

Australia's dietary guidelines and the environmental impact of food "from paddock to plate"

Our guidelines need to do more for the health of the planet as well as the population

A draft revision of Australia's dietary guidelines was released by the National Health and Medical Research Council (NHMRC) for public comment in December 2011.¹ Although comprehensive with respect to nutrition, there is minimal reference in the guidelines to the environmental impact of the food supply and what food choices consumers can make to minimise this impact. Continuing to consume food that has a large ecological footprint will threaten our future food supply. As ensuring food security and minimising the environmental impact of food are intrinsically linked, it is time that all involved in making recommendations about food consumption start taking this food and environmental interconnection into account. Recently, the NHMRC released a draft appendix to the revised dietary guidelines, *Australian dietary guidelines through an environmental lens*.² Although this draft appendix acknowledges the critical need to consider the environmental impact of food "from paddock to plate", the recommendations made are limited, fairly generic and need to be strengthened.

The idea of considering the environmental impact of food in dietary guidelines is not new. The Australian dietary guidelines for adults released in 2003 include an appendix on the sustainability of food systems, which flagged that future dietary guidelines would probably have a greater emphasis on sustainability as "the problems caused by non-sustainable systems become more starkly obvious".³ More recently, the Health Council of the Netherlands developed dietary guidelines from an ecological perspective.⁴ Even acknowledging the limitations and complexity of the environmental data about minimising the ecological impact of food production in Australia, there is sufficient information to make stronger statements in the dietary guidelines about some key areas: in relation to fish, bottled water and red meat, the evidence is clear.

Fish stocks globally are collapsing at an alarming rate, with more than three-quarters overexploited or overfished.⁵ Forty per cent of Australia's managed fish stocks have been deemed overfished,⁶ and 72% of fish now consumed in Australia is imported.⁷ The growth of imports of fish into Australia is mirrored by other developed countries such as the member states of the European Union, which sources around 40% of its fish from a range of fisheries outside its own exclusive economic zone.⁵ Aquaculture has expanded to meet fish market requirements, but largely relies on fishmeal (usually sourced from small fish caught as bycatch when fishing for target species) as a food source for the fish being farmed.

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This further depletes fish stocks, especially of small fish that are the main source of food for larger pelagic fish.⁵ Climate change and ocean acidification from increased levels of atmospheric carbon dioxide (CO₂) will also have an impact on fisheries throughout the world, particularly in tropical areas.⁸

The Australian draft dietary guidelines recommend at least two serves of fish per week. To meet these recommended intakes, fish consumption in Australia would need to increase by 40%.¹ The guidelines acknowledge that Australian fish stocks may not be sufficient to meet this recommendation, with resulting implications for global fish stocks. Many populations in the world rely on fish as their main source of protein, and fish consumption is expanding globally. Marine ecologists have predicted that, if current trends continue, global fish stocks are set to collapse within the next 40 years.⁵ Although the draft appendix recommends that consumers "choose fish and other seafood from stable stocks", can any recommendation to increase consumption of a depleting resource be considered advisable, given that even current fish consumption levels are exceeding a renewable supply? As was recommended in the Netherlands,⁴ the recommendations in the Australian guidelines should be modified to match population consumption levels that are achievable within catch limits from Australia's exclusive economic zone, and should suggest alternative sources of omega-3 fatty acids (even though the evidence supporting their effectiveness is not as compelling).

The draft dietary guidelines recommend drinking water in preference to other beverages, but make no reference to the impact of consuming bottled water, beyond reference to fluoride and cost.¹ The draft appendix recommends drinking tap water in preference to bottled water, to decrease the production and disposal of plastic bottles, but does not mention energy consumption.² In Switzerland, a life-cycle analysis (tracing energy use from water catchment and extraction through to drinking) showed that tap water requires less than 1% of the energy required to produce bottled water.⁹ Bottled water also creates waste and is expensive. The Australian guidelines should recommend against not only bottled water but also other bottled drinks, to minimise environmental impact as well as, in the case of sweetened and carbonated drinks, on health grounds.

Australian men consume 20% more red meat than the maximum recommended in the draft dietary guidelines, but women, children and infants consume less.¹ Livestock contributes a significant proportion of agriculture's greenhouse gas (GHG) emissions.¹⁰ Reducing red meat consumption would not only reduce emissions but would also reduce the risk of colorectal cancer¹ and the consumption of saturated fat, with associated health benefits.¹⁰ Although the draft appendix refers to protein

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sources that have lower environmental impact,² there is no specific mention of the high environmental impact of red meat, particularly beef. In the interest of limiting GHG emissions, the guidelines should strengthen recommendations for men to reduce consumption of red meat, and state more explicitly the environmental benefits of reducing red meat consumption. Other sources of protein, iron and other nutrients could be emphasised.

Several other broad recommendations could also be made more explicitly in the guidelines — for example, to minimise the intake of processed food, to eat fruit and vegetables in season (which is also a much cheaper option), to reduce food waste and to move, in general, to a less meat-based and more plant-based diet.

Also contributing to food security and the environmental impact of food are food production practices and climate. Unsustainable food production practices contribute to land degradation, which is a problem in Australia and globally. It has been estimated that 5.7 million hectares of land in Australia are in regions at risk of or affected by salinity, with this area increasing over time. Soil acidification and erosion are also on the increase in Australia.⁸ To protect Australia's future food supply, Australian farming practices need to be adjusted to minimise further land degradation.

Agriculture produces 16% of Australia's total GHG emissions, not including emissions attributable to diesel fuel use on farms, food transport and manufacturing.⁸ Changes in climate caused by increases in GHG levels will have significant impacts on food security in Australia and elsewhere. Queensland's wheat industry lost \$150 million in 2009 when a heatwave in winter destroyed the wheat crop in the state's south-east.¹¹ Although individual heat events are not directly attributable to climate change, climate modelling predicts increases in heatwaves and changes in rainfall patterns as a result of global warming. In Australia over the past decade, the frequency of record hot days was more than double the frequency of record cold days.¹²

The impact of climate change on agriculture and food production will be a mix of positive and negative effects: while an increase in atmospheric CO₂ levels stimulates plant growth, it also results in lower nutrient content of grains.⁸ Overall, the impact of climate change in Australia is considered to be negative, with an estimated 15%–30% decline in food production over the next 40 years.⁸ Clearly, it would be in our interest to minimise the GHG emissions associated with food production, while maintaining adequate nutritional intake.

Although there are ethical challenges to consider when making recommendations in health guidelines beyond the health of the individual, the strong interconnectedness between public health, the environment, food production, and food security should make this inclusion an imperative in the case of dietary guidelines.⁸ The dietary guideline recommendations, themselves, should take every

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opportunity to incorporate the principles of minimising the environmental impact of the food supply, rather than relegating these to an appendix (implying lesser consideration).

Australia needs to fully recognise the critical importance of minimising the environmental impact of the food supply, and we need more research about the ecological footprint of our food production. In the meantime, Australia's dietary guidelines will form the basis of recommendations that people will be encouraged to follow, as well as providing a benchmark for assessing current consumption. Australians are aware of the importance of good nutrition to health but, as yet, have a very low level of awareness about the connection between food and environmental impact.¹³ Awareness has to start somewhere, and Australia's dietary guidelines would be a good place to start.

Competing interests: We are both on the management committee of Doctors for the Environment Australia and are members of the Australian Conservation Foundation. Linda Selvey was formerly the Chief Executive Officer of Greenpeace Australia Pacific.

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