Capital Food and Fibre Strategy

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Recipient

Agriculture Strategy Team

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Dietitians Australia
The Leading Voice of Nutrition

Contents

About Dietitians Australia

Dietitians Australia is the national association of the dietetic profession with over 8000 members, and branches in each state and territory. Dietitians Australia is the leading voice in nutrition and dietetics and advocates for food and nutrition for healthier people and healthier communities.

The Accredited Practising Dietitian (APD) program provides an assurance of safety and quality and is the foundation of self-regulation of the dietetic profession in Australia. Dietetic practice promotes healthy and sustainable diets at various levels, for example in food-based dietary guidelines at the population-level, food procurement and menu planning policies at an institutional-level and in nutrition education to client groups, community groups and other health professionals, and medical nutrition therapy at the group and individual level. In terms of providing specific dietary advice, dietitians can provide advice on the many activities a person engages in to source, store, prepare, consume and dispose of the food they eat

This submission was prepared by Dietitians Australia staff in consultation with members of the Dietitians Australia Food and Environment Interest Group, Public Health and Community Nutrition Interest Group and Corporate Nutrition Interest Group following the Conflict of Interest Management Policy and process approved by the Board of Dietitians Australia. Contributors include Dietitians Australia members with wide ranging expertise in areas including public health, food systems, food industry, emergency food relief and academia.

Dietitians Australia position on healthy and sustainable diets

It is the position of Dietitians Australia that to promote human and planetary health, a food system transformation is needed that supports the population to adopt healthy and sustainable diet-related practices. A healthy and sustainable diet must:

- Be nutritionally adequate, healthy and safe
- Have low environmental impact and be protective of natural resources and biodiversity
- Be culturally acceptable
- Be accessible, economically fair and affordable

Dietitians Australia acknowledges that it is critical to prioritise Indigenous knowledge in consultation, policymaking and implementation processes to achieve these recommendations. In facilitating the uptake of healthy and sustainable diets, dietitians are contributing to the transformation of our current food system that is urgently required to nourish present and future generations within planetary boundaries.

For more information about our position, see the evidence brief and position paper on our website.

Summary

In Australia, the way our food is produced, manufactured, distributed and consumed is contributing to climate change and malnutrition in all its forms.[1, 2] Our agricultural sector is responsible for 16% of Australia's greenhouse gas emissions as well as biodiversity loss, water consumption and unsustainable land management practices.[3] This is only worsened by the fact that unhealthy foods (high saturated fat, added sugar and salt) account for 27% of diet-related emissions.[4-6] Unhealthy dietary patterns are the leading preventable risk factor for chronic disease, particularly amongst lower socio-economic groups.[7, 2]

To achieve a more healthy, sustainable and equitable food system, change will need to occur across all sub-systems, including more sustainable agricultural practices, less energy use in food processing and transportation, a changed food supply chain and retail sector, significant changes in consumer food choices, as well as strategies that result in less food waste. This will require comprehensive action across multiple settings to bring about the necessary change. Food environments, including where people access food, the types of foods available, and the way that foods are marketed, have an enormous impact on population diets.[8]

This relationship between our food system and our climate is bidirectional. Climate change and poor environmental conditions also affects our food supply and security, for example through decreased crop yield, availability and quality, which adversely affects health.[9] This requires a change to both food production and consumption practices to ensure current and future generations are nourished within planetary boundaries.[8] Global targets are an effective mechanism for driving such change,[10] such as Agenda 2030,[11] the Paris Agreement[12] and the United Nations' Decade of Action on Nutrition.[13] Efforts to improve our food system can have far-reaching benefits – improving food security and nutrition, social and gender equity, community resilience and more.[14]

It is agreed that a whole-of-system approach is required, and efforts to promote healthy and sustainable diets can trigger action across the entire food system.[14, 15] The food system has six phases which make up 'the interconnected system of everything and everybody that influences, and is influenced by, the activities involved in bringing food from farm to fork and beyond':[16] (i) agricultural production, (ii) distribution, transport and trade, (iii) processing, (iv) food retail/service, (v) consumption, and (vi) waste and disposal. The points of intersection between diet and this broader food system present a great opportunity to achieve systemic transformation, in particular, efforts to promote the consumption of healthy and sustainable diets.[16]

Dietitians have a key role to play in facilitating the required food system transformation. Dietetic practice promotes healthy and sustainable diets at various levels, for example in food-based dietary guidelines at the population-level, food procurement and menu planning policies at an institutional-level and in nutrition education to client groups, community groups and other health professionals, and medical nutrition therapy at the group and individual level.[17, 18] In terms of providing specific dietary advice, dietitians can provide advice on the many activities a person engages in to source, store, prepare, consume and dispose of the food they eat.[19]

A list of all recommendations is provided in Appendix A.

Discussion

Goal 1: Ecological sustainability

> Transition to ecologically sustainable food and fibre production supported by strong environmental stewardship to ensure our region has healthy soils, water and air.

Knowledge of Indigenous Peoples

Indigenous Peoples of the world have managed sustainable food systems for millennia, providing food, livelihoods and well-being to humankind.[20] Indigenous People's food systems are founded on values of reciprocity and respect for the whole ecosystem, whereby humans are interconnected with the natural environment. The way food is produced and consumed has changed substantially over the last decades and often disregards these Indigenous knowledges.[8, 21] As we attempt to mitigate the effects of climate change and an increasing prevalence of diet-related disease, Indigenous Peoples' knowledges of sustainable food systems can provide insights, lessons and evidence.[20, 22]

Environmental impact of dietary patterns

Food production and consumption practices need to shift to feed the predicted nearly 10 billion people by 2050, to achieve human health within finite planetary boundaries. Nothing short of a 'Great Food Transformation' is required to meet this challenge.[8] To achieve widespread change in food consumption practices to be more sustainable and equitable, an upstream-downstream model of behaviour change is required. This will require policy levers from all levels of government, as well as involve actors across the entire food system.

To achieve a more healthy, sustainable and equitable food system, change will need to occur across all sub-systems, including more sustainable agricultural practices, less energy use in food processing and transportation, a changed food supply chain and retail sector, significant changes in consumer food choices, as well as strategies that result in less food waste. This will require comprehensive action across multiple settings to bring about the necessary change. Food environments, including where people access food, the types of foods available, and the way that foods are marketed, have an enormous impact on population diets.[8]

Environmental impact of dietary patterns is most commonly assessed in the peer-reviewed literature using greenhouse gas (GHG) emissions and, to a lesser extent, land and water use.[23, 24] Of the 20 studies in a rapid review to determine the environmental impacts associated with food consumption in Australia and New Zealand, greenhouse gas emissions (n=12) were the most commonly used environmental indicator followed by water use and environmental footprint (n=7) and carbon footprint (*n 3*).[24] An integrative review identified that soil carbon stocks were overlooked as an important indicator of environmental impact.[23] This represents a misalignment in the scientific methodologies between publications aiming to inform climate action through agricultural production and those assessing the environmental impacts of foods to define a healthy and sustainable diet.[23]

A systematic literature review, co-authored by members of Dietitians Australia Food and Environment Interest Group, has summarised the evidence on the environmental impacts associated with current food consumption patterns in Australia and NZ,[25] in terms of greenhouse gas emissions (GHGe); water use/footprints and/or water scarcity footprints; and land use, ecological footprints, and cropland footprints. Australia's food system-related greenhouse gas emissions currently represents 14.2% of the country's total annual emissions.[24]

The contribution of different types of foods to overall GHGe can provide insights into what a more sustainable diet may look like. Core foods are estimated to contribute 67 - 73% to total food-related GHGe in Australia, with discretionary foods contributing to the remainder, with processed meats being the single highest contributor in the discretionary food category (11 – 15% total).[4, 26-28] The high contribution from discretionary foods highlights not only the impact of the production of these foods on the environment, but also reflects the higher than recommended consumption of these low nutritional quality foods. Of the core foods, 26 to 34% of contributions come from the meat and alternatives group. Fruit (3.5%) and vegetables (6.5%) were the two lowest contributors, but if dietary intakes aligned with the recommended 2 and 5 serves, respectively, per day, contribution of this food group to GHGe would be considerably higher. Red meat, in particular beef, is the main contributor to the GHGe of core foods.

In Australia, the amount of water required for food production is high, with 60% of the water available for human use being used for irrigated agriculture [29]. Of the eight million megalitres (ML) of water used for Australia's agricultural production in 2018 -2019, one million of this was used for fruit and nut crops, 882,000 ML for sugar cane, 388,933 ML for vegetable crops for human consumption and 75,600 ML for rice. A national household expenditure study identified that the three highest contributors to water footprint were bakery products, flour and cereals (39%; related to water intense wheat production), meat (20%), and meals outside the home and fast food (16%).[30] Not all water footprint calculations consider environmental relevance, especially for Australia where variation in local water stress is extreme between regions, therefore the water scarcity footprint is a more useful metric.

Researchers at CSIRO quantified the water scarcity footprint of 9341 Australian adults using dietary intake data and compared this to the planetary boundary for freshwater use.[6] They concluded that diets based on Australia's dietary guidelines are within the planetary boundary for freshwater.[6] Using the same dietary intake data, they also investigated use of a weighted environmental impact score, factoring in climate footprint, water-scarcity footprint and cropland-scarcity footprint. Upon considering wider impacts, they concluded that a diet based on Australia's dietary guidelines could achieve a lower environmental impact score, but not low enough to achieve planetary boundary targets due to the impacts of the food production system.[31] This is akin to conclusions of research overseas co-benefits of healthy and sustainable dietary patterns are not universal, with trade-offs required across the health and environmental measures.[32, 33] However, the literature widely supports that dietary transitions towards healthy food consumption will generally also improve sustainability.[8, 34, 35]

In terms of land use, discretionary foods contributed the highest percent share to cropland footprints (36%),[36] compared to other food groups. The second largest contributor to cropland footprints is the meat and alternatives group (23.9 – 27.4%; of which poultry (9.5 - 11.7%) and beef and lamb: (7.3 - 8.8%) were the main contributors). The third highest contributor was the grains (cereals) food group, contributing 12% to total cropland footprint.

In summary, discretionary foods are consistently one of the two highest contributors to environmental impacts across multiple metrics: GHGe, cropland footprints, ecological footprint, and WSF. The meat and alternatives group also has a high environmental impact across multiple metrics, although the WSF was lower for this group compared to dairy products, cereals, grains and fruit and vegetables. Fruits and vegetables generally had a low environmental impact in other metrics. Due to differences in climatic conditions and availability of land and water for agriculture and farming, Australian data needs to be used for modelling the environmental impact of food consumption.

Food waste in Australia

Food waste is a worldwide challenge which has environmental, economic and social impacts. As a Signatory to the United Nations 2030 Agenda for Sustainable Development, Australia is obliged to act on Development Goal 12.3 to halve food waste by 2030.[37] In 2017 the Australian Government published the National Food Waste Strategy to provide a framework to support collective action towards reducing food waste. Food Innovation Australia Limited (FIAL), was commissioned by the government to implement the Strategy. In 2020 FIAL published A Roadmap for reducing Australia's food waste by half by 2030,[38] and in 2021 published the National Food Waste Strategy Feasibility Study.[39]

Australia wastes 7.6 million tonnes of food each year, 70% of which is edible. This equates to 312kg of wasted food per person per year.[39] In the ACT, 23,000 tonnes of food waste was generated in households in 2016/17. Over 90% of that food waste ended up in landfill.[40] There are significant environmental, economic and social costs associated with wasted food that is fit for human consumption:[41]

- 8-10% of global greenhouse gases comes from food that is produced but not eaten.[42]
- More than 25 million hectares of land in Australia is wasted to grow food that is not eaten.[39]
- Food waste across the supply chain (ie farm to fridge) costs the Australian economy $36.6 billion a year.[39]
- $2.84 billion agricultural food losses to farmers in Australia.[41]
- Over 25,000 people in the ACT experience food stress,[43] yet edible food is being wasted.

The drivers of food losses within the primary production sector are numerous, categorised broadly as on-farm damage, market forces, cosmetic standards, perishability and processing and transport losses. Among the market factors are price variation, which may make it uneconomic to harvest, and challenges securing seasonal employees for picking.

Food waste in institutions

Food waste in hospitals is an issue regularly investigated by dietitians. Despite patients generally wanting to avoid food and related waste (eg single use cutlery),[44, 45] waste in this setting is influenced by patient appetite or interest in food, food quality and quantity, and the foodservice model (eg set times of day, on demand ordering).[45] A systematic review of hospital food service has investigated environmental and associated economic impacts of food waste, outcomes of strategies aiming to improve sustainability and perspectives of patients, staff and stakeholders about these strategies. The review found that foodservice strategies to increase patient intake were the most common intervention to reduce food waste. Challenges to implementing other strategies to improve sustainability or reduce food waste included logistical barriers, requirement for efficiency, budget constraints, and the menu modifications required for the change in foods sourced.[46]

Literature suggests that sustainable procurement and foodservice policies and guidelines are becoming more common, with work needed on supporting staff to implement these policies.[47] Representation of First Nations perspectives in the literature is lacking,[47] suggesting that more needs to be done to engage First Nations stakeholders in developing sustainable food systems policies in institutional and other settings. Guidelines for healthy and sustainable institutional food service have been developed in Victoria[48] and the United States.[49, 50] Similar guidelines developed for the ACT context would reduce food waste from institutions such as schools, hospitals and residential aged care homes.

Recommendations to the ACT Government

1. Involve First Nations peoples at all levels of decision making and implementation, prioritising local expertise, local needs and local governance structures in both long-term planning and emergency responses to food and water security.[35, 51, 52]
2. Facilitate the empowerment of communities to participate in the care and wise use of natural resources, including the land and sea, and in particular enable and support traditional owners to care for their country.[52]
3. Incorporate First Nations people's knowledge of native plants and materials into consideration as sources of food.[52]
4. Implement sustainable soil management practices including measurement of carbon stocks to support growth of plant foods with optimal nutritional value and to reduce atmospheric carbon.[35, 52]
5. Work across all institutional settings to adapt food service provision to support social normative shifts to less animal-derived foods and more plant-based proteins on the menu, and efforts to minimise food-related waste.
6. Adequately resource measures to reduce and reuse commercial and domestic food-related waste in line with circular economy principles.[35, 52]
7. Fund public awareness campaigns and social marketing interventions to promote healthy and sustainable diet-related practices.
8. Incentivise development of innovative models for distribution and supply of food to shorten and decentralise supply chains, and reconnect producers and consumers.
9. Invest in regional infrastructure that centralises the collection of surplus or off-specification food, to allow greater volumes to be collected and sold for repurposing, or donated to food rescue organisations.

Goal 2: Drought and climate change resilience

Build the drought and climate change resilience of the ACT farm sector by identifying and encouraging practices that best fit the region's conditions.

The relationship between our climate and our food system is bidirectional. On one side, climate change is affecting our planet's ability to produce food under extreme weather conditions, diminishing natural resources, ocean acidification and rising sea levels.[9, 53] On the other side, our food system disrupts natural ecosystems by creating more greenhouse gas emissions than any other single contributor, causing land degradation, depleting water stores and driving biodiversity loss.[54, 55] While food systems have the potential to promote human health, environmental sustainability and equity, they are currently threatening all three.[8]

In Australia, the way our food is produced, manufactured, distributed and consumed is contributing to climate change and malnutrition in all its forms.[1, 2] Our agricultural sector is responsible for 16% of Australia's greenhouse gas emissions as well as biodiversity loss, water consumption and unsustainable land management practices.[3] Our dietary consumption patterns yield the highest per capita greenhouse gas emissions of all the G20 countries.[56] If the global population were to adopt Australian consumption patterns, by 2050 the natural resources of over six and a half Earths would be required to support food production.[56] This is only worsened by the fact that foods which are energy-dense and nutrient-poor account for 27% of diet-related emissions.[4-6]

Efforts to improve our food system can have far-reaching benefits such as improving food security and nutrition, social and gender equity, community resilience, amongst others.[14] Global targets exist to support Australia's effort to achieve this population-wide dietary shift, including Agenda 2030 and the Paris Agreement, which are proving to be effective mechanisms for attracting political will and driving change.[12, 57, 58] The United Nations' (UN) Decade of Action on Nutrition commits UN Member States, including Australia, to implement public health policy to create sustainable, resilient food systems for healthy diets for all.[13] It is agreed that a whole-of-system approach is required.

Recommendations to the ACT Government

10. Recognise social, cultural and environmental determinants of health in all policy decisions, including climate and energy policy.[52]
11. Work in collaborative multi-organisational alliances and partnerships, including with peak bodies, to guide policy priorities regarding climate change, health and nutrition.[52]

Goal 3: Production

> Increase the capacity to produce food and fibre locally to shorten supply chains and reduce reliance on external supply.

Agricultural land in the Australian Capital Territory (ACT) occupies approximately 15% of the region.[59] This land is predominantly used for beef cattle farming and sheep farming, which together produce 59% of the total value of agricultural production in the region.[59] While these commodities contribute to the food we eat, red meat is only a small proportion of one of five core food groups necessary for a healthy dietary pattern.[60]

If the ACT is to shorten supply chains and reduce reliance on external supply, the territory must produce foods from more food groups. Community gardens across the territory have demonstrated the ACT climate is suitable for growing many vegetables, herbs and some fruits.

Recommendations to the ACT Government

12. Continue to support community gardens with grants and supportive policies.[52]
13. Investigate suitability of agricultural land in the ACT for plant produce (ie foods in the fruit, vegetable, nut, legume and wholegrain food groups).
14. Provide incentives for production of low emission, healthy foods[60] and discourage production of highly processed foods which are damaging to both human and planetary health.[35, 52]

Goal 4: Innovation

> Support innovation in the food and fibre sector through the adoption of diverse practices, business models and new technology.

The Australian Capital Territory (ACT) has pioneered planning reforms to support food production in cities. The ACT actively supports community gardens for growing food via grants and planning permissions,[61] and allows planting of food plants on nature strips.[62] We recommend these efforts are continued and expanded upon to support food production in Canberra.

Food-sensitive planning and urban design (FSPUD) recognises that access to healthy, sustainable and equitable food is an essential part of achieving liveable communities. FSPUD principles outline the approaches and interventions required to shift to a more sustainable and resilient food system and ensure people can meet their food needs into the future.[63] A report commissioned by the Heart Foundation[63] provides further information on FSPUD, including how to apply it in practice.

In 2009, state legislature in Vermont, USA introduced the Farm-to-Plate (FTP) Investment Program, co-ordinated by the non-profit Vermont Sustainable Jobs Fund. Vermont, has extensively invested in its local food system and is considered an international leader in this effort.[64] Evaluation of the program found that consumption of local food products increased from 5% of foods consumed in 2010 to 11.2% in 2017 while the program was running.[64]

The FTP agribusiness concept has not been widely adopted in Australia, however the Cardinia Food Circles initiative in Victoria has evolved along the same co-design principles by building a shared understanding of the Cardinia Shire food system, and addressing its challenges and opportunities, amongst a diverse and representative group of stakeholders.[65] Also in Victoria, the Open Food Network is piloting the Open Road program to connect farms, community food hubs and independent retailers.[66]

Recommendations to the ACT Government

15. Ensure urban planning legislation/requirements allow for equitable access to healthy and sustainable food, including zoning regulations to prioritise farmers markets, green grocers, social solidarity supermarkets and bulk food stores over retail outlets selling fast food and ultra-processed foods.[35]
16. Support open-source platforms to create online marketplaces for small-scale food producers, to connect producers and consumers without relying on the supermarket duopoly.[52]
17. Incentivise commercial kitchens (eg cafes and restaurants) to offer healthy and sustainable menu options by rewarding and promoting their efforts.[35]

Goal 5: Participation and opportunity

Enhance participation, knowledge exchange, employment opportunities and financial viability across the food and fibre supply chain.

Food insecurity

Food insecurity is defined by the Food and Agricultural Organisation as the lack of reliable physical, social or economic access to a sufficient amount of nutritious, safe and appropriate foods for an active and healthy life.[67] Food insecurity is related to poorer physical and mental health and wellbeing, and includes a higher risk of elevated levels of stress, anxiety and depression,[68-75] weight changes,[76-85] and higher prevalence of cardiometabolic[86, 87] and other chronic diseases.[88, 89] These conditions lead to diminished community participation, contribute to a burden on the health system and higher health care expenditure.

According to the Foodbank Hunger Report 2021,[90, 91] 1 in 6 adults and over 371,000 children in NSW and ACT had gone hungry in the last year, and 43% of parents facing food insecurity reported their children went an entire day without eating at least once a week. The COVID-19 pandemic has disproportionately impacted individuals who typically work casual part-time jobs, reducing their working hours, causing lost employment and undermining their career prospects. As a result, 65% of food insecure Australians are 18 to 25-year-olds going hungry at least once a week.[90]

A 2019 report by the ACT Council of Social Services (ACTCOSS) found that over 25,000 people in the ACT were experiencing food stress, meaning they were spending more than 30% of their disposable household income on food.[43] This is likely to have worsened in the past three years due to the effects of the COVID-19 pandemic.

Food relief organisations

Food relief organisations offer a vital immediate response to the serious public health issue of food insecurity and are not a substitute for whole community or public policy level solutions to address the root cause of food insecurity. Research shows that many people attending food relief organisations have been doing so for years, with some getting half or more of their food needs from these organisations,[92] and many accessing support from multiple food relief organisations in the space of a year.[75] The reliance on food relief organisations may be masking a higher level issue of cost of living, stagnant wage growth and social welfare payments below the poverty line.[92, 93]

Food environment

The foods we eat are strongly influenced by the food environment surrounding us. This includes factors like the foods that are available in the local geographical area, experiences when shopping for food and food advertising a person is exposed to.[8] Food environments can be assessed and improved using the INFORMAS framework.[94, 95] The ACT's progress on improving food environments up to 2019, following the INFORMAS framework, is outlined on pages 13 to 14 of the Policies for tackling obesity and creating healthier food environments report.[96] Below we discuss background to the INFORMAS categories and provide recommendations.

FOOD COMPOSITION AND LABELLING

Food environments can be improved by being more overt about the nutritional value of foods. Front-of-pack labelling can give consumers a greater understanding of what is in the food options available

to them, and can encourage companies to reformulate products, thus altering the food environment.[97]

Food labelling is a core feature in supporting consumers to identify healthy and sustainable food options. Consumers are supported to identify healthier food options by the Health Star Rating, but there is no labelling system in Australia to identify the environmental sustainability of foods. Any claims on food packaging about sustainability are unregulated and may mislead consumers.

Consumers identify nutrition, environmental and social responsibility food labelling as important features when selecting from food options.[98] Consumers are also willing to pay more for environmentally sustainable products according to a 2021 meta-analysis.[99]

A recent publication in The Lancet Planetary Health[100] suggests environmental sustainability labelling would support a sustainable and healthy food system. Environmental sustainability labelling would need to be evidence-based, fit-for purpose, appropriate for the unique setting of the Australia-New Zealand food system, and be trusted by consumers.[101] The International Organization for Standardization[102] outlines labelling types that may be appropriate. A systematic review by Bunge and colleagues[103] explores sustainable food profiling models used to inform the development of food labels accounting for both nutrition and the environment. Any labelling system must have additional criteria around healthiness of foods to prevent environmental claims being used to promote unhealthy foods.

FOOD MARKETING

Food marketing and advertising influences what we eat.[104, 105] A 2018 study on food advertising on Australian free-to-air television found that 11% of ads were for food products, of which up to 71% were for unhealthy foods high in saturated fat, sugar or salt.[106] A 2020 study on advertising on children's school routes in Sydney found that 32% of ads were for food or drinks, and of those, 75% were for unhealthy products high in saturated fat, sugar or salt. The ACT has taken positive steps to improve the food environment by reducing exposure to marketing of unhealthy foods in public spaces. This includes restricted marketing on buses and light rail,[107] and outdoor advertising bans with limited exceptions.[108] Restriction of marketing to children, and establishing 'green zones' around schools have improved food environments overseas[97] and should be implemented in Canberra.

FOOD PROVISION

The food environment can be improved by changing the foods available in institutions. There are several overseas examples of menu adaptation improving health and sustainability of foods served in institutions:

- Meatless Monday in Armed Forces (Norway)[109] and a national school meal program (United States of America)[110]
- Offering more vegetarian cafeteria meal options (United Kingdom)[111]
- Improved school meals using linear optimization, without negative effects on food waste, consumption or cost (Sweden)[112]
- Randomised controlled field experiments nudging conference participants to select a vegetarian default lunch option (Denmark)[113]
- Traffic light labelling of meal choices as a method of persuasion (United Kingdom)[114]

FOOD RETAIL

Product placement and the shopping experience affect the way people buy food. A 2020 systematic review found that greater availability and more prominent positioning of healthy foods in stores, or

reduced availability and less prominent positioning of unhealthy foods in stores, related to selection of healthier food options.[115] This was supported by a 2021 cluster trial which suggests that shoppers purchase healthier foods when fruit and vegetable displays are more obvious when entering a store and unhealthy foods are removed from end-of-aisle displays and checkout displays.[116] Cross-sectional analysis published in 2021 suggests Australians generally support changing retail environments to support healthy choices, such as by reducing the number of end-of-aisle displays containing unhealthy foods or soft drinks, and increasing the shelf space for fresh and healthier foods,[117] suggesting that altering food placement in stores can improve healthiness of food baskets.

Prominent display areas such as end-of-aisles, island bins and checkouts are typically used to display price promotions on unhealthy foods.[118] Price promotions lead to impulse purchases, stockpiling and overconsumption.[119] This is concerning, given research from Deakin University found that price promotions (eg discounts, 2-for-1 deals) are applied more commonly to unhealthy foods than healthy foods, to the point of statistical significance.[118, 120] Policies should be implemented to reduce the prevalence of unhealthy food price promotions, as part of a comprehensive approach to improving population diets.[119]

The ACT has taken more action on improving food retail environments than many other jurisdictions.[96] A demonstration of this is the Healthier Choices Canberra scheme launched in 2018 with the aim of increasing the visibility and appeal of healthier foods at sport clubs and businesses, with a focus on vegetables, fruit, and water.[121] No evaluation of this program has been made public, and should be conducted to inform the continuation or adaptation of the scheme.

FOOD PRICES

A healthy diet is high in fruits, vegetables, legumes, wholegrains and dairy, contains lean meats, fish, and nuts, and is low in alcohol, saturated fats, sodium, refined grains and added sugars.[122-126] Diets following this pattern are often unavailable or unaffordable for families experiencing low income and at risk of experiencing food insecurity,[127-134] costing up to 31% of their disposable income.[131] This can lead to families experiencing low income eating a diet low in plant foods[135, 136] (eg fruit, vegetables, wholegrains) and high in low-cost energy-dense packaged foods (eg bulking meals with pasta or white rice, cheap high-fat sausages, fast food 'family' meal deals).[137-139] People experiencing food insecurity are also more likely to ration, reduce portion sizes or skip meals. These unhealthy dietary patterns are a known risk factor for chronic diseases such as heart disease and diabetes.[137, 140, 141]

Australia lacks a national program to monitor the cost of healthy foods and the availability and quality of fresh fruit and vegetables. There have been several state-based programs, some longitudinal studies, and ad hoc studies in smaller communities that have undertaken food basket surveys. Since the late 1990s, the state government Health Departments in Queensland[142] and the Northern Territory[143] have regularly monitored the cost of healthy food. More recently the Western Australia government has conducted two food basket surveys in 2010 and 2013.[144] Other food basket surveys have been undertaken by academic researchers rather than led by government, using a variety of methodologies and survey instruments.[145] Beyond high-level data in the annual ACTCOSS Cost of Living Report,[146] the ACT does not have regular monitoring of food prices.

A 2020 study[147] investigated the cost, price-differential and affordability of diets in Canberra and Sydney. They found that unlike Sydney, Canberra grocery stores in the most disadvantaged compared with least disadvantaged areas (as measured by SEIFA quintiles) had similar food prices. However, the relative cost of a healthy diet was more for people with low income living in areas of most disadvantage, costing about 28% of disposable income, compared with 10% of disposable income for households with a median household income in areas of most disadvantage.[147]

Workforce

Dietitians working within the food industry can influence practices throughout the supply chain, including procurement, manufacturing, distribution, and packaging to increase public accessibility to healthy and sustainable diets.[35] Dietitians also consider the environmental impact of dietary behaviours, across diverse practice areas such as hospitals, health services, aged care, food industry, primary production, schools, early learning centres, and recreation and community centres.[35]

Dietitians can provide training to other professionals in the hospitality, food procurement and food service industries (eg caterers and food service providers) incorporating health and sustainability principles into food procurement, food service practices and menus.[35]

Local action

The ACT is unique from other Australian states and territories in that there is no separate system of local government and instead the Legislative Assembly is responsible for local government functions.[148] This gives the ACT the opportunity to overcome challenges faced by local and state governments in other jurisdictions.

A comprehensive policy analysis of actions concerned with creating a healthy, sustainable, and equitable food system from all local governments in New South Wales (n=128) and Victoria (n=79) was undertaken by researchers at the University of Sydney.[149] This analysis found that food safety, food waste and drinking water were most commonly considered by governments, with few acting on healthier eating. Challenges to acting on healthier eating faced by local government, such as lack of restrictive land use at a state level or shifting political priorities, can be overcome in the ACT due to its unique governance.[150]

The 2013 Milan Urban Food Policy Pact (MUFPP)[151] presents an opportunity for the ACT to publicly committed to developing sustainable food systems that are:

- Inclusive, resilient, safe and diverse
- Provide healthy and affordable food to all people in a human rights-based framework
- Minimise waste and conserve biodiversity while adapting to and mitigating impacts of climate change

Sixty-six different policy actions are being undertaken by MUFPP signatories, the most common being food procurement in public facilities (44%) and guidelines for school-feeding programs (33%).[152] So far in Australia, only the City of Sydney and City of Melbourne are signatories, presenting an opportunity for Canberra to be a leader in this space. Any action on food systems requires engaging stakeholders from a diverse range of sectors including local, social services and organisations to share resources and best practices to address factors affecting the local community.[153] Participation of people who have experienced food insecurity is integral to this process, to develop sustainable and socially inclusive programs that support and empower individuals to access healthy foods.[154] VicHealth have had great success using this approach in their Food For All program.[155]

Overseas action

In countries such as the United States and Canada, local governments have introduced food system policies that address multiple challenges in a comprehensive, integrated way, such as Food Policy Councils, which bring together community and non-government stakeholders to undertake diverse policy-related tasks.[156]

It is important to target children in their earlier years to maximise their chances of developing lifelong positive eating habits. Experiential learning is based on ‘learning from life experience’, rather

than using didactic or theoretically based teaching methods. In the United States, farm visits are a primary mode of experiential school-based nutrition learning provided through the federally funded United States Department of Agriculture (USDA) Farm to School grant programme,[157] with high uptake of this programme. The USDA Farm to School programmes include garden education, local procurement for school foods and experiential learning activities in agriculture, food, health or nutrition.

Recommendations to the ACT Government

18. Support an updated National Nutrition Strategy.[35, 158]
19. Work with the Federal government to implement routine, robust food insecurity monitoring and surveillance system to identify drivers, impacts and effective strategies. Include the USDA 18-question Household Food Security Survey Module in government health surveillance systems and Australian Health Surveys.
20. Support a federal scheme for front-of-pack labelling identifying environmental impacts of packaged foods, with clear criteria to prevent eco-labelling of unhealthy foods.
21. Take action on recommendations in the Healthy Food Environment Policy Index report:[96]
    a. Implement formal health impact assessments on population nutrition and health as part of policy development proposal process.[35, 96]
    b. Continue efforts to implement policies on healthy food provision (eg the Healthy Food and Drink Choices Policy, Healthier Choices Canberra).[35, 96]
    c. Require all organisations that receive funding from the ACT Government to restrict all promotion (including sponsorship) related to unhealthy food and beverages as a condition of funding.[35, 96]
    d. Continue to restrict unhealthy food and beverage advertising in all settings controlled or managed by the ACT Government, including public transport infrastructure and sports sponsorship.[35, 96]
    e. Identify policy mechanisms to limit access to unhealthy takeaway foods, and to assist retail outlets to improve the healthiness of the foods supplied.[35, 96]
    f. Develop public health promotion programs to encourage shifting to healthy and sustainable dietary patterns, with an emphasis on locally sourced food where possible.[35, 52, 96]
22. Invest in an ACT Food Security Council to determine the degree to which ACT policy, legislation, services and projects represent the needs of low-socioeconomic populations, with the outcome of reducing food insecurity.[159]
    a. The Council be comprised of a range of experts and stakeholders, including but not limited to ACT Council of Social Services, ACT Health, Accredited Practising Dietitians, public health, urban planning and food relief organisations.
    b. The Council have a clear goal of reducing household food insecurity by 10% by 2030.
    c. To achieve this goal, the Council be given a legislative mandate that provides clear authority and capacity to affect change, clear transparent targets, performance indicators and financial capacity to support services.
    d. The Council be required to take a responsive and democratic approach that includes consultation with industry experts and with people experiencing food insecurity.

e. The Council have clear lines of reporting into key government directorates to translate work into government policy and action.

f. The Council:

i. Commits to regular monitoring of food prices and availability across ACT.[35]

ii. Explores Canberra becoming a signatory to the Milan Urban Food Policy Pact.[151]

iii. Ensures ACT homeless services are provided with a quality framework, monitoring or training to include food and nutrition in their service provisions.[154]

iv. Explores including alternative food networks (eg non-supermarket retail options and civil society groups) in urban policy.[160]

v. Reforms the emergency food relief system to ensure its efficiency and effectiveness, by reorienting to nutrition-focussed food relief and client-focussed services providing pathways to food security.

23. Fund and facilitate dietitian-delivered training for stakeholders from the hospitality, food procurement and food service industries (eg caterers and food service providers) in incorporating health and sustainability principles into food procurement, food service practices and menus.[35]

24. Invest in continuing education and professional development initiatives to support the development of a workforce that is equipped to respond to climate change, and can lead and support the development and implementation of low and net zero carbon initiatives in health care.[52]

25. Fund research encouraging interdisciplinary collaboration to identify relationships between human health and urban design, energy, housing, food, and water security, transport and other sectors and strategies to respond.[35, 52]

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Appendix A – List of all recommendations

1. Involve First Nations peoples at all levels of decision making and implementation, prioritising local expertise, local needs and local governance structures in both long-term planning and emergency responses to food and water security.[35, 51, 52]
2. Facilitate the empowerment of communities to participate in the care and wise use of natural resources, including the land and sea, and in particular enable and support traditional owners to care for their country.[52]
3. Incorporate First Nations people's knowledge of native plants and materials into consideration as sources of food.[52]
4. Implement sustainable soil management practices including measurement of carbon stocks to support growth of plant foods with optimal nutritional value and to reduce atmospheric carbon.[35, 52]
5. Work across all institutional settings to adapt food service provision to support social normative shifts to less animal-derived foods and more plant-based proteins on the menu, and efforts to minimise food-related waste.
6. Adequately resource measures to reduce and reuse commercial and domestic food-related waste in line with circular economy principles.[35, 52]
7. Fund public awareness campaigns and social marketing interventions to promote healthy and sustainable diet-related practices.
8. Incentivise development of innovative models for distribution and supply of food to shorten and decentralise supply chains, and reconnect producers and consumers.
9. Invest in regional infrastructure that centralises the collection of surplus or off-specification food, to allow greater volumes to be collected and sold for repurposing, or donated to food rescue organisations.
10. Recognise social, cultural and environmental determinants of health in all policy decisions, including climate and energy policy.[52]
11. Work in collaborative multi-organisational alliances and partnerships, including with peak bodies, to guide policy priorities regarding climate change, health and nutrition.[52]
12. Continue to support community gardens with grants and supportive policies.[52]
13. Investigate suitability of agricultural land in the ACT for plant produce (ie foods in the fruit, vegetable, nut, legume and wholegrain food groups).
14. Provide incentives for production of low emission, healthy foods[60] and discourage production of highly processed foods which are damaging to both human and planetary health.[35, 52]
15. Ensure urban planning legislation/requirements allow for equitable access to healthy and sustainable food, including zoning regulations to prioritise farmers markets, green grocers, social solidarity supermarkets and bulk food stores over retail outlets selling fast food and ultra-processed foods.[35]
16. Support open-source platforms to create online marketplaces for small-scale food producers, to connect producers and consumers without relying on the supermarket duopoly.[52]
17. Incentivise commercial kitchens (eg cafes and restaurants) to offer healthy and sustainable menu options by rewarding and promoting their efforts.[35]
18. Support an updated National Nutrition Strategy.[35, 158]

19. Work with the Federal government to implement routine, robust food insecurity monitoring and surveillance system to identify drivers, impacts and effective strategies. Include the USDA 18-question Household Food Security Survey Module in government health surveillance systems and Australian Health Surveys.
20. Support a federal scheme for front-of-pack labelling identifying environmental impacts of packaged foods, with clear criteria to prevent eco-labelling of unhealthy foods.
21. Take action on recommendations in the Healthy Food Environment Policy Index report:[96]
    a. Implement formal health impact assessments on population nutrition and health as part of policy development proposal process.[35, 96]
    b. Continue efforts to implement policies on healthy food provision (eg the Healthy Food and Drink Choices Policy, Healthier Choices Canberra).[35, 96]
    c. Require all organisations that receive funding from the ACT Government to restrict all promotion (including sponsorship) related to unhealthy food and beverages as a condition of funding.[35, 96]
    d. Continue to restrict unhealthy food and beverage advertising in all settings controlled or managed by the ACT Government, including public transport infrastructure and sports sponsorship.[35, 96]
    e. Identify policy mechanisms to limit access to unhealthy takeaway foods, and to assist retail outlets to improve the healthiness of the foods supplied.[35, 96]
    f. Develop public health promotion programs to encourage shifting to healthy and sustainable dietary patterns, with an emphasis on locally sourced food where possible.[35, 52, 96]
22. Invest in an ACT Food Security Council to determine the degree to which ACT policy, legislation, services and projects represent the needs of low-socioeconomic populations, with the outcome of reducing food insecurity.[159]
    a. The Council be comprised of a range of experts and stakeholders, including but not limited to ACT Council of Social Services, ACT Health, Accredited Practising Dietitians, public health, urban planning and food relief organisations.
    b. The Council have a clear goal of reducing household food insecurity by 10% by 2030.
    c. To achieve this goal, the Council be given a legislative mandate that provides clear authority and capacity to affect change, clear transparent targets, performance indicators and financial capacity to support services.
    d. The Council be required to take a responsive and democratic approach that includes consultation with industry experts and with people experiencing food insecurity.
    e. The Council have clear lines of reporting into key government directorates to translate work into government policy and action.
    f. The Council:
        i. Commits to regular monitoring of food prices and availability across ACT.[35]
        ii. Explores Canberra becoming a signatory to the Milan Urban Food Policy Pact.[151]

iii. Ensures ACT homeless services are provided with a quality framework, monitoring or training to include food and nutrition in their service provisions.[154]

iv. Explores including alternative food networks (eg non-supermarket retail options and civil society groups) in urban policy.[160]

v. Reforms the emergency food relief system to ensure its efficiency and effectiveness, by reorienting to nutrition-focussed food relief and client-focussed services providing pathways to food security.

23. Fund and facilitate dietitian-delivered training for stakeholders from the hospitality, food procurement and food service industries (eg caterers and food service providers) in incorporating health and sustainability principles into food procurement, food service practices and menus.[35]

24. Invest in continuing education and professional development initiatives to support the development of a workforce that is equipped to respond to climate change, and can lead and support the development and implementation of low and net zero carbon initiatives in health care.[52]

25. Fund research encouraging interdisciplinary collaboration to identify relationships between human health and urban design, energy, housing, food, and water security, transport and other sectors and strategies to respond.[35, 52]