⁹ CSIRO, *Submission 149*, p. 10.

⁴⁰ CSIRO, *Submission 149*, p. 8.

⁴¹ Australian Food and Grocery Council, *Submission 128*, p. 3.

revealed input supply chain vulnerabilities of the food and grocery manufacturing sector:

The COVID-19 pandemic and recent international trade disputes have highlighted that international trade can be disrupted by unexpected economic, political and health events. This disruption can impact right across the supply chain from raw materials to final products. In an increasingly difficult geo-political environment, the probability of more disruptive events has increased.⁴²

- 4.38 Australia is heavily reliant on imported pesticides, with imports currently accounting for 52 per cent of the Australian market. Domestic manufacture relies on imported ingredients from a small number of nations.⁴³ Industry body CropLife Australia observed that:

The supply chains for crop protection products are long, encompassing imports through various nations and means. The delivery of these products is extremely time sensitive.⁴⁴

- 4.39 The University of Sydney noted that Australian agriculture's reliance on overseas inputs has heavily exposed the industry to external influences. For example, 'a single disruption in urea supply would cripple all of Australia's grain production capacity and influence other sectors to suffer significant challenges in their ability to produce'.⁴⁵

Addressing vulnerabilities

- 4.40 Changes to farming systems were seen as a means of reducing reliance on imported inputs. With regard to fertilisers and soil nutrients, CSIRO stated:

Improved nutrient and pest management strategies could mitigate costs of fluctuating supply and prices. Current CSIRO research is showing there is significant potential to reverse the high reliance of farming systems on tactical fertiliser or pesticide applications. More consistent and long-term fertiliser strategies, whereby farmers maintain their soils fertility, will reduce spikes in demand and allow farmers to more consistently match crop demand across seasons to maximise their yield potential.⁴⁶

- 4.41 CSIRO also saw scope for changes to pest management to reduce reliance on crop protection chemicals:

Similarly, integrated pest management practices reduce the reliance on specific chemicals to control outbreaks of weeds, pests or diseases. This has the benefit of reducing the risks of lack of supply or exposure to periods of high input prices in particular seasons. There are also many practices and technologies such as

⁴² Australian Food and Grocery Council, *Submission 128*, p. 12.

⁴³ CropLife Australia, *Submission 70*, p. 10.

⁴⁴ CropLife Australia, *Submission 70*, p. 10.

⁴⁵ University of Sydney, *Submission 152*, p. 2.

⁴⁶ CSIRO, *Submission 149*, p. 11.

precision agriculture, new biological pesticides, fertiliser formulations, and organic amendments that can enable farmers to improve the efficiency of their inputs and reduce losses to the environment...innovative bioeconomy-derived amendment and fertiliser products could play a key role in reducing reliance on imported inputs while improving sustainability of the agricultural sector.⁴⁷

4.42 CropLife Australia called for farmers to have predictable, reliable and timely access to the latest safe and proven agricultural technologies and innovations. This is to combat the threat of not only food and nutritional insecurity but the impacts of climate change and increasing production costs. It emphasised that maintaining and strengthening domestic supply chains while remaining internationally competitive and incentivising diversification is critical to achieve Australian and global food security.⁴⁸

4.43 The University of Sydney proposed increasing local production of key food supply inputs:

Domestic supply of key inputs should be placed as a high priority to ensure the robustness and resilience of the sector and the ability to adapt to change and priorities. Food and fibre are relatively cheap to Australian consumers and the previous models, which drive prices downwards on the back of decreasing sustainability, will end poorly for the nation.⁴⁹

Scope for local production

4.44 There was considerable support for developing sovereign capability in the manufacture of essential inputs. AUSVEG recommended increasing sovereign capability by 'investing in local manufacturing facilities to develop key inputs such as fertiliser'.⁵⁰ The possibilities for local phosphate production were highlighted by Agriflex Pty Ltd⁵¹ and Trigg Minerals.⁵² Grain Producers Australia asserted that 'recent world events highlight the sovereign risks to Australian food production from an over-reliance on imported inputs'. It called for government and private sector collaboration and co-investment to strengthen 'Australia's sovereign manufacturing capability and ultimately the country's food security'.⁵³

4.45 The Centre for Entrepreneurial Agri-Technology (CEAT) signalled 'the need to establish domestic sovereign manufacturing and infrastructure capabilities to manage input resourcing risks' across a range of areas, including:

- Agricultural machinery, such as tractors, harvesters, motors, drivetrain and hydraulic equipment (as external factors are limiting access to required machinery from overseas).

⁴⁷ CSIRO, *Submission 149*, p. 11.

⁴⁸ CropLife Australia, *Submission 70*, p. 10.

⁴⁹ University of Sydney, *Submission 152*, p. 2.

⁵⁰ AUSVEG, *Submission 99*, p. 6.

⁵¹ Agriflex Pty Ltd, *Submission 170*, p. 3.

⁵² Trigg Minerals, *Submission 162*, p. 1.

⁵³ Grain Producers Australia, *Submission 129*, p. 4.

- Pesticide and fertiliser manufacturing of active ingredients, (as there is almost no sovereign fertiliser manufacturing capability; rather a complete reliance on imported fertiliser product).
 - Secondary processing to increase value, storage life and transportability of food products.
 - Local fuel supply and sovereign fuel stocks, including increased renewable fuels including biodiesel for agriculture and critical heavy industry and transport.⁵⁴
- 4.46 Nufarm, a developer and manufacturer of seeds and crop protection solutions, urged government and private sector collaboration and co-investment. This is to strengthen Australia’s sovereign manufacturing capability and ultimately the country’s food security. It noted that ‘securing the supply of Australian-made crop protection products tailored to local conditions will protect valuable crops that produce food, feed, fibre and fuel for local and international markets’.⁵⁵
- 4.47 The Australian Fresh Produce Alliance (AFPA)—while supporting local production of imported inputs—cautioned that ‘it will take significant investment in Australia’s workforce, manufacturing capabilities and infrastructure to replicate the quantities required and be commercially viable’. It also noted that ‘in some instances Australia simply doesn’t have the right mix of ingredients or volume (domestically) to decouple from the global supply chain’.⁵⁶
- 4.48 Similarly, Bayer Australia Limited noted that although there was scope for the local manufacture of agricultural chemicals, ‘most companies in Australia, including Bayer, still need to import most of the raw materials that go into manufacturing’, with most active ingredients and raw materials coming from Europe, North America and China. Even with local manufacturing, the supply chain risk remained. Bayer further observed that local production would require access to enough skilled and unskilled labour.⁵⁷

Local inputs

- 4.49 Local inputs such as land, water and energy are critical to almost every facet of food production, manufacturing, and distribution. Almost all contributors to this inquiry emphasised the importance of local inputs, and the role they play in Australia’s food security. Many stakeholders stressed the point that timely access to affordable and reliable inputs such as land, water, energy and pallets is critical to ensure the nation’s food security.

⁵⁴ Centre for Entrepreneurial Agri-Technology, *Submission 84*, p. 6.

⁵⁵ NuFarm Australia Limited, *Submission 37*, p. 3.

⁵⁶ Australian Fresh Produce Alliance, *Submission 135*, p. 14.

⁵⁷ Mr Warren Inwood, Managing Director Crop Science, Bayer Australia Ltd, *Committee Hansard*, 6 July 2023, p. 18.

- 4.50 The University of Melbourne raised concerns about the rising cost of fuel and energy, and potential flow-on effects, stating that Treasury estimates point to a sharp increase in fuel and energy prices for late 2022 and for 2023:⁵⁸

As stated in Treasury notes in budget statement, "[t]his rise in wholesale electricity and gas prices can be expected to flow through to higher consumer prices as wholesale contracts are renewed." The rise in fuel and energy is equal to higher costs of logistics across Australian food supply chains from production to retailing. This will subsequently translate into higher cost of food for consumers.⁵⁹

- 4.51 The AFGC stated that reliable access to cheap locally sourced inputs like gas, electricity and water are also vital to the growing and manufacturing of food. It emphasised that the increasing costs of utilities for manufacturing further strained producers' ability to be profitable while producing food.⁶⁰

- 4.52 The National Food Supply Chain Alliance observed that in the last twelve months many businesses along the length of Australia's food supply chains are reporting increases to input costs averaging around 25 per cent while operating on margins of just two per cent. It explained:⁶¹

Every player in the supply chain is faced with the increasing cost of energy – with wholesale electricity prices more than doubling since 2021, and further increases forecast for 2023. This is particularly acute for energy-intensive food processing and manufacturing businesses, and those in food cold storage, distribution and logistics.⁶²

- 4.53 Mrs Andrea Molteno, from the NSW Irrigators' Council, stressed that water is a crucial input for food and fibre production, emphasising that water resources need to be managed securely, sustainably and productively to ensure Australia's food security. The NSW Irrigator's Council identified two key water related issues risking national food security. The first is that buybacks have driven increased prices for water, with flow-on increases to food affordability through cost-push inflation. The second is that climate change is already causing a decline in water availability to grow food and fibre.⁶³

- 4.54 The AFGC highlighted the importance of pallets and how this intersects with almost every sector across the agriculture industry, calling pallets the backbone of Australian supply chains. It noted that recent pallet shortages have created disruptions along supply chains. The AGFC stated:

⁵⁸ University of Melbourne, *Submission 34*, p. 8.

⁵⁹ University of Melbourne, *Submission 34*, p. 8.

⁶⁰ Australian Fresh Produce Alliance, *Submission 135*, p. 14.

⁶¹ National Food Supply Chain Alliance, *Submission 49*, p. 2.

⁶² National Food Supply Chain Alliance, *Submission 49*, p. 2.

⁶³ Mrs Andrea Molteno, Policy Officer, New South Wales Irrigators Council, *Committee Hansard*, 11 August 2023, p. 1.

The transport of goods around Australia, be it building supplies, medicines or processed foods, use pallets, upon which items are stacked. Pallets are the backbone of Australian supply chains, providing an efficient mechanism to store and move product throughout the supply chain. The impacts of the pandemic have led to a significant structural shift in supply chain management, most notably the move from “just in time” to “just in case” ordering. This has resulted in the demand for pallets outstripping supply. As pallet providers have struggled to meet demand for pallets, major disruptions to the pallet pool are occurring.⁶⁴

Protecting farmland from development

- 4.55 The threat of development, particularly urban encroachment, to Australia’s farmland was highlighted in the evidence presented to the Committee. The NFF stated that ‘prime agricultural land is an invaluable, natural resource that provides the capacity for Australia to meet increasing domestic and global demand for food and fibre’.⁶⁵ It argued that ‘non-agricultural on-farm development must be managed in a way so as to complement or coexist with agriculture, not stifle it’.⁶⁶ The NFF noted that:

Productive land in high rainfall zones along the coastlines and around cities are now being lost to urban expansion. The development of mines and expansion of onshore gas activities can risk the productivity of agricultural land where there are potentially irreversible impacts on the integrity of soil and water resources. Continued urban expansion and, more recently, the development of solar and wind farms has raised concerns about further losses of prime agricultural land, particularly as many of these developments occur in agricultural areas. This poses a significant challenge to agricultural communities that rely on agriculture for their economic viability.⁶⁷

- 4.56 Sustain highlighted the key issue of urban sprawl being a major contributor to the loss of farmland, related to land use planning and practices. The practice of valuing agricultural land at its highest monetary use—rather than highest productivity—put it at risk from urban development.⁶⁸ Sustain stated:

As real estate development encroaches on farmland, it increases the costs and risks of production and drives up land values beyond the reach of producers in surrounding areas. Primary producers have less access to affordable land for farming activities, even on a small-scale (local, regional and city region supply chains). This cycle inevitably pushes productive farmland away from communities and increases the speed of urbanisation. Within farming, functioning of the land market can favour large farmers and leads to land concentration. In parallel, more non-agricultural people and businesses are investing in farmland, which

⁶⁴ Australian Food and Grocery Council, *Submission 128*, p. 9.

⁶⁵ National Farmers’ Federation, *Submission 103*, p. 16.

⁶⁶ National Farmers’ Federation, *Submission 103*, p. 16.

⁶⁷ National Farmers’ Federation, *Submission 103*, p. 16.

⁶⁸ Sustain, *Submission 72*, p. 19.

they view as a highly profitable investment. This phenomenon fuels land speculation and, in extreme cases, land grabbing.⁶⁹

- 4.57 The Australian Food Sovereignty Alliance emphasised the role of state and local governments in protecting farmland from urban encroachment, arguing that if ‘State and Local Governments continue to allow inappropriate encroachment and urban growth into viable farmland, future generations will become food insecure’.⁷⁰ The Alliance considered that ‘a food secure and food sovereign future depends on appropriate planning controls that preserve farmland in perpetuity’.⁷¹
- 4.58 The Queensland Farmers Federation asserted that protecting prime agricultural land from other forms of development should be a priority of the Australian Government. It argued that ‘we need to look at farming land as one of our biggest assets and continue to derive those biggest assets and protect them’.⁷²
- 4.59 The Queensland Government acknowledged the importance of this issue, advising of policies to improve ‘land use coexistence requirements through its planning framework to protect and maintain the regionally significant agricultural land and uses from fragmentation and incompatible non-agricultural development’.⁷³

Committee Comment

- 4.60 A productive, efficient and reliable workforce is vital to the food production sector and Australia’s food security. There are opportunities for workforce development both within Australia and externally. Overseas workers play an increasingly critical role in agriculture and food production. COVID-19 highlighted some vulnerabilities in the workforce and its reliance on overseas workers. A productive and returning workforce is vital to productivity and a critical input for production. The Committee considers it would be useful to review current administration and reporting requirements for seasonal and harvest work employers, with the view to reducing the administrative burden and making overseas labour more accessible.
- 4.61 Australia needs to support the urban farming sector and promote its work and contribution to food production in Australia. The Committee considers that urban farming can be an entry point to a career in agriculture, provide education and training that moves away from traditional farming methods and provides a more modern approach.
- 4.62 Job hubs bring employers, employees, and industry stakeholders together in a concerted effort to build agriculture labour workforces, fill labour shortages and enhance agricultural careers. Agricultural job hubs can play a vital role in establishing

⁶⁹ Sustain, *Submission 72*, p. 19.

⁷⁰ Australian Food Sovereignty Alliance, *Submission 147*, p. 29.

⁷¹ Australian Food Sovereignty Alliance, *Submission 147*, p. 29.

⁷² Ms Sharon McIntosh, Water and Energy Policy Adviser, Queensland Farmers Federation, *Committee Hansard*, 10 July 2023, p. 23.

⁷³ Mr Peter Donaghy, Acting Executive Director, Agribusiness and Policy, Department of Agriculture and Fisheries, Queensland, *Committee Hansard*, 10 July 2023, p. 2.

an agricultural labour workforce in general but can also help to find specific labour to fill unique roles and specialised vacancies, and assist with time sensitive seasonal work.

- 4.63 Australian agriculture and food production relies on access and supply of critical inputs such as fuel, land, fertilisers, energy and labour. The Committee notes that these inputs are critical to successful farming operations and the agriculture industry. The absence of these products or supply disruptions of any critical input poses a significant threat to Australia's agricultural capabilities and food security.
- 4.64 The reliance on imported inputs was raised in the evidence. COVID-19 travel restrictions and border closures and international political pressure exposed supply chain vulnerabilities and made clear that Australia's food production is heavily dependent on some imported inputs such as fuel and fertilisers. Australia needs to examine its domestic agriculture manufacturing capacity and capabilities to address our dependency on imported inputs.
- 4.65 Similarly, the Committee heard about the importance of local inputs, such as land, water, energy and pallets. The Committee notes that the rising prices and lack of availability of local inputs have put further pressures on agricultural producers and manufacturers. Australia needs to ensure that its agricultural producers and manufacturers have continued access to these critical local inputs through innovation and development of alternative products. The Committee considers that local inputs of land and water need to be managed and regulated appropriately to balance access and use between agricultural and non-agricultural operations.

Recommendation 9

- 4.66 The Committee recommends the Australian Government, in conjunction with State and Territory Governments and industry, develop agriculture job hubs and a regional network engagement and implementation plan.**

Recommendation 10

- 4.67 The Committee recommends the Australian Government, in conjunction with State and Territory Governments and local government, explore options for the development of urban agriculture, in particular as a means for developing skills and encouraging careers in agriculture.**

Recommendation 11

- 4.68 The Committee recommends the Australian Government, in conjunction with industry, review current administration and reporting requirements for seasonal and harvest work employers, with the view to reducing the administrative burden and making use of overseas labour more accessible.**

Recommendation 12

- 4.69** The Committee recommends the Australian government support the development and expansion of the domestic production and manufacturing of essential inputs, such as fertiliser and agricultural chemicals.

Recommendation 13

- 4.70** The Committee recommends the Australian Government, in conjunction with State, Territory and Local governments, develop a strategic plan to protect agricultural land from urban sprawl and utilisation for non-agricultural purposes.



5. The supply chain

Introduction

- 5.1 This chapter discusses the food supply chain, in particular its vulnerabilities. It examines the lessons from the COVID-19 pandemic, issues around transport networks, the importance of distribution centres, and the special circumstances of remote communities in northern Australia. It also explores the need for a national food supply chain map to locate the production and distribution elements of the food system and identify weaknesses. This chapter then focuses on the end of the supply chain—food waste and potential solutions, including the creation of a circular economy.

Impact on the cost and availability of food

- 5.2 Supply chains are vital to the availability and affordability of food in Australia and globally. The Department of Agriculture, Fisheries and Forestry (DAFF) observed that global food prices have increased substantially since 2020, initially because of supply chain problems associated with the COVID-19 pandemic. Poor seasons in the northern hemisphere were followed by the outbreak of war in Ukraine, leading to a surge in global food prices. DAFF noted that in Australia ‘annual food inflation has increased significantly over the last 18 months to 9% in September 2022’. The price increases ‘reflected a range of price pressures including supply chain disruptions, flooding, and increased input costs’.¹
- 5.3 The University of Melbourne observed that Australia’s supermarkets rely on ‘sophisticated global supply chains’ to maintain supplies of food—sourced from wherever it is seasonally available and can be distributed cost-effectively. Supermarkets also maintain ‘lean’ supply chains ‘to reduce their costs and keep food fresh’. Recent disruptions, however, have highlighted that ‘these long and complex supply chains’ have many potential points of vulnerability.² The University of Melbourne argued that ‘these vulnerabilities can be addressed by diversifying and decentralising food supply chains and by strengthening local and regional food supply chains’. It stated:

Resilient food supply chains are likely to be diverse – in the geographic locations that food is sourced from (global, national, regional and local sources), in the types of crops that are grown, the enterprises that we source food from (community and social enterprises, as well as commercial), the modes and

¹ Department of Agriculture, Fisheries and Forestry, *Submission 116*, p. 16.

² University of Melbourne, *Submission 34*, p. 7.

routes of transport used to distribute food, and the scale of enterprises that we source food from (small and medium scale, as well as large scale). Food supply chains that are resilient to shocks and stresses are also likely to be more decentralised, with a larger number of smaller food processing and distribution centres.³

- 5.4 Similar observations about supply chain vulnerability were made by the Australian Food Sovereignty Alliance (AFSA). It noted that ‘supply chain resilience and redundancy is not systemically built into the food supply chain’, and that Australia’s food supply chain is exposed to disruption from extreme weather and malicious attacks. The AFSA observed that Australian food production ‘also relies on aspects of global supply networks for inputs, such as energy, labour and agricultural supplies’; and that ‘the domestic food supply chain is vulnerable because of just-in-time processes over long physical distances across a diverse range of producers, processors, manufacturers and retailers’. These pressures will grow as climate change impacts food production in coming years.⁴

Lessons from COVID

- 5.5 The COVID-19 pandemic had significant impacts on the supply chain, including grocery shortages, price spikes, shortages of vital inputs, labour shortages and disruptions to transport networks. One of the key players in the national food supply chain, supermarket retailer Woolworths, highlighted the impact of the pandemic on its operations—an unprecedented surge in demand over several weeks in March 2020, where virtually overnight the increase in demand ‘reflected a population of 50 million, albeit against the backdrop of a highly efficient system built to play its part in feeding 25 million Australians’.⁵
- 5.6 The National Farmers’ Federation (NFF) noted that ‘COVID-19 severely damaged Australia’s perishable goods industry and supply chain partners’. It observed that ‘domestically we lost much of our food service market almost overnight as restaurants and cafes closed and conferences and cruises were cancelled’. In addition, ‘access to many overseas markets for our perishable goods became impossible as airfreight options evaporated’.⁶
- 5.7 The pandemic also affected the availability of key agricultural inputs such as seed and fertiliser,⁷ and farm machinery and spare parts.⁸ Moreover, according to the NFF, the pandemic highlighted ‘vulnerabilities in our existing food supply chain and the market dynamics within this supply chain that keep it inherently weak and prone to disruption by future disasters, natural or otherwise’.⁹

³ University of Melbourne, *Submission 34*, p. 9.

⁴ Australian Food Sovereignty Alliance, *Submission 147*, p. 54.

⁵ Woolworths Group, *Submission 139*, p. 10.

⁶ National Farmers’ Federation, *Submission 103*, p. 20.

⁷ National Farmers’ Federation, *Submission 103*, p. 14.

⁸ National Farmers’ Federation, *Submission 103*, p. 15.

⁹ National Farmers’ Federation, *Submission 103*, p. 20.

- 5.8 Disruptions to exports also affected the food supply chain. The closure of international markets saw the price of Tasmanian rock lobster halve, with government and industry working hard to diversify export markets.¹⁰ Salmon Tasmania noted the impact of air freight costs on an industry where exports account for about forty per cent of production, with costs rising from ‘around \$1.80 a kilogram to \$5 to \$7 a kilogram’. The industry welcomed ‘the Federal Government’s \$60 million investment in upgrades at Hobart Airport, announced last October, which means fully laden, wide-bodied aircraft can use the runway from domestic and international routes’.¹¹
- 5.9 Hort Innovation highlighted the cost of exporting fruit to the United States, with a container of citrus costing ‘up to \$15,000 or even \$20,000’ to get from Sunraysia to the United States. As explained by Mr Brett Fifield of Hort Innovation, ‘Australia is often at the end of the line when it comes to the required technology, shipping containers, et cetera; it is as simple as that’.¹²
- 5.10 The University of Melbourne highlighted the impact of COVID on the availability of agricultural labour, observing that ‘the resilience of food supply chains and their capacity to deliver food security for all depends on labour availability’. The University noted that during the pandemic, ‘labour availability was a critical challenge, highlighting the fragility of food supply chains’; and that COVID transmission was ‘a significant issue in high-density food and agriculture workplaces globally’. The University also noted that ‘despite being a key input into food supply chains, much of the food industry workforce is casual, insecure and working under poor pay and conditions’.¹³
- 5.11 The Tasmanian Government highlighted the impact of labour shortages caused by the cessation of workers coming in from overseas. The impacts of COVID-19 were particularly felt in the Tasmanian agricultural sector where the dominant workforce is seasonal workers ‘helping with fruit picking and suchlike’. The Tasmanian Government noted that unskilled and seasonal workers were still in short supply, resulting in increased production costs ‘and, in some cases, an inability to process the forecasted volume’.¹⁴
- 5.12 The chicken meat industry was particularly vulnerable to the disruption of the supply chain and labour availability caused by COVID-19. Dr Mary Wu, CEO of the Australian Chicken Meat Federation, observed that with COVID ‘there was a massive risk to the continuity of that supply chain’, and that during COVID ‘the huge absenteeism rate really affected production’. Dr Wu explained:

¹⁰ Ms Jenna Cairney, Acting Deputy Secretary, Business and Jobs, Department of State Growth, Tasmania, & Mr Jordan Szmekura, Director, Trade, Development and Marketing, Trade and International Relations Unit, Business and Trade Tasmania, Department of State Growth, Tasmania, *Committee Hansard*, 12 April 2023, p. 4.

¹¹ Mr Lyall Howard, Chairman, Salmon Tasmania, *Committee Hansard*, 12 April 2023, p. 10.

¹² Mr Brett Fifield, Chief Executive Officer, Hort Innovation, *Committee Hansard*, 23 June 2023, p. 13.

¹³ University of Melbourne, *Submission 34*, p. 6.

¹⁴ Ms Jenna Cairney, Acting Deputy Secretary, Business and Jobs, Department of State Growth, Tasmania, *Committee Hansard*, 12 April 2023, p. 2

With the chicken industry, it's a continuous process. You can't hold back chicken. They've got five to seven weeks in terms of a production cycle. It's a continuous system. You can't just turn it off at one point. You've got to keep the flow going, otherwise you'll have animal welfare issues and whatever else.¹⁵

- 5.13 Dr Wu emphasised that with chicken meat it was vital 'to make sure that the supply chain keeps flowing in order to produce that product'.¹⁶ Ms Anne-Marie Mooney, of chicken producer Inghams, advised the Committee that it took 69 weeks to recover from a decision to stop production. She explained that the key to managing the disruption of the pandemic was educating governments about the implications of shutting down production. Ms Mooney told the Committee:

One of the roles we played very early on, when this hit, is there was significant education of both state and federal governments, when they were setting policies and decisions. It was around educating people: 'You can't completely shut us down if you are going to keep supermarkets open, because here are the implications.'¹⁷

- 5.14 One of the keys to managing the pandemic was the engagement of the Food and Grocery Sector Group (FGSG), which was established in 2003 'to develop strategies and options to mitigate risk and maintain continuity of food supply in the face of all hazards'. The FGSG is one of 15 sectors under the Department of Home Affairs' Trusted Information Sharing Network, the Australian Government's primary engagement mechanism with industry on critical infrastructure. The FGSG consists of a range of organisations from the food and grocery sector, including peak bodies, transport and logistics, charities and all levels of government.
- 5.15 The Department of Agriculture Fisheries and Forestry (DAFF), which provides the secretariat for the FGSG, noted that 'the FGSG met regularly during the 2019–20 bushfire season, COVID-19 pandemic and convenes in response to natural disasters to ensure continued supply of essential goods to the Australian public'.¹⁸ The CEO of Foodbank, Ms Brianna Casey, who is part of the FGSG, commended the work of the group in response to COVID and other crisis, stating that it was 'a great exemplar of bringing together all of the key stakeholders' in partnership with government.¹⁹
- 5.16 DAFF indicated that the FGSG 'worked quite effectively during COVID as well to manage some of those issues around transport access, or pallets and those sorts of things as well';²⁰ while the Australian Retailers Association saw the FGSG as a

¹⁵ Dr Mary Wu, Chief Executive Officer, Australian Chicken Meat Federation, *Committee Hansard*, 2 June 2023, p. 3.

¹⁶ Dr Mary Wu, Chief Executive Officer, Australian Chicken Meat Federation, *Committee Hansard*, 2 June 2023, p. 3.

¹⁷ Ms Anne-Marie Mooney, Chief Operations Officer, Inghams Enterprises Pty Ltd, *Committee Hansard*, 23 June 2023, p. 17.

¹⁸ Department of Agriculture, Fisheries and Forestry, *Submission 116*, p. 18.

¹⁹ Ms Brianna Casey, Chief Executive Officer, Foodbank Australia, *Committee Hansard*, 23 June 2023, p. 6.

²⁰ Mr Paul Denny, Assistant Secretary, Food, Agricultural Policy Division, Department of Agriculture, Fisheries and Forestry, *Committee Hansard*, 30 November 2022, p. 6.

potential site for collaboration ‘between government, agencies and industry to develop a national food security roadmap’.²¹

- 5.17 Another significant initiative was the Supermarkets Taskforce, formed in March 2020 under the auspices of the Department of Home Affairs with an ACCC Authorisation which allowed collaboration between ‘retailers, and other interested parties, to share challenges and create appropriate solutions on supply chain issues with state and federal departmental representatives’. According to Woolworths:

This was a critical initiative and collaboration across the industry that assisted the sector’s ability to navigate through a period of deep uncertainty. It helped shape a cohesive industry voice to policymakers and promoted the welfare and safety of consumers and team members of Woolworths and other retailers. The ACCC Authorisation assisted significantly in these unique circumstances.²²

Transport networks and their vulnerabilities

- 5.18 The importance of the transport network to food security, and the vulnerability of the network to disruption, was highlighted in the evidence presented to the Committee. Ms Claire McClelland, CEO of the Australian Fresh Produce Alliance (AFPA), observed, somewhat wryly, that ‘it may be a surprise to some, but obviously the reliance of our sector on the movement of food is really critical’. Ms McClelland stated that connectivity was vital, because disruptions to logistics had a really significant impact on produce that was not shelf stable. Ms McClelland further noted that from AFPA’s perspective ‘understanding key freight routes, how we can protect them and the vulnerabilities associated with them is quite critical because, unlike the luxury of other components of the grocery sector, we’re on a time sensitive movement of food’.²³

- 5.19 Recent supply chain disruptions were highlighted by a number of stakeholders. The Australian Food and Grocery Council observed that recent events, such as the 2019–20 bushfires and recent floods—‘which destroyed crops, communication and transport infrastructure’—revealed the ‘dependency of Australia’s sophisticated food distribution system on interconnectivities with other industries’. Natural disasters, such as cyclones, floods and bushfires, could ‘lead to indiscriminate, widespread acute food insecurity across the population’.²⁴ The Australian Retailers Association noted that:

- Access to transport has been affected by both a labour and infrastructure shortage with increased competition for both drivers and vehicles.
- Flooding events have meant re-routing was necessary, in turn, increasing distance and travel times by road.

²¹ Australian Retailers Association, *Submission 140*, p. 3.

²² Woolworths Group, *Submission 139*, p. 11.

²³ Ms Claire McClelland, Chief Executive Officer, Australian Fresh Produce Alliance, *Committee Hansard*, 26 May 2023, p. 15.

²⁴ Australian Food and Grocery Council, *Submission 128*, p. 11.

- Rail lines have been closed due to flooding events, putting even more pressure on road transport alternatives.²⁵
- 5.20 Using the example of a break in the east-west intercontinental railway, Mrs Tanya Barden, CEO of the Australian Food and Grocery Council, highlighted the flow-on effects of losing key transport routes:
- It's not only about getting product from east to west. Once that rail line goes down or the roads go down, then we're having to take transport drivers, freight workers and vehicles off the eastern seaboard to go on very lengthy routes around. That actually then starts to leave the eastern seaboard short, which causes significant additional trouble. So that's the infrastructure piece.²⁶
- 5.21 Ms Barden observed that making road and rail infrastructure secure and reliable, 'particularly that east-west link', was critical.²⁷
- 5.22 The Australian Dairy Products Federation (ADPF) gave a detailed appreciation of the impact of transport disruptions on the dairy industry. It noted that 'the past three years have provided stark evidence that food production and distribution in Australia relies heavily on both quality and reliable transport infrastructure'. Furthermore, 'the destruction and disruption of these assets has exposed the vulnerability of our transport infrastructure in the face of extreme weather events'. The ADPF observed:
- When bushfires resulted in the closure of railways in South Australia, Western Australia and Queensland dairy processors bore the costs of alternative road-based transport that at times increase above standard prices by multiples of three and four with increases above this level at certain times of the year. Time and product are lost when freight must be switched from rail to road for transport and when transport times by road double and triple on alternative routes to roads closed by floodwater. For example, one dairy processor noted a loss of \$650,000 from spoiled product and needing to alternate from rail to road.²⁸
- 5.23 In early 2023, the Bureau of Infrastructure and Transport Research Economics (BITRE) released a review which identified critical road and rail supply chain routes at highest risk of failure. The review identified 65 road and rail supply chain routes as critical. Of the 52 critical road key freight routes assessed, 'the Arnhem Highway, Gregory Development Road, South Coast Highway, Buchanan Highway, Carpentaria Highway, Central Arnhem Road, Lasseter Highway and Stuart Highway were determined to have a high or very high vulnerability rating'. The BITRE noted that 'disruption to these routes would impact hundreds of LGAs along their length and beyond, and could result in some communities being completely cut off from

²⁵ Australian Retailers Association, *Submission 140*, p. 2.

²⁶ Mrs Tanya Barden, CEO, Australian Food and Grocery Council, *Committee Hansard*, 24 March 2023, p. 36.

²⁷ Mrs Tanya Barden, CEO, Australian Food and Grocery Council, *Committee Hansard*, 24 March 2023, p. 36.

²⁸ Australian Dairy Products Federation, *Submission 136*, p. 32.

essential freight using these routes'. It also observed that 'the majority of the most vulnerable critical routes are located in the Northern Territory'.²⁹

5.24 Of 13 critical rail key freight routes assessed, 'the East-West rail corridor (running through Western Australia and South Australia), New South Wales Main West Line, Queensland Great Northern Line and Queensland Western System Line were determined to have a high or very high vulnerability rating'. The review observed that 'the breakage points assessed on these routes carry approximately 30 million tonnes of freight annually and in some cases of disruption, would be too much to practically mode shift to road'.³⁰

5.25 Given these potential and actual vulnerabilities, the Australian Food and Grocery Council urged that priority be given 'to really harden our road, rail and port infrastructure'.³¹ The National Retail Association urged better infrastructure for roads, trucks and cargo; and proposed an emergency plan for supply chain disruption including provision for 'emergency vehicles, planes and marine vessels used to distribute food'.³² The Australian Retailers Association suggested potential investment in domestic shipping 'as an alternative to rail and road transport, particularly between Western Australia and the eastern states'.³³ The ADPF recommended that the government:

- Prioritise development of a National Rail Network Resilience Plan, to provide a cost-effective, reliable alternative to road haulage.
- Develop a National Road and Bridge Resilience Plan, to future-proof and disaster-proof vital road and bridge infrastructure including prioritised repairs of damaged roads and bridges in flood affected regions.
- Improved shipping freight services, including costs and availability (i.e., refrigerated containers), to improve certainty and reliability across the supply chain.³⁴

5.26 The NSW Farmers' Association simply sought a more efficient transport network in order to reduce costs. Ms Kathryn Rankin, Acting Head of Policy and Advocacy, told the Committee:

We have varying expensive supply chain costs because we have inefficiencies in terms of our road and rail networks and access to ports. So improving and streamlining and connecting across national and state funding to deliver that connected road and rail infrastructure is critically important.³⁵

²⁹ Bureau of Infrastructure and Transport Research Economics (BITRE), *Road and Rail Supply Chain Resilience Review, 2023*, BITRE, Canberra ACT, p. 12.

³⁰ Bureau of Infrastructure and Transport Research Economics (BITRE), *Road and Rail Supply Chain Resilience Review, 2023*, BITRE, Canberra ACT, p. 12.

³¹ Mrs Tanya Barden, CEO, Australian Food and Grocery Council, *Committee Hansard*, 24 March 2023, p. 35.

³² National Retail Association, *Submission 141*, p. 2.

³³ Australian Retailers Association, *Submission 140*, p. 2.

³⁴ Australian Dairy Products Federation, *Submission 136*, p. 32.

³⁵ Ms Kathryn Rankin, Acting Head of Policy and Advocacy, NSW Farmers Association, *Committee Hansard*, 6 July 2023, p. 14.

Roads

- 5.27 The critical importance of rural road transport to food security in Australia was emphasised by the Australian Livestock and Rural Transporters' Association (ALRTA). Road transport was 'typically the first and last link of our food supply chains, bringing vital supplies to our production centres and taking value-added produce to our markets'. The ALRTA observed that the rural supply chain and rural trucking businesses were often co-dependent— 'that is to say that one cannot operate without the other'.³⁶ The ALRTA made eleven recommendations on matters such as road funding, network planning, road construction, resilient freight corridors, natural disaster repairs and heavy vehicle charges.³⁷ These included:
- That Australian Governments increase the proportion of road funding spent on maintenance on national, regional, rural and remote roads.
 - That Australian Governments cooperate in planning and working towards improving the resilience of the Australian road freight network.³⁸
- 5.28 How critical road networks are to food security was highlighted by the Committee's visit to Fitzroy Crossing, where the National Highway was cut when the bridge was washed out by a major flood in January 2023. The community was cut off from its traditional supply source in Broome, with fuel and food being brought in by barge. It was noted that bringing food in from the east was problematic due to quarantine requirements. While a new bridge was being constructed, completion was expected after the coming wet season in 2023–24, meaning the community was likely to be cut off again. There was limited causeway access in the meantime.
- 5.29 Potential solutions proposed by the community included upgrading the Fitzroy Crossing airstrip, upgrading an alternative transport route in the form of the Tanami Road, and using Curtin airbase for civil defence purposes. Even then, the road between Derby and Fitzroy Crossing would remain vulnerable to flooding; while the Indigenous community at Bayula, just across the river, was regularly cut off during the wet season.
- 5.30 The Committee for Greater Shepparton highlighted similar issues around reliance on isolated river crossings during the recent floods in Victoria. It recommended climate-proofing 'critical freight and transport networks by building a second river crossing at Shepparton-Mooroopna to enable delivery of response and relief services, and the safe movement of people, workforce, and freight'.³⁹

³⁶ Australian Livestock and Rural Transporters' Association, *Submission 166*, p. 1.

³⁷ Australian Livestock and Rural Transporters' Association, *Submission 166*, Attachment 1, pp. 4–5.

³⁸ Australian Livestock and Rural Transporters' Association, *Submission 166*, Attachment 1, p. 4.

³⁹ Committee for Greater Shepparton, *Submission 81*, Attachment 1, p. 27.

Rail

- 5.31 The importance of rail transport, and the risks associated with it were highlighted by a number of stakeholders. Woolworths noted its heavy reliance on the rail system for its operations, stating:

We use four key food and grocery rail networks. There is east-west, of course. We are a heavy user of the east-west rail network connecting the eastern seaboard with Western Australia. There is also South Australia to Darwin, from Adelaide to the NT. We are a user of that rail corridor. Melbourne to Brisbane is not as heavy. There is a more balanced mix of freight moving on road and on rail on that corridor. Nevertheless, we are still a large user of the Melbourne to Brisbane corridor.⁴⁰

- 5.32 Prior to the disruption of the east-west transcontinental line in January and February 2022, Woolworths moved around 80% of what they brought in from interstate to Western Australia by rail. The scale of the disruption includes a range of factors, including:

- The sheer scale of flood damage, which lengthened the duration of the outage to more than three weeks;
- Surge buying triggered by the anticipated reopening of the WA border at that time (later delayed);
- Significant pressure on transport networks due to absenteeism on the eastern seaboard; and
- Floods in South Australia which concurrently saw a lengthy outage of the main train line and major road connection to Darwin (requiring a re-routing of deliveries into the NT via a route through NSW and QLD).⁴¹

- 5.33 In light of this, Woolworths recommended:

- Continued support of government for Coastal Sea Freight between the eastern states and WA, to ensure shipping continues to be a viable alternative mode to rail
- Consideration be given to expanding the use of Australia's Strategic Fleet to assist with shipping essential food and grocery supplies, in the event of further significant disruption.
- State Governments consider the ability to receive deliveries via road trains (double or triple) closer to major metropolitan centres, particularly in times of major truck driver and food and grocery shortages – rather than having to transfer onto smaller trucks, or break into smaller combinations, on the outskirts of these centres.

⁴⁰ Mr Chris Brooks, Director, PC3 and Transport, Primary Connect, Woolworths Group, *Committee Hansard*, 16 June 2023, p. 14.

⁴¹ Woolworths Group, *Submission 139*, p. 12.

- Infrastructure Australia should commit to undertaking a full review of the investment required to improve rail freight resilience in light of increasingly severe weather events, to guide the Federal Government in making funding decisions in the years ahead.⁴²
- 5.34 A key element of Woolworth’s recommendations was ‘improving investment in our rail infrastructure’.⁴³ Likewise, the Australian Retailers Association proposed ‘further investment in rail infrastructure to build resilience and minimise interruptions to freight services due to flooding and other adverse weather events’.⁴⁴
- 5.35 Disruption to the east-west rail was also an issue for the Australian Food and Grocery Council (AFGC). In a survey of members, ‘81% of respondents advised that the key routes adversely impacting their business were the ones going to/from the East Coast to Western Australia’. There were delays, on average, of 9.5 days in the distribution and supply of perishable products as a result of weather disruptions on the east-west rail line. Road freight alternatives added significant costs ‘due to a shortage of available drivers, increased fuel costs, and added demand’. The survey indicated that year-on-year, there had been a 77.9% increase in road freight costs.⁴⁵
- 5.36 Viterra’s submission highlighted the importance of an efficient rail system for the grain supply chain on the Eyre Peninsula. Viterra noted that underinvestment in the rail network had made road transport more cost-effective. It sought government investment in rail so that the movement of grain could be shifted from road to rail. In return, it would commit to the upgrading of loading facilities and the transport of a proportion of its grain by rail.⁴⁶ The benefits identified by Viterra included:
- assisting growers to achieve up to \$45 million in premium per year for their grain by exporting in the first half of the year, prior to the commencement of the Northern Hemisphere harvest;
 - up to a 25 per cent reduction in freight costs, with those savings passed directly back to growers, around \$5 million annually;
 - removal of approximately 43,000 truck movements between up-country storage facilities and Port Lincoln; and
 - a reduction of approximately 20,000 tonnes of CO₂ emissions per annum.⁴⁷
- 5.37 Grain Trade Australia also supported increased investment in the rail network. Mr Pat O’Shannassy, CEO of Grain Trade Australia, observed that, ‘in terms of efficiency, if we do produce crops like we’ve produced in the last three years and we’re looking at exporting that, our answer to efficiency in that sense is in the rail network’. But Mr O’Shannassy also noted that ‘rail is not a risk-free proposition’:

⁴² Woolworths Group, *Submission 139*, p. 13.

⁴³ Mr Chris Brooks, Director, PC3 and Transport, Primary Connect, Woolworths Group, *Committee Hansard*, 16 June 2023, p. 14.

⁴⁴ Australian Retailers Association, *Submission 140*, p. 2.

⁴⁵ Australian Food and Grocery Council, *Submission 128.1*, p. 2.

⁴⁶ Viterra, *Submission 122*, pp. 2–3.

⁴⁷ Mr Damian Fitzgerald, Executive and General Counsel, Viterra, *Committee Hansard*, 20 April 2023, p. 26.

There are a lot of fixed costs in rail. The risks around that need to be worked out, because we find that in drought years the owners of the rail assets, as it were—the trains—and the people who have commitments in that end up paying a lot of money without the extra throughput that they're getting in a big year. So we've got to balance out what is the right level of asset—optimising that. The other piece around that is that drivers for trains is as much an issue as for trucks—in a sense more, because of the training and requirements that drivers need to have to become accredited on a particular rail line. And we find in the grains industry also there's a lot of competition for those drivers with mining and so forth—so working that out.⁴⁸

Ports

- 5.38 The evidence presented to the Committee highlighted the importance of ports to the food supply chain. The AFGC observed that 'ports are a part of Australia's critical infrastructure, and their efficient operation is important for maintaining Australia's food security'. The submission stated that 'Australian container ports were relatively inefficient and below international best practices'. The main causes for delays were the sheer volume of goods stretching port capacity, the availability of food grade shipping containers, and delays in conducting biosecurity inspections and processing documentation. The AFGC recommended that the government review port operations 'to assess current levels of performance, to identify opportunities for improvements and make recommendations which will minimise cross-border delays whilst maintaining high standards of border protection'.⁴⁹
- 5.39 Grain Trade Australia advised that the bulk export of grain was greater than ever, and that where bottlenecks occurred it was in 'getting the grain to the port, which is a transport infrastructure issue'. On the other hand, container exports were a concern—'our members are very clear about the increasing costs that they're getting through stevedore charges—they scratch their heads as to "Why are we getting these costs?"'.⁵⁰
- 5.40 Similar concerns were raised by Grain Growers Limited. Both supported the Productivity Commission recommendation calling for the repeal of Part X of the Competition and Consumer Act. Part X regulates international liner shipping of cargo to and from Australia, and allows shipping lines 'to cooperate on ship use, schedules (timetables), containers, use of terminals and freight rates' through registered agreements. They also supported the Productivity Commission recommendation calling for the development of a mandatory container terminal operator code that would be administered and enforced by the Australian Competition and Consumer Commission (ACCC).⁵⁰

⁴⁸ Mr Pat O'Shannassy, Chief Executive Officer, Grain Trade Australia, *Committee Hansard*, 2 June 2023, p. 35.

⁴⁹ Australian Food and Grocery Council, *Submission 128*, p. 15.

⁵⁰ Mr Pat O'Shannassy, Chief Executive Officer, Grain Trade Australia, *Committee Hansard*, 2 June 2023, p. 36; Ms Annabel Mactier, Policy Manager, Trade and Supply Chains, GrainGrowers Ltd, *Committee Hansard*,

- 5.41 CBH Group highlighted the link between port infrastructure and transport infrastructure in the handling of grain. Western Australia produces a substantial grain surplus every year, providing domestic security and export opportunities into overseas markets. Investment in new infrastructure is necessary to meet export demand in a timely way. CBH advised that ‘the most critical challenge for the industry is to significantly increase the tonnes-to-port capacity of the supply chain from its current level’. It observed that ongoing investment in the supply chain by both government and industry was critical— ‘particularly in rail out-loading projects that increases export capacity, as well as road infrastructure to complement and increase flexibility of the freight task to port and from farm gate’. CBH noted that it was currently investing in increasing permanent storage capacity, additional rolling stock and port upgrades ‘to enable the WA grain supply chain to get more tonnes to port, and meet the international demand for our grain’.⁵¹
- 5.42 Viterra made similar observations with regard to South Australia, calling for ‘a focus on road and rail infrastructure that supports the existing grain ports in South Australia’. It stated that ‘there is currently excessive grain port capacity in South Australia, and supporting current infrastructure will prevent underutilisation of ports’.⁵² Viterra also called for the removal of the mandatory port code. The code was introduced to assist the transition of the industry following the abolition of the single wheat desk. Viterra argued that the transition was now complete, observing that the code operated unequally—of 32 grain ports only seven were not exempt and four of those were in South Australia.⁵³ According to Viterra:

The key part of that regulation is that it governs the access to port capacity. We have 19 exporters coming to use our system, and we have rules that have to be approved by the ACCC before we can provide services to those exporters. If they want us to change how we provide services, we actually have to go back to the ACCC and say, 'This has been requested by industry,' and they will go out and have a public consultation around that. We can be looking at a 12-month wait for a change, which is something that should be able to be done over the phone. That is where we're disadvantaging ourselves in the global marketplace as well, because other countries don't have this sort of regulation, and we're competing against those other countries where it's easier to do business at the ports. For us, that's a real key. We think it's outdated. It has done its time. There's always competition legislation so that if someone does the wrong thing the ACCC can step in and use the competition legislation to take action.⁵⁴

2 June 2023, p. 35; Productivity Commission 2022, *Lifting productivity at Australia's container ports: between water, wharf and warehouse*, Report no. 99, Canberra, pp. 17, 42.

⁵¹ CBH Group, *Submission 23*.

⁵² Mr Damian Fitzgerald, Executive and General Counsel, Viterra, *Committee Hansard*, 20 April 2023, p. 27

⁵³ Viterra, *Submission 122*, p. 5.

⁵⁴ Mr Damian Fitzgerald, Executive and General Counsel, Viterra, *Committee Hansard*, 20 April 2023, p. 28.

Distribution Centres

- 5.43 Distribution centres—where goods from suppliers are concentrated for distribution to retailers—are a key part of the supply chain. Their size and location can determine the availability of goods, with centralisation promoting efficiency, but also increasing vulnerability when supply chains are disrupted.
- 5.44 Woolworths provided the Committee with an overview of its distribution network, which consists of 23 distribution centres nationally. It advised that the continuous operation of the distribution centres ‘is important for the distribution of food and groceries across each state and territory, as reflected during the COVID-19 pandemic’, and that the distribution centres are ‘critical nodes in the Woolworths’ supply chain’.
- 5.45 In October 2020, Woolworths opened a newly upgraded Townsville Regional Distribution Centre, ‘which was directly designed to underpin resilient food supply in North Queensland, in light of significant flood events’. This would play ‘a key role in servicing stores from Sarina to Weipa all year round, and adding contingency support during the wet season’.⁵⁵ With inventory in three locations in north Queensland—Mackay, Townsville and Cairns—Woolworths was able to deliver into the communities from each of those centres when transport routes were cut.⁵⁶ Mr Paul Harker, Chief Commercial Officer, Woolworths Supermarkets, observed:
- When it comes to Townsville, for example, we do hold a lot of reserves of essential things that would be needed if a cyclone occurred or the roads got cut. We increase the essential stock holding both in stores and in offsite storage, be it long life milk, canned vegetables, even batteries and clean-up equipment and stuff. So we do that. It is something we have been leaning into.⁵⁷
- 5.46 Mr Harker noted, however, that Woolworths was not ‘looking at an actual distribution centre in Darwin’.⁵⁸
- 5.47 An important consideration when looking at the distribution network is that it is ‘border blind’. Mr David Stout, Director of Policy at the National Retail Association, observed that distributors ‘look at transport circumferences or transport length—let’s say it’s seven or eight hours in every direction—and that’s in total disregard to a particular border’. For example, all the major distribution centres for northern New South Wales are located in southern Queensland. Mr Stout noted that ‘a lot of the impediments we had to food supply and distribution during COVID were the frictions between state governments and not necessarily the good work of the food

⁵⁵ Woolworths Group, *Submission 139*, p. 5.

⁵⁶ Mr Chris Brooks, Director, PC3 and Transport, Primary Connect, Woolworths Group, *Committee Hansard*, 16 June 2023, p. 14.

⁵⁷ Mr Paul Harker, Chief Commercial Officer, Woolworths Supermarkets, Woolworths Group, *Committee Hansard*, 16 June 2023, p. 14.

⁵⁸ Mr Paul Harker, Chief Commercial Officer, Woolworths Supermarkets, Woolworths Group, *Committee Hansard*, 16 June 2023, p. 14.

distribution system'. It was, he observed 'a national system and challenged with state limitations and consultations'.⁵⁹

- 5.48 The vulnerabilities inherent in this system has led to calls for a more localised distribution network with shorter supply chains. The Menzies Centre for Health Governance argued that 'shortening supply chains and increasing diversity could build resilience and help deliver fresher produce to consumers'. It observed that 'this would require investments such as in regional transport, stable power/energy distribution, and food hub infrastructure'.⁶⁰ It proposed creating:

... funding schemes and legislative frameworks that support innovative, localised models for food distribution and supply that directly or more directly connect growers and consumers (e.g., food hubs, community-supported agricultural schemes, urban market gardens and farms, farmgate stalls, open-source online platforms that create online marketplaces).⁶¹

- 5.49 The University of Melbourne proposed establishing an investment fund 'to invest in local and regional food processing and distribution appropriate for small-medium scale enterprises, with a focus on shared infrastructure that is accessible to multiple enterprises'. It also proposed funding 'small-medium scale enterprises to develop and scale models for decentralised logistics and marketing schemes that promote resilient, sustainable, healthy and equitable food systems'.⁶²

The Top End

- 5.50 Food distribution in the Top End presents a set of challenges all of its own. Mr Philip Hausler, representing the Northern Territory Government, explained:

You've all seen a map of the Northern Territory. We have a road and a railway network straight down the middle—north-south—and then we have the Barkly Tablelands, which link us to Queensland, and the Victoria Highway, which links us to Western Australia. The key transport routes are from Queensland and from South Australia. We have seen not just COVID but also significant rainfall events in Central Australia, which have cut the railway network and the road network, and that has impacted on food supply in Darwin, Katherine and, also, quite likely, Kununurra. In terms of significant pinch points, north of Three Ways there's one road to Darwin, and we have seen that cut at various times as well. We have limited throughput through the Darwin Port—product coming in. Our supermarkets are supplied through the southern states and that road and rail network that I just talked about.⁶³

⁵⁹ Mr David Stout, Director of Policy, National Retail Association, *Committee Hansard*, 10 July 2023, p. 42.

⁶⁰ Menzies Centre for Health Governance, *Submission 41*, p. 7.

⁶¹ Menzies Centre for Health Governance, *Submission 41*, p. 5.

⁶² University of Melbourne, *Submission 34*, p. 2.

⁶³ Mr Philip Hausler, Senior Executive Director, Agriculture, Department of Industry, Tourism and Trade, Northern Territory, *Committee Hansard*, 27 July 2023, pp. 2–3.

- 5.51 The challenges in East Arnhem (EA) were even more daunting. The Miwatj Health Aboriginal Corporation observed:

As well as impacting the range, shelf life, and quality of fresh produce, the long distance from supplier to stores and institutions in EA continues to be a great financial burden. Barge costs have been cited at \$183.10 per cubic meter. During Miwatj lead community consultation, a school in one community reported to face a \$1000 charge per delivery to supply food for the School Nutrition Program. In this program, the government funds wages for canteen staff, though the cost of food is meant to be paid from parent contributions. Freight, however, significantly adds to these costs with limited options to source food from closer distributors, stores and institutions have no choice but to use this costly supply pathway.⁶⁴

- 5.52 Consumers also faced significant challenges with cost and accessibility. Miwatj explained:

Woolworths in Nhulunbuy is the only major supermarket in EA. Whilst Nhulunbuy may be accessible to some in nearby communities, it is difficult for those without access to a vehicle, and a costly journey for those who live further away. Those living in surrounding homelands face the choice to spend up to \$600 to get a taxi into Nhulunbuy where they can access a wider range of products at a cheaper price than the stores in their community might offer, or pay for expensive groceries, neither which offer any relief of food insecurity. Some communities, particularly homelands, have no store and are forced to make this expensive journey to purchase food.⁶⁵

- 5.53 Other challenges included 'a lack of suitable roads throughout remote EA', with communities cut off during the wet season and stores forced to use charter aircraft to deliver goods. Homelands were cut off from nearby communities, with people relocating 'to stay with family during the wet season so they can continue to access the store'. Miwatj noted that while there were plans to upgrade the central Arnhem highway, 'many roads leading to communities are unsealed and inappropriate for large trucks delivering pallets of food'. It argued that 'consideration and investment must be made to the state of roads that may provide key access routes to regions within EA'.⁶⁶

- 5.54 Miwatj observed that a government subsidy on freight to remote communities would lessen the burden, though it cautioned that any subsidy must reduce prices to consumers. It noted that 'recommendations for freight subsidies were included in the 2009 Inquiry into Remote Aboriginal and Torres Strait Islander Community Stores, as well as the 2010 AMSANT Food Summit and remain unactioned in the Northern Territory'.⁶⁷ Miwatj also suggested that 'investment and support from government for suppliers to create decentralised distribution centres closer to EA may enable stores

⁶⁴ Miwatj Health Aboriginal Corporation, *Submission 65*, pp. 9–10.

⁶⁵ Miwatj Health Aboriginal Corporation, *Submission 65*, p. 8.

⁶⁶ Miwatj Health Aboriginal Corporation, *Submission 65*, pp. 8–9.

⁶⁷ Miwatj Health Aboriginal Corporation, *Submission 65*, pp. 9–10.

to purchase and sell food at lower prices', and that this in turn could 'increase the viability of small homeland stores that typically struggle to secure funding yet provide an essential service for their communities'. Miwatj cited the example of Laynhapuy Health increasing access and affordability of food with three non-for-profit homeland community stores, 'saving community members a \$1300 round trip to Nhulunbuy'. It noted that the Australian Government had 'committed the NIAA to work with wholesalers and support the creation of local distribution centres'.⁶⁸

Mapping the supply chain

- 5.55 The need to map the supply chain was emphasised by a number of stakeholders. The Australian Fresh Produce Alliance argued that 'in order to support food security, government must map industry's supply chains to ensure that in the event of significant disruption, key inputs will continue to be available to produce food'.⁶⁹ It recommended that the Australian Government 'undertake a detailed mapping exercise of key supply chain inputs and, with this information, create a program of work and investments to build a more resilient supply-chain, including through domestic capability improvements'.⁷⁰
- 5.56 The National Food Supply Chain Alliance observed that there were many existing and emerging threats to Australia's food security, as well as its ability to contribute to global food security. Many of these threats, 'including future risks and vulnerabilities, could be identified through comprehensive supply chain risk mapping'.⁷¹ Undertaking some form of mapping process and gathering better data 'about the food system, our supply chains, our freight and logistics networks and where potential vulnerabilities might lie' was a priority—identifying pinch points, such as 'the next AdBlue crisis' or the impact of 'the next train derailment which severs food supplies into communities'.⁷²
- 5.57 Mr Richard Forbes, CEO of Independent Food Distributors Australia, cited an example where seemingly disparate activities intersected, with consequences for the food security of different sections of the community:

Can I give you an example of that. Our members that are family-owned warehouse owners provide food to the \$57 billion food service hospitality sector, which was shut down basically during COVID. But they also provide food to 20,000 institutional facilities. Who are they: public and private hospitals, nursing homes, childcare centres and schools. How many within government departments and portfolios understand the role of those warehouse owners in keeping food up to the sick, the frail and the elderly when an event occurs? I think that's part of the mapping process—to understand all the different

⁶⁸ Miwatj Health Aboriginal Corporation, *Submission 65*, pp. 8–9.

⁶⁹ Australian Fresh Produce Alliance, *Submission 135*, p. 3.

⁷⁰ Australian Fresh Produce Alliance, *Submission 135*, p. 4.

⁷¹ National Food Supply Chain Alliance, *Submission 49*, p. 3.

⁷² Mr Charles Thomas, General Manager, Corporate Affairs, National Farmers Federation, *Committee Hansard*, 8 March 2023, p. 2.

stakeholders and to map out where all the IGAs are in small communities around Australia, where the Woollies and Coles outlets are and so on and so forth.⁷³

- 5.58 When asked who should lead the mapping process, Mr Forbes suggested it be industry led, ‘because that’s where the expertise and supply chain lies’. He suggested that the Food and Grocery Sector Forum could develop a framework.⁷⁴
- 5.59 Mr David Stout, Director of Policy at the National Retail Association, observed that much of the information about food production and distribution was already available. Mr Stout suggested that to begin with a simple appreciation of where vital assets are located and where vulnerabilities existed would be the place to start. He explained:
- I don’t think we have to have a forensic assessment, especially on day one. We need to know where the abattoirs are. We need to know where the distribution centres are. Then we would probably work backwards from that, so you know that if you close the border at Queensland that there’s no food supply from the border down through Tamworth, out to Coffs Harbour and probably further south to maybe Grafton.⁷⁵
- 5.60 The NSW Farmers’ Association also observed that much of the data required was already available—such as annual livestock returns—it was a matter of ‘finding the information that’s already out there and managing to consolidate it’.⁷⁶ It was important, however, that the data be accurate and timely.⁷⁷
- 5.61 Dr Patrick Hone, Managing Director of the Fisheries Research and Development Corporation, identified the lack of supply chain data as a significant problem, observing that ‘it’s very hard to make decisions on supply chains when you’re lacking good quality data to make informed decisions’.⁷⁸ He believed it important that governments ‘invest in baseline information that informs people’, including ‘making that data transparent and easy to access’.⁷⁹

Food Waste

- 5.62 Australia has a significant food waste problem. CSIRO observed that:

Agriculture, food loss and waste are pervasive issues in Australia’s food systems. Australia’s industrialised model of agriculture follows a linear model of non-

⁷³ Mr Richard Forbes, Chief Executive Officer, Independent Food Distributors Australia, *Committee Hansard*, 8 March 2023, p. 5.

⁷⁴ Mr Richard Forbes, Chief Executive Officer, Independent Food Distributors Australia, *Committee Hansard*, 8 March 2023, p. 5.

⁷⁵ Mr David Stout, Director of Policy, National Retail Association, *Committee Hansard*, 10 July 2023, p. 45.

⁷⁶ Mr John Lowe, Chair, Business, Economics and Trade Committee, NSW Farmers’ Association, *Committee Hansard*, 6 July 2023, p. 13.

⁷⁷ Mr Brendan O’Keeffe, Economist, NSW Farmers’ Association, *Committee Hansard*, 6 July 2023, pp. 13–14.

⁷⁸ Dr Patrick Hone, Managing Director, Fisheries Research and Development, *Committee Hansard*, 26 May 2023, pp. 3–4.

⁷⁹ Dr Patrick Hone, Managing Director, Fisheries Research and Development, *Committee Hansard*, 26 May 2023, pp. 3–4.

renewable inputs and resources lost to waste. It is a system that has partially delivered food security but is increasingly imperilled by the environmental and social harms it causes.⁸⁰

- 5.63 According to CSIRO ‘approximately 28 million tonnes of agricultural and fisheries waste are generated each year, accounting for over 65 percent of Australia’s organic waste production’.⁸¹
- 5.64 Research has estimated that 7.6 million tonnes of food is lost or wasted in Australia each year with an economic cost of \$36.6 billion. This waste represents 3.5% of national greenhouse gas emissions and ‘increases the water footprint of every Australian by 170% and utilises a landmass greater than Victoria to grow food that is then wasted’. Of this waste:
- 22% occurs in primary production
 - 17% in processing
 - 3% in distribution
 - 7% at wholesale or retail
 - 32% in households
 - 16% in hospitality
 - 3% in institutions.⁸²
- 5.65 At a national level, horticulture accounts for about one-third of all food waste, with losses of 7–10% at the production level, 11–12% at the processing/packing stages and 22–25% after processing or packaging. One-third of production ‘was forcibly discarded from the marketing system due to cosmetic standards’. Horticulture constitutes two thirds of on-farm losses, 80% of which is edible.⁸³ Only 0.2% of Australia’s surplus food is rescued, the bulk goes to landfill.⁸⁴
- 5.66 OzHarvest observed that gaps in the cold chain were a significant source of food waste, with 18-22% of total fruit and vegetable production being lost ‘to poor cold chain infrastructure and education’. OzHarvest noted that ‘Australia’s cold chain is complicated, with multiple links from farmer to consumer and frequent gaps, while the journey is characterised by varying extreme temperatures, long distances, and human error’. The outcome was ‘an expensive loss, that greatly impacts the country’s food security’.⁸⁵
- 5.67 OzHarvest also highlighted the problem of household food waste, noting that household waste makes up one third of food waste in Australia—70% of which was

⁸⁰ CSIRO, *Submission 149*, p. 7.

⁸¹ CSIRO, *Submission 149*, p. 7.

⁸² Stop Food Waste Australia, *Submission 120*, p. 1.

⁸³ Stop Food Waste Australia, *Submission 120*, pp. 1–2.

⁸⁴ OzHarvest, *Submission 40*, p. 4.

⁸⁵ OzHarvest, *Submission 40*, p. 6.

edible and 73% of which ended up in landfill. In 2021, this represented a cost per household of \$2,000–2,500 each year. OzHarvest observed that ‘considering the inflationary pressures we have seen over the past 6 months, this is most likely now a higher number’. It argued that ‘tackling food waste produced at the household level is critical to tackling Australia’s food waste problem’.⁸⁶

Packaging

- 5.68 Another aspect of food waste is packaging. Evidence presented to the Committee highlighted the complex interrelationship between food, packaging and the environment. The Australian Fresh Produce Alliance (AFPA) recognised public concern ‘about the level and type of plastic packaging that is used for fresh produce’; but observed that ‘there are practical reasons for using packaging for certain fresh produce, whether it be to ensure product integrity in the supply chain, extend shelf life and/or avoid food waste’. These were ‘significant environmental and social benefits’.⁸⁷
- 5.69 Ms Claire McClelland, AFPA CEO, suggested that rather than ‘maligned plastic, we need to talk about functionality and that perhaps that plastic and packaging supports a functionality that supports a health outcome’.⁸⁸
- 5.70 Mr Michael Toby, of Costa Group, explained that multiple fresh produce items rely on ‘recycled plastic packaging because it is the most effective way to ensure shelf life, quality, and longevity’. Mr Toby argued that ‘by trying to do away with packaging for fresh produce, including plastic packaging, you are going to create an even bigger problem, and that is food wasted and landfill, and food waste from landfill mainly emits methane gas’. Mr Toby indicated that such an outcome might conflict with ‘the decarbonisation plans that the government is talking about for agriculture and industry’.⁸⁹
- 5.71 In a similar vein, the National Retail Association asserted that there was a false comparison between renewable packaging and recyclable packaging. Mr David Stout, Director of Policy at the National Retail Association, explained:

The push in this country to remove a lot of plastic packaging and reduce the amount of things given away, littered, has been admirable, but there have also been some perverse outcomes. I would probably consider the one that you mentioned, paper bags, a perverse outcome, because it isn't a genuine recycling and long-term viable solution. There's a better circular and life-cycle analysis with rigorous plastics, the thicker plastics, because we can take them, capture and recycle them—like you would do with your water bottle, for example. The system's in place to capture those and recycle them. If they're pure LDPE or

⁸⁶ OzHarvest, *Submission 40*, p. 5.

⁸⁷ Australian Fresh Produce Alliance, *Submission 135*, p. 16.

⁸⁸ Ms Claire McClelland, Chief Executive Officer, Australian Fresh Produce Alliance, *Committee Hansard*, 26 May 2023, p. 19.

⁸⁹ Mr Michael Toby, Corporate Affairs Manager, Costa Group Holdings Ltd, *Committee Hansard*, 4 August 2023, p. 19.

PET, the system's in place. We have a virtually closed system, because no-one likes buying any more if you've got a bootful. But, unfortunately, we've been somewhat convinced that paper is a better, more viable option. It isn't. I don't consider these things, in the long term, reusable to any extent. They're just convenient, so it's problematic.⁹⁰

- 5.72 Mr Matthew Cossey, CEO of CropLife Australia, provided the Committee with an example of plastic recycling through CropLife's BagMUSTER program, which turns light-plastic bags back into virgin liquid polymer, creating a 'genuine, full-life-cycle, closed-loop plastics management'.⁹¹
- 5.73 AFPA highlighted research completed by the Royal Melbourne Institute of Technology (RMIT) which sought to 'understand the role of packaging in minimising food waste, and maximising quality control'. The main findings were:
- Packaging of fresh produce does help to avoid and reduce food waste, by protecting the integrity of the product in the supply chain.
 - Packaging increases and extends produce shelf life from farm to fork compared to having no packaging at all.
 - Packaging materials and packaging formats should work synergistically to provide product protection and shelf life as it travels through the supply chain.
- 5.74 AFPA was committed to measures to minimise packaging waste, including:
- Ensuring that the role of packaging is focused on providing consumers with freshly grown, healthy and nutritious food, and minimising food waste.
 - Removing any non-functional or surplus packaging by designing it for optimal efficiency to maintain product freshness and maximising the availability of nutritious food.
 - Reducing the amount of packaging through the broader supply chain, and working toward developing a circular economy for packaging (where current packaging is recycled into new packaging) including recycled content.
 - Working with industry, suppliers, recyclers, and retailers to deliver outcomes, and encouraging the development of environmentally sustainable packaging.
- 5.75 AFPA highlighted the 'recent breakdown of soft plastic recycling scheme operated by REDcycle' as demonstrating that more needs to be done to support recycling in Australia.⁹² It noted that from their perspective, the broader conversation was about the lack of recycling infrastructure—the 'complete absence in this country of soft plastics recycling'. What was required was recycling infrastructure rather than

⁹⁰ Mr David Stout, Director of Policy, National Retail Association, *Committee Hansard*, 10 July 2023, p. 44.

⁹¹ Mr Matthew Cossey, Chief Executive Officer, CropLife Australia, *Committee Hansard*, 21 June 2023, p. 7.

⁹² Australian Fresh Produce Alliance, *Submission 135*, pp. 16–17.

'tinkering around on the edges and changing packaging formats'.⁹³ AFPA recommended that:

Government recognise that environmental objectives and ambitions, whilst widely supported and progressed by industry, need to be considered alongside Australia's food security and the industry's ongoing ability to produce fruit and vegetables in a strained commercial environment.⁹⁴

Potential solutions

- 5.76 A number of organisations proposed solutions to the problem of food waste. CSIRO identified a number of avenues for making better use of food waste, including using transformative technologies to turn food waste into food, animal feed, and biomaterials. Higher value uses of food waste included plant-based protein, oils, fibre, and nutraceuticals.⁹⁵ Other options included bioenergy production and fertilisers.⁹⁶
- 5.77 Fight Food Waste Limited observed that with half of all food lost across the supply chain being at pre-consumer stages, 'a systems perspective, more robust production procedures, and policies that foster fair trading arrangements and provide tax incentives for food donation' would 'reduce food waste and increase food security'. It recommended the development of a national food strategy, triennial reviews of food waste based on the 2021 assessment undertaken by Food Innovation Australia Limited (FIAL); and removing regulatory barriers to improving food utilisation and access. The food strategy would include:
- Actions targeted to address food insecurity.
 - Alternative approaches to food production, including upcycling.
 - A review of requisite infrastructure to improve the supply chain, particularly for chilled products and opportunities for regional food relief, processing and transformation hubs.
- 5.78 Regulatory changes would include:
- Reviewing and updating national competition law and working with states and territories to foster fair trading practices along the supply chain from farms to retail.
 - Implementing tax changes to create incentives to donate food and related services (see below).⁹⁷

⁹³ Ms Claire McClelland, Chief Executive Officer, Australian Fresh Produce Alliance, *Committee Hansard*, 26 May 2023, p. 20.

⁹⁴ Australian Fresh Produce Alliance, *Submission 135*, pp. 16–17.

⁹⁵ CSIRO, *Submission 149*, p. 8.

⁹⁶ CSIRO, *Submission 149*, p. 9.

⁹⁷ Stop Food Waste Australia, *Submission 120*, p. 2.

- 5.79 The Food Waste Tax Incentive, developed by KPMG in conjunction with the Fight Food Waste Cooperative Research Centre and food rescue organisations such as Foodbank, is designed to provide an incentive through the tax system for those who donate food or related services—such as freight, logistics, transport—to food relief organisations. Business with up to \$20 million in aggregated turnover would be eligible to receive a refundable tax offset equal to 45% of the lesser of:
- The production costs of goods donated and related services, or
 - The total market value of the goods donated and related services (at the time of donation).
- 5.80 When accounting for the tax deduction forgone (at 25%), this leaves a net tax incentive of 20%.
- 5.81 Businesses with an annual aggregated turnover of over \$20 million would be eligible to receive a non-refundable tax credit equal to 40% of the lesser of:
- The production costs of goods donated and related services, or
 - The total market value of the goods donated and related services (at the time of donation).
- 5.82 When accounting for the tax deduction forgone (at 30%), this leaves a net tax incentive of 10%.⁹⁸
- 5.83 OzHarvest made a number of recommendations around reducing food waste, including:
- Developing a comprehensive food security and food systems plan which addresses food waste and food insecurity as inherently related problems. This plan would be developed with a focus on 4 action areas:
 - Ensuring surplus food feeds people not landfill.
 - Inspiring household behavioural change.
 - Helping farmers get food off the land and onto plates.
 - Putting an end to hunger in Australia.
 - Encouraging a reduction in household food waste and improving food literacy through behaviour change campaigns and school education programs.
 - Providing incentives for farmers, logistics companies and others to help reduce the cost burden of transporting food for donation, reducing food waste.
 - Working with the cold chain industry to increase knowledge of food security issues and decrease food waste.
 - Establishing regional food hubs to allow surplus food to be repurposed or donated closer to the farm gate.

⁹⁸ Foodbank, *Submission 24*, p. 19.

- Improve data sharing across the food supply chain so it is easier to identify where surplus food is and match it with demand.
 - Increasing federal funding for the food relief sector to \$45m per annum in line with community need.⁹⁹
- 5.84 OzHarvest argued that investment in regional infrastructure—regional food hubs—which centralised ‘the collection of surplus or off-specification produce and food waste would unlock significant volumes of rescued food’. Regional hubs would also generate ‘local employment and alternative revenue streams for primary producers’, while increasing access to food relief for regional and remote communities. OzHarvest observed that ‘these communities are already extremely vulnerable, often feel forgotten and many are affected by natural disasters and climate change’.¹⁰⁰
- 5.85 OzHarvest proposed public education campaigns to prevent food waste based on ‘other memorable and generation-defining campaigns’ such as ‘sun safety (Slip Slop Slap) to anti-littering (Keep Australia Beautiful)’. Such campaigns ‘combined mass media messaging with school-based education programs that embed long-term, generational change’.¹⁰¹
- 5.86 OzHarvest also highlighted the lack of federal funding for it and similar organisations, stating that ‘the Department of Social Services currently provides annual base funding of \$1.4m for food relief to the entire sector: OzHarvest, Foodbank and Secondbite combined’.¹⁰²
- 5.87 Another potential remedy for reducing food waste is educating consumers on the use of ‘best before’ dates. Dr Steven Lapidge, of Fight Food Waste Limited, highlighted the distinction between ‘use-by dates’—a food safety mechanism that ‘generally provide an appropriate service’—and best before dates, that operate around stock rotation. Dr Lapidge noted that ‘more than 50 per cent of the population do not know the difference between a best-before or use-by or packed-on date; they just see a date, and, if the food is approaching that day, they automatically throw it out’. This leads to ‘a lot of extra food waste for no valid reason’. Dr Lapidge proposed ‘removing best-before dates’ where possible, noting that work was already underway to investigate this. He also noted that some of the larger retailers in the United Kingdom had already commenced removing best before dates ‘and it’s been very effective’.¹⁰³
- 5.88 The Australian Food Sovereignty Alliance recommended that ‘the Federal Government should establish a campaign to educate consumers on “best before” dates to reduce food waste’.¹⁰⁴

⁹⁹ OzHarvest, *Submission 40*, p. 2.

¹⁰⁰ OzHarvest, *Submission 40*, p. 6.

¹⁰¹ OzHarvest, *Submission 40*, p. 5.

¹⁰² OzHarvest, *Submission 40*, p. 7.

¹⁰³ Dr Steven Lapidge, Chief Executive Officer, Fight Food Waste Limited, *Committee Hansard*, 20 April 2023, p. 22. See also Mr Matthew Rose, Advocacy and Sustainability Lead, OzHarvest, *Committee Hansard*, 23 June 2023, p. 31.

¹⁰⁴ Australian Food Sovereignty Alliance, *Submission 147*, p. 35.

- 5.89 OzHarvest highlighted their use of 'use it up' tape, 'that helps households put a label on their shelf and then put food on that shelf that they have to use, as a visual cue'. OzHarvest found 'that reduces food waste in households by about 40 per cent'. They observed that 'those kinds of things, which seem a little bit gimmicky, have an impact at a household level that we think is important'.¹⁰⁵

Creating the circular economy?

- 5.90 Perhaps the ultimate solution to food waste is the creation of a circular economy—where “‘food waste becomes valuable, affordable healthy food becomes accessible to everyone and innovation uses a regenerative approach to how food is produced, distributed and consumed’”.¹⁰⁶ Professor Brent Kaiser, from the University of Sydney, observed that 'as we move towards greater use of circular economies in the industry, a lot of those food waste streams can find homes'. Professor Kaiser noted that a lot of waste streams could be used in different areas of value adding where they are not used now:

For example, if I am fermenting yeast cells and making proteins out of yeast cells for various foods, they need sources of carbohydrates or other sources of proteins to allow that process to go forward.¹⁰⁷

- 5.91 Professor Kaiser suggested creating 'the incentives and the ability for different industries to come together so they can reutilise a lot of the waste streams and make things happen'.¹⁰⁸
- 5.92 Professor Susanne Schmidt, from the University of Queensland, highlighted the potential of waste to regenerate soils, 'with fertiliser being recycled from waste', as well as the potential for biofuels, 'including ethanol production from waste products and others'.¹⁰⁹ Professor Schmidt noted the work being done in Europe, including converting human waste to fertiliser. She highlighted the need for government engagement and investment in this space.¹¹⁰
- 5.93 Ms Tammi Jonas, President, Australian Food Sovereignty Alliance, stated that 'if you have closed circular systems closer to where people are consuming the food, you actually eradicate most of your waste concerns'. Ms Jonas observed that much of the 'waste' being created was the result of current production systems and supply chains, while 'perfectly edible food is being wasted'.¹¹¹

¹⁰⁵ Mr Matthew Rose, Advocacy and Sustainability Lead, OzHarvest, *Committee Hansard*, 23 June 2023, p. 31.

¹⁰⁶ National Rural Women's Coalition, *Submission 20*, p. 5.

¹⁰⁷ Professor Brent Kaiser, Director, Sydney Institute of Agriculture, University of Sydney, *Committee Hansard*, 11 August 2023, pp. 14–15.

¹⁰⁸ Professor Brent Kaiser, Director, Sydney Institute of Agriculture, University of Sydney, *Committee Hansard*, 11 August 2023, pp. 14–15.

¹⁰⁹ Professor Susanne Schmidt, School of Agriculture and Food Sustainability, University of Queensland, *Committee Hansard*, 10 July 2023, pp. 15–16.

¹¹⁰ Professor Susanne Schmidt, School of Agriculture and Food Sustainability, University of Queensland, *Committee Hansard*, 10 July 2023, p. 17.

¹¹¹ Ms Tammi Jonas, President, Australian Food Sovereignty Alliance, *Committee Hansard*, 11 August 2023, p. 19.

- 5.94 The Australian Institute of Food Science and Technology recommended that the Australian Government ‘works with industry to mitigate ways that existing Australian policies and regulations are inhibiting the Australian food system’s potential to upcycle waste and participate more fully in circular economy projects’;¹¹² while the National Rural Women’s Coalition urged increased investment ‘in sustainable primary production and the circular food economy’.¹¹³ The Australian Food and Grocery Council’s vision for the future included:

A climate neutral food, beverage, and grocery manufacturing footprint by 2050 or sooner, via the accelerated integration of renewable energy solutions and reduced wastage underpinned by a thriving circular food and packaging economy.¹¹⁴

Committee comment

- 5.95 The food supply chain is critical to food security in Australia. The Committee notes that to date the food supply chain has stood up pretty well under various stresses, such as the COVID-19 pandemic and recent weather-related disasters. The response of government and industry to the pandemic highlighted the resilience of the food system. The Food and Grocery Sector Group (FGSG) and the Supermarkets Taskforce have shown the importance of having standing arrangements for meeting crises—arrangements which it is widely agreed stood up well to the test of the pandemic. But the pandemic and recent floods have also highlighted vulnerabilities, particularly in food transport, vulnerabilities which increase as communities become more remote from the major nodes and networks of the food supply chain.
- 5.96 Probably the most critical need for improving the resilience of the food supply chain is to map it. The mapping of the food supply chain should be a joint exercise between government and industry and should be undertaken as part of the broader planning process recommended in Chapter 2. We need to know where things are grown and in what quantity, how they are transported, where they are processed, what the major transport routes are, the main centres for the collection and distribution of product, and where transport routes are vulnerable and what happens if they are cut. The collection of comprehensive data is vital to the mapping process. The Australian Government should also consider options for technical innovation in the collection, access to and dissemination of this information and data.
- 5.97 We also need to identify vulnerabilities in terms of inputs. The pandemic revealed the vital role that labour plays in the food supply chain; but it also brought our attention to less obvious inputs such as fuel additives and pallets. We need to know where these things come from and how we will maintain supplies when supply chains break down. We also have to consider the role of inputs such as fertiliser to plant production and

¹¹² Australian Institute of Food Science and Technology, *Submission 85*, p. 3.

¹¹³ National Rural Women’s Coalition, *Submission 20*, p. 6.

¹¹⁴ Australian Food and Grocery Council, *Submission 128*, p. 4.

grain to meat production. The chicken meat supply chain depends on reliable supplies of grain. Farmed salmon depends on fishmeal from overseas.

- 5.98 In addition to mapping, there needs to be put in place transport resilience planning that will allow for the creation of multi-modal options for the movement of food and other supplies, the optimal location of distribution centres to cope with potential breaks in the supply chain, and the development of redundancy across transport networks. For example, the break in the east-west transcontinental railway demonstrated the importance of having access to sea freight to move supplies from east to west. The cutting of major roads by flooding in various parts of the country over the last two years has highlighted the need to develop more resilient infrastructure and alternative routes across the road network. The importance of rail to the movement of major commodities has also been highlighted by a number of stakeholders.
- 5.99 Port regulation was another of the issues raised in the evidence. The Committee notes the support of the grains industry for Productivity Commission recommendations calling for the repeal of Part X of the Competition and Consumer Act, and the development of a mandatory container terminal operator code. The Committee agrees that on the face of it these are useful measures and should be implemented. The Committee is also conscious of Viterra's calls for the abolition of the mandatory port code. Again, on the face of the evidence presented to the Committee this is a matter requiring consideration by government.
- 5.100 Supply chains in the Top End are particularly fragile, easily cut and expensive to maintain. The result is a high level of food insecurity in remote communities, and higher prices for fresh produce. Solutions proposed include freight subsidies for the transport of goods to remote communities, government support for decentralised distribution centres, and support for not-for-profit community stores. The Committee believes that increased government support for the transport, storage and sale of goods in remote communities, along with other measures (see Chapter 7) has the power to alleviate much of the food insecurity in remote communities in the Top End.
- 5.101 The Committee believes that food waste is a critical issue in this country and that it needs to be addressed as a matter of urgency. The quantity of food waste is simply unsustainable economically and environmentally. The management of food waste should be an integral part of a National Food Plan.
- 5.102 A number of solutions to the problem of food waste have been proposed, including
- Public education to reduce household food waste.
 - Repurposing food waste—for example as animal feed or processed food.
 - Supporting food donation, including through tax incentives.
 - Establishing regional food hubs.
 - Better management of the cold chain.
 - Improving data sharing across the food supply chain.

- Increasing federal funding for the food relief sector.
 - Reviewing 'best before' dates with a view to their removal.
 - Creating a circular economy.
- 5.103 The Committee supports all of these proposals and believes they should be implemented as part of a broader strategy to eliminate food waste. In particular, the Committee supports providing a tax incentive to support the donation of food and related services by industry modelled on the Food Waste Tax Incentive developed by KPMG and the Fight Food Waste Cooperative Research Centre. This proposal would not only enable food donation, but the provision of support services, such as transport and storage.
- 5.104 The Committee acknowledges the ongoing role of plastic packaging in food distribution and food safety. At this stage, and for the foreseeable future, plastic packaging is likely to remain indispensable to the storage and transport of fresh and processed food. However, given the environmental costs of plastic packaging, the development of a viable system for the recovery and recycling of plastic packaging is vital. This should be a priority for government and industry. In addition, the Government should, through appropriate research and development programs, support innovation in biodegradable and plant-based plastics and environmentally sustainable packaging. Government and industry should also encourage the use of reusable bags by wholesalers, retailers and consumers.
- 5.105 The Committee supports a review of 'best before' and 'use by' dates on food, given the high levels of household food waste.
- 5.106 The Committee also acknowledges the benefits of developing a circular economy in the food system—one in which there is little to no waste as everything is fed back into the system in a productive way. The Committee therefore recommends support and funding for research focused on the development of a circular food economy.

Recommendation 14

- 5.107 The Committee recommends that as part of the development of a National Food Plan, the Australian Government coordinate with industry in the development of a National Food Supply Chain Map, identifying:**
- **where products are grown or produced and in what quantity;**
 - **how they are transported;**
 - **where they are processed;**
 - **what the major transport routes are;**
 - **the main centres for the collection and distribution of product;**
 - **where transport routes are vulnerable; and**
 - **what happens if they are cut.**

This map should also identify key inputs and vulnerabilities to lack of supply.

The Australian Government should consider options for technical innovation in the collection, access to and dissemination of this information and data.

Recommendation 15

5.108 The Committee recommends that as part of the development of a National Food Plan, the Australian Government develop a transport resilience plan focussed on food security, including the optimal location of distribution centres.

Recommendation 16

5.109 The Committee recommends that the Australian Government implement the recommendations of the Productivity Commission calling for the repeal of Part X of the *Competition and Consumer Act 2010* and the development of a mandatory container terminal operator code.

Recommendation 17

5.110 The Committee recommends that the Australian Government review the mandatory port code covering grain ports.

Recommendation 18

5.111 The Committee recommends that the Australian Government incorporate measures to eliminate food waste into the proposed National Food Plan, including:

- **A national public education campaign aimed at the elimination of household food waste.**
- **Repurposing food waste—for example as animal feed or processed food.**
- **Supporting food donation.**
- **Establishing regional food hubs.**
- **Better management of the cold chain.**
- **Improving data sharing across the food supply chain.**
- **Increasing federal funding for the food relief sector.**
- **Creating a circular economy.**

Recommendation 19

5.112 The Committee recommends that the Australian Government provide an incentive through the tax system for those who donate food or related services, based on the Food Waste Tax Incentive developed by KPMG and the Fight Food Waste Cooperative Research Centre.

Recommendation 20

5.113 The Committee recommends that the Australian Government work with industry to develop a viable system for the recovery and recycling of plastic packaging.

Recommendation 21

5.114 The Committee recommends that the Australian Government, in conjunction with the food industry, review the application of 'best before' and 'use by' dates on food, and consider the use of QR codes on packaging to provide relevant information to consumers.

Recommendation 22

5.115 The Committee recommends that the Australian Government develop and fund a research program focussed on the development of a circular food economy.



6. Climate change and biosecurity

Introduction

- 6.1 This chapter discusses climate change and biosecurity. It examines the threat and potential impacts of climate change on food security, as well as options for adaptation and innovation that will allow the agriculture sector to reduce emissions, sequester carbon, and adopt approaches that will make the farm sector more resilient. The chapter then explores the challenge of biosecurity—potential threats and the cost of incursions, how biosecurity will be impacted by climate change, and the complex issue of how biosecurity is funded.

Potential impacts of climate change

- 6.2 Climate change is impacting upon food security. In 2021, ABARES released research that indicated that ‘Australia has seen a shift towards higher temperatures and lower winter rainfall, which has had significant effects on many farmers’.¹ It observed that ‘Australia’s climate has warmed on average by 1.4°C since 1910, with most of this occurring since 1950’. There has been a decline in winter rainfall of 20% since 1970 in south-western Australia and 12% since 2000 in south-eastern Australia.
- 6.3 ABARES estimated ‘that changes in seasonal conditions over the period 2001 to 2020 (relative to 1950 to 2000) have reduced annual average farm profits by 23%, or around \$29,200 per farm’, with the impacts being felt most heavily in south-western and south-eastern Australia. Northern Australia and the coastal higher rainfall zones were less affected. ABARES indicated that conditions post-2000 had ‘increased risk in terms of more variable cash income and profits’. The risk of very low farm returns due to climate variability had essentially doubled, relative to the period 1950 to 2000, since 2000.²
- 6.4 Despite this, ABARES estimated that climate-adjusted Total Farm Productivity showed ‘an increase in farm productivity across the broadacre sector of around 28% since 1989, with much larger gains in the cropping sector (68% since 1989)’. These gains in productivity, ABARES observed, had ‘offset the negative effects of climate over the last 30 years, such that actual industry productivity levels have still increased or at least remained stable’. ABARES noted that ‘a combination of productivity growth, better prices and increases in farm size have resulted in an

¹ Hughes, N 2021, *Analysis of climate change impacts and adaptation on Australian farms*, ABARES Insights, Canberra, p. 1.

² Hughes, N 2021, *Analysis of climate change impacts and adaptation on Australian farms*, ABARES Insights, Canberra, p. 2.

upward trend in farm profits over the last decade, at least until the droughts of 2018–19 and 2019–20'.³ One of the consequences of this increased ability to withstand dry conditions was that the 2020 winter crop harvest in Western Australia far exceeded expectations given the seasonal conditions experienced.⁴ ABARES observed that 'there remains much uncertainty over the long-run effects of climate change on farm businesses'.⁵

- 6.5 The CSIRO confirmed these findings, noting that 'weather and climate extremes observed over recent years in Australia can be increasingly linked to climate change rather than the effects of climate variability alone'. It further stated that 'recent research suggests that warming and intensification of ENSO sea surface temperature variability is happening faster than previously anticipated'.⁶
- 6.6 The impacts of climate change are not just about production—they also impact the whole supply chain. Farmers for Climate Action noted that severe weather events linked to climate change could 'directly cut supply lines or have an indirect impact by causing labour shortages and disruptions to international supplies'. Climate change affects the supply chain in a number of ways, including:
- availability and price of water;
 - energy prices;
 - transport (especially, cutting of key routes following extreme weather events);
 - international competition for inputs; and
 - availability and price of financial products (such as lending and insurance).
- 6.7 Farmers for Climate Action highlighted that 'competition for inputs like fertiliser, pesticides and other agricultural chemicals is growing worldwide', and would increase as climate change impacts food production systems. This was resulting in increased costs to farmers and ultimately higher food prices.⁷
- 6.8 Likewise, the CSIRO explained that Australia, with its internationally oriented food production, is affected by climate change impacts on agriculture overseas. According to the CSIRO, 'climate change has increased the risk of simultaneous harvest failures in major grain producing regions of the world, also called multiple breadbasket failures'. It argued the need to 'better understand Australia's role in mitigating this heightened risk to regional and global food security, while navigating its own local climatic challenges to agricultural production'. This required examining how Australia can best contribute to climate proofing the food system, including 'considering the role of food exports as well as opportunities for cooperation in

³ Hughes, N 2021, *Analysis of climate change impacts and adaptation on Australian farms*, ABARES Insights, Canberra, p. 6.

⁴ Hughes, N 2021, *Analysis of climate change impacts and adaptation on Australian farms*, ABARES Insights, Canberra, p. 7.

⁵ Hughes, N 2021, *Analysis of climate change impacts and adaptation on Australian farms*, ABARES Insights, Canberra, p. 1.

⁶ CSIRO, *Submission 149*, p. 12.

⁷ Farmers for Climate Action, *Submission 26*, p. 3.

technology and practice innovations to reduce the vulnerability of countries and the overall system'.⁸

Cost of inaction

- 6.9 The cost of inaction on climate change was stressed by the CSIRO. It argued that global mitigation efforts would need to be accompanied by adaptation efforts to 'manage local and regional climate risks that can no longer be avoided'. Furthermore, 'limiting global warming to 1.5°C or at least to well below 2°C will require arriving globally at net zero emissions around the middle of century'. It noted that agriculture was 'a major driver of greenhouse gas emissions, pollution, biodiversity loss and land use changes while also being vulnerable to environmental changes', so had a major role in both climate change and mitigation. The CSIRO observed that as well as presenting challenges, climate change also presented Australia with the opportunity to become a leader in the global transformation of the food system. As global temperatures rose, so did risks to global food security, 'with potentially grave adverse and irreversible changes over meaningful time scales to the Earth's life support system upon which humanity depends'.⁹
- 6.10 The Australian Security Leaders Climate Group (ASLCG) also stressed the urgency of action on climate change. It estimated that 'the warming trend will reach 1.5°C around 2030, irrespective of any emission reduction initiatives taken in the meantime', but that as greenhouse gas levels are still rising, 'the 2°C target will very likely be missed by a significant margin'. It observed that 'when large-scale, self-reinforcing climate system feedbacks are considered, current emission-reduction commitments are estimated to lead to around 3°C of warming, which US security analysts say may result in a world of "outright chaos"'.¹⁰ The ASLGC highlighted the potential security risks—human, regional and global—of climate change and its impacts, and urged a deeper understanding of the threats being faced:

To understand the level of security threat and how to respond, Australia needs a sound base of knowledge about the projected physical impacts and the tools to analyse their social and economic consequences. This requires expertise that is well managed and organised, and available in a transparent manner. But due to past political neglect and malfeasance, there is an institutional expertise deficit in Australia at present.¹¹

Adaptation and innovation

- 6.11 The need for adaptation and innovation within the food system was highlighted by a number of stakeholders. CSIRO urged that 'the time for strengthening Australia's food system is now. Business-as-usual and incremental adaptations to Australia's

⁸ CSIRO, *Submission 149*, p. 12.

⁹ CSIRO, *Submission 149*, p. 14.

¹⁰ Australian Security Leaders Climate Group, *Submission 10*, p. 9.

¹¹ Australian Security Leaders Climate Group, *Submission 10*, p. 11.

agri-food system will be insufficient for managing the changing risk landscape and sustainability challenges'. It argued that 'harnessing innovation and integrating diverse knowledge systems will help address climate change needs as part of a holistic risk management approach for Australia's food systems'.¹² Farmers for Climate Action urged measures around mitigation, resilience building, risk management and adaptation, making the following recommendations:

1. Mitigation – Deep emissions reductions this decade, led by energy and transport, and a commitment to 2035 targets being compatible with 1.5°C to protect food security.
2. Build resilience – The Government strengthens the resilience of key supply lines and to fill gaps in the market where private sector investment is insufficient due to high levels of uncertainty.
3. Manage risk – The Government commission a National Agriculture Risk Assessment to provide the knowledge basis required to adequately prepare for the future.
4. Adaptation – The Government works with the agriculture industry, the private sector and other levels of government to develop adaptation strategies that minimise the impact of climate change on our food supply.¹³

6.12 Evidence presented to the Committee highlighted a range of adaptations and innovations, including emissions reduction, soil carbon sequestration, regenerative agriculture, and agroecology. These are discussed further below.

Emissions reductions

6.13 Managing emissions from agriculture is a key part of greenhouse gas emissions reduction. The CSIRO observed that 'food systems are responsible for over one third of greenhouse gas emissions from human activities', with meat-based foods contributing approximately double the amount of plant-based foods. Food and land-use systems therefore had a critical role in mitigating climate change.¹⁴

6.14 A number of industries were already investing heavily in renewable energy. According to the Australian Dairy Products Federation (ADPF), dairy companies reduced their greenhouse gas emissions 'by 25.5% between 2010–11 and 2020–21', 94% of dairy farmers had implemented practices to reduce or offset their emissions, and 71% of farms use some renewable energy. The ADPF noted that 'dairy processing businesses continue to strengthen their understanding and commitment to sustainability through more targeted goals and transition plans'.¹⁵

6.15 Australian Pork Limited (APL) stated that 'the pork industry has been actively mitigating climate change risks for decades', noting that industry had 'reduced carbon

¹² CSIRO, *Submission 149*, p. 12.

¹³ Farmers for Climate Action, *Submission 26*, p. 2.

¹⁴ CSIRO, *Submission 149*, p. 13.

¹⁵ Australian Dairy Products Federation, *Submission 136*, p. 8.

emissions by 69%, reduced water usage by 80% and had started the transition to renewable energy technologies'. APL recognised and supported action on climate change and supported mechanisms that enabled investment in innovation within the agricultural sector. It observed that 'intensive animal industries have the potential to provide low carbon footprint, sustainable protein and contribute to the national climate change targets'.¹⁶

- 6.16 AUSVEG asserted that producing renewable energy on-farm would decrease emissions and save growers money over time as energy prices increase. It supported on-farm initiatives to increase farm sustainability, such as funding for renewables and waste recycling.¹⁷ The National Rural Women's Coalition recommended investment in measures 'to enable rural communities to transition to renewable energy to mitigate greenhouse gas emissions'.¹⁸
- 6.17 Nonetheless, there were voices of caution when it came to the transition to renewables. The NSW Farmers' Association observed that while greater energy efficiency in the food and agribusiness sector through alternative energy sources would make the sector more cost-competitive, the high-risk nature of agriculture made it 'difficult for farmers to undertake large investments and the accompanying debt'. Accessing investment from bodies such as the Australian Renewable Energy Agency (ARENA) for pre-commercial renewable on-farm projects had proved difficult.
- 6.18 The NSW Farmers' Association suggested that 'governments could assist farmers in overcoming the high capital costs of on-farm renewables, in addition to reducing farmers' knowledge gaps of the options available to them'. It proposed:
- A Regional Sustainability Fund for the development and investment of renewable and alternative energy sources and the potential for voluntary emissions reductions.
 - Subsidising on-farm batteries to reduce the payback period and make them financially viable—especially useful in intensive production systems requiring high levels of energy security.
 - Funding demonstration and knowledge sharing projects.¹⁹
- 6.19 The NSW Farmers' Association also cautioned that while renewable energy projects would cover a significant amount of agricultural land, there was a lack of research into how these projects would impact agricultural operations. It proposed a more rigorous energy network planning process, with clear criteria for reducing the impact of transmission lines through undergrounding.²⁰

¹⁶ Australian Pork Limited, *Submission 138*, p. 8.

¹⁷ AUSVEG, *Submission 99*, p. 11.

¹⁸ National Rural Women's Coalition, *Submission 20*, p. 9.

¹⁹ NSW Farmers' Association, *Submission 143*, pp. 16–17.

²⁰ NSW Farmers' Association, *Submission 143*, p. 17.

- 6.20 Likewise, the Victorian Farmers Federation argued for greater consideration of farmers in the development of energy projects, and particularly the routing of transmission lines. It stated that:

Given Australia and Victoria's prominence in food and fibre production, farmers must be considered, consulted and supported in the rollout of any large-scale infrastructure project which impacts the ability to farm.²¹

Asparagopsis

- 6.21 One of the potential innovations in emissions reduction brought to the attention of the Committee was the use of feed supplements for ruminant animals made from Asparagopsis seaweed. Tasmanian company Sea Forest explained:

Sea Forest's SeaFeed product, when fed to ruminant livestock such as cattle and sheep, interacts with enzymes in the final stages of digestion and diverts that which would have been expelled by the animal as a gaseous waste product into energy it uses to create milk or produce more meat.²²

- 6.22 Sea Forest noted that there was 'a very clear dose-response curve on the dietary inclusion of our supplement and the abatement outcome'. They had achieved a maximum abatement of over 90 per cent emissions reduction, scaling down to 55 per cent abatement with a half dose, and about 30 per cent at a one-third dose..²³

- 6.23 Sea Forest estimated that when its assets are fully developed, it would 'have the capacity to feed up to five million cattle, reducing over 12 million tonnes of CO₂ equivalent per annum from livestock production'. It observed that livestock feed supplements held significant potential in meeting emission reduction targets with minimal behavioural change by farmers, but this would require 'in the short-term industry adoption and government support for education and awareness'.²⁴

- 6.24 Two barriers to the successful commercialisation of the technology were funding and access to carbon credits. Sea Forest stated that the sector 'needs the Commonwealth's funding assistance to commence large-scale trials in order to see near-term reduction of agricultural emissions across the nation'. In return, this would help 'the government to reach its 30 per cent methane reduction target under the methane pledge'.

- 6.25 The barrier to using Australian Carbon Credit Units (ACCUs) under the Emissions Reduction Fund (ERF) was that requirements for newness and additionality under the ERF prevented early adopters from accessing future carbon credits, thereby discouraging adoption of the technology. A possible solution was the introduction of an interim and transitional mechanism 'that would exempt early adopters of asparagopsis from the newness requirement in the time between now and when the

²¹ Victorian Farmers Federation, *Submission 110*, p. 2.

²² Mr Sam Elsom, CEO, Sea Forest Ltd, *Committee Hansard*, 12 April 2023, p. 13.

²³ Mr Sam Elsom, CEO, Sea Forest Ltd, *Committee Hansard*, 12 April 2023, p. 17.

²⁴ Mr Sam Elsom, CEO, Sea Forest Ltd, *Committee Hansard*, 12 April 2023, p. 13.

formal legislative change to the ERF can be implemented'.²⁵ Mr Sam Elsom, Chief Executive Officer of Sea Forest, explained:

What we propose is a precedent that was set in 2014 and 2015 called a notice of intent. That was used for the Carbon Farming Initiative. It was a form that you could download from the Clean Energy Regulator's website which basically outlined that a farmer who wanted to participate in a project for which there was no methodology developed, as in the case of the Carbon Farming Initiative, they could submit that notice of intent and have their newness and additionality assessed from this point in time.²⁶

Soil carbon

- 6.26 The sequestration of carbon in soil was viewed as a potentially significant response to climate change and a potential source of income for farmers. The International Fund for Agricultural Development highlighted Climate Change Authority estimates 'that carbon sequestration in soils could offset up to 60 million tonnes of greenhouse gas emissions per year by 2030 if widely adopted'. It suggested that 'a significant portion of Australian farms have diverse cropping systems which can sequester carbon more efficiently'.²⁷
- 6.27 Both the Queensland²⁸ and New South Wales Governments²⁹ advised of programs they are undertaking to reduce agriculture emissions and increase carbon farming. The New South Wales Government is developing a Primary Industries Productivity and Abatement Program that aims to reduce emissions from agriculture and increase carbon sequestration in soils and vegetation. The Program includes:
- commercialising low emissions technology in the dairy, wool and red meat industries, such as those technologies identified through the CSIRO-MLA partnership;
 - connecting small landholders, including Aboriginal landowners, to carbon markets;
 - underwriting project risks from trialling new approaches to carbon sequestration; and
 - developing premium land-based carbon markets that deliver stronger environmental and social outcomes compared to traditional low-cost abatement programs.³⁰
- 6.28 In its submission, the University of Melbourne highlighted the benefits of organic farming for soil health, including carbon sequestration. It suggested that in addition to reducing Australia's reliance on imported synthetic fertilisers, organic farming practices would allow Australia to reduce its greenhouse gas emissions from

²⁵ Mr Sam Elsom, CEO, Sea Forest Ltd, *Committee Hansard*, 12 April 2023, p. 14.

²⁶ Mr Sam Elsom, CEO, Sea Forest Ltd, *Committee Hansard*, 12 April 2023, p. 17.

²⁷ International Fund for Agricultural Development, *Submission 177*, p. 6.

²⁸ Queensland Government, *Submission 98*, p. 6.

²⁹ NSW Government, *Submission 83*, p. 17.

³⁰ NSW Government, *Submission 83*, p. 17.

agriculture 'because organic systems emit up to 40 per cent less carbon emissions compared to non-organic systems'.³¹ The University proposed the establishment of evidence-based sustainability indices for agricultural production. These would:

- facilitate the monetisation of the costs and benefits of agricultural production to the environment, human health, ecosystems, climate and society;
- develop environmental credits (market premium) to reward more sustainable farmers who produce food with fewer environmental impacts than their peers;
- raise public awareness by helping consumers to make more informed and sustainable food choices; and
- provide information to help guide international trade policies to improve agricultural sustainability in Australia.³²

6.29 The Australian Food Sovereignty Alliance (AFSA) urged the adoption of soil stewardship, recommending recognition and support for the National Soil Strategy 2021 as a key Australian Government priority 'over all else'. It remarked that 'if we don't look after our soil, we won't have a country to grow food on'. It also recommended the adoption of a Healthy Soils Act modelled on the New Mexico Healthy Soils Act. This legislation from the US state of New Mexico, established five Soil Stewardship Principles:

- Keep soil covered.
- Minimise soil disturbance and external inputs.
- Maximise biodiversity.
- Maintain living roots.
- Integrate animals.

6.30 AFSA proposed, however, that 'where subsidies are provided to land managers for carbon sequestration, they should not create purchasable or tradeable credits, which disincentivise emissions reduction by polluters'.³³

6.31 A similar position on carbon credits was taken by the representative of global supplier of farm inputs, Nutrien Ag Solutions. Mr David Stanko suggested that carbon offsets were best employed by farmers to reduce their own carbon footprint, rather than 'losing the right to that carbon long term in some cases as long as 25 or even up to 100 years'. He stated:

It isn't that we don't believe there's value in sequestering carbon on farm. It's all about selling off the rights to that carbon into a marketplace where there are some long-term liabilities that maybe aren't quite as clear as they should be.³⁴

³¹ Ms Nicole Ford, Chief Executive Officer, Australian Organic Ltd, *Committee Hansard*, 10 July 2023, p. 49.

³² University of Melbourne, *Submission 34*, p. 5.

³³ Australian Food Sovereignty Alliance, *Submission 147*, p. 43.

³⁴ Mr David Stanko, Head of Commercial Sustainability, Nutrien Ag Solutions, *Committee Hansard*, 26 May 2023, p. 23; see also Nutrien Ag Solutions, *Submission 142*, p. 9.

Regenerative agriculture

- 6.32 Evidence highlighted a range of farming practices which could come under the general heading of regenerative agriculture—landscape management practices which restore landscape function and natural capital in agricultural settings. These practices are seen as vital to maintaining and enhancing farm productivity in the face of climate change.
- 6.33 The possibilities for regenerative agriculture were discussed by the CSIRO. Dr Michael Robertson, Director, CSIRO Agriculture and Food, noted that regenerative farming practices were ‘nudging us’ to look harder at things like nutrient management:
- How can we recycle things like crop residues, animal excreta and, in more novel ways, to help retain those nutrients on farms and not export them and not have them ending up being wasted and ending up in the groundwater or in the atmosphere.³⁵
- 6.34 Dr Robertson thought ‘the regenerative farming movement is pointing to a need for us to adopt a more holistic view about ... the natural capital that agriculture generates for the nation’.³⁶
- 6.35 Dr Robertson noted that signs were emerging overseas, but also in Australia, of stakeholders investing in ‘natural capital improvements that farmers can create for the nation on their farm, whether it’s building their soil fertility, whether it’s protecting their native vegetation on their farms or whether it’s fostering more biodiversity’. He suggested that this was an agenda ‘that’s not going to go away. If anything, it’s going to be driven by capital markets and other market access issues. There’s no way we can avoid that.’ What was needed, he stated, were ‘simple systems for farmers to be able to show how they’re progressing as they go year by year, and improving that natural capital state on their farms’. He indicated that a key challenge for science was ‘to simplify that and help us measure and monitor it’.³⁷
- 6.36 The SA Food Systems Network recommended investment in regenerative agriculture to adapt to climate change. It stated that regenerative agriculture had already shown results in restoring degraded soils across Australia; and noted that the Commonwealth had already committed research funding to quantify the benefits of regenerative agricultural practices in restoring soils. It argued for more investment to address ‘the gap in production when farmers stop using chemical fertilizers and the benefits of regenerative agricultural practices begin to take effect’.³⁸

³⁵ Dr Michael Robertson, Director, CSIRO Agriculture and Food, CSIRO, *Committee Hansard*, 16 June 2023, p. 32.

³⁶ Dr Michael Robertson, Director, CSIRO Agriculture and Food, CSIRO, *Committee Hansard*, 16 June 2023, p. 32.

³⁷ Dr Michael Robertson, Director, CSIRO Agriculture and Food, CSIRO, *Committee Hansard*, 16 June 2023, p. 32.

³⁸ SA Food Systems Network, *Submission 55*, p. 4.

6.37 Ms Sharon McGann, representing the SA Food Systems Network, explained that there was ‘a one to two-year transition where yields initially decline, but then the deficit tends to disappear’. Ms McGann observed that ‘in stressful or volatile weather conditions, organic yields can actually perform better and be more resilient. Soil can hold more biomass, absorb more water, and water is also a big issue for us in Australia’. McGann noted that:

It's really about getting over the hump. The medium-term increase in profitability can be explained by: the system of practices that lead to lower input costs at a time when fertiliser costs are increasing; resilience, which reduces the risk of climate volatility; the ability to grow higher value crops and access new markets and premiums because there is a demand for higher value; and higher nutritional products.³⁹

6.38 Farming for the Future, a philanthropic research and innovation foundation, was working at the cutting edge of regenerative agriculture. It defined natural capital as:

...the natural resources that producers manage for the benefit of their businesses, their families and for future generations of producers. Agricultural Natural Capital includes soils, water, pasturelands and croplands, riparian areas, remnant native vegetation, agroforestry and environmental plantings and animals.⁴⁰

6.39 Farming for the Future observed that natural capital improvements could mitigate ‘both the cause and impact of climate change (e.g. reducing emissions and increasing sequestration)’; and ‘ameliorate flood impacts (e.g. ground cover reducing top soil losses)’, thus supporting food security. It noted that many of the technologies used to support food security involved investment in forms of natural capital—soils, water, ground cover, genetics, and biological pest control. It argued that:

Understanding the relationships between natural capital and agricultural performance will improve management decisions that optimise the free benefits of nature, improve productivity and farm resilience to climate shocks and contribute to food security.⁴¹

6.40 Farming for the Future suggested that the productivity benefits of investing in natural capital were potentially large, with estimates of a greater than 20 per cent increase in overall farm business productivity.⁴² It argued that developing systems and institutions ‘that provide for cheap and effective natural capital measures’ would improve productivity and profitability, creating ‘deeper resilience of food production systems’. They would also improve access to markets with high sustainability reporting and trading standards.⁴³

³⁹ Ms Sharon McGann, Chair, Steering Group, Onkaparinga Food Security Collaborative, SA Food Systems Network, *Committee Hansard*, 20 April 2023, p. 9.

⁴⁰ Farming for the Future, *Submission 89*, p. 2.

⁴¹ Farming for the Future, *Submission 89*, pp. 2–3.

⁴² Farming for the Future, *Submission 89*, p. 5.

⁴³ Farming for the Future, *Submission 89*, p. 5.

- 6.41 Farming for the Future asserted that ‘the omission of natural capital from farm management and strategic decision making is likely to be a key or even the prime reason that natural capital has been depleted on agricultural landscapes across the globe’. This had resulted in ‘lower agricultural productivity and profitability and increased exposure to risks that are mitigated through the presence of healthy ecosystems’.⁴⁴
- 6.42 The NSW Farmers’ Association also put forward that natural capital investment and markets represented a way to achieve positive outcomes for farmers, the environment, and society. It identified a number of barriers to adoption, including:
- Lack of a unified view of what constitutes natural capital;
 - Absence of an agreed way of valuing natural capital;
 - Societal perceptions of the role of agriculture; and
 - The way governments legislate for environmental outcomes.⁴⁵
- 6.43 The NSW Farmers’ Association observed that ‘Australian producers are well placed to support retailers, corporations, and government to meet their sustainability commitments’, but that they needed ‘greater clarity on the costs and benefits of doing so’. It argued that ‘at present, an unfair burden of the responsibility falls to producers in an environment already plagued by escalating costs, high risks, and market power imbalances’. The NSW Farmers’ Association proposed a range of areas for government action and investment to support the development of natural capital in agriculture, including:
- Developing analytical tools to assess the performance of agricultural businesses, including standard metrics, robust methods to test these metrics, frameworks which put metrics in context and aligned targets and objectives.
 - Providing real examples of natural capital positive methods that deliver financial benefits to build confidence and increase the likelihood of adoption.
 - Establishing platforms to link suppliers of natural capital outcomes (producers) with purchasers who have sustainability commitments.
 - Partnering with extension networks to ensure information reaches producers.
 - Increasing RD&E investment in conjunction with land managers in developing sustainable farming practices and providing information to industry.
 - Streamlining environmental regulations.⁴⁶
- 6.44 In its submission, the WFF advocated for increasing support for producers to scale up sustainable agricultural practices such as ‘maintaining diverse ground cover, use of trees and biodiversity in the landscape, improving soil health, [and] landscape rehydration’. It stated that these practices improved ecosystem health and functioning that support food production and reduced the need for external inputs.

⁴⁴ Farming for the Future, *Submission 89*, p. 3.

⁴⁵ NSW Farmers’ Association, *Submission 143*, p. 18.

⁴⁶ NSW Farmers’ Association, *Submission 143*, p. 18.

The provision of these ecosystem services and the productivity benefits of increasing soil organic carbon justified the effort, quite apart from the soil carbon sequestration potential.⁴⁷

Landscape rehydration

6.45 Another example of regenerative agriculture is landscape rehydration. The Mulloon Institute, a not-for-profit organisation focussed on landscape rehydration and environmental regeneration at the property and catchment scales, explained:

Landscape Rehydration strategies employ both natural infrastructure and land management techniques that slow the movement of water over the land's surface and in waterways and optimise the cycling of water between soil, plant, and atmosphere. These strategies recouple the water cycle with the biological cycle in degraded landscapes, enabling the energy coming from the sun to be moderated near the earth's surface. This reduces temperature variations, cooling temperatures during the day and warming temperatures at night. When projects are undertaken at scale, these strategies can moderate climatic extremes across entire catchments.⁴⁸

6.46 The benefits of this approach are that it:

- re-establishes areas that have historically been carbon sinks including wetlands and swampy meadows;
- sustains soil moisture levels, creating deep 'soil sponges' that mitigate the impacts of climatic variation, including drought, on soil carbon levels over time;
- supports the recovery of habitat and biodiversity in farming landscapes; and
- leads to increases in agricultural productivity due to enhanced soil biology, humification and nutrient cycling, reduced erosion and sediment loss, and more reliable plant growth.⁴⁹

6.47 The Institute observed that these restoration techniques were best done at a catchment scale. It concluded that:

An integrated holistic approach to repairing and restoring the function of our landscapes through landscape rehydration can begin to address the impacts of climate change on our productive agricultural lands. This will be an essential component in achieving food security in the face of climate change.⁵⁰

6.48 Committee Members had the opportunity to visit the Mulloon Institute's site at Mulloon Creek, near Bungendore NSW, and see landscape rehydration at work. The project is subject to a rigorous monitoring and assessment program which allows the Institute to measure changes to the landscape across a range of criteria including

⁴⁷ WWF, *Submission 60*, p. 3.

⁴⁸ Mulloon Institute, *Submission 111*, p. 1.

⁴⁹ Mulloon Institute, *Submission 111*, p. 2.

⁵⁰ Mulloon Institute, *Submission 111*, p. 2.

hydrology, biodiversity and productivity.⁵¹ The Institute has also carried out projects in other parts of Australia across a range of landscape types.⁵²

6.49 The Institute has identified two barriers to the work it does. The first is reliance on grant funding to continue its work. The Institute finds itself in the position of not being eligible for traditional research funding streams such as ARC or CRC funding. Mrs Carolyn Hall, CEO of the Mulloon Institute, explained that funding from the National Landcare Program (NLP) Phase 2 had 'allowed an extensive monitoring system and data portal to be developed' at Mulloon Creek, but that funding was now finished. Mrs Hall noted that the Institute had worked with the NSW Department of Primary Industries to create a catchment rehydration selection tool—'a priority map that has ranked catchments across New South Wales for their suitability for landscape rehydration'. With funding, Mrs Hall observed, 'that could easily become a national tool'.

6.50 The other problem was the regulatory frameworks 'that treat farmers and natural resource managers trying to deliver these projects the same way they treat developers exploiting the environment for money'.⁵³ Mrs Hall described the situation:

...if you want to get a project like this up, you need to satisfy probably upwards of 10 pieces of legislation. There's biodiversity, there's European heritage, there's Indigenous heritage, there's water, and it just goes on and on and on. You need specialist expert reports that provide the information to satisfy those regulators so they can make a decision. It's those external additional costs that are making the cost of these projects prohibitive, particularly when we're trying to work at scale... For example, a biodiversity development assessment report in New South Wales can be between \$50,000 and \$100,000. You can build a leaky weir for \$10,000 or \$15,000. You can spend \$100,000 on design and get something watertight that's going to survive a one-in-100-years rainfall event, and you can build it for another \$100,000, but you're going to spend nearly half a million dollars on approvals. It doesn't stack up then. That's where we need this regulatory reform.⁵⁴

6.51 Mrs Hall noted that the Institute was exploring the possibility of state governments shouldering some of the costs of the regulatory burden. While landholders receive the private benefit of increased productivity, 'the ultimate benefit is a much broader public benefit when you are doing this work at scale'.⁵⁵

6.52 The Australian Food Sovereignty Alliance (ASFA) endorsed the work of the Mulloon Institute and recommended that government 'develop planning legislation, capacity building (led by farmers) and provide financial resources for landholders to work to restore natural flows'.⁵⁶

⁵¹ Mrs Carolyn Hall, CEO, Managing Director, Mulloon Institute, *Committee Hansard*, 2 August 2023, p. 4.

⁵² Mrs Carolyn Hall, CEO, Managing Director, Mulloon Institute, *Committee Hansard*, 2 August 2023, pp. 2–3.

⁵³ Mulloon Institute, *Submission 111*, p. 2.

⁵⁴ Mrs Carolyn Hall, CEO, Managing Director, Mulloon Institute, *Committee Hansard*, 2 August 2023, p. 5.

⁵⁵ Mrs Carolyn Hall, CEO, Managing Director, Mulloon Institute, *Committee Hansard*, 2 August 2023, pp. 5–6.

⁵⁶ Australian Food Sovereignty Alliance, *Submission 147*, p. 45.

Agroecology

6.53 Agroecology is perhaps the ultimate response to the challenges of sustainability and climate change in the agriculture sector. ASFA defined agroecology as:

a scientifically and experientially justified practice of agriculture that is sensitive to the ecosystems in which it is situated and that fosters the democratic participation of all peoples in the food system.

6.54 Agroecology also aims to promote ‘the deep ecological, social, and economic knowledge of First Peoples, peasants, and other small-scale food producers and custodians of Land’. Fundamentally it puts ‘decision-making power back in the hands of Indigenous Peoples and peasants and local communities’.⁵⁷

6.55 The 10 Elements of Agroecology are:

- Diversity: diversification is key to agroecological transitions to ensure food security and nutrition while conserving, protecting and enhancing natural resources.
- Co-creation and sharing of knowledge: agricultural innovations respond better to local challenges when they are co-created through participatory processes.
- Synergies: building synergies enhances key functions across food systems, supporting production and multiple ecosystem services.
- Efficiency: innovative agroecological practices produce more using less external resources.
- Recycling: more recycling means agricultural production with lower economic and environmental costs.
- Resilience: enhanced resilience of people, communities and ecosystems is key to sustainable food and agricultural systems.
- Human and social values: protecting and improving rural livelihoods, equity and social well-being is essential for sustainable food and agricultural systems.
- Culture and food traditions: by supporting healthy, diversified and culturally appropriate diets, agroecology contributes to food security and nutrition while maintaining the health of ecosystems.
- Responsible governance: sustainable food and agriculture requires responsible and effective governance mechanisms at different scales – from local to national to global.
- Circular and solidarity economy: circular and solidarity economies that reconnect producers and consumers provide innovative solutions for living within our planetary boundaries while ensuring the social foundation for inclusive and sustainable development.⁵⁸

⁵⁷ Australian Food Sovereignty Alliance, *Submission 147*, p. 16.

⁵⁸ Australian Food Sovereignty Alliance, *Submission 147*, pp. 17–18.

- 6.56 To support the promotion of agroecology, ASFA made the following recommendations:
- Promote and support Indigenous land management, including fire management, to restore biodiversity and health of Country.
 - Measure quality of agricultural systems on landscape function, provision of ecosystem services including carbon sequestration and landscape rehydration, and protection and promotion of biodiversity at the genetic, species, and ecosystem levels.
 - Support innovation through research and development, and horizontal knowledge sharing to develop and share new models, ideas and designs:
 - Agroecological farming systems
 - First Peoples-to-farmer knowledge sharing
 - Farmer-to-farmer knowledge sharing.
 - Promote and finance research into agroecological food production and co-design and co-produce educational resources in partnership with small-scale farmers.
 - Support a risk- and scale-appropriate regulatory framework to enable small-scale and agroecological production.
 - Ensure industrialised food and fibre production is appropriately regulated due to the environmental impacts of monoculture production, land clearing and the use of veterinary and agri-chemicals.⁵⁹
- 6.57 The International Fund for Agricultural Development (IFAD) also promoted the benefits of agroecology. It was leading work on capturing the true environmental and social cost of food through an enhanced economic and financial analysis (EFA+) approach. The aim 'is to recognise the broader public goods agroecology farming and food systems generate' through criteria such as biodiversity, clean water, public health and nutrition, flood risk reduction, soil regeneration, carbon storage and emissions reductions. IFAD stated that:
- EFA+ will benefit governments and policy makers at all levels, international financial institutions, insurance companies, and private sector impact investors by making visible the benefits of agroecology for ecosystem services and sustainable food systems and positively affect the flow of investments.⁶⁰
- 6.58 The University of Queensland linked agroecology to local food systems and short supply chains, observing that these have 'strong potential to addressing the cost of food (economic, and environmental)'.⁶¹

⁵⁹ Australian Food Sovereignty Alliance, *Submission 147*, p. 66.

⁶⁰ International Fund for Agricultural Development, *Submission 177*, p. 3.

⁶¹ University of Queensland, *Submission 53*, p. 5.

The challenge of biosecurity

- 6.59 Another major risk to Australia's food security is pest and disease incursions. The National Retail Association observed that 'livestock, farming, and the agricultural sector will be adversely impacted by any biosecurity hazards'. This included 'plant and pest diseases, antimicrobial resistance, and biological and chemical hazards'.⁶²
- 6.60 The Australian Livestock and Rural Transporter's Association (ALRTA) stated that 'Australia's biosecurity preparedness directly affects food security because an exotic disease incursion can affect domestic food yield, cost of production, food safety, market access and prices'.⁶³
- 6.61 Seafood Industry Australia (SIA) noted that 'any major biosecurity breach has the potential to wipe out an entire sector of Australia's seafood industry, or agriculture industry more broadly thereby having a significant impact on national food security'.⁶⁴ It asserted that 'the maintenance of a comprehensive and effective biosecurity system is vital for the protection of Australia's agriculture and fisheries sectors'. SIA observed that there was 'a plethora of international and domestic examples' of biosecurity breaches 'resulting in the devastation of rural industries, impacts on food supply, export bans, reduced market access and national revenue, and long-term impacts on the world's food security'. It noted that the estimated costs of invasive species across industry and government in the last six decades was in the order of \$390 billion. In addition to this, was 'foregone growth and missed market opportunities'.⁶⁵
- 6.62 The Australian Fresh Produce Alliance (AFPA) highlighted the importance of strong and effective biosecurity to the fresh produce industry's ability to trade, while also protecting our domestic production. It stated that 'in order to ensure the ongoing production of fresh produce in Australia, significant attention must be paid to our biosecurity system'.⁶⁶
- 6.63 The National Retail Association emphasised the importance of State and Federal cooperation in the management of biosecurity and the need for additional surveillance, resources and increased education. It identified 'the need to work with industry to secure better surveillance systems, enhance data sharing across sectors, improve biosecurity community engagement and develop national [and] international biosecurity innovation priorities'.⁶⁷ The Northern Territory Government also highlighted the need for community engagement, stating that 'Australians need to adopt a greater level of awareness of the importance of biosecurity and that it is everyone's responsibility'.⁶⁸

⁶² National Retail Association, *Submission 141*, p. 2.

⁶³ Australian Livestock and Rural Transporter's Association, *Submission 166*, p. 2.

⁶⁴ Seafood Industry Australia, *Submission 125*, p. 25.

⁶⁵ Seafood Industry Australia, *Submission 125*, p. 26.

⁶⁶ Australian Fresh Produce Alliance, *Submission 135*, p. 11.

⁶⁷ National Retail Association, *Submission 141*, p. 2.

⁶⁸ Northern Territory Government, *Submission 132*, p. 10.

- 6.64 In its submission, Charles Sturt University expressed concern that ‘at present, too much of Australia’s response to biosecurity threats to the agricultural sector is reactive’. It suggested, however, that there are signs—‘with the development of the new National Biosecurity Strategy’—that this was changing.⁶⁹
- 6.65 Nonetheless, it is acknowledged that Australia has some of the best biosecurity protocols in the world. A number of industries are protected by strict restrictions on the import of agricultural products from overseas. Australia does not import eggs due to disease risks.⁷⁰ Australia’s strict biosecurity protocols and risk assessment prohibit the importation of fresh pork; only cooked product can be brought in because the cooking process eliminates disease.⁷¹ A similar regime applies to chicken meat. Chicken producer Ingham’s Group stated that ‘Australia’s strict biosecurity regime, including the ban on chicken meat imports, actively protects this country from the devastation these diseases could impose on this industry, the economy, the community and the environment’. It considered ‘a strict biosecurity regime is a central plank in the policy framework required to deliver food security in this country’, and recommended that:
- The Committee endorse continuing support for the conservative import protocols in place to protect against exotic disease incursions into the Australian chicken meat industry, given it is a key centrepiece of food security in Australia.⁷²
- 6.66 Dr Mary Wu, Chief Executive Officer, Australian Chicken Meat Federation, highlighted Australia’s effective response to previous outbreaks of avian influenza, telling the Committee:
- Australia has really strong preparedness strategies in place to be able to respond quickly and basically eradicate the disease as soon as it comes in. The last time we had AI was in 2020, and that was in Victoria. That was resolved fairly quickly. Obviously, we eradicate the birds that are infected, we establish control zones around them to stop movement, we go in with our control measures and then we are declared free.⁷³
- 6.67 Despite this, the industry remained on alert because of how quickly the current strain of the disease had moved around the world and how many birds had succumbed to it.⁷⁴
- 6.68 Likewise, Meat & Livestock Australia (MLA) acknowledged the work of the Australian Government in strengthening Australia’s border controls around biosecurity in

⁶⁹ Charles Sturt University, *Submission 36*, p. 5.

⁷⁰ Egg Farmers of Australia, *Submission 14*, p. 6.

⁷¹ Ms Margo Andrae, Chief Executive Officer, Australian Pork Ltd, *Committee Hansard*, 22 March 2023, p. 3.

⁷² Ingham’s Group Limited. *Submission 137*, pp. 14–15.

⁷³ Dr Mary Wu, Chief Executive Officer, Australian Chicken Meat Federation, *Committee Hansard*, 2 June 2023, p. 5.

⁷⁴ Dr Mary Wu, Chief Executive Officer, Australian Chicken Meat Federation, *Committee Hansard*, 2 June 2023, p. 5.

response to the Foot-and-Mouth Disease (FMD) and Lumpy Skin Disease (LSD) risk in Indonesia. Activities and investments included:

- Supporting the Indonesian Government to review its national traceability system to help track and control livestock movements.
- Funding portable cattle yards to assist local government authorities to vaccinate cattle for FMD.
- Partnering with the Australian Government to deliver biosecurity support to Indonesia.
- Providing in-country vaccination support, including a reimbursement for vaccinations of Australian cattle entering Indonesian feedlots. MLA has committed up to \$1.3 million.
- Investing in research and innovation, such as partnerships around the development of mRNA vaccines for LSD.⁷⁵

6.69 The Department of Agriculture, Fisheries and Forestry (DAFF) acknowledged that increasing biosecurity risks in our region required stronger and more resilient systems to effectively manage animal disease risks. DAFF observed that it ‘invests considerable resources to understand the risks posed by these diseases to minimise these biosecurity threats’.⁷⁶

6.70 DAFF also highlighted the National Biosecurity Strategy, released in August 2022. The Strategy ‘provides a strategic roadmap for Australia’s biosecurity system over the next 10 years in recognition of the critical role biosecurity plays in maintaining a strong agricultural sector and supporting our environment and biodiversity’. The Strategy covers exotic and established pests, weeds and diseases, including zoonotic diseases, but not human biosecurity. DAFF advised that the Strategy ‘will be underpinned by a national implementation plan and national action plan, complemented by other local, regional and sector-based action plans’. The Strategy is also founded upon the Intergovernmental Agreement on Biosecurity and builds on the National Biosecurity Statement, and various government and sectoral biosecurity strategies.⁷⁷

Potential cost of incursions on production

6.71 The potential costs of incursions were highlighted by a number of stakeholders. For example:

- The National Farmers’ Federation (NFF) observed that the economic impact of a FMD incursion on Australia’s livestock industries was estimated at \$80 billion.
- The cost to the grains industry of a Khapra beetle incursion was estimated at \$16 billion.

⁷⁵ Meat & Livestock Australia, *Submission 115*, p. 3.

⁷⁶ Department of Agriculture, Fisheries and Forestry, *Submission 116.1*, p. 2.

⁷⁷ Department of Agriculture, Fisheries and Forestry, *Submission 116*, p. 8.

- The cost to horticulture of a Varroa mite incursion was estimated at \$5 billion.⁷⁸
- 6.72 Such outbreaks would detrimentally affect the cost and availability of food. An outbreak of FMD would see ‘a very big reduction in the availability of protein in Australia’. An outbreak of Khapra beetle would limit the availability of grain and the ability to export to key markets, ‘which would have flow-on effects for global food security’.⁷⁹ Moreover, the NFF stressed, ‘while the economic impacts of such incursions are stark, the social impacts on not just Australia’s 80,000 farmers, but the communities they underpin, would also be enormous’.⁸⁰
- 6.73 Meat and Livestock Australia stated that an incursion of FMD or LSD ‘would devastate the Australian cattle and beef industry and the associated communities and businesses’.⁸¹ For example, a suspected outbreak of LSD in July 2023 resulted in the immediate suspension of live cattle exports to Indonesia and Malaysia.⁸²
- 6.74 An FMD outbreak was also expected to have severe consequences for the dairy industry including significant impacts across the entire supply chain and international trade losses. It was estimated that ‘the overall cost for the Australian dairy industry from an FMD outbreak would be approximately \$6.5 billion over 10 years’. It would ‘potentially take years for Australia to return to its FMD free status’.⁸³
- 6.75 The pork industry was concerned about multiple threats, including African Swine Fever (ASF), Japanese encephalitis virus (JEV) and FMD. It indicated that an outbreak of ASF could cost around \$2 billion dollars; and noted that ‘the combination of these challenges has disrupted normal operations across the domestic and global pork supply chain, risking both business continuity and pig welfare’. Australian Pork Limited cited analysis from the Centre of Excellence for Biosecurity Risk Analysis (CEBRA) in 2021 which found that ‘the likelihood of Australia experiencing a major animal disease outbreak in the next five years sits at 42 per cent’.⁸⁴ Ms Margo Andrae, Australian Pork Limited’s CEO, told the Committee:
- We’ve managed to keep the top 10 exotic diseases out of this country over the decades, but we know that is not ideal at the moment, because the diseases are flying at us. But we’ve managed to keep them out.⁸⁵
- 6.76 SIA observed that ‘aquatic animal disease is one of the most serious constraints to the expansion and development of sustainable aquaculture’. The Australian aquaculture industry had experienced recent disease incursions including White Spot Disease in prawns and Abalone Viral Ganglioneuritis disease in Victoria and

⁷⁸ National Farmers’ Federation, *Submission 103*, p. 15.

⁷⁹ Mr Kade Denton, General Manager, Trade and Economics, National Farmers’ Federation, *Committee Hansard*, 15 February 2023, p. 8.

⁸⁰ National Farmers’ Federation, *Submission 103*, p. 15.

⁸¹ Meat & Livestock Australia, *Submission 115*, p. 3.

⁸² See <https://www.abc.net.au/news/2023-08-10/malaysia-joins-indonesia-in-suspending-live-cattle/102712248>.> Accessed 6 October 2023.

⁸³ Australian Dairy Products Federation, *Submission 136*, p. 20.

⁸⁴ Australian Pork Limited, *Submission 138*, p. 19.

⁸⁵ Ms Margo Andrae, Chief Executive Officer, Australian Pork Ltd, *Committee Hansard*, 22 March 2023, p. 3.

Tasmania. SIA noted that ‘globally, a trend in aquaculture is the emergence of novel, previously unknown diseases that cause major cross border production losses approximately every three to five years’. The causes of this trend included:

- Trade and movement of live animals and related products;
- Industry development moving ahead of our understanding of biosecurity risks;
- Lack of capacity in institutional and technical aquatic animal health management; and
- Ecosystem changes arising from dynamic aquatic ecosystems, including through direct human activity and environmental changes, such as climate change.

6.77 The chicken meat industry noted that while Australia remained free of exotic diseases such as virulent Infectious Bursal Disease and Avian Influenza type H5N1, those diseases are present in nearly all other countries and represented a major threat to Australia’s poultry industry. Any outbreak ‘would erode the contribution chicken meat makes to Australia’s food security’.⁸⁶

6.78 Dr Mary Wu told the Committee that ‘protecting our valuable national flock by maintaining strict biosecurity controls, particularly of imported product, in the context of a dramatic global deterioration in animal health’, in the face of the current global outbreak of highly pathogenic avian influenza, was a priority for the industry.⁸⁷

6.79 For its part, the Australian Fresh Produce Alliance highlighted the potential biosecurity risk facing the horticulture industry:

Biosecurity is a clear example where a failure of government policy or program can have a significant effect on Australia’s food security. Significant pests of concern for horticulture such as citrus canker, brown marmorated stink bug, and leaf miner would all have a substantial impact on the production and distribution of fresh produce and in some cases, eliminate valuable export markets that drive industry growth and sustainability.⁸⁸

6.80 The grains sector was also concerned about biosecurity, especially with regard to the threat and potential impact of Khapra beetle. Ms Annabel Mactier, of GrainGrowers Ltd, told the Committee:

There's a whole heap of factors, including climate change, increased cross-border movements—and even COVID has contributed to a significantly larger risk of incursion than we've ever had before. So we need the biosecurity measures to really match that increased risk, because that is a direct threat for food production in Australia—for all food production, not just grain—definitely.⁸⁹

⁸⁶ Ingham’s Group Limited. *Submission 137*, pp. 14–15.

⁸⁷ Dr Mary Wu, Chief Executive Officer, Australian Chicken Meat Federation, *Committee Hansard*, 2 June 2023, p. 1.

⁸⁸ Australian Fresh Produce Alliance, *Submission 135*, p. 11.

⁸⁹ Ms Annabel Mactier, Policy Manager, Trade and Supply Chains, GrainGrowers Ltd, *Committee Hansard*, 2 June 2023, p. 32.

Climate change and biosecurity threats

- 6.81 Climate change was identified as a significant contributor to the biosecurity challenges facing Australia. Charles Sturt University noted that ‘climate change is only increasing the magnitude of these threats, with warming conditions spreading the range of some diseases and pests, and higher rainfall increasing the likelihood, and spread, of diseases like lumpy skin’.⁹⁰ Similarly, the Queensland Farmers Federation stated that with ‘global temperature continuing to rise, the incidence of biosecurity threats increases, as pests and disease increase their range of latitude and longitude distribution’. It argued that more funding needed to be provided to address ‘the impacts of climate change on agriculture and the impacts to biosecurity from the inevitable increase of pests and diseases as the climate continues to warm’.⁹¹
- 6.82 Dr Maxine Piggott, Professor of Tropical Biosecurity at Charles Darwin University, observed that ‘we’re certainly seeing an increase in biosecurity risks coming into the country, and I think, with climate change, there will be more of that’. Dr Piggott was concerned at the lack of information or data for northern Australia regarding pathways for pests and disease incursions.⁹² The Northern Territory Government also noted that among the negative impacts of climate change was ‘increased biosecurity risks’.⁹³
- 6.83 Australian Pork Limited expected climate change to impact the pork industry in a numbers of ways, including increased biosecurity threats. It highlighted predictions by animal health specialists that ‘increased temperatures due to climate change, combined with biodiversity and species migratory changes, will lead to an increased risk of zoonotic diseases’. It noted that the pork industry had responded to a range of animal disease threats such as Swine Influenza (2009) and JEV (2022), while maintaining vigilance for other threats from near neighbours such as FMD and ASF.⁹⁴
- 6.84 DAFF acknowledged the increased biosecurity risks associated with changing global climatic and trade patterns.⁹⁵ It also acknowledged the increased risks from mosquito and other insect borne diseases of animals following recent wet weather and flooding events:

In late February 2022, a large outbreak of Japanese encephalitis virus (JEV) occurred for the first time in the eastern and southern states of Australia, causing abortions and still births in sows, boar infertility, and possible cases of encephalitis in horses. The disease is transmitted by mosquitoes and also affects people. It can cause severe encephalitis and death.⁹⁶

⁹⁰ Charles Sturt University, *Submission 36*, p. 5.

⁹¹ Queensland Farmers Federation, *Submission 133*, p. 11.

⁹² Dr Maxine Piggott, Professor of Tropical Biosecurity, Charles Darwin University, *Committee Hansard*, 27 July 2023, p. 27.

⁹³ Northern Territory Government, *Submission 132*, p. 9.

⁹⁴ Australian Pork Limited, *Submission 138*, p. 18.

⁹⁵ Department of Agriculture, Fisheries and Forestry, *Submission 116.1*, p. 2.

⁹⁶ Department of Agriculture, Fisheries and Forestry, *Submission 116.1*, p. 3.

- 6.85 DAFF noted that previously the virus had only been detected in far northern Australia. It stated that ‘surveillance and preparedness activities are underway in anticipation of another wet summer season and increased risk of mosquito-borne diseases, including JEV’.⁹⁷

Paying for biosecurity

- 6.86 Funding for biosecurity is a complex mix of federal, state and industry funding, much of which comes from industry levies. A number of industry bodies expressed frustration over the current mix of funding, arguing that it was inadequate and fell disproportionately on growers. According to AUSVEG:

Growers and industry are currently bearing the cost of increasing biosecurity incursions, whether through partaking in an eradication response or increased management costs.⁹⁸

- 6.87 AUSVEG noted, however, that ‘there are entities along the risk pathways of cargo, sea vessels and aircraft, international travellers, post, and mail that, while contributing to the risk of new pest incursions, do not share the responsibility of the incursion’.⁹⁹
- 6.88 AUSVEG argued that biosecurity was a ‘shared responsibility’ and that the burden of cost should be shared with stakeholders along the risk pathway. It suggested that ‘an import levy, along with a passenger levy, is critical to ensure biosecurity is a shared responsibility’. It argued that ‘cost sharing of biosecurity risks should be equitable for all parties along the risk pathway’. This would ‘provide a pathway for sustained funding for biosecurity preparedness and response’.¹⁰⁰ AUSVEG recommended that the Government restart consultation on the Biosecurity Imports Levy with stakeholders with a view to implementation; and increase capacity and capability of critical government services in biosecurity through increased and sustained funding.¹⁰¹ In a similar vein, Grain Producers Australia proposed a container levy.¹⁰²
- 6.89 The Australian Fresh Produce Alliance (AFPA) also argued that ‘funding models (both for export and import) that rely on a “user pays” model for biosecurity do not consider the net-benefit or public good created for all Australians by effectively managing biosecurity’. It recommended that:

That Government deliver on its commitment to establish long-term, sustainable funding for biosecurity, which is not dependent on trade levies or new taxes on farmers but drawn from central funding in recognition of biosecurity being of national interest and for public good.¹⁰³

⁹⁷ Department of Agriculture, Fisheries and Forestry, *Submission 116.1*, p. 3.

⁹⁸ AUSVEG, *Submission 99*, p. 15.

⁹⁹ AUSVEG, *Submission 99*, p. 15.

¹⁰⁰ AUSVEG, *Submission 99*, p. 16.

¹⁰¹ AUSVEG, *Submission 99*, p. 16.

¹⁰² Mr Colin Bettles, Chief Executive, Grain Producers Australia, *Committee Hansard*, 24 March 2023, p. 6.

¹⁰³ Australian Fresh Produce Alliance, *Submission 135*, p. 11.

- 6.90 While acknowledging and supporting existing funding programs in place for biosecurity, Australian Pork Limited stated that a barrier to implementing long-term biosecurity solutions was sustainable funding. It questioned whether current compensation and funding arrangements provided enough cover for losses from biosecurity incidents and whether they still serve the needs of the national biosecurity system. It recommended a ‘sustainable and strategically aligned biosecurity funding solution’, which was independent of political cycles, representative of the entire biosecurity system, shared by all stakeholders, and prioritised by risk assessment.¹⁰⁴
- 6.91 The NSW Farmers’ Association argued that the current model for funding biosecurity was unsustainable, unable to cover all biosecurity system costs and response losses or move in line with Australia’s increasing risk exposure. It, ‘along with other industry stakeholders’, advocated for ‘a sustainable funding model which allocates risk equitably between key risk creators and system beneficiaries, effectively accounting for imbalances in existing cost recovery arrangements for certain border pathways’. The NSW Farmers’ Association asserted that ‘any funding must be invested back into this system and integrated with the necessary drivers to capture and allocate responsibility and cost based on matrixes of risk, benefit, involvement, and capacity’. This was to ensure long-term security in the face of dynamic biosecurity risks. The NSW Farmers’ Association acknowledged the current consultation process being undertaken by DAFF on making national biosecurity funding sustainable.¹⁰⁵

Committee comment

- 6.92 Evidence presented to the Committee highlights the threat of climate change to Australia’s food security. ABARES’ research tells us that climate change is already playing a significant role in the production and profitability of rural industries, a fact largely disguised to date by substantial improvements in productivity. The challenge presented by climate change will require innovation across the entire food supply chain, but especially on farm. Measures will need to be taken to reduce agricultural emissions and improve the environmental sustainability of agricultural production.
- 6.93 Fortunately, there are plenty of options available for meeting the challenge of climate change and Australia’s farmers have a great track record for innovation. The Committee was impressed by the work of Sea Forest in developing feed supplements to reduce ruminant emissions. The Committee strongly encourages this work, and for the adoption of this technology by farmers. The Committee supports the idea of early adopters of this technology being eligible for Australian Carbon Credit Units under the Emissions Reduction Fund through the mechanism of a ‘notice of intent’.
- 6.94 Regenerative agriculture in all its variety has great potential to meet the challenges of climate change by allowing for production methods which increase soil carbon, reduce emissions, reduce reliance on inputs and restore the landscape. An important part of encouraging the take-up of these opportunities will be the development of

¹⁰⁴ Australian Pork Limited, *Submission 138*, p. 20.

¹⁰⁵ NSW Farmers’ Association, *Submission 143*, pp. 14–15.

clear definitions of natural capital and the development of natural capital markets. Putting a value on natural capital will allow it to be accounted for in production and monetised in developing natural capital markets.

- 6.95 The Committee was particularly impressed by the work of the Mulloon Institute and its landscape rehydration projects. Relatively small interventions had restored the health of the Mulloon Creek catchment and substantially increased the amount of moisture in the landscape. The Committee notes the difficulties faced by organisations such as the Mulloon Institute in accessing sustained funding for what is long-term research, development and extension (RD&E) at landscape level. The Committee would like to see the Australian Government develop a funding stream for this kind of RD&E.
- 6.96 The Committee also notes the difficulties in obtaining development approvals for this kind of landscape restoration. It seems perverse that relatively minor interventions aimed at restoring the natural capital of a landscape should be subject to almost prohibitive development costs. The Committee would like to see this situation improved, either through co-contributions from government or grant funding that defrays the development costs.
- 6.97 The Committee considers that biosecurity threats represent a real and significant risk to Australia's food security. Although Australia has some of the best biosecurity systems and protocols in the world, incidents such as the current Varroa mite incursion demonstrate that Australia can take nothing for granted.
- 6.98 The costs of a significant biosecurity incursion would be enormous to industry and damaging to trade. Nearly every major agriculture industry is vulnerable to a major pest or disease outbreak. This means that Australia must continue to have strict biosecurity systems and protocols to provide the food sector with the highest level of protection possible. The Committee welcomes the release of the National Biosecurity Strategy and looks forward to following its development and implementation.
- 6.99 Climate change will increase the biosecurity threat by increasing the range of existing biosecurity risks and the volume of potential threats. This will require that the biosecurity system remains agile, responsive and, where possible, proactive. The Committee acknowledges the work of the Australian Government in supporting the response of Indonesia to FMG and LSD.
- 6.100 Biosecurity is everyone's responsibility. There is a strong case for increased public education on how breaches in biosecurity impact the food system and what people can do to protect the food system from possible incursions. This should be targeted at anyone who interacts with Australia's international borders.
- 6.101 The Committee acknowledges the challenge of funding biosecurity and industry concerns that much of the burden has fallen on them. Given the accelerated movement of people and goods across international borders, the potential impacts of climate change in facilitating the spread of pests and diseases, and the consequences of a major disease or pest outbreak, funding should reflect the

responsibilities and benefits for all stakeholders, and the importance of biosecurity to the whole nation.

Recommendation 23

6.102 The Committee recommends that the Australian Government support early adopters of emissions reduction technologies in agriculture through the mechanism of notices of intent, to ensure they remain eligible for Australian Carbon Credit Units under the Emissions Reduction Fund.

Recommendation 24

6.103 The Committee recommends that the Australian Government work with industry and other stakeholders to develop standard definitions of natural capital and develop natural capital markets.

Recommendation 25

6.104 The Committee recommends that the Australian Government develop a funding stream for long-term, public-interest RD&E which promotes the environmental sustainability of agricultural production.

Recommendation 26

6.105 The Committee recommends that the Australian Government work with State and Territory Governments to ensure the financial viability of landscape restoration projects either through co-contributions from government or grant funding that defrays the development costs.

Recommendation 27

6.106 The Committee recommends that the Australian Government develop a public education campaign to inform people of their biosecurity responsibilities and what they can do to protect the food system from possible incursions, with a focus on individuals or organisations interacting with Australia's international borders.

Recommendation 28

6.107 The Committee recommends that the Australian Government ensure that funding for biosecurity reflects the responsibilities and benefits of biosecurity for all stakeholders and the importance of biosecurity to the nation as a whole.



7. Food insecurity

Introduction

- 7.1 This chapter examines food insecurity in Australia, including its origins and impacts, the importance of nutritional education and awareness, and particular challenges for Indigenous and remote communities. Responses to food insecurity in Australia are also discussed.
- 7.2 Food insecurity can be an overlooked aspect of Australia's food security. The Menzies Centre for Health Governance submitted that the 'dominant discourse' of Australia being food secure 'masks the reality of household food insecurity that exists'.¹ Professor Danielle Gallegos, for the Public Health Association of Australia, outlined the significance of food insecurity:

Being able to access an affordable, nutritious diet that contributes to an active and healthy life, irrespective of your circumstances or where you live, is a human right. Food security is not only about being able to produce enough healthy food; it's also about making sure that it reaches the tables of families. ... Our work is showing that this is not the case in Australia. ... A generation of children are relying on chicken nuggets and chips day in and day out.²

What is food insecurity?

- 7.3 The United Nations Food and Agricultural Organization (FAO) defines food insecurity as—'a person is food insecure when they lack regular access to enough safe and nutritious food for normal growth and development and an active and healthy life'.³
- 7.4 This definition of food insecurity is further categorised into degrees of severity:
- Mild: uncertainty regarding ability to obtain food.
 - Moderate: compromising on food quality and variety; reducing food quantity; and skipping meals.

¹ Menzies Centre for Health Governance, *Submission 41*, p. 1; Queensland University of Technology, *Submission 69*, p. 1.

² Professor Danielle Gallegos, Subject Matter Expert, Food and Nutrition Special Interest Group, Public Health Association of Australia, *Committee Hansard*, 2 June 2023, p. 25.

³ Food and Agriculture Organization, Hunger and Food Insecurity, <<https://www.fao.org/hunger/en/>>. Accessed 21 September 2023; see also Dr Scott McKeown, Deputy Director, Public Health, Public Health Services, Tasmanian Department of Health, *Committee Hansard*, 12 April 2023, p. 4.

- Severe: no food for a day or more or, in extreme cases, several days.⁴
- 7.5 The US Department of Agriculture defines food insecurity in terms of whether a person or household has limited or uncertain access to adequate food. Under this definition, the degree of insecurity is classed as:
- Low food security: reports of reduced quality, variety, or desirability of diet. Little or no indication of reduced food intake.
 - Very low food security: reports of multiple indications of disrupted eating patterns and reduced food intake.⁵
- 7.6 The Committee heard that Aboriginal and Torres Strait Islander definitions and understandings of food security may differ to commonly accepted Western definitions.⁶ Rebekah Clancy, Miwatj Aboriginal Health Corporation, explained that in East Arnhem the definition of food security emphasizes cultural appropriateness, nutritional quality and sustainability.⁷ Ms Clancy stated:
- The land and the sea is our food security. It is our right. Food security for us has two parts. It's when the food of our ancestors is protected and always there for us and our children. It's when we can easily access and afford the right non-traditional food for a collective, healthy and active life. When we are food secure we can provide, share and fulfil our responsibilities. We can choose good food, know how to make healthy choices and know how to prepare and use it.⁸

How many people are food insecure?

- 7.7 OzHarvest stated that food insecurity is a 'complex issue' that 'affects people from across the community and it's not always who you think.'⁹
- 7.8 Many stakeholders highlighted the key findings of Foodbank Australia's 'Hunger Report 2022' as an indicator of food insecurity in Australia.¹⁰ Foodbank is a national food relief organisation that distributes food and groceries to charities.¹¹
- 7.9 Foodbank's report found that in 2021, 2 million households (21 per cent of households) in Australia had experienced food insecurity 'because of financial

⁴ Food and Agriculture Organization, Hunger and Food Insecurity, <<https://www.fao.org/hunger/en/>>. Accessed 21 September 2023.

⁵ United States Department of Agriculture Economic Research Service, 'Definitions of Food Security' at <<https://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-u-s/definitions-of-food-security/>>. Accessed 20 September 2023.

⁶ Dr Amy Carrad, *Submission 29*, p. 5; see also, Public Health Association of Australia, *Submission 58*, p. 4.

⁷ Rebekah Clancy, Nutrition Team Leader and Public Health Nutritionist, Miwatj Health Aboriginal Corporation, *Committee Hansard*, 27 July 2023, p. 15.

⁸ Rebekah Clancy, Nutrition Team Leader and Public Health Nutritionist, Miwatj Health Aboriginal Corporation, *Committee Hansard*, 27 July 2023, p. 15; see also Dr Amy Carrad, *Submission 29*, p. 5.

⁹ OzHarvest, *Submission 40*, p. 7.

¹⁰ See for example: National Rural Women's Coalition, *Submission 20*, p. 4; OzHarvest, *Submission 40*, p. 3; Fair Food WA, *Submission 62*, p. 4.

¹¹ Foodbank Australia, *Submission 24*, p. 3.

limitations and at worst went entire days without eating'.¹² The Australian Food Sovereignty Alliance estimated that among people experiencing food insecurity, only half will seek food relief from charities.¹³

Box 7.1 Foodbank Australia Hunger Report 2022

The Hunger Report 2022 surveyed a sample of 4,000 adults around Australia using methods applied by the United States Department of Agriculture Household Food Security Survey Module (HFSSM).

The report's findings included:

- Households with children were even more likely to experience severe food insecurity, with 32% reporting that they were severely food insecure – 1.5 times greater than the national average (21%).
- The main reasons reported for experiencing severe food insecurity in 2022 were increased/high living expenses (64%) (with the cost of food and groceries confirmed as the top cause followed closely by energy and housing costs) and reduced/low income or government benefits (42%), in addition to other factors such as a change of household living arrangement (24%) or natural disasters (19%).
- Food insecurity is impacting a diverse range of households. However, some are more susceptible to experiencing food insecurity than others, such as households with dependent children (52%), those with young adults 18-24 years old (60%), those unemployed/looking for work (52%) or households currently renting (45%). More than half of food insecure households (54%) had someone in paid work and nearly a third of households with mortgages (30%) have experienced food insecurity in the past year.

Source: Foodbank Australia, *Submission 24*, p. 12.

7.10 Other estimates of food insecurity ranged from four to thirteen per cent of the population. For example:

- The Australian Bureau of Statistics 2011–12 National Nutrition and Physical Activity Survey found that:
Nationally, 4.0% of people lived in a household that, in the previous 12 months, had run out of food and could not afford to buy more, and 1.5% of all Australians were in a household where someone went without food when they couldn't afford to buy any more. Rates were similar for all States and Territories.¹⁴

¹² Foodbank Australia, *Submission 24*, p. 12.

¹³ Australian Food Sovereignty Alliance, *Submission 147*, p. 32.

¹⁴ Australian Bureau of Statistics, *Australian Health Survey: Nutrition - State and Territory results*, <Australian Health Survey: Nutrition - State and Territory results, 2011-12 financial year | Australian Bureau of Statistics (abs.gov.au)>. Accessed 16 October 2023.

- Dietitians Australia advised that food insecurity impacts between 4 per cent and 13 per cent of Australians and that 28,000 people die each year from causes linked to unhealthy diets.¹⁵
- Dr Rachel Carey cited (in addition to Foodbank’s report) the United Nations report on the ‘State of Food Security and Nutrition in the World’, which estimated that around 11 per cent of Australians were either severely or moderately food insecure between 2020 and 2022.¹⁶

7.11 The Committee heard that there is limited statistical information on food insecurity in Australia and no agreed approach on how food insecurity is measured. For example, the University of Queensland submitted that there is ‘no nationally-recognised or consistent approach to measuring food insecurity’.¹⁷ Western Sydney University academic Dr Liesel Spencer stated:

Australia needs to measure food security/food insecurity more regularly, using the most reliable and valid measuring tools. This is essential as the basis for an informed, equitable and effective regulatory response.¹⁸

7.12 Dr Amy Carrad advised that measures of food insecurity in Australia are ‘severely lacking’ with existing data ‘extremely outdated’.¹⁹ Dr Carrad suggested that household food security should be surveyed every three years.²⁰ Dietitians Australia also identified ‘a critical need to implement a routine, robust food security monitoring and surveillance system in Australia’;²¹ as did the George Institute for Global Health (Australia) who recommended:

...extensive qualitative research with people experiencing food insecurity be conducted... to better understand the complex factors leading to and perpetuating food and water insecurity.²²

7.13 A number of stakeholders drew particular attention to the 18-item United States Department of Agriculture Household Food Security Survey Module to benchmark against high income countries.²³

¹⁵ Ms Natalie Stapleton, General Manager, Advocacy and Policy, Dietitians Australia, *Committee Hansard*, 2 June 2023, p. 24.

¹⁶ Dr Rachel Carey, Senior Lecturer in Food Systems, School of Agriculture, Food and Ecosystem Sciences, University of Melbourne, *Committee Hansard*, 4 August 2023, p. 8; see also UN Food and Agriculture Organization, <<https://www.fao.org/documents/card/en/c/cc3017en>>. Accessed 20 September 2023.

¹⁷ University of Queensland, *Submission 53*, p. 6; Cancer Council Australia, *Submission 56*, p. 6.

¹⁸ Dr Liesel Spencer, *Submission 78*, p. 9.

¹⁹ Dr Amy Carrad, *Submission 29*, p. 5.

²⁰ Based on the United States Department of Agriculture Household Food Security survey module. Dr Amy Carrad, *Submission 29*, p. 6.

²¹ Dietitians Australia, *Submission 39*, p. 3.

²² George Institute for Global Health (Australia), *Submission 43*, p. 4.

²³ For example: Edith Cowan University, *Submission 91*, p. 1; Sustain, *Submission 72*, p. 10; Monash University, *Submission 124*, p. 9; Food Fairness Illawarra, *Submission 145*, p. 2; Australia’s Right to Food Coalition, *Submission 148*, pp. 5–6.

Origins and impacts of food insecurity

7.14 A range of factors influence the extent and severity of food insecurity. The Committee heard that low incomes, high prices and long distances were among the common causes of food insecurity in Australia. The Community Grocer observed that food prices are at 'near record levels...increasing the numbers of people experiencing food insecurity' and that food charities are experiencing 'unprecedented demand'.²⁴

7.15 The Australian Fresh Produce Alliance noted the 'inability to access food is being driven by countless factors, such as household mortgage stress, petrol prices, utility prices and other household expenses'. It called on the government and responsible organisations to address the issues 'preventing families from putting food on the table'.²⁵ Similarly, Darebin Information, Volunteer and Resource Service (based in the northern suburbs of Melbourne) discussed the impacts of cost-of-living increases and the linkages between food insecurity and financial hardship.²⁶

7.16 The National Retail Association also commented on the cost of living and food insecurity.²⁷ It stated:

...high inflation, increasing energy bills and subsequent impact on the cost of food and groceries has increased food insecurity for many Australians. Increasing costs of food in rural, remote, and regional Australia significantly impacts the access to food in these communities. Geographical location and supply and demand issues have resulted in unavailability of food in some areas.²⁸

7.17 In addition, stakeholders identified a range of other factors likely to impact on food security, including climate change.²⁹ Deakin University described the many 'shocks and stressors' impacting on access to food:

These include supply chain problems stemming from the COVID-19 pandemic, the Russian war on Ukraine and recent natural disasters such as floods across many of the nation's most productive food-growing regions.³⁰

7.18 The impacts of food insecurity were significant and often cumulative. Dr Liesel Spencer submitted:

These manifestations of food insecurity are overlapping in that the people suffering long-term chronic food insecurity are even more vulnerable to crisis

²⁴ The Community Grocer, *Submission 45*, p. 1.

²⁵ Australian Fresh Produce Alliance, *Submission 135*, p. 6.

²⁶ Darebin Information, Volunteer and Resource Service, *Submission 33*, p. 1; Penelope Clark, *Submission 17*, p. 1.

²⁷ National Retail Association, *Submission 141*, p. 4.

²⁸ National Retail Association, *Submission 141*, p. 4.

²⁹ National Rural Health Alliance, *Submission 50*, pp. 8, 12; Illawarra Shoalhaven Local Health District, *Submission 86*, p. 4.

³⁰ Deakin University, *Submission 31*, p. 2.

disruptions to food supply than the general population; their already precarious food situation is exacerbated by food system shocks.³¹

7.19 Dr Spencer encouraged the Committee to view food insecurity from a public health perspective:

Food insecurity in Australia has distinct but overlapping forms: the chronic underlying food insecurity experienced by vulnerable population groups; and the crisis food insecurity resulting from short-term shocks to the food supply system, such as the Covid-19 pandemic, bushfires and floods.³²

7.20 Other stakeholders highlighted the impact of food security on physical and mental health. For example, Dr Scott McKeown, of the Tasmanian Department of Health, noted that definitions of food security or insecurity are 'very important' with connections to physical and mental health.³³ Dr McKeown commented:

It's a powerful social determinant of health, with health consequences for both adults and children, and the health impacts on children can be lifelong. Any policy, plan or program that addresses food security needs to have a clearly articulated goal, and its impact needs to be measured for success.³⁴

7.21 Similarly, the National Rural Health Alliance explained that while food insecurity is generally associated with low-income households, it can also be due to high food costs, poor nutrition literacy, difficulty in accessing fresh and nutritious food, difficulty in accessing food preparation and storage infrastructure, or poor or insecure transport links. It stated that food insecurity has a significant effect on both physical and mental health and wellbeing from infancy through to old age.³⁵

7.22 Further examples of the impact of food insecurity on health included:

- increased risk of elevated stress levels, anxiety and depression;
- smoking and drinking alcohol;
- malnutrition;
- consumption of low cost, energy-dense foods (high in fat and sugar) and carbohydrate-based meals;
- delayed child development; and
- consuming fewer plant-based foods and reducing portion size or skipping meals.

³¹ Dr Liesel Spencer, *Submission 78*, p. 2.

³² Dr Liesel Spencer, *Submission 78*, p. 2.

³³ Dr Scott McKeown, Deputy Director, Public Health, Public Health Services, Tasmanian Department of Health, *Committee Hansard*, 12 April 2023, p. 2.

³⁴ Dr Scott McKeown, Deputy Director, Public Health, Public Health Services, Tasmanian Department of Health, *Committee Hansard*, 12 April 2023, p. 2.

³⁵ National Rural Health Alliance, *Submission 50*, p. 8.

- 7.23 The Committee heard that prolonged food insecurity can cause chronic diseases in later life including diabetes, heart disease, kidney disease, hypertension, obesity, nutritional deficiencies, and poor mental health.³⁶
- 7.24 Women and children were identified as particularly vulnerable to food insecurity. Ms Keli McDonald, CEO, National Rural Women's Coalition, told the Committee that food insecurity 'affects women more than anyone else':
- ...women will often go without a meal before they will let their partner or child go without a meal, or they will reduce their calorie intake when times are tough. It's also women that are having to go to the charities to get assistance.³⁷
- 7.25 A joint submission from the World Breastfeeding Trends Initiative and the Australian Breastfeeding Association (and others) observed that infants and young children in Australia are more likely to be food insecure. The submission explained that breastfeeding rates in Australia are 'inadequate' and lower than recommended standards.³⁸ The submission added:
- The poorest and least resourced women are those most likely not to breastfeed or to breastfeed for the shortest duration, meaning that the food security risks their infants face applies not just to breastfeeding but also to the costs of feeding infant formula.³⁹
- 7.26 The Association's stated that the food security of infants and young children is 'commonly overlooked, notably in emergency and disaster planning.'⁴⁰
- 7.27 Ms Sharon McGann, of the Onkaparinga Food Security Collaborative, identified the health and social risks associated with food insecurity and children, stating:
- If the child doesn't receive sufficient nutrition in the first thousand days, they're at risk of mental impairment, poor health, low productivity and even death. ...we're concerned about the flow-on effects through education... and the health systems, and, sadly, the impacts on the justice system.⁴¹
- 7.28 The Department of Agriculture, Fisheries and Forestry (DAFF) acknowledged that some people experience 'reduced' food security, though maintained that 'Australia is broadly a food-secure nation'. Ms Joanna Stanion, from DAFF, told the Committee:

³⁶ Public Health Association of Australia, *Submission 58*, p. 4; Illawarra Shoalhaven Local Health District, *Submission 86*, p. 13; Tasmanian Government, *Submission 102*, p. 2; Diabetes Australia, *Submission 104*, p. 3; Dr Elizabeth Moore, Public Health Manager, Aboriginal Medical Services Alliance Northern Territory, *Committee Hansard*, 27 July 2023, pp. 13-14.

³⁷ Ms Keli McDonald, CEO, National Rural Women's Coalition, *Committee Hansard*, 29 March 2023, p. 4.

³⁸ World Breastfeeding Trends Initiative and the Australian Breastfeeding Association (and others), *Submission 164*, p. 5.

³⁹ World Breastfeeding Trends Initiative and the Australian Breastfeeding Association (and others), *Submission 164*, p. 5.

⁴⁰ World Breastfeeding Trends Initiative and the Australian Breastfeeding Association (and others), *Submission 164*, p. 4.

⁴¹ Ms Sharon McGann, Chair, Steering Group, Onkaparinga Food Security Collaborative, SA Food Systems Network, *Committee Hansard*, 20 April 2023, p. 8.

This is generally not due to inadequate supplier produce but driven by social disadvantage and often inadequate incomes. At times temporary shortages for specific products reduce variety and can limit options for a nutritionally rich diet. We also acknowledge that food prices have increased over the last 18 months, and this is generally a result of supply chain disruptions, flooding and rising input costs. This can also impact food security, often for limited periods.⁴²

Nutritional education and awareness

- 7.29 Fundamental to food security in Australia is nutrition. Professor Rachel Burton, of the University of Adelaide, explained:

Food security is not just the amount of food we have; it's the nutritional value of the food that we have. We lose sight of that. It's not just mass; it's actual quality. Then that feeds into our health.⁴³

- 7.30 Similarly, Dr Sarina Kilham indicated that 'simply meeting individual daily calorific count does not equate with food security because food security is a complex socioeconomic and biophysical phenomenon'.⁴⁴ Dr Patrick Hone, of the Fisheries Research and Development Corporation, referred to the benefits of seafood and said that while Australia is arguably food secure, there is 'certainly' a food nutrition issue about getting fresh nutritious food that will make people healthy and live longer lives.⁴⁵

- 7.31 Evidence indicated that sub-optimal nutrition was an issue. The Australian Fresh Produce Alliance noted that ninety-six per cent of Australians 'consume less than half of the World Health Organisation (WHO) recommended daily intake of 400g of fruits and vegetables'.⁴⁶ Average seafood consumption was also below the recommended intake. Seafood Industry Australia stated:

The Australian Dietary Guidelines and Heart Foundation recommend eating two to three servings of fish (150-200grams) per week...but according to the last National Dietary Survey, only one in four of us reported eating fish at least once a week. International guidelines also consistently recommend consumption of at least two fish meals each week.

- 7.32 Both a lack of access to fresh food and a lack of knowledge about nutrition were seen as barriers to good nutrition. Cardinia Shire, in Melbourne's east, described how there are 397 agricultural businesses in the area producing food from among all

⁴² Ms Joanna Stanion, First Assistant Secretary, Agricultural Policy Division, Department of Agriculture, Fisheries and Forestry, *Committee Hansard*, 30 November 2022, p. 1.

⁴³ Professor Rachel Burton, Professor of Plant and Food Science, School of Agriculture, Food and Wine, University of Adelaide, *Committee Hansard*, 20 April 2023, p. 6.

⁴⁴ Dr Sarina Kilham, *Submission 63*, p. 1.

⁴⁵ Dr Patrick Hone, Managing Director, Fisheries Research and Development Corporation, *Committee Hansard*, 26 May 2023, p. 1; see also Ms Veronica Papacosta, CEO, Seafood Industry Australia, *Committee Hansard*, 2 June 2023, p. 17.

⁴⁶ Australian Fresh Produce Alliance, *Submission 135*, p. 8.

dietary food groups.⁴⁷ Despite this, the Shire has been described as a ‘food swamp’, where access to ‘highly processed, nutrient poor food is significantly more accessible than nutritious food’.⁴⁸ In Cardinia Shire, ‘only 6% of adults and 4% of children consume the recommended amounts of fruit and vegetables each day’.⁴⁹ The Shire observed that most of its residents ‘are not consuming a nutritious diet that is consistent with positive health outcomes’.⁵⁰

- 7.33 Mr Matthew Rose, of OzHarvest, noted that access to nutritional food is one step and knowing how to prepare and cook the food can be a challenge.⁵¹ He added:

Often we work with schoolchildren. ... The other program we run is with disadvantaged communities. Often, we will run sessions with men at men's sheds. With men of a certain generation—I am going to generalise—perhaps their wives have passed away and they are coming in and getting involved... we're also talking to refugee communities... who are perhaps learning about what Australian produce is, and how to cook with and budget for Australian produce.⁵²

- 7.34 Professor Burton stated that nutritional education is ‘really important’, especially for children, who ‘need to know where their food comes from’.⁵³ Professor Burton added:

They need fundamental information about nutrition, and they need information that's correct, not misinformation... that has come off the internet. I think local is really important, and so is changing the expectation that you can have everything all the time. ... It's seasonal eating and it's taking advantage of what's local.⁵⁴

- 7.35 Ms Natalie Stapleton, representing Dietitians Australia, said that education is needed ‘to improve health literacy and nutrition literacy around what is a healthy diet’. Ms Stapleton added that dietary guidelines were last issued in 2013.⁵⁵

- 7.36 Ms Emma Germano, President of the Victorian Farmers Federation, observed that nutritional levels in produce or ‘how we take care of our soil’ is not necessarily acknowledged, adding that ‘there is plenty of scientific evidence that suggests that the amount of nutrient in the food today is not the same as it was decades ago’.⁵⁶ Ms Germano stated that food is instead valued depending on whether it sells:

⁴⁷ Cardinia Shire, *Submission 46*, p. 1.

⁴⁸ Cardinia Shire, *Submission 46*, p. 5.

⁴⁹ Cardinia Shire, *Submission 46*, p. 5.

⁵⁰ Cardinia Shire, *Submission 46*, p. 5; see also Professor Johannes le Coutre, Professor of Food and Health, University of New South Wales, *Committee Hansard*, 6 July 2023, p. 9.

⁵¹ Mr Matthew Rose, Advocacy and Sustainability Lead, OzHarvest, *Committee Hansard*, 23 June 2023, p. 28.

⁵² Mr Matthew Rose, Advocacy and Sustainability Lead, OzHarvest, *Committee Hansard*, 23 June 2023, p. 29.

⁵³ Professor Rachel Burton, Professor of Plant and Food Science, School of Agriculture, Food and Wine, University of Adelaide, *Committee Hansard*, 20 April 2023, p. 6.

⁵⁴ Professor Rachel Burton, Professor of Plant and Food Science, School of Agriculture, Food and Wine, University of Adelaide, *Committee Hansard*, 20 April 2023, p. 6.

⁵⁵ Ms Natalie Stapleton, General Manager, Advocacy and Policy, Dietitians Australia, *Committee Hansard*, 2 June 2023, p. 29.

⁵⁶ Ms Emma Germano, President, Victorian Farmers Federation, *Committee Hansard*, 9 August 2023, p. 2; see also Nicole Ford, CEO, Australian Organic Ltd, *Committee Hansard*, 10 July 2023, p. 49.

Often we get paid for things like how long the food lasts on the shelf and what it looks like. Perhaps this is not so relevant to a food security inquiry, but we even don't get paid on what it tastes like. We get paid by how long it's going to sit there in the supermarket and how long it can sit in a distribution centre...what we're facing is the potential for food insecurity and nutritional insecurity.⁵⁷

7.37 The Australian Fresh Produce Alliance recommended that government:

Better support household access to and the consumption of nutritious fresh produce... to create a healthier society, lower levels of preventative illness and disease in the population and relieve the pressure on future health budgets.⁵⁸

7.38 A critical gap in the improvement of health and nutrition was identified by several researchers. Dr Melissa Fitzgerald, of the University of Queensland, advised the Committee that current arrangements for research funding 'does not allow food science and food technology to work with nutritionists'. Dr Fitzgerald explained that this is because food and nutrition could fall outside the scope of two key bodies that give research funding: the Australian Research Council (ARC) and the National Health and Medical Research Council (NHMRC).⁵⁹ Likewise, Professor Burton stated:

We have quite narrow grant opportunities in this country. There's the ARC, which is for everything apart from medical, and then there's the NHMRC. Being able to push money into that nexus between industry and research is going to be really important... and will help with that commercialisation and translation of what we're doing.⁶⁰

Indigenous communities and remote areas

7.39 The high costs and logistical challenges of transporting and distributing food to remote communities is contributing to food insecurity in Indigenous communities. The National Aboriginal Community Controlled Health Organisation (NACCHO) referred to a 2013 estimate that up to 31% of Aboriginal and Torres Strait Islander people experience food insecurity. It noted however that this figure is outdated and, due to underreporting, likely underrepresents the number of Aboriginal and Torres Strait Islander people experiencing some level of food insecurity.⁶¹

7.40 NACCHO submitted that Aboriginal and Torres Strait Islander people 'disproportionately experience food insecurity' especially in rural and remote communities.⁶² It added that low household income is 'compounded by high prices', households could spend up to 50% of income on food, and 'remote households

⁵⁷ Ms Emma Germano, President, Victorian Farmers Federation, *Committee Hansard*, 9 August 2023, p. 2.

⁵⁸ Australian Fresh Produce Alliance, *Submission 135*, p. 3.

⁵⁹ Dr Melissa Fitzgerald, Professor, School of Agriculture and Food Sustainability, University of Queensland, *Committee Hansard*, 10 July 2023, pp. 15, 17.

⁶⁰ Professor Rachel Burton, Professor of Plant and Food Science, School of Agriculture, Food and Wine, University of Adelaide, *Committee Hansard*, 20 April 2023, p. 5.

⁶¹ National Aboriginal Community Controlled Health Organisation, *Submission 113*, p. 4.

⁶² National Aboriginal Community Controlled Health Organisation, *Submission 113*, p. 7.

dependent on inadequate government support payments are at a particular disadvantage'.⁶³ NACCHO stated that colonisation had restricted access to traditional foods rich in nutrients and encouraged energy-dense diets.⁶⁴

Getting food to remote communities

7.41 In 2020, the Parliamentary Standing Committee on Indigenous Affairs conducted an inquiry into food pricing and food security in remote Indigenous communities. The inquiry made 16 recommendations and highlighted the following issues:

- Indigenous people living in remote communities continue to face significant challenges with food security;
- Food and grocery prices are consistently higher on average in remote areas than in the rest of the country;
- Most remote community stores operate in a difficult trading environment and cannot purchase at volumes that allow them to negotiate for better wholesale prices;
- The supply chains for food, particularly perishable food, into remote areas are costly, are often severely affected by seasonal weather conditions and the cold chain cannot be guaranteed causing food to spoil;
- Local food production through market gardens and other operations has had mixed success.⁶⁵

7.42 Several stakeholders asked the Committee to revisit and consider the outcomes of that inquiry, noting that these issues remain unresolved.⁶⁶ For example, the Arnhem Land Progress Aboriginal Corporation (ALPA; an Indigenous corporation operating community stores in East Arnhem Land) commented on the costs and challenges of using aircraft to move fresh produce into stores during the wet season, when roads could be closed for up to six months.⁶⁷ The ALPA observed how rising fuel prices continue to place pressure on supply chains:

As fuel continued to rise over 2022 we projected it would cost the business \$365,000 in one quarter alone. At that point it was unsustainable to not pass on

⁶³ National Aboriginal Community Controlled Health Organisation, *Submission 113*, p. 7.

⁶⁴ National Aboriginal Community Controlled Health Organisation, *Submission 113*, p. 5.

⁶⁵ House of Representatives Standing Committee on Indigenous Affairs, *Report on Food Pricing and Food Security in remote Indigenous Communities*, November 2020, p. 3.

⁶⁶ For example: Ms Keli McDonald, CEO, National Rural Women's Coalition, *Committee Hansard*, 29 March 2023, p. 2; Ms Clare Hughes, Chair, Nutrition, Alcohol and Physical Activity Committee, Cancer Council, *Committee Hansard*, 2 June 2023, p. 23; Ms Christine Hickey, General Manager, Retail, Arnhem Land Progress Aboriginal Corporation, *Committee Hansard*, 27 July 2023, p. 37.

⁶⁷ Arnhem Land Progress Aboriginal Corporation, *Submission 144*, p. 4; see also Mr Mickey Wunungmurra, Deputy Chairman, Board of Directors, Arnhem Land Progress Aboriginal Corporation, *Committee Hansard*, 27 July 2023, pp. 33–4.

freight increases to the customer. We are now recouping 75% of the increased freight costs through increased prices.⁶⁸

- 7.43 The ALPA stated that 'this ultimately means if the store is unable to afford the weekly flights in the wet season, community members have limited access to fresh fruit and vegetables. But they are guaranteed to receive their mail'.⁶⁹
- 7.44 Similar issues were raised by the Miwatj Health Aboriginal Corporation. It identified that 'the unique geography and tropical climate facing communities in East Arnhem [Northern Territory] combined with issues of poverty and financial instability, causes high levels of food insecurity for Yolŋu across the region'.⁷⁰
- 7.45 Miwatj observed that food arrives on a barge from Darwin, taking around one week to arrive, reducing the shelf life of fresh produce and contributing to increased food prices.⁷¹ The Committee heard about the added costs incurred when mangoes are picked in Darwin, sent to Adelaide to be processed and returned to supermarket shelves in Darwin.⁷²

Overcoming food insecurity and supply challenges

- 7.46 A range of possible solutions for improving food security in remote locations was identified in evidence. Many of these solutions stress the need for locally led programs in local languages.
- 7.47 The CSIRO noted that 'local food production systems, such as community gardens and urban agriculture can support remote communities access to fresh produce'.⁷³ It highlighted the potential of Indigenous food and indigenous-led food systems to support health and nutrition across the country. However the CSIRO noted that governance and financial challenges will need to be addressed to ensure the durability and scaling of such initiatives. The CSIRO explained that co-designing products, services and policy solutions with communities will be necessary to ensure suitability and uptake of context-specific solutions which have co-benefits for both population and planetary health.⁷⁴
- 7.48 NACCHO also identified local programs as critical to ensuring healthy eating messages are designed and delivered in a culturally appropriate way. It suggested that community-wide nutrition promotion should be undertaken through the use of local language, cook-ups, group education, hunting trips and education on traditional foods to children in schools with Elders.⁷⁵ Specifically NACCHO stated:

⁶⁸ Arnhem Land Progress Aboriginal Corporation, *Submission 144*, p. 5.

⁶⁹ Arnhem Land Progress Aboriginal Corporation, *Submission 144*, p. 5.

⁷⁰ Miwatj Health Aboriginal Corporation, *Submission 65*, p. 12.

⁷¹ Miwatj Health Aboriginal Corporation, *Submission 65*, p. 2.

⁷² Open Food Network Australia, *Submission 74*, p. 6.

⁷³ CSIRO, *Submission 149*, p. 5.

⁷⁴ CSIRO, *Submission 149*, p. 5.

⁷⁵ National Aboriginal Community Controlled Health Organisation, *Submission 113*, p. 6.

Developing cooking skills and health literacy in young Aboriginal people is vital. Education and youth services should work closely together to educate and develop young Aboriginal people's cooking skills and appreciation for healthy eating. These promotional programs should aim to be led by Aboriginal people using local languages.⁷⁶

7.49 Similarly, Naomi Lacey, of Community Gardens Australia, said that gardens in remote Indigenous communities could have a 'huge impact' on the quality of food available.⁷⁷ Ms Lacey observed, however, that the success of the gardens tended to rely on the goodwill and enthusiasm of a couple of people coming into the community, encouraging the local community to be a part of it, and teaching them how to cook. When that person decides to move on, the garden collapses.⁷⁸ Ms Lacey said that with 'proper support and training given to the local community' outcomes could improve, but funding and support hasn't been there.⁷⁹

7.50 The Regional Food Security Alliance also submitted that:

Local community ownership of the food system enables better adaptation to local conditions and responsiveness to changes in those conditions whether transient or longer term. Resilience is strongest when we have networks of local food production and local food warehousing and distribution backed up from other localised food networks. Distributed food system models create community wealth as money is spent locally and retained in the community.⁸⁰

7.51 The Aboriginal Medical Services Alliance Northern Territory (AMSANT) proposed a range of measures to improve food security in remote communities. Dr Elizabeth Moore, Public Health Manager with AMSANT, recommended 'healthy food subsidies in very remote areas, funded through a national 20 per cent sugar tax'.⁸¹ Dr Moore also suggested:

- Improving the Centrelink remote allowance.
- Strengthening governance of community-controlled stores.
- Ensuring access to safe potable water that meets national standards and affordable power so that people can store and cook food.
- Addressing high rates of energy disconnection, which causes loss of stored food.
- Reducing overcrowding and ensuring that households have the capacity to store and cook food safely.
- Supporting access to traditional food and local food production.

⁷⁶ National Aboriginal Community Controlled Health Organisation, *Submission 113*, p. 6.

⁷⁷ Ms Naomi Lacey, President, Community Gardens Australia, *Committee Hansard*, 27 July 2023, p. 9.

⁷⁸ Ms Naomi Lacey, President, Community Gardens Australia, *Committee Hansard*, 27 July 2023, p. 9.

⁷⁹ Ms Naomi Lacey, President, Community Gardens Australia, *Committee Hansard*, 27 July 2023, p. 9.

⁸⁰ Regional Food Security Alliance, *Submission 184*, p. 3.

⁸¹ Dr Elizabeth Moore, Public Health Manager, Aboriginal Medical Services Alliance Northern Territory, *Committee Hansard*, 27 July 2023, p. 14.

- Investing in local stores, recognising their role as an essential service and encouraging them to be health-promoting stores that support healthy choices.
- Working to reduce the cost of food, including to small community stores, including through bulk-purchasing agreements and storage facilities located in remote regions.
- Developing an Aboriginal community-based workforce focused on healthy food and nutrition supported by nutritionists and dietitians based in Aboriginal primary health care and other public health staff.
- Having community and residential services funded to support healthy food options.⁸²

7.52 Mr Coryn Tambling, Food Security Consultant with AMSANT, also suggested:

- Increasing natural resource and cultural resource management activity.
- Investment into land and sea management programs, including traditional food resource mapping and planning for sustainable traditional food harvests.
- Community participation in on-country traditional food harvesting activities.
- Participation in and maintenance of traditional knowledge systems and connectedness to country.
- The development of scientific and educational resources and recordings of traditional food items, seasons, uses, harvesting, hunting and gathering, and food preparation techniques in Indigenous language and English.
- Funding to ensure that traditional food sources are protected and maintained,
- Community led and controlled local food production and harvesting of traditional foods.
- Open grant opportunities and investment in community controlled primary industries, facilities, programs and food suppliers to provide economic opportunities for remote communities to harvest traditional foods for community consumption and sale to both local and national markets.
- Funding for training linked to animal and plant-based agriculture, horticulture, aquaculture et cetera; the development of a traditional food knowledge and practices network.
- Maintenance of traditional food knowledge and nutritional promotional activities that support access to traditional foods, nutrition education and knowledge sharing.⁸³

7.53 The importance of community stores was highlighted by several stakeholders. AMSANT stated that community stores provided an essential service to their

⁸² Dr Elizabeth Moore, Public Health Manager, Aboriginal Medical Services Alliance Northern Territory, *Committee Hansard*, 27 July 2023, p. 14.

⁸³ Mr Coryn Tambling, Food Security Consultant, Aboriginal Medical Services Alliance Northern Territory, *Committee Hansard*, 27 July 2023, pp. 16-17.

communities and should be recognised and supported in the provision of these services.⁸⁴ NACCHO recommended that the Australian Government subsidise community stores in remote locations, 'to compensate for their high overheads'.⁸⁵ ALPA recommended that 'the Remote Air Services Subsidy Scheme (RASS) prioritise the delivery of fresh fruit and vegetables into wet-season impacted communities, at sufficient quantities'.⁸⁶

- 7.54 Food technology has a potential role to play in improving food security in remote communities. Dr Warren Hunt, Project Manager with the Northern Australia Food Technology Innovation Project at Charles Darwin University, discussed the potential benefits of shelf stable foods. Dr Hunt stated:

Shelf-stable foods are those foods that have been containerised, treated and sterilised to a point where they can be handled and be stored at ambient temperature. ... This has enormous utility with regard to our northern regions... We... have food access issues here in the north with regard to climatic conditions throughout the wet season. There are extended lines of supply for food that are 3,000 or 4,000 kilometres long.⁸⁷

Responses to food insecurity

- 7.55 The Committee received extensive evidence on possible solutions to food insecurity more generally. Many of these responses are linked to themes and issues discussed elsewhere in this report, such as the potential effects of climate change (see Chapter 6). Responses discussed below include community projects and institutions as food procurers and distributors.

Community projects

- 7.56 Ms Naomi Lacey, of Community Gardens Australia, said that urban agriculture and community gardens 'provide a really good opportunity to help alleviate food insecurity'.⁸⁸ Ms Lacey told the Committee:

We are teaching people how to grow food... how to cook... how they can grow food in very small spaces. That might not be all the food that they need for their family and for their household, but it can be quite a significant proportion of it.⁸⁹

- 7.57 Professor Danielle Gallegos, representing the Public Health Association of Australia, advised that Victorian local governments have been creating food hubs:

⁸⁴ Aboriginal Medical Services Alliance Northern Territory, *Submission 73*, pp. 1, 9.

⁸⁵ National Aboriginal Community Controlled Health Organisation, *Submission 113*, p. 7.

⁸⁶ Arnhem Land Progress Aboriginal Corporation, *Submission 144*, p. 7.

⁸⁷ Dr Warren Hunt, Project Manager, Northern Australia Food Technology Innovation Project, Charles Darwin University, *Committee Hansard*, 27 July 2023, p. 26.

⁸⁸ Ms Naomi Lacey, President, Community Gardens Australia, *Committee Hansard*, 27 July 2023, p. 7.

⁸⁹ Ms Naomi Lacey, President, Community Gardens Australia, *Committee Hansard*, 27 July 2023, p. 7.

They are co-designing food hubs with members of the community so that people are having a say in what their local food system looks like, how it is enacted and what access to food they have. It's embracing community members and listening to their voices and their ideas and putting them into play.⁹⁰

- 7.58 Ms Jane Adams, Chairperson of the Australian Farmers Markets Association, suggested greater 'connectivity between farmers markets, food hubs, food rescue, community gardens and school gardens' and 'integrative policy settings' across health, nutrition, regional development and environmental planning. 'All these things come together when you look at the total foodscape,' Ms Adams explained.⁹¹

Institutions

- 7.59 Institutional food procurement has a role in promoting food security in the community. Ms Pieta Bucello, of Cardinia Shire Council, suggested that institutional food procurers could provide opportunities to local food producers and 'help strengthen those local food systems'.⁹² Ms Leah Galvin highlighted the success of institutional food procurement models in Denmark and the United Kingdom, but noted that change depended on prioritising local food sources.⁹³ Ms Galvin explained:

Any system that you create, including through procurement or others, and any changes you create in the food system that build resilience and self-sufficiency in a region or state are most certainly about achieving food security. It has an impact on supply. It also has an impact potentially on production and foods grown in local regions. I certainly observed that in the models I saw. There was a lot of cooperation between institutions and farmers on the kind of food they want to produce.⁹⁴

- 7.60 Dr Scott McKeown, of the Tasmanian Department of Health, drew attention to meals being provided at school canteens:

When we can get decisions that are good for the producer, that are good for human health and that are good for the climate, we can have our best impact. A practical example of such a program with co-benefits is the School Lunch Project, which is funded by the Tasmanian government and is managed by School Food Matters within Tasmania.⁹⁵

⁹⁰ Professor Danielle Gallegos, Subject Matter Expert, Food and Nutrition Special Interest Group, Public Health Association of Australia, *Committee Hansard*, 2 June 2023, p 26; see also Ms Pieta Bucello, Coordinator, Health and Social Planning, Cardinia Shire Council, *Committee Hansard*, 11 August 2023, p. 8.

⁹¹ Ms Jane Adams, Chairperson, Australian Farmers Markets Association, *Committee Hansard*, 16 June 2023, p. 24.

⁹² Ms Pieta Bucello, Coordinator, Health and Social Planning, Cardinia Shire Council, *Committee Hansard*, 11 August 2023, p. 9.

⁹³ Ms Leah Galvin, private capacity, *Committee Hansard*, pp. 7–8.

⁹⁴ Ms Leah Galvin, private capacity, *Committee Hansard*, p. 9.

⁹⁵ Dr Scott McKeown, Deputy Director, Public Health, Public Health Services, Tasmanian Department of Health, *Committee Hansard*, 12 April 2023, p. 2.

- 7.61 The Tasmanian Government noted that early evaluation had shown the program is valued across the school community with a positive effect on behaviour and attendance, with most parents valuing the program and some willing to pay for it.⁹⁶

Committee comment

- 7.62 While Australia produces more than enough food to feed everyone, many Australian households are food insecure, going without adequate food and nutrition. Food security must also mean nutritional security. Evidence to the Committee highlighted the public health implications and impacts of food insecurity in Australia and the potential cost of failing to address food and nutritional security.
- 7.63 Addressing food insecurity begins with having a clear understanding of its prevalence. More work is needed to monitor and measure the extent of food insecurity. The Committee supports improved data collection through surveying households using the model provided by the United States Department of Agriculture Household Food Security Survey Module.
- 7.64 The causes of food insecurity are complex. Part of the comprehensive National Food Plan should be to identify and address the causes of food insecurity across the food system. The focus should be on ensuring that everyone has access to nutritious food on an ongoing basis in accordance with the United Nations Food and Agriculture Administration's definition of food security.
- 7.65 Part of the solution is ensuring community access to nutritious food. Community gardens, urban farms, food hubs and institutional procurement founded on local procurement are all part of the solution. The provision of school meals is a critical element of nutritional security, ensuring that regardless of personal circumstances children get adequate meals. The Committee acknowledges the work currently being undertaken in Tasmania to assess and expand school meal programs. This could provide a model for the entire nation.
- 7.66 Another aspect of food security is education on food and nutrition, including the development of food preparation skills. This should be an integral part of school education. The Committee supports the development of a school curriculum for food and nutrition education, including the universal development of basic cooking skills. An example of such a program is the Stephanie Alexander Kitchen Garden Program.
- 7.67 The Committee acknowledges the concerns raised around the difficulties in accessing research funding for projects that cross the boundaries between food, health and nutrition under the funding streams administered by the Australian Research Council and the National Health and Medical Research Council. The Committee supports the development of protocols for cross funding research.
- 7.68 Food security in remote communities is a particular challenge, especially in Australia's north. Distance, transport costs, storage facilities or lack thereof, and

⁹⁶ Tasmanian Government, *Submission 102*, p. 7.

weather, can all affect the cost and availability of food. Prices in turn impact affordability. The Committee is aware that there are no easy solutions to these problems. The key elements need to be a combination of greater support in facilitating year-round access to food while supporting the capacity of remote communities to feed themselves. The Committee proposes that the Australian Government:

- Recognize the special circumstances of remote communities, including Indigenous communities, in the food supply chain.
- Make provision for a more decentralised model of distribution in regions containing remote communities.
- Acknowledge community stores as an essential community service.
- Provide subsidies for community stores in remote locations so they can provide fresh food in regular quantities at an affordable price.
- Amend the funding and governance of the Remote Air Services Subsidy Scheme to prioritise the efficient and affordable delivery of fresh fruit and vegetable to wet-season impacted communities.

Recommendation 29

7.69 The Committee recommends that the Australian Government conducts surveys of household food insecurity every 3 years using the United States Department of Agriculture Household Food Security Survey Module (HFSSM) as a model.

Recommendation 30

7.70 The Committee recommends that the Australian Government, in conjunction with the State and Territory Governments, develop a school curriculum for food and nutrition education, including the universal development of basic cooking skills.

Recommendation 31

7.71 The Committee recommends that the Australian Government, in conjunction with the State and Territory Governments, consider the feasibility of introducing a schools meals program.

Recommendation 32

7.72 The Committee recommends that the Australian Government develops protocols that allow the Australian Research Council and the National Health and Medical Research Council to cross fund research examining food, health and nutrition.

Recommendation 33

- 7.73** The Committee recommends that as part of the development of a National Food Plan, the Australian Government facilitate the development of:
- Improved nutritional and dietary guidance.
 - Community projects designed to improve localised food systems and food security.
 - Supply networks aimed at local production, procurement, distribution and sale of fresh and nutritious food, especially by institutions such as hospitals, aged-care facilities and schools.
 - Programs aimed to educate groups within communities about affordable, options to access (or grow), prepare, cook and share nutritious food.

Recommendation 34

- 7.74** The Committee recommends that as part of the development of a National Food Plan, the Australian Government:
- Recognize the special circumstances of remote communities, including Indigenous communities, in the food supply chain.
 - Make provision for a more decentralised model of distribution in regions containing remote communities.
 - Acknowledge community stores as an essential community service.
 - Provide subsidies for community stores in remote locations so they can provide fresh food in regular quantities at an affordable price.
 - Amend the funding and governance of the Remote Air Services Subsidy Scheme to prioritise the efficient and affordable delivery of fresh fruit and vegetable to wet-season impacted communities.

Recommendation 35

- 7.75** The Committee recommends that the Australian Government assess progress towards implementing the recommendations made in the House of Representatives Standing Committee on Indigenous Affairs' 2020 report on food pricing and food security in remote Indigenous communities.

Meryl Swanson MP

Chair'

16 November 2023



A. Submissions

- 1 John Williams
- 2 WA Fishing Industry Council
- 3 Don Owers
- 4 The University of Western Australia
- 5 Celia Karp
- 6 Madonna Waugh
- 7 Mr Benjamin Cronshaw
- 8 Professor Emeritus Lindsay Falvey
- 9 Pastoralists and Graziers Association of WA
- 10 Australian Security Leaders Climate Group
- 11 Ms Robyn Todd
- 12 Approved Employers of Australia Ltd
- 13 Victorian Farmers' Markets Association
- 14 Egg Farmers of Australia
- 15 Australian Small Business and Family Enterprise Ombudsman
- 16 University of New South Wales, Sydney
- 17 Ms Penelope Clark
- 18 Western Sydney University
- 19 Remote Food Security Study
- 20 National Rural Womens Coalition
- 21 RSPCA Australia
- 22 Mr John Maguire

- 23** CBH Group
- 24** Foodbank Australia
 - 24.1 Supplementary to submission 24
- 25** Ms Leah Galvin
- 26** Farmers for Climate Action
- 27** IP Australia
- 28** Australian Organic Limited
- 29** Dr Amy Carrad
- 30** Mr Eric Vanweydeveld
- 31** Deakin University
- 32** Mr Eric Brocken
- 33** Darebin Information, Volunteer and Resource Services (DIVRS)
- 34** The University of Melbourne
 - 34.1 Supplementary to submission 34
 - 34.2 Supplementary to submission 34
- 35** Vow
- 36** Charles Sturt University
- 37** Nufarm Australia Limited
- 38** The University of Adelaide
- 39** Dietitians Australia
- 40** OzHarvest
- 41** ANU Menzies Centre for Health Governance
- 42** Young Farmers Council - National Farmers Federation
- 43** The George Institute for Global Health
- 44** Community Gardens Australia
- 45** The Community Grocer

- 46** Cardinia Shire Council
- 47** Costa Group
 - 47.1 Supplementary to submission 47
- 48** University of New England
- 49** National Food Supply Chain Alliance
- 50** National Rural Health Alliance
- 51** Australian Chicken Meat Federation
- 52** FreshChain Systems
- 53** University of Queensland
- 54** Gleanr Pty Ltd
- 55** SA Food Systems Network
- 56** Cancer Council Australia
- 57** Australian Livestock Exporters Council
- 58** Public Health Association of Australia
- 59** NSW Irrigators' Council
- 60** WWF
- 61** GrainGrowers Limited
- 62** Fair Food WA
- 63** Dr Sarina Kilham
- 64** Murray Irrigation Ltd
 - 64.1 Supplementary to submission 64
- 65** Miwatj Health Aboriginal Corporation
- 66** SA Sardine Industry Association
- 67** Australian Dairy Farmers Ltd
- 68** University of the Sunshine Coast Australia
- 69** Queensland University Of Technology

- 70** CropLife Australia
- 71** Food Frontier
- 72** Sustain: The Australian Food Network
- 73** AMSANT
- 74** Open Food Network Australia
- 75** Fisheries Research and Development Corporation
 - 75.1 Supplementary to submission 75
- 76** Institute of Public Affairs
- 77** Caitlin McConnel
 - 77.1 Supplementary to submission 77
- 78** Dr Liesel Spencer
- 79** Eden Brew
- 80** Australian Research Data Commons (ARDC)
- 81** Committee for Greater Shepparton
- 82** Australian Academy of Science
- 83** NSW Government
- 84** Centre for Entrepreneurial Agri-Technology
 - 84.1 Supplementary to submission 84
- 85** Australian Institute of Food Science and Technology
- 86** Illawarra Shoalhaven Local Health District
- 87** Harvest Trails and Markets
- 88** Food Standards Australia New Zealand
- 89** Farming for the Future
- 90** Rosemary Nankivell
- 91** Edith Cowan University
- 92** *Name Withheld*

- 93** Canberra Region Food Collaborative
- 94** Fiona Buining
- 95** Australian Farmers Markets Association
- 96** Grain Trade Australia
- 97** Lex Stewart
- 98** Queensland Government
- 98.1 Supplementary to submission 98
- 99** AUSVEG
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- 106** University of Queensland
- 107** Australian Forest Products Association
- 107.1 Supplementary to submission 107
- 108** Government of South Australia
- 109** *Name Withheld*
- 110** Victorian Farmers Federation
- 111** Mulloon Institute
- 112** Vegan Australia
- 113** National Aboriginal Community Controlled Health Organisation (NACCHO)
- 114** Longreach Maris
- 115** Meat & Livestock Australia

- 116** Department of Agriculture, Fisheries and Forestry
- 116.1 Supplementary to submission 116
- 117** Red Meat Advisory Council (RMAC)
- 118** City of Greater Bendigo
- 119** v2food Pty Ltd
- 120** Stop Food Waste Australia
- 121** Seafood Industry Victoria
- 122** Viterra
- 123** Alternative Proteins Council (APC)
- 124** Monash University
- 125** Seafood Industry Australia (SIA)
- 126** NSW Seafood Industry Council
- 127** Sydney Fish Market
- 128** Australian Food and Grocery Council (AFGC)
- 128.1 Supplementary to submission 128
- 129** Grain Producers Australia
- 129.1 Supplementary to submission 129
- 130** Growcom
- 131** La Trobe University
- 132** Northern Territory Government
- 133** Queensland Farmers' Federation (QFF)
- 134** Greenspace ESG Pty Limited
- 135** Australian Fresh Produce Alliance
- 136** Australian Dairy Products Federation
- 137** Ingham's Group Limited
- 137.1 Supplementary to submission 137
- 138** Australian Pork Limited

- 139** Woolworths Group
- 140** Australian Retailers Association
- 141** National Retail Association
- 142** Nutrien Ag Solutions
- 143** NSW Farmers Association
- 144** The Arnhem Land Progress Aboriginal Corporation
- 145** Food Fairness Illawarra
- 146** Melbourne Farmers Markets
- 147** Australian Food Sovereignty Alliance
- 147.1 Supplementary to submission 147
- 148** Australia's Right to Food Coalition
- 149** CSIRO
- 150** Friends of Queen Victoria Market
- 151** Freshmark
- 152** University of Sydney
- 152.1 Supplementary to submission 152
- 153** Cedric Creed
- 154** *Name Withheld*
- 155** NSW Farmers Wagga Wagga & District Branch
- 156** Save Our Surroundings (SOS)
- 157** Mr Richard Martin
- 158** Riverina Sustainable Food Alliance (RSFA)
- 159** *Name Withheld*
- 160** Mr Grant Piper
- 161** National Irrigators' Council
- 162** Trigg Minerals

- 163** Primary Industries Education Foundation Australia
- 164** World Breastfeeding Trends Initiative Australia and Australian Breastfeeding Association and others
- 165** Geoff Miell
- 165.1 Supplementary to submission 165
 - 165.2 Supplementary to submission 165
- 166** Australian Livestock and Rural Transporters Association
- 167** GS1 Australia
- 168** Charles Darwin University
- 169** GeneEthics
- 169.1 Supplementary to submission 169
- 170** Agriflex Pty Ltd
- 171** National Nutrition Network
- 172** Ms Susan Kopittke
- 173** Gillian Blair
- 174** Property Rights Australia Inc
- 175** Ms Cathy McGowan
- 176** Griffith University - Business Strategy & Innovation
- 176.1 Supplementary to submission 176
- 177** International Fund for Agricultural Development (IFAD)
- 178** Microbiogen Pty Ltd
- 179** Food Ladder
- 180** Agsecure & Saba Sinai
- 181** *Name Withheld*
- 182** Dr Kaya Barry
- 183** ANTAR
- 184** Regional Food Security Alliance

- 185** Iplex
- 186** *Name Withheld*
- 187** Mr Valeriy Trukhin
- 188** Brewers Association of Australia



B. Exhibits

- 1 Tasmanian Government, UTAS – Menzies, School Lunch Project Evaluation – Interim Report 2022 – Overview
- 2 Tasmanian Government, UTAS – Menzies, School Lunch Project Evaluation – Interim Report 2022
- 3 Public Health Association of Australia, Australian Household Food Security Data Coalition (AHFSDC) – Household Food Security Data Consensus Statement – December 2022
- 4 Public Health Association of Australia, Flinders University, Do we need school meals in Australia? A discussion paper 2022
- 5 Public Health Association of Australia, Graham M. Turner et al., Squandering Australia’s food security: The environmental and economic costs of our unhealthy diet and the policy Path We’re On, *Journal of Cleaner Production*, 195 (2018) pp. 1581–99
- 6 Red Meat Advisory Council, Australian Beef Sustainability Framework – Annual Update 2023
- 7 Dietitians Australia, Dietitians Australia, National Nutrition Strategy – Evidence Brief
- 8 Dietitians Australia, Dietitians Australia, National Nutrition Strategy Position Paper
- 9 Prof Johannes le Coutre, Economist Impact, Global Food Security Index 2022
- 10 Prof Johannes le Coutre, Global Food Security Index 2022 – Farm Infrastructure
- 11 Prof Johannes le Coutre, Global Food Security Index 2022 – Farm Infrastructure
- 12 Bayer, Bryant Christie Inc, Potentially Affected Trade from World Agri-Food Exporters Due to EU Hazard-Based Cut-Offs for Active Substances (2022)
- 13 Dr Warren Hunt, Charles Darwin University, The case for manufacturing of shelf-stable foods in Northern Australia
- 14 Dr Warren Hunt, Charles Darwin University, Process Partners, Top End Shelf Stable Foods Project Report
- 15 Dr Mary Wu, Australian Poultry Industry Association, Letter, APIA to Minister Watt, re concerns about the NFF Market Transparency Project

- 16** Australian Dairy Products Federation, Australian Dairy Sustainability Framework – 2021 Sustainability Report
- 17** Australian Dairy Products Federation, Dairy Sector Food Waste Action Plan, July 2023
- 18** Australian Food Sovereignty Alliance, Draft Updated People’s Food Plan 2023
- 19** Shire of Derby/West Kimberley, Map of Fitzroy Crossing Communities
- 20** Shire of Derby/West Kimberley, Map of Kimberley Region Aboriginal Communities
- 21** Shire of Derby/West Kimberley, WA Department of Water and Environment Regulation – Rainfall Powerpoint Presentation 11 May 2023
- 22** Shire of Derby/West Kimberley, Shire of Derby/Weste Kimberley – road network map
- 23** NSW Irrigators’ Council, Job Impacts – from water recovery for the environment in the Southern Murray-Darling Basin
- 24** Cardinia Shire, Mansfield Model agriculture education
- 25** Grain Growers, Fertilisers – Inputs for the future
- 26** Ag Institute Australia, 2023 NSW Undergraduate Handbook



C. Public hearings

Wednesday, 30 November 2022

Committee Room 1R4, Parliament House, Canberra

Department of Agriculture, Fisheries and Forestry

- Tom Black, Acting First Assistant Secretary, Exports and Veterinary Services Division
- Joanna Stanion, First Assistant Secretary, Agricultural Policy Division
- Paul Denny, Assistant Secretary, Agricultural Policy Division
- David Garner, Assistant Secretary, International Organisation and Negotiations, Trade Marke Access and International Division
- Dr Jared Greenville, Executive Director, Australian Bureau of Agricultural and Resource Economics and Science

Wednesday, 15 February 2023

Committee Room 1R4, Parliament House, Canberra

National Farmers' Federation

- Tony Mahar, Chief Executive Officer
- Kade Denton, General Manager, Trade and Economics
- Charlotte Wundersitz, Policy Officer, Trade and Economics

Wednesday, 8 March 2023

Committee Room 1R4, Parliament House, Canberra

National Food Supply Chain Alliance

- Tony Mahar, Chief Executive Officer, National Farmers' Federation
- Charles Thomas, General Manager, Corporate Affairs, National Farmers' Federation
- Richard Forbes, Chief Executive Officer, Independent Food Distributors Australia

Wednesday, 22 March 2023

Committee Room 1R4, Parliament House, Canberra

Australian Pork Ltd

- Margo Andrae, Chief Executive Officer
- Tanya Pittard, Policy Director

Friday, 24 March 2023

Committee Room 1R3, Parliament House, Canberra

Grain Producers Australia

- Colin Bettles, Chief Executive
- Andrew Earle, Deputy Chair

Australian Security Leaders Climate Group

- Admiral Christopher Barrie, Executive Member
- Cheryl Durrant, Executive Member

Centre for Entrepreneurial Agri-Technology (ANU)

- Professor Owen Atkin, Director
- Dr Nadeem Samnakay, CEAT Fellow
- Victoria Taylor, Chair, CEAT Governance Committee

Murray Irrigation

- Ron McCalman, Chief Executive Officer
- John Madden, Strategic Policy Adviser

Farmers for Climate Action

- Dr Fiona Davis, Chief Executive Officer

Australian Food and Grocery Council

- Tanya Barden, Chief Executive Officer
- Scott McGrath, Director, Government and Media Relations

Wednesday, 29 March 2023

Committee Room 1R4, Parliament House, Canberra

National Rural Women's Coalition

- Keli McDonald, Chief Executive Officer

Wednesday, 12 April 2023

Committee Room 1, Parliament House, 1 Salamanca Place, Hobart

Tasmanian Government

- Deidre Wilson, Deputy Secretary, Primary Industries and Water, Department of Natural Resources and Environment
- Caroline Brown, Assistant Director, AgriGrowth Tasmania, Agriculture, Forestry and Water Strategic Business Unit, Department of Natural Resources and Environment
- Jenna Cairney, Acting Deputy Secretary, Business and Jobs, Department of State Growth
- Jordan Szmekura, Director, Trade, Development and Marketing, Trade and International Relations Unit, Business and Trade, Department of State Growth
- Dr Scott McKeown, Deputy Director, Public Health, Public Health Services, Department of Health

Salmon Tasmania

- Lyall Howard, Chairman

Sea Forest Limited

- Sam Elsom, Chief Executive Officer

Thursday, 20 April 2023

David Spence Room, Adelaide Town Hall, 128 King William Street, Adelaide

The University of Adelaide

- Professor Rachel Burton, Professor of Plant and Food Science, School of Agriculture, Food and Wine

SA Food Systems Network

- Sharon McGann, Chair, Steering Group, Onkaparinga Food Security Collaborative
- Linda Enright, Representative

- Christy Spier, Representative

AusVeg SA

- Jordan Brooke-Barnett, Chief Executive Officer

Stop Food Waste Australia

- Dr Steven Lapidge, Chief Executive Officer, Fight Food Waste

Viterra

- Philip Hughes, Chief Executive Officer, Australia and New Zealand
- James Murray, Chief Operating Officer
- Damian Fitzgerald, Executive and General Counsel

Wednesday, 24 May 2023

Committee Room 1R4, Parliament House, Canberra

Red Meat Advisory Council

- Alastair James, Chief Executive Officer, Red Meat Advisory Council
- Luke Bowen, Chief Executive Officer, Cattle Australia
- Mark Harvey-Sutton, Chief Executive Officer, Australian Livestock Exporters Council
- Patrick Hutchinson, Chief Executive Officer, Australian Meat Industry Council

Friday, 26 May 2023

Committee Room 1R6, Parliament House, Canberra

Fisheries Research and Development Corporation

- Dr Patrick Hone, Managing Director
- Matthew Barwick, General Manager, Strategy and Innovation

Australian Retailers Association

- Jason Robertson, Director of Policy, Sustainability and Impact

Australian Fresh Produce Alliance

- Claire McClelland, Chief Executive Officer
- Cameron Brown, Manager, Public Affairs

Nutrien Ag Solutions

- Tyson Cattle, Senior Manager, Government and Industry Affairs

- David Stanko, Head of Commercial Sustainability

Wednesday, 31 May 2023

Committee Room 1R4, Parliament House Canberra

Australian Forest Products Association

- Natasa Sikman, Acting Chief Executive
- Richard Hyett, Director of Policy

Friday, 2 June 2023

Committee Room 1R2, Parliament House, Canberra

Australian Chicken Meat Federation

- Dr Mary Wu, Chief Executive Officer

Ms Fiona Buining, Private capacity

Seafood Industry Australia

- Veronica Papacosta, Chief Executive Officer

Cancer Council Australia

- Clare Hughes, Chair, Nutrition, Alcohol and Physical Activity Committee
- Ainslie Sartori, Deputy Chair, Nutrition, Alcohol and Physical Activity Committee

Public Health Association of Australia

- Professor Danielle Gallegos, Subject Matter Expert, Food and Nutrition Special Interest Group

Dietitians Australia

- Natalie Stapleton, General Manager, Advocacy and Policy

Grain Trade Australia

- Pat O'Shannassy, Chief Executive Officer

Grain Growers Limited

- Sean Cole, Manager, Advocacy and Rural Affairs
- Annabel Mactier, Policy Manager, Trade and Supply Chains

Wednesday, 14 June 2023

Committee Room 1R4, Parliament House, Canberra

Canberra Region Food Collaborative

- Michael Claessens, Executive Director and Chief Executive Officer, Regional Development Australia ACT

Friday, 16 June 2023

Committee Room 1R3, Parliament House, Canberra

Farming for the Future

- Dr Sue Ogilvy, Program Director

Ms Leah Galvin, Private capacity

Woolworths Group

- Paul Harker, Chief Commercial Officer, Woolworths Supermarkets
- Chris Brooks, Director, PC3 and Transport, Primary Connect

Australian Institute of Food Science and Technology

- Fiona Fleming, Chief Executive Officer
- Dr Michael Depalo, Board Member

Australian Farmers Markets Association

- Jane Adams, Chairperson

CSIRO

- Dr Michael Robertson, Director, CSIRO Agriculture and Food
- Dr Cecile Godde, Food Systems Research Scientist

Wednesday, 21 June 2023

Committee Room 1R4, Parliament House, Canberra

CropLife Australia

- Matthew Cossey, Chief Executive Officer
- Justin Crosby, Director, Government and Strategic Relations
- Dr Jana Phan, Director, Stewardship and Sustainability Policy

Friday, 23 June 2023

Committee Room 2R2, Parliament House, Canberra

Foodbank

- Brianna Casey, Chief Executive Officer

Hort Innovation

- Brett Fifield, Chief Executive Officer
- Dr Mila Bristow, General Manager, Trade and Biosecurity R&D

Ingham's

- Anne-Marie Mooney, Chief Operations Officer
- Scott Mitchell, Consultant

Alternative Proteins Council

- Kirsten Grinter, Chairperson (also Nestle Australia)
- Dr Roger Bektash, Deputy Chair (also v2food)
- Jennifer Thompson, APC Lead
- Rodney Stiles, Policy and Regulatory Lead, Vow Food

OzHarvest

- Matthew Rose, Advocacy and Sustainability Lead

Thursday, 6 July 2023

Macquarie Room, NSW Parliament, 6 Macquarie Street, Sydney

Greenspace ESG Pty Ltd

- Nicolas Fox, Microfarm Operations Manager

University of NSW

- Professor Johannes le Coutre, Professor of Food and Health

NSW Farmers

- John Lowe, Chair, Business, Economics and Trade Committee
- Kathryn Rankin, Acting Head of Policy and Advocacy
- Brendan O'Keeffe, Economist

Bayer

- Warren Inwood, Managing Director, Crop Science
- Alexandra Bunton, Senior Manager, Public Affairs

Monday, 10 July 2023

Speaker's Hall, Parliamentary Annexe, Alice Street, Brisbane

Queensland Government – Department of Agriculture and Fisheries

- Peter Donaghy, Acting Executive Director, Agribusiness and Policy
- Marnie Manning, General Manager, Strategy, Investment and Performance, Biosecurity Queensland
- Salvo Vitelli, General Manager, Agribusiness Policy

Ms Caitlin McConnel, Private capacity

University of Queensland

- Dr Melissa Fitzgerald, Professor, School of Agriculture and Food Sustainability
- Professor Susanne Schmidt, School of Agriculture and Food Sustainability

Queensland Farmers' Federation

- Sharon McIntosh, Water and Energy Policy Advisor

Gleanr Pty Ltd

- Jelenko Dragisic, Director and Co-founder
- Peter Kearney, Director and Co-founder

Queensland Fruit and Vegetable Growers

- Rachel Chambers, Chief Executive Officer

National Retail Association

- David Stout, Director of Policy
- Bonnie Marshall, Communications Manager

Australian Organic Limited

- Nicole Ford, Chief Executive Officer
- Josefine Pettersson, Technical and Research Manager

Monday, 24 July 2023

Conference Room, Commonwealth Parliamentary Offices, Level 39, Exchange Tower, 2 The Esplanade, Perth

CBH Group

- Robert Dickie, Head of Government and Industry Relations

Pastoralists and Graziers Association of WA

- Sheldon Mumby, Policy Director, Pastoral and Private Property Rights
- Ian Randles, Policy Director, Livestock and Grain

Longreach Maris

- Dr Andrew Rado, Managing Director

WA Fishing Industry Council

- Darryl Hockey, Chief Executive Officer

Thursday, 27 July 2023

Brolga Room, Novotel Darwin CBD, 100 The Esplanade, Darwin

Northern Territory Government

- Philip Hausler, Senior Executive Director, Agriculture, Department of Industry, Tourism and Trade, Northern Territory

Community Gardens Australia

- Naomi Lacey, President

Aboriginal Medical Services Alliance NT (AMSANT)

- Dr Elizabeth Moore, Public Health Manager
- Coryn Tambling, Food Security Consultant

Miwatj Health Aboriginal Corporation

- Michelle Anne Evison-Rose, Acting Deputy Chief Executive Officer
- Annie Carter, Public Health Manager
- Rebekah Clancy, Nutrition Team Leader and Public Health Nutritionist
- Julie Capalathana, Tackling Indigenous Smoking Team
- Trudy Wunungmurra, Aboriginal Health Trainee

Charles Darwin University

- Dr Warren Hunt, Project Manager, Northern Australia Food Technology Innovation Project
- Dr Maxine Piggott, Professor of Tropical Biosecurity
- Associate Professor Kamaljit K Sangha
- Dr Karen Cavanagh, Manager, Research Institute for Northern Agriculture and Drought Resilience

Arnhem Land Progress Aboriginal Corporation

- Mickey Wunungmurra, Deputy Chairman, Board of Directors
- Christine Hickey, General Manager, Retail

Wednesday, 2 August 2023

Committee Room 1R3, Parliament House, Canberra

Mulloon Institute

- Carolyn Hall, Chief Executive Officer, Managing Director

Friday, 4 August 2023

Committee Room 1R3, Parliament House, Canberra

La Trobe University

- Professor Susan Dodds, Senior Deputy Vice-Chancellor, Research and Industry Engagement
- Professor Tony Bacic, Director, La Trobe Institute for Sustainable Agriculture and Food
- Professor Travis Beddoe, Head of Department of Animal, Plant and Soil Science

The University of Melbourne

- Dr Rachel Carey, Senior Lecturer in Food Systems, School of Agriculture, Food and Ecosystem Sciences
- Dr Shu Kee Lam, Senior Lecturer in Food Systems, School of Agriculture, Food and Ecosystem Sciences
- Dr Mehrdokht (Medo) Pournader, Senior Lecturer, Management and Marketing

Costa Group

- Michael Toby, Corporate Affairs Manager

AUSVEG

- Michael Coote, Chief Executive Officer
- Bill Bulmer, Chair

Australian Dairy Products Federation

- John Williams, President
- Janine Waller, Executive Director

Wednesday, 9 August 2023

Committee Room 1R4, Parliament House, Canberra

Victorian Farmers Federation

- Emma Germano, President

Friday, 11 August 2023

Committee Room 2S2, Parliament House, Canberra

NSW Irrigators' Council

- Thomas Green, Acting Chairman
- Andrea Molteno, Policy Officer

Cardinia Shire Council

- Teresa Hazendonk, Principal Strategic Planner
- Pieta Bucello, Coordinator Health and Social Planning
- Billie Ling, Team Leader, Environmental Health

University of Sydney

- Professor Brent Kaiser, Director, Sydney Institute of Agriculture

Australian Food Sovereignty Alliance

- Tammi Jonas, President
- Jessica Power, General Coordinator

Committee for Greater Shepparton

- Leigh Findlay, Chair
- Linda Nieuwenhuizen, Chief Executive Officer
- Jenny Wilson, Member and Chief Executive Officer, Murray Dairy
- Andrew Mann, Board Member
- Rob Priestly, Member



D. Australian food strategies

Australian Food and Nutrition Policy 1992

- 1.1 In 1992, the Australian Government published its *Food and Nutrition Policy*, which focused on the link between health and nutrition. The goal of the policy was ‘to improve health and reduce the preventable burden of diet-related early death, illness and disability among Australians’. It was intended that the policy be implemented through strategies supporting the Australian dietary guidelines, involving key sectors in the food system, and fostering community participation.¹ The policy's aims were:
- to improve the knowledge and skills necessary for Australians to choose a healthy diet;
 - to support community-based initiatives towards improving the diet of people with special needs;
 - to incorporate food and nutrition objectives into a broad range of policy areas and sectors; and
 - to regularly monitor the food and nutrition system.²
- 1.2 The policy was designed to be implemented through a range of strategies focused on the policy's aims. It was recommended that a review be undertaken after three years, but this did not eventuate. The result is that Australia does not have a current and comprehensive national nutrition strategy.³

National Food Plan 2013

- 1.3 The National Food Plan, released in 2013, was a policy document designed to identify ‘what we can all do to support our food system’. It observed that the Australian Government was ‘providing leadership and articulating the direction of our food-related policies’, but that to succeed, ‘everyone—governments, farmers, fishers, manufacturers, businesses, researchers, consumers and communities—needs to work together’.⁴ The Plan established goals to ‘grow our domestic industry and

¹ Commonwealth Department of Health, Housing and Community Services, *Food and Nutrition Policy*, AGPS 1992, p. 12.

² Commonwealth Department of Health, Housing and Community Services, *Food and Nutrition Policy 1992*, AGPS 1992, p. 13.

³ Nichols, T., M. Craike, I. Thevios & R. Calder, 2020. *Nutrition policy in Australia: adopting a harm minimisation approach*. Policy evidence brief 2020-01. Mitchell Institute, Victoria University. Melbourne, p. 12.

⁴ *National Food Plan, Our food future*, Department of Agriculture, Fisheries and Forestry, Canberra, 2013, p. 14.

increase the value of our food exports', while supporting 'local communities growing, preparing and sharing food'. The plan would 'work to embed food and agriculture within the national curriculum so that our kids know where food comes from and value the hard-working Australians who produce it'.⁵

1.4 The National Food Plan had four themes:

- Growing exports
- Thriving industry
- People
- Sustainable food.⁶

1.5 The export growth goals for 2025 were:

- The value of Australia's agriculture and food-related exports will have increased by 45 per cent (in real terms), contributing to an increase in our gross domestic product.
- Australia will have stronger food trade and investment relationships with countries across the region and the capabilities to promote Australian interests.
- Australia will have a globally recognised food brand that is synonymous with high-quality, innovative, safe and sustainable food, services and technology.⁷

1.6 The thriving industry goals for 2025 were:

- Australia's agricultural productivity will have increased by 30 per cent, helping farmers grow more food using fewer inputs.
- Innovation in Australia's food manufacturing industry will have increased, building scale and capability through collaborations to make the most of emerging opportunities in the Asian region.
- Australia's agriculture and fisheries workforce will have built its skills base, increasing the proportion with post-school qualifications.
- Australia's infrastructure and biosecurity systems will support a growing food industry, moving food cost-effectively and efficiently to markets and supporting new export opportunities.
- Participation by Australian food businesses in the digital economy will have increased, driving productivity gains and innovation and creating connections with global markets.
- Australia will be among the top five most efficiently regulated countries in the world, reducing business costs.⁸

⁵ *National Food Plan, Our food future*, Department of Agriculture, Fisheries and Forestry, Canberra, 2013, p. 3.

⁶ *National Food Plan, Our food future*, Department of Agriculture, Fisheries and Forestry, Canberra, 2013, p. 16.

⁷ *National Food Plan, Our food future*, Department of Agriculture, Fisheries and Forestry, Canberra, 2013, p. 8.

⁸ *National Food Plan, Our food future*, Department of Agriculture, Fisheries and Forestry, Canberra, 2013, p. 9.

1.7 The people goals for 2025 were:

- Australia will have built on its high level of food security by continuing to improve access to safe and nutritious food for those living in remote communities or struggling with disadvantage.
- Australia will be considered to be in the top three countries in the world for food safety, increasing the reputation of Australia's exports.
- Australians will have the information they need to help them make decisions about food.
- Australian children will have a better understanding of how food is produced.
- Australia will have contributed to global food security by helping farmers in developing countries gain access to new agricultural technologies.⁹

1.8 The sustainable food goals for 2025 were:

- Australia will produce food sustainably and will have adopted innovative practices to improve productive and environmental outcomes.
- Australia will have reduced per capita food waste.¹⁰

1.9 The goals of the National Food Plan were designed to mesh with other policy initiatives around trade, productivity, nutrition and sustainability. Accountability was to be through the establishment of an Australian Council on Food, the publication of a State of the Food System Report every five years, and a review of the Plan every five years.¹¹ The Australian Council on Food would 'bring together relevant Australian Government ministers, food industry leaders, public health experts and community representatives to advise on strategic priorities for food'. It would also provide 'opportunities for government, industry and other stakeholders to work together'.¹²

1.10 The Plan highlighted potential constraints on production growth, especially the impacts of climate change, but also 'the availability of key inputs to production, including land, soil, energy, water, wild fish stocks and, potentially, phosphorous'. It noted that 'our food industry will only be able to grow if it can produce more food with the same or fewer natural resources'. It also highlighted the importance of reducing food waste.¹³

1.11 The Plan observed recent developments in the food supply chain that potentially made the food sector less resilient and more vulnerable to shocks. It stated:

⁹ *National Food Plan, Our food future*, Department of Agriculture, Fisheries and Forestry, Canberra, 2013, p. 10.

¹⁰ *National Food Plan, Our food future*, Department of Agriculture, Fisheries and Forestry, Canberra, 2013, p. 11.

¹¹ *National Food Plan, Our food future*, Department of Agriculture, Fisheries and Forestry, Canberra, 2013, p. 11.

¹² *National Food Plan, Our food future*, Department of Agriculture, Fisheries and Forestry, Canberra, 2013, p. 19.

¹³ *National Food Plan, Our food future*, Department of Agriculture, Fisheries and Forestry, Canberra, 2013, p. 23.

Recent trends in the food supply chain include seeking efficiency gains through centralisation and just-in-time management practices. These trends and the reliance of the food sector on power, water, transport, access to diesel fuel and some imported ingredients and packaging materials could reduce the food sector's resilience to unexpected events and pose challenges for the ongoing stability of our food supply.¹⁴

- 1.12 The Plan observed that 'the food industry may struggle to maintain continuity of food supply during a national emergency (such as a severe influenza pandemic)'.¹⁵
- 1.13 The Plan noted the link between food, nutrition and health, observing that 'a significant number of Australians have a poor diet', that 'inappropriate diet is a major contributor to poor health', and that 'better nutrition and dietary choice will be part of the solution'.¹⁶
- 1.14 In addition, the Plan noted a number of themes raised in the evidence of the Committee's current inquiry, including:
- Water availability as a constant constraint on Australian agriculture.¹⁷
 - Productivity growth being central to long-term international competitiveness.¹⁸
 - The importance of exports for domestic production and growth.¹⁹
 - The importance of strategic investments in research capacity, infrastructure, biosecurity and the workforce.²⁰
 - Encouraging innovation in food manufacturing.²¹
 - The importance of biotechnology, including genetically modified (GM) food products, to future food security.²²
 - The need to build and maintain a skilled food system workforce.²³

¹⁴ *National Food Plan, Our food future*, Department of Agriculture, Fisheries and Forestry, Canberra, 2013, p. 59.

¹⁵ *National Food Plan, Our food future*, Department of Agriculture, Fisheries and Forestry, Canberra, 2013, p. 59.

¹⁶ *National Food Plan, Our food future*, Department of Agriculture, Fisheries and Forestry, Canberra, 2013, p. 24.

¹⁷ *National Food Plan, Our food future*, Department of Agriculture, Fisheries and Forestry, Canberra, 2013, p. 23.

¹⁸ *National Food Plan, Our food future*, Department of Agriculture, Fisheries and Forestry, Canberra, 2013, p. 23.

¹⁹ *National Food Plan, Our food future*, Department of Agriculture, Fisheries and Forestry, Canberra, 2013, p. 26.

²⁰ *National Food Plan, Our food future*, Department of Agriculture, Fisheries and Forestry, Canberra, 2013, p. 34.

²¹ *National Food Plan, Our food future*, Department of Agriculture, Fisheries and Forestry, Canberra, 2013, p. 36.

²² *National Food Plan, Our food future*, Department of Agriculture, Fisheries and Forestry, Canberra, 2013, p. 38.

²³ *National Food Plan, Our food future*, Department of Agriculture, Fisheries and Forestry, Canberra, 2013, p. 41.

- The pressure of rising input costs.²⁴
 - The need for the right infrastructure to create efficient food supply chains.²⁵
 - The importance of a strong biosecurity system.²⁶
 - The problem of food insecurity, particularly in remote Indigenous communities.²⁷
 - The need to use and manage productive natural resources sustainably.²⁸
- 1.15 A critique of the plan noted that those aspects focused on production and exports ‘attracted over 90% of the \$AU42.8 million total funding allocated to implementing the Plan’, leaving those aspects dealing with health and welfare and sustainability ‘with less than 10% of the funding’. The allocation of funding was indicative of policy directions focussed upon export growth in Asia. The critique observed that the National Food Plan ‘began with the stated intention of being an integrated national food policy, but evolved into an industry-focused plan in which both health and environmental sustainability were sidelined’. The National Food Plan was shelved following the change of government in 2013.²⁹

NSW Parliamentary Committee report 2022

- 1.16 In November 2022, the NSW Legislative Assembly Committee on Environment and Planning presented a report on *Food Production and Supply in NSW*. The report made 8 findings and thirty-six recommendations on a diverse range of issues including:
- Planning and oversight of the food system.
 - The role of local government in the food system.
 - Managing food insecurity.
 - Managing food waste.
 - Funding for food relief.
 - Food rescue.
 - Better food and sustainability awareness and literacy.

²⁴ *National Food Plan, Our food future*, Department of Agriculture, Fisheries and Forestry, Canberra, 2013, p. 44.

²⁵ *National Food Plan, Our food future*, Department of Agriculture, Fisheries and Forestry, Canberra, 2013, p. 45.

²⁶ *National Food Plan, Our food future*, Department of Agriculture, Fisheries and Forestry, Canberra, 2013, p. 45.

²⁷ *National Food Plan, Our food future*, Department of Agriculture, Fisheries and Forestry, Canberra, 2013, pp. 56–8.

²⁸ *National Food Plan, Our food future*, Department of Agriculture, Fisheries and Forestry, Canberra, 2013, p. 74.

²⁹ Rachel Carey, Martin Caraher, Mark Lawrence and Sharon Friel, ‘Opportunities and challenges in developing a whole-of-government national food and nutrition policy: lessons from Australia’s National Food Plan’, *Public Health Nutrition*, Volume 19, Issue 1, January 2016, pp. 3–14.

- Encouraging urban agriculture and community gardens.
- Supporting Indigenous food production.
- Managing climate change and its impacts.
- Managing the renewable energy transition.
- Plant-based proteins.
- Addressing workforce challenges.³⁰

1.17 The findings of the report included:

- The COVID-19 pandemic has had a significant impact on the number of people accessing food relief across NSW.
- Aboriginal community representation on local emergency management committees could improve the response to food supply issues during crises, particularly in remote communities.
- Reducing food waste will have a positive impact on reducing emissions. This will help achieve the state's target to achieve net zero emissions by 2050.
- Food rescue models are cost effective and have positive returns for communities and retailers. They also reduce the environmental impact of food waste.
- Community gardens and local agriculture projects are important sources of fresh produce, particularly for regional and remote, culturally and linguistically diverse, and Aboriginal communities.
- Changes to the environment can significantly disrupt supply chains and food production, which contributes to food insecurity.
- Access to enough safe water is critical to food production and food security. Water resources are vulnerable to changes in the environment and must be effectively managed.
- Agritourism is a way for farmers to innovate and diversify their businesses. It is important that planning frameworks support farmers who wish to use their land for agritourism activities.³¹

1.18 The recommendations of the report included the development of a comprehensive Food Security Plan for NSW, with a Food System and Security Council responsible for implementing and reporting on the plan. The report also recommended the conduct of regular and comprehensive food security and nutrition surveys.³²

³⁰ NSW Legislative Assembly Committee on Environment and Planning, *Food Production and Supply in NSW*, November 2022, pp. vi–x.

³¹ NSW Legislative Assembly Committee on Environment and Planning, *Food Production and Supply in NSW*, November 2022, pp. xi–xv.

³² NSW Legislative Assembly Committee on Environment and Planning, *Food Production and Supply in NSW*, November 2022, p. xi.

- 1.19 Several recommendations were targeted at enabling local government to participate effectively in food security planning and activities, including that:
- The NSW Government works with local councils to develop and implement strategies to improve local food systems, and provides appropriate funding as required.
 - The *Public Health Act 2010* be amended to require local government areas to develop, implement and report on dedicated local food system policies.
 - The Department of Planning and Environment begins consulting on introducing planning instruments that enable local governments to consider the community's health and wellbeing when determining development applications.³³
- 1.20 The report addressed issues around food relief and food waste, particularly ways at reducing food waste and increasing awareness of food waste, and highlighted the nexus between the management of food insecurity and food waste. Related recommendations included that:
- The NSW Government introduces ongoing funding programs for food relief organisations.
 - The Department of Planning and Environment develops a food waste strategy with clear targets and concrete actions for all parts of the food system.
 - The Department of Planning and Environment extends and expands the Waste Less Recycle More policy and increases funding for the policy.
 - The NSW Government partners with industry to conduct research to identify and respond to gaps in the cold chain.
 - The NSW Government provides more funding to the food rescue sector to increase the amount of food that is rescued and donated.
 - The Department of Planning and Environment increases funding to support local government implementation of food and garden organics waste collection.³⁴
- 1.21 The report also supported using tax credits to 'enable farmers and logistics companies to claim the cost of transporting donated surplus food'.³⁵
- 1.22 The report made several recommendations around supporting school and community gardens and facilitating urban agriculture, including that the 'Department of Education reviews school curricula to increase students' food literacy, including through experiential learning programs'.³⁶ It also made several recommendations around supporting the development of traditional foods by Indigenous people and the

³³ NSW Legislative Assembly Committee on Environment and Planning, *Food Production and Supply in NSW*, November 2022, p. xii.

³⁴ NSW Legislative Assembly Committee on Environment and Planning, *Food Production and Supply in NSW*, November 2022, pp. xii–xiii.

³⁵ NSW Legislative Assembly Committee on Environment and Planning, *Food Production and Supply in NSW*, November 2022, pp. 31–2.

³⁶ NSW Legislative Assembly Committee on Environment and Planning, *Food Production and Supply in NSW*, November 2022, p. xiii.

growing of traditional foods in remote communities. This included a recommendation ‘to develop legislation and strategies to protect the intellectual property of Aboriginal and Torres Strait Islander peoples and their knowledge of traditional foods and land management’.³⁷

1.23 The report observed that ‘the limited amount of productive peri-urban and urban agricultural land in NSW is increasingly threatened by development’, and argued that ‘these sites should be preserved for food production under planning policies’. It recommended that ‘the Department of Planning and Environment conducts a survey of productive peri-urban and urban agricultural land and works with local councils to promote agriculture and food production activities on these sites’.³⁸

1.24 Other recommendations included that:

- The Department of Planning and Environment reviews planning and regulatory frameworks to promote sustainable practices in the food production and supply chains.
- The Department of Planning and Environment creates land use offices in food production regions to help businesses adapt to and benefit from the renewable energy transition.
- The NSW Government continues to investigate opportunities to promote the growth of the plant-based protein manufacturing industry in NSW.
- The NSW Government consults with experts and stakeholders from industry and regional communities to develop a long-term food workforce strategy.
- The Department of Primary Industries sets up a Help Harvest NSW network to help employers coordinate and promote work opportunities mapped to supply and demand cycles in specific regional areas.³⁹

1.25 The report noted that ‘existing practices in our food production and supply systems can contribute to environmental damage and greenhouse gas emissions’. It suggested that ‘food producers, processors and suppliers should be supported to adopt more sustainable practices’.⁴⁰

CSIRO 2023—Reshaping Australian Food Systems

1.26 In June 2023, the CSIRO released *Reshaping Australian Food Systems – A Roadmap towards a more sustainable, productive and resilient future for Australia's food, its environment and people*. The report was the product of extensive

³⁷ NSW Legislative Assembly Committee on Environment and Planning, *Food Production and Supply in NSW*, November 2022, p. xiv.

³⁸ NSW Legislative Assembly Committee on Environment and Planning, *Food Production and Supply in NSW*, November 2022, p. 52.

³⁹ NSW Legislative Assembly Committee on Environment and Planning, *Food Production and Supply in NSW*, November 2022, p. xv.

⁴⁰ NSW Legislative Assembly Committee on Environment and Planning, *Food Production and Supply in NSW*, November 2022, p. 63.

consultation across the food system, and focused on a range of considerations, opportunities and research needs across five broad themes:

- 1 Enabling equitable access to healthy and sustainable diets.
- 2 Minimising waste and improving circularity.
- 3 Facilitating Australia's transition to net zero emissions.
- 4 Aligning resilience with socioeconomic and environmental sustainability.
- 5 Increasing value and productivity.⁴¹

1.27 The report observes that 'food systems encompass the people, places, policies, processes, and businesses involved in the production, processing, packaging, distribution, preparation and consumption of food and beverages and the waste produced throughout these steps', and that these are 'inextricably linked with other vital systems, including the health, economic, social, environmental, political and energy systems'.⁴² It notes that food systems are facing 'unprecedented challenges' including 'a changing climate and expectations to reduce environmental footprints, increasing demand, disruptions to food supply chains and workforces, rising input costs, and nutrition-related public health issues'. The report states that 'it is now well recognized internationally that food systems require change to meet these challenges'.⁴³

1.28 Meeting these system-wide challenges 'necessitates new change processes that diverge from existing practices and ways of thinking', requiring 'deep engagement with different stakeholder groups and industries and strengthening capacities for cross-disciplinary cooperation'. The report noted that while 'ways to enable food system transformations are still emerging and will continue to evolve over time', guiding principles were already available, relating to:

- the need for governance systems to couple with science and technological innovation at varying scales;
- coordinated and co-designed actions across different policy and practice domains;
- transparency around the values and objectives that are shaping targeted policy interventions;
- coordinated processes driven from the top-down and bottom-up; and
- research to catalyse, inform and assess collaborative action.⁴⁴

⁴¹ CSIRO Futures (2023) *Reshaping Australian Food Systems – A Roadmap towards a more sustainable, productive and resilient future for Australia's food, its environment and people*. CSIRO, Canberra, p. v.

⁴² CSIRO Futures (2023) *Reshaping Australian Food Systems – A Roadmap towards a more sustainable, productive and resilient future for Australia's food, its environment and people*. CSIRO, Canberra, p. 1.

⁴³ CSIRO Futures (2023) *Reshaping Australian Food Systems – A Roadmap towards a more sustainable, productive and resilient future for Australia's food, its environment and people*. CSIRO, Canberra, p. 1.

⁴⁴ *Australian Food Systems* CSIRO Futures (2023) *Reshaping – A Roadmap towards a more sustainable, productive and resilient future for Australia's food, its environment and people*. CSIRO, Canberra, p. 45.

1.29 The report observed that ‘preparing food systems for the future means strengthening the interfaces and feedback loops between science, policy and practice’, noting that:

As a complex system operating across multiple scales in a dynamic and uncertain world, progress across the various food systems domains will need to be monitored and iterative adjustments applied, where necessary.⁴⁵

1.30 Some of the complexities and potential conflicts presented in the report include:

- Conflict between productivity, profitability, and environmental sustainability goals.
- Conflict between prices and costs, and the externalising of environmental and public health costs in the ‘cheaper food paradigm’.
- Consumers demanding more functional and traceable foods at no additional cost.
- Competition over land use and planning.⁴⁶

1.31 The report noted that ‘Australia operates a market economy that prioritises productivity and profitability and struggles to account for environmental and public health externalities’.⁴⁷

1.32 The report highlights the need to enable equitable access to healthy and sustainable diets, with a 2030 target of ‘enable equitable access to sufficient, safe, nutritious, and sustainably produced food with a strengthened focus on adapting to diverse cultural and community needs’; and a 2050 goal of all Australians accessing ‘safe, nutritious, acceptable, sufficient, sustainably produced, and affordable food, regardless of location, socio-economic status and cultural background’. This would contribute towards improved nutrition and a reduced burden of disease, while empowering consumers to source foods supporting ‘healthy dietary patterns while also preserving and celebrating diverse food cultures’. Consumers would also have ‘equitable access to information, services, equipment and facilities that support healthy food consumption’.⁴⁸ Opportunities for development include:

- Integrating equity and sustainability principles into the Australian Dietary Guidelines.
- Securing access to healthy and safe food for Aboriginal and Torres Strait Islander communities.
- Supporting localised food systems and innovative business models.
- Government and business collaboration to reshape commercial food environments.

⁴⁵ *Australian Food Systems* CSIRO Futures (2023) *Reshaping – A Roadmap towards a more sustainable, productive and resilient future for Australia's food, its environment and people*. CSIRO, Canberra, p. 45.

⁴⁶ *CSIRO Futures (2023) Reshaping Australian Food Systems – A Roadmap towards a more sustainable, productive and resilient future for Australia's food, its environment and people*. CSIRO, Canberra, p. 4.

⁴⁷ *CSIRO Futures (2023) Reshaping Australian Food Systems – A Roadmap towards a more sustainable, productive and resilient future for Australia's food, its environment and people*. CSIRO, Canberra, p. 4.

⁴⁸ *CSIRO Futures (2023) Reshaping Australian Food Systems – A Roadmap towards a more sustainable, productive and resilient future for Australia's food, its environment and people*. CSIRO, Canberra, p. 10.

- Leveraging institutional procurement to prioritise healthy and sustainable diets.
 - Educating and empowering consumers to eat healthier.⁴⁹
- 1.33 Regarding minimising waste and improving circularity, the 2030 target is to halve food waste at the retail and consumer levels, and reduce food, packaging and other losses along production and supply chains, in line with the goals of the 2030 National Food Waste Strategy and 2025 National Packaging Targets. By 2050, the goal is to have ‘circular food systems with zero avoidable food waste’. Unavoidable food and packaging waste would be ‘minimised, redistributed or transformed into value-added products as part of an increasingly thriving circular bioeconomy’.⁵⁰ Opportunities for development include:
- Implementing sustainable and recyclable packaging with improved labelling.
 - Educating and empowering consumers to reduce food waste.
 - Transforming waste into value-added products.⁵¹
- 1.34 Facilitating Australia’s transition to net zero emissions 2030 target has industries across the food value chain aligning with a 43 per cent emissions reduction goal, while achieving a 2050 goal of net zero emissions. Food producers and supply chain participants would minimise emissions while remaining productive. Consumers would be informed and able to ‘easily make purchasing decisions that support lower emissions’.⁵² Opportunities for development include:
- Reducing emissions through nature-based solutions.
 - Strengthening markets for low carbon and nature-positive land use.
 - Expanding the availability of climate-neutral foods.
 - Reducing emissions through innovative technologies.
 - Integrating renewable energy sources throughout the food supply chain.
 - Creating diversified lower emission protein products and markets.
 - Reducing emissions from food loss and waste.⁵³
- 1.35 To align resilience with socioeconomic and environmental sustainability, the reports 2030 target is strengthening food systems resilience through ‘improved capacity to deal with diverse and evolving risks and stressors’:

⁴⁹ CSIRO Futures (2023) *Reshaping Australian Food Systems – A Roadmap towards a more sustainable, productive and resilient future for Australia's food, its environment and people*. CSIRO, Canberra, pp. 13–15.

⁵⁰ CSIRO Futures (2023) *Reshaping Australian Food Systems – A Roadmap towards a more sustainable, productive and resilient future for Australia's food, its environment and people*. CSIRO, Canberra, p. 16.

⁵¹ CSIRO Futures (2023) *Reshaping Australian Food Systems – A Roadmap towards a more sustainable, productive and resilient future for Australia's food, its environment and people*. CSIRO, Canberra, pp. 19–20.

⁵² CSIRO Futures (2023) *Reshaping Australian Food Systems – A Roadmap towards a more sustainable, productive and resilient future for Australia's food, its environment and people*. CSIRO, Canberra, p. 22.

⁵³ CSIRO Futures (2023) *Reshaping Australian Food Systems – A Roadmap towards a more sustainable, productive and resilient future for Australia's food, its environment and people*. CSIRO, Canberra, pp. 26–8.

- Information is more freely shared between participants, and procedures for predicting and responding to threats are tested and become increasingly robust.
 - Sustainable land management practices to improve and value biodiversity and ecological environments are widely adopted.
 - Supply chains offer greater diversity, supported by improved domestic manufacturing capability.
- 1.36 By 2050, the goal is that ‘Australia’s food systems are safe, resilient to system-wide disturbances, and are contributing to environmental, economic and social sustainability outcomes’. They also ‘have the absorptive capacity to respond to volatilities without severe setbacks’⁵⁴. Opportunities for development include:
- Improving environmental health, biodiversity and sustainability outcomes of agricultural practices, including through:
 - Climate-smart agriculture.
 - Agroecology.
 - Regenerative farming.
 - Controlled environment agriculture.
 - Diversifying food supply chains to improve system flexibility.
 - Strengthening Australia’s sovereign manufacturing capabilities and workforce.
 - Bolstering transparency and trust of food supply chains.
 - Promoting integrated regional planning for industry development.
 - Advancing industry-wide adoption of risk management and sustainability strategies.⁵⁵
- 1.37 The 2030 target for increasing value and productivity is that Australia realises its target to exceed \$100 billion in farm gate output. Additional value is to be generated from ‘highly differentiated and value-added food products’ through increased domestic processing and manufacturing capabilities, leveraging ‘national advantages in particular food areas while supporting resilience and sustainability’. The 2050 goal is to have domestically grown and manufactured food products that ‘are healthy, environmentally sustainable, and underpinned by efficient technologies and innovation-driven production changes’. These products are ‘unique in their differentiation and provenance, enabling Australian farmers and processors to capture greater value in domestic and offshore markets’. Australia exports ‘high value food products seen as novel or newly established’.⁵⁶
- 1.38 Opportunities for development include:

⁵⁴ CSIRO Futures (2023) *Reshaping Australian Food Systems – A Roadmap towards a more sustainable, productive and resilient future for Australia’s food, its environment and people*. CSIRO, Canberra, p. 30.

⁵⁵ CSIRO Futures (2023) *Reshaping Australian Food Systems – A Roadmap towards a more sustainable, productive and resilient future for Australia’s food, its environment and people*. CSIRO, Canberra, pp. 33–5.

⁵⁶ CSIRO Futures (2023) *Reshaping Australian Food Systems – A Roadmap towards a more sustainable, productive and resilient future for Australia’s food, its environment and people*. CSIRO, Canberra, p. 38.

- Diversifying exports for long-term economic prosperity.
- Creating additional value-add opportunities for Australia in global value chains.
- Regional leadership through the sharing of technology solutions and expertise.
- Promote healthy landscapes to protect current and future productive capacity.
- Expand Australia’s self-determined Aboriginal and Torres Strait Islander food industry.⁵⁷

Local Government food strategies—Cardinia Shire

1.39 Local government has a potentially important role to play in food security, and some local governments are already active in developing food strategies. One such is Cardinia Shire, on the peri-urban edge of Melbourne. The Cardinia Shire *Community Food Strategy 2018–26*, launched in 2018, sets out that community’s vision for its food future. The vision is for ‘a healthy, delicious, sustainable and fair food system for all Cardinia Shire residents’, while the objective of the strategy is increased access to affordable, nutritious food by 2026.⁵⁸ The focus of the strategy is on developing a community food system.⁵⁹ Within the overall strategy there are five individual strategies and associated actions:

- Strategy 1: Protecting and using fertile land as a source of fresh food for current and future generations
 - Deliver community awareness campaigns
 - Support community gardens and urban agriculture projects
 - Investigate other mechanisms for farmland protection
 - Run community workshops and programs
 - Advocate to other levels of government and peak bodies.⁶⁰
- Strategy 2: Growing a vibrant local food economy that supports local farmers and food businesses and increases access to affordable, local and healthy food
 - Undertake research into food access and affordability
 - Support local fresh food markets
 - Increase access points for fresh food
 - Promote local fresh produce
 - Connect local food producers to each other and the broader community
 - Increase healthy fresh food provision and promotion in food retail spaces (cafes, canteens, kiosks).⁶¹

⁵⁷ CSIRO Futures (2023) *Reshaping Australian Food Systems – A Roadmap towards a more sustainable, productive and resilient future for Australia's food, its environment and people*. CSIRO, Canberra, pp. 41–2.

⁵⁸ Cardinia Shire, *Community Food Strategy 2018–26*, pp. 4, 6.

⁵⁹ Cardinia Shire, *Community Food Strategy 2018–26*, p. 12.

⁶⁰ Cardinia Shire, *Community Food Strategy 2018–26*, pp. 18–19.

⁶¹ Cardinia Shire, *Community Food Strategy 2018–26*, pp. 20–1.

- Strategy 3: Enhancing food knowledge, skills and culture within schools, workplaces, clubs and the wider community
 - Promote community cooking spaces
 - Build capacity of schools to take a holistic approach for food and nutrition
 - Support the Achievement Program in early learning centres, schools and community centres
 - Deliver the Healthy Sporting Clubs program
 - Deliver community-based food and nutrition programs
 - Celebrate food at local events
 - Deliver social marketing campaigns
 - Support projects that increase pathways to employment in food.⁶²
- Strategy 4: Reducing and diverting food waste and reusing water to grow food
 - Advocate for recycled water to be used for food growing
 - Establish community compost hubs
 - Implement the Waste and Resource Recovery Strategy
 - Promote Council’s compost rebate scheme.⁶³
- Strategy 5: Building capacity across the community to lead, participate in and support food system work
 - Build capacity for collective impact
 - Develop and strengthen partnerships
 - Mobilise funding
 - Deliver annual food forums
 - Build capacity of the Cardinia Food Network.⁶⁴

1.40 The strategy was informed by a two-year community and stakeholder consultation process, and integrates with other strategies and initiatives, such as the Cardinia Shire Council Plan, the Cardinia Planning Scheme and *Cardinia Shire’s Liveability Plan 2017–29*.⁶⁵ Other initiatives include:

- Koo Wee Rup Community Garden.⁶⁶
- The Community Grocer—running weekly affordable fresh produce markets.⁶⁷
- Monash Health Achievement Program—focused on healthy eating and oral health in early childhood services.⁶⁸
- Cardinia Shire Council’s Waste and Resource Recovery Strategy.⁶⁹

⁶² Cardinia Shire, *Community Food Strategy 2018–26*, pp. 22–3.

⁶³ Cardinia Shire, *Community Food Strategy 2018–26*, pp. 24–5.

⁶⁴ Cardinia Shire, *Community Food Strategy 2018–26*, pp. 26–7.

⁶⁵ Cardinia Shire, *Community Food Strategy 2018–26*, p. 15.

⁶⁶ Cardinia Shire, *Community Food Strategy 2018–26*, p. 19.

⁶⁷ Cardinia Shire, *Community Food Strategy 2018–26*, p. 21.

⁶⁸ Cardinia Shire, *Community Food Strategy 2018–26*, p. 23.

⁶⁹ Cardinia Shire, *Community Food Strategy 2018–26*, p. 25.

- The Cardinia Food Network—which provides a platform for networking, collaboration, capacity building and mutual support across a diverse range of community members and sectors across the local food system.⁷⁰

⁷⁰ Cardinia Shire, *Community Food Strategy 2018–26*, p. 27.



E. International strategies

Canada

- 1.1 In 2019, the Canadian Government released its *Food Policy for Canada: Everyone at the Table*. The aim of the policy was to ‘build a healthier and more sustainable food system’. It noted that ‘food systems, including the way food is produced, processed, distributed, consumed, and disposed of, have direct impacts on the lives of Canadians’; and observed that ‘food systems are interconnected and are integral to the wellbeing of communities, including northern and Indigenous communities, public health, environmental sustainability, and the strength of the economy’.¹
- 1.2 The policy consists of:
- A vision
 - Priority Outcomes
 - Action areas
 - Guiding principles.
- 1.3 The policy’s vision is that:
- All people in Canada are able to access a sufficient amount of safe, nutritious, and culturally diverse food. Canada’s food system is resilient and innovative, sustains our environment and supports our economy.²
- 1.4 The six ‘long-term interconnected and mutually-reinforcing’ outcomes identified by the policy were:
- Vibrant communities—improving community capacity and resilience to meet food-related challenges.
 - Increased connections within food systems—including through governance spaces and partnerships that connect multiple sectors and actors across the food system.
 - Improved food-related health outcomes—improving diet related health and reducing the burden of diet-related disease, particularly among groups at higher risk of food insecurity.

¹ Agriculture and Agri-Food Canada, *Food Policy for Canada*, 2019, p. 3.

² Agriculture and Agri-Food Canada, *Food Policy for Canada*, 2019, p. 5.

- Strong Indigenous food systems—partnering with Indigenous communities and organizations to support strong and prosperous First Nations, Inuit and Métis food systems.
 - Sustainable food practices—improving practices along the food value chain to reduce environmental impact and improve the climate resilience.
 - Inclusive economic growth—creating a diversified, economically viable, and sustainable food system, with improved access to opportunities in the agriculture and food sector for all Canadians.³
- 1.5 Four action areas were identified requiring action in the short and medium terms to support long-term outcomes. These were:
- Helping Canadian communities access healthy food—with a focus on community-based initiatives with potential to provide social, health, environmental and economic benefits.
 - Making Canadian food the top choice at home and abroad—with efforts to diversify exports, support food processors, and enhance the potential of Canadian agriculture and food products to stand out as safe and healthy in domestic and international markets.
 - Supporting food security in Northern and Indigenous communities—strengthening First Nations, Inuit, and Métis food systems, recognizing the importance of food to Indigenous culture and well-being, and, in so doing, supporting Indigenous food self-determination.
 - Reducing food waste—with a shift towards more sustainable food practices across the processing, retail and food services sector and within government.⁴
- 1.6 The guiding principles of the Food Policy are intended to provide direction and guidance for action on food related issues. The principles are:
- Inclusion and diversity—all Canadians to be part of an ongoing dialogue on food issues, with decisions being made after gathering and considering diverse interests and perspectives.
 - Reconciliation—acknowledging the distinct food systems of First Nations, Inuit and Métis communities in Canada, ensuring their rights, interests and circumstances are acknowledged, affirmed and implemented and supporting food self-determination.
 - Collaboration—improving integration across food-related policies and programs.
 - Innovation—creating a food system that encourages innovation and is adaptable as priorities shift.
 - Sustainability—a food system that supports social, cultural, environmental and economic sustainability.

³ Agriculture and Agri-Food Canada, *Food Policy for Canada*, 2019, pp. 6–7.

⁴ Agriculture and Agri-Food Canada, *Food Policy for Canada*, 2019, p. 9.

- Evidence and accountability—ensuring that food-related policies and programs are evidence-based, transparent, accountable and results oriented.⁵
- 1.7 The Food Policy for Canada is supported by the Canadian Food Policy Advisory Council. The Council was created to ensure collaboration in understanding complex and interconnected food systems issues from diverse perspectives. It provides advice to the Minister of Agriculture and Agri-Food on addressing challenges and opportunities across Canada’s food systems. Its membership is designed to reflect the diversity of Canada’s food systems including from the food and agriculture sector, academia, civil society, and Indigenous communities. The Council will contribute to building consensus and greater trust across food-system stakeholders, identify gaps in data and opportunities, provide advice on future action areas and assist in the development of specific and measurable targets for each of the long-term outcomes.⁶
- 1.8 In addition, a cross-government reporting framework will measure and track progress towards outcomes, ‘holding the government accountable for results and ensuring transparent reporting to Canadians’. It will also support evidence-based decision-making for tackling food system issues.⁷

UK food strategy

- 1.9 The UK Government food strategy, presented to the UK Parliament in June 2022, was a response to a process begun in 2018 with the establishment of the independent review of the UK food system. The review submitted two reports—*The National Food Strategy: Part One* (July 2020) and *The National Food Strategy: The Plan* (July 2021). Part One made seven recommendations around two main themes—addressing disadvantage and maintaining food sovereignty. The recommendations included:
- Expand eligibility for the Free School Meal scheme to include every child (up to the age of 16) from a household where the parent or guardian is in receipt of Universal Credit (or equivalent benefits).
 - Extend the Holiday Activity and Food Programme to all areas in England, so that summer holiday support is available to all children in receipt of Free School Meals.
 - Increase the value of Healthy Start vouchers to £4.25 per week; and expand the scheme to pregnant woman and to all households with children under 4 in both cases where the parent or guardian is in receipt of Universal Credit (or equivalent benefits).
 - Extend the work of the Food to the Vulnerable Ministerial Task Force for a further 12 months up until July 2021. It should collect, assess and monitor data on the number of people suffering from food insecurity at any time, and agree cross-

⁵ Agriculture and Agri-Food Canada, *Food Policy for Canada*, 2019, pp. 10–12.

⁶ Agriculture and Agri-Food Canada, *Food Policy for Canada*, 2019, pp. 8, 13.

⁷ Agriculture and Agri-Food Canada, *Food Policy for Canada*, 2019, p. 8.

departmental actions, where necessary, to support those who cannot access or afford food.

- The government should only agree to cut tariffs in new trade deals on products which meet our core standards.
- The government should adopt a statutory responsibility to commission and publish an independent report on any proposed trade agreements.
- The government should adopt a statutory duty to give Parliament the time and opportunity to properly scrutinise any new trade deal.⁸

1.10 The Plan (2021) made fourteen recommendations around four themes. The first theme was ‘escape the junk food cycle and protect the National Health Service’. Under this theme it was recommended that the government:

- Introduce a Sugar and Salt Reformulation Tax and use some of the revenue to help get fresh fruit and vegetables to low-income families.
- Introduce mandatory reporting for large food companies.
- Launch a new “Eat and Learn” initiative for schools.

1.11 These recommendations were designed to ensure reductions in sugar and salt in processed foods; mandatory reporting of food sales by type and nutrient content and waste; education in food and food preparation skills.⁹

1.12 The second theme was ‘reduce diet-related inequality’. Under this theme it was recommended that the government:

- Extend eligibility for free school meals.
- Fund the Holiday Activities and Food programme for the next three years.
- Expand the Healthy Start scheme.
- Trial a “Community Eatwell” programme, supporting those on low incomes to improve their diets.

1.13 These recommendations target disadvantaged children, both before and during their school years and outside school, including pregnant mothers. The Community Eatwell program would give General Practitioners ‘the option to prescribe fruit and vegetables – along with food-related education and social support – to patients suffering the effects of poor diet or food insecurity’.¹⁰

1.14 The third theme was ‘make the best use of our land’. Under this theme it was recommended that the government:

- Guarantee the budget for agricultural payments until at least 2029 to help farmers transition to more sustainable land use.

⁸ *The National Food Strategy: Part One* (July 2020), pp. 8–10.

⁹ *The National Food Strategy: The Plan* (July 2021), pp. 146–8.

¹⁰ *The National Food Strategy: The Plan* (July 2021), pp. 151–3.

- Create a Rural Land Use Framework based on the three-compartment model.
 - Define minimum standards for trade and a mechanism for protecting them.
- 1.15 These recommendations were designed to assist the transition from subsidies under the European Union Common Agricultural Policy to Environmental Land Management payments promoting sustainable land management practices; create a framework for environmental management on different land use functions—high-yield farmland, low-yield farmland and semi-natural land; and ensure that English farmers were on a level playing field when it came to meeting environmental and animal welfare standards under trade agreements.¹¹
- 1.16 The fourth theme was ‘create a long-term shift in our food culture’. Under this theme it was recommended that the government:
- Invest £1 billion in innovation to create a better food system.
 - Create a National Food System Data programme.
 - Strengthen Government procurement rules to ensure that taxpayer money is spent on healthy and sustainable food.
 - Set clear targets and bring in legislation for long-term change.
- 1.17 The recommendations are designed to ensure funding for systemic change; the collection of data on land-use, food production, distribution and exchange, and the health and environmental impacts of food; that government uses institutional procurement to ensure that food is healthy and sustainable in accordance with its own policies and goals; and clear legislated targets for food system change.¹²
- 1.18 The UK Government food strategy (2022) ‘focuses on longer-term measures to support a resilient, healthier, and more sustainable food system that is affordable to all’. It is designed to enable ‘a prosperous agri-food sector’, while ensuring that ‘healthier and more sustainable diets can be achieved by all’. The objectives of the strategy are to deliver:
- A prosperous agri-food and seafood sector that ensures a secure food supply in an unpredictable world and contributes to the levelling up agenda through good quality jobs around the country.
 - A sustainable, nature positive, affordable food system that provides choice and access to high quality products that support healthier and home-grown diets for all.
 - Trade that provides export opportunities and consumer choice through imports, without compromising our regulatory standards for food, whether produced domestically or imported.¹³

¹¹ *The National Food Strategy: The Plan* (July 2021), pp. 155–7.

¹² *The National Food Strategy: The Plan* (July 2021), pp. 159–62.

¹³ *UK Government Food Strategy* (June 2022), p. 8.

1.19 The prosperity of the agrifood sector will be delivered through:

- Maintaining levels of domestic production through productivity gain and new farming schemes.
- Research and innovation.
- Workforce development, including skilled and seasonal migration.
- Skills development.¹⁴

1.20 The sustainability of the agrifood sector would be delivered through:

- Legislative frameworks to incentivise farmers and food producers to adopt more sustainable practices.
- A land use framework ‘to ensure we meet our net zero and biodiversity targets, and help our farmers adapt to a changing climate, whilst continuing to produce high quality, affordable produce that supports a healthier diet’.
- Developing interventions to encourage and enable healthier and more sustainable diets.
- Introducing measures to improve school food and build a strong food curriculum.
- Through a Food Data Transparency Partnership, implement mandatory public reporting against a set of health metrics and explore a similar approach to sustainability and animal welfare; and provide consumers with the information they need to make more sustainable, ethical, and healthier food choices.
- Using institutional procurement to encourage spending on locally produced food or food certified to higher environmental production standards.¹⁵

1.21 The strategy also highlights a range of issues and problems surrounding food security. It acknowledges that trade strengthens food security while enabling access to foodstuff that ‘would be impossible or impractical to produce domestically’.¹⁶ It notes the need for innovation in production through things like protected cropping, alternative proteins, and regenerative farming.¹⁷ It highlights the challenges for the agri-food sector in securing labour and skills ‘despite the variety of roles and career pathways available’.¹⁸

1.22 The strategy also highlights issues around health and diet. It noted that ‘on average adults are consuming 200-300 more calories each day than needed’;¹⁹ and that people do not eat enough seafood.²⁰ It observed that ‘the link between deprivation and dietary outcomes is not only about the cost of healthier food’ but also ‘about having the equipment, cooking skills, and time to prepare and cook healthier food

¹⁴ UK Government Food Strategy (June 2022), p. 10.

¹⁵ UK Government Food Strategy (June 2022), p. 11.

¹⁶ UK Government Food Strategy (June 2022), p. 12.

¹⁷ UK Government Food Strategy (June 2022), pp. 16–17.

¹⁸ UK Government Food Strategy (June 2022), p. 18.

¹⁹ UK Government Food Strategy (June 2022), p. 21.

²⁰ UK Government Food Strategy (June 2022), p. 22.

than more convenient alternatives'.²¹ It emphasised the importance of nutritional education, stating that 'it is important that individuals build a better understanding of their food choices from a young age as early childhood experiences have far-reaching implications for later in life'.²² The strategy also provides for the continuation and development of school meals programs.²³ It observed that public sector food 'should be healthier, more sustainable and provided by a diverse range of local suppliers'. Its vision is that 'public sector food and catering is an exemplar for wider society, delivering positive health, animal welfare, environmental and socio-economic impacts'.²⁴

- 1.23 The strategy also highlights the collection of data on food and health. A UK Food Security Report will be published triennially.²⁵ In addition, the UK is planning the launch of the Food Data Transparency Partnership, which will 'champion consumer interests, providing people with the information they need to make more sustainable, ethical, and healthier food choices, and incentivise industry to produce healthier and more ethical and sustainable food'.²⁶

Scotland

- 1.24 Scotland has been on a food policy journey since 2009, when it launched *Recipe for Success – Scotland's National Food and Drink Policy*.²⁷ The targets of the policy were:

- support the growth of our food and drink industry;
- build on our reputation as a land of food and drink;
- ensure we make healthy and sustainable choices;
- make our public sector an exemplar for sustainable food procurement;
- ensure our food supplies are secure and resilient to change;
- make food both available and affordable to all; and
- ensure that our people understand more about the food they eat.²⁸

- 1.25 In 2014, the Scottish Government released a discussion document, *Becoming a Good Food Nation*, designed to build upon and expand the earlier policy.²⁹ As well as

²¹ UK Government Food Strategy (June 2022), p. 22.

²² UK Government Food Strategy (June 2022), p. 24.

²³ UK Government Food Strategy (June 2022), p. 25.

²⁴ UK Government Food Strategy (June 2022), p. 27.

²⁵ UK Government Food Strategy (June 2022), p. 16.

²⁶ UK Government Food Strategy (June 2022), pp. 25–7.

²⁷ The Scottish Government, *Recipe for Success – Scotland's National Food and Drink Policy*, Edinburgh, June 2009.

²⁸ The Scottish Government, *Recipe for Success – Scotland's National Food and Drink Policy*, Edinburgh, June 2009, p. 1.

²⁹ The Scottish Government, *Becoming a Good Food Nation*, Edinburgh, June 2014.

being the basis for an extensive program of consultation, the policy was the foundation for the development of a *Programme of Measures*, targeting:

- Health
- Social justice
- Knowledge
- Environmental sustainability
- Prosperity.

1.26 The Programme ties food policy into a broader policy framework and initiatives covering health policy, education, environment, economic and industry development, and measures to address food insecurity.³⁰ This includes:

- Support for allotments and community gardens.
- Dietary guidance under Eat Well Your Way.
- The Healthcare Retail Standard—sets criteria where 50% of food and 70% of drink sold in all National Health Service Scotland shops is 'healthy' and only certain items can be promoted.
- The Healthy Living Programme—encouraging retailers to prioritise the sale of healthy food.
- Proposed legislated restrictions on the marketing of food and drink high in fat, sugar and salt.
- An out of home food strategy—providing a voluntary framework for out of home food outlets to help them provide healthier foods in support of Scottish Dietary Goals. It includes calorie labelling and a Code of Practice for Children's Menus.
- School Food and Drink Regulations.
- Food For Life programme—which aims to increase the amount of healthy, locally sourced food served by local authorities in early years settings, schools and care homes.³¹

1.27 In addition, the Scottish Government has established a Ministerial Working Group on Food 'to co-ordinate action in relation to food and drink matters across government'; created the position of National Chef; and passed the *Good Food Nation (Scotland) Act 2022*, underpinning the work undertaken through the *Good Food Nation* policy. The Act requires Scottish Ministers and relevant public authorities 'to produce plans of their policies in relation to food and set out what they will do to make those plans real'. The plans will deliver outcomes, among other things, for 'social and economic wellbeing, the environment, people's health and physical and mental wellbeing, economic development, animal welfare, education and child poverty'. The effect of

³⁰ The Scottish Government, *Good Food Nation Programme of Measures*, November 2019.

³¹ The Scottish Government, *Good Food Nation - programme of measures: interim update 2022*, <<https://www.gov.scot/publications/good-food-nation-programme-measures-2022-interim-update/pages/2/>>. Accessed 12 September 2023.

the plans is that ministers and relevant authorities must have regard to their plans when exercising their functions. The Act requires the establishment of a Scottish Food Commission to scrutinise and make recommendations 'in relation to the progress in achieving the outcomes in the good food nation plans; conducting research; and providing advice to Scottish Ministers and relevant authorities in carrying out their duties under the Act'.³²

- 1.28 In response to the war in Ukraine, the Scottish Government appointed a Food Security and Supply Taskforce to 'monitor, identify and respond to any potential disruption to food security and supply resulting from the impact of the ongoing conflict in Ukraine'. In June 2022, the Taskforce recommended, among other things, the creation of a dedicated Food Security Unit within the Scottish Government. This unit would 'manage ongoing monitoring of supply chain vulnerabilities, including infrastructure, (e.g. a dedicated food security function), and linking with future food security work', allowing Government and industry 'to react as quickly as possible to any future shocks, as these arise'.³³

³² The Scottish Government, Good Food Nation Policy, <<https://www.gov.scot/policies/food-and-drink/good-food-nation>>. Accessed 12 September 2023.,

³³ The Scottish Government, Short Life Food Security and Supply Taskforce: report, <<https://www.gov.scot/publications/short-life-food-security-and-supply-taskforce-report/pages/overview/>>. Accessed 12 September 2023.