

SUSTAINABLE HEALTHY FOOD CHOICES: THE PROMISE OF ‘HOLISTIC’ DIETARY GUIDELINES AS A NATIONAL AND INTERNATIONAL POLICY SPRINGBOARD

CHRISTINE PARKER* AND HOPE JOHNSON**

A healthy diet is generally a sustainable diet. This point is illustrated in the large body of work exploring the interconnections between public health nutrition and environmental issues associated with food choices. Unhealthy diets and their contribution to diet-related noncommunicable diseases (NCDs) are receiving growing attention from international and national policy-makers. Dietary guidelines that inform consumers about food choices and that shape policy actions to enable choices in line with the guidelines are foundational to both national and international responses to diet-related NCDs. The purpose of this paper is to argue for holistic dietary guidelines as part of national and international policy responses to diet-related NCDs. Holistic dietary guidelines simultaneously address health and environmental sustainability to address common causes and harness synergistic solutions. They are based on evidence, and free of conflicts of interest. Moreover, they act as a policy springboard for effective regulatory action to change the food environment and not just as an education tool. Holistic dietary guidelines raise potential concerns under international trade and investment law, for example, to the extent that such guidelines promote local products as a means of supporting both nutritional and environmental health. These issues will be examined in more depth in a second paper in this special issue that follows on from this one.

I INTRODUCTION

Global dietary patterns sit at the nexus of health and sustainability issues. They are associated both with public health issues, including a rise in diet-related non-communicable diseases (‘NCDs’), and the environmental harms significantly caused by industrial agriculture, including biodiversity loss, climate change and water pollution. Indeed, the Sustainable Development Goals (‘SDGs’) established by the General Assembly of the United Nations (‘UN’) in 2015¹ recognise the twin problems of a sustainability crisis for agriculture and the need to feed more and more people nutritiously without overburdening the planet. Of the 17 Goals in the SDGs, twelve of these directly require, or otherwise relate to regulatory interventions into food systems.² For example, Goal 1 is to ‘[e]nd poverty in all its forms everywhere’, including by eradicating ‘extreme poverty’ by 2030;³ Goal 2 is to ‘[e]nd hunger, achieve food security and improved nutrition and promote sustainable agriculture’. Simultaneously, the SDGs recognise the need to ‘[t]ake urgent action to combat climate change

* Christine Parker: Melbourne Law School, The University of Melbourne, Parkville, Victoria, Australia; ** Hope Johnson: Law Faculty, QUT, Gardens Point, Queensland, Australia.

¹ *Transforming Our World: The 2030 Agenda for Sustainable Development*, GA Res 70/1, UN GAOR, 70th sess, 4th plen mtg, Agenda Items 15 and 16, Supp No 49, UN Doc A/RES/70/1 (25 September 2015) 14.

² As observed in: Pamela Mason and Tim Lang, *Sustainable Diets: How Ecological Nutrition Can Transform Consumption and the Food System* (Routledge, 2017) 279.

³ *Transforming Our World*, above n 1, 15 [1.1].



and its impacts'⁴ and to '[h]alt biodiversity loss'.⁵ Although diet-related NCDs are not explicitly mentioned in the SDGs, good health (Goal 3) is integral to the SDGs and the SDG agenda includes a specific commitment to a target of reducing premature mortality from all NCDs by one third by 2030.⁶ The SDGs thus recognise the need to address environmental, security and health goals holistically at international and national levels through coordinated action and governance. This paper suggests that international and national policy action to create more sustainable healthy dietary patterns is one promising way to address this agenda. International and national policy action on NCDs is already paying increasing attention to the need to change dietary patterns. The UN General Assembly proclaimed 2016 to 2025 the United Nations Decade of Action on Nutrition,⁷ building on earlier international declarations and reports that recognise the growing burden of diet-related NCDs.⁸ In 2013, for instance, the World Health Organization ('WHO') reported that 63 per cent of global deaths in 2008 were due to NCDs, 80 per cent of these being in low- and middle-income countries.⁹ The 'common modifiable risk factors' of NCDs are recognised as 'tobacco use, unhealthy diet, physical inactivity and the harmful use of alcohol'.¹⁰ Since the 1990s, many countries have used dietary guidelines as an important policy tool for promoting public health and nutrition.¹¹ At the international level, the WHO has promoted dietary guidelines as a foundational policy for addressing NCDs.¹² Moreover, there is increasing support from a range of civil society organisations for a global framework convention on diet-related NCDs, with dietary guidelines as a foundation.¹³ Such a convention incorporating dietary guidelines is likely to face considerable resistance from much of the food industry and therefore considerable difficulty in attracting political commitment. Yet as we show in Part IIB below, dietary guidelines now play an established part in national and international policy and advocacy frameworks for NCDs and therefore warrant attention as a promising springboard for further policy innovation and international legal developments.

⁴ Ibid 14, Goal 13.

⁵ Ibid 14, Goal 15.

⁶ Ibid 16 [3.4].

⁷ *United Nations Decade of Action on Nutrition (2016–2025)*, GA Res 70/259, UN GAOR, 70th sess, 90th plen mtg, Agenda Item 15, Supp No 49, UN Doc A/RES/70/259 (1 April 2016) <http://www.un.org/en/ga/search/view_doc.asp?symbol=A/RES/70/259> [1].

⁸ See, eg, *Note by the Secretary-General Transmitting the Report of the Director-General of the World Health Organization on the Prevention and Control of Non-Communicable Diseases*, 68th sess, Agenda Item 118, UN Doc A/68/650 (10 December 2013).

⁹ World Health Assembly, *Follow-up to the Political Declaration of the High-level Meeting of the General Assembly on the Prevention and Control of Non-Communicable Diseases*, WHO Doc WHA 66.10 (27 May 2013) Annex: 'Global Action Plan for the Prevention and Control of Noncommunicable Diseases 2013–2020' ('*NCD Global Action Plan 2013-2020*') 8 [2].

¹⁰ *Political Declaration of the High-level Meeting of the General Assembly on the Prevention and Control of Non-Communicable Diseases*, GA Res 66/2, UN GAOR, 66th sess, 3rd plen mtg, Agenda Item 117, Supp No 49, UN Doc A/RES/66/2 (24 January 2012) [35].

¹¹ Food and Agriculture Organization of the United Nations, *Food-based Dietary Guidelines* (2017) <<http://www.fao.org/nutrition/education/food-dietary-guidelines/home/en/>>.

¹² See, eg, *NCD Global Action Plan 2013-2020*, above n 9, 32.

¹³ Allyn Taylor, Emily Parento and Laura Schmidt, 'The Increasing Weight of Regulation: Countries Combat the Global Obesity Epidemic' (2015) 90 *Indiana Law Journal* 257; Consumer International and World Obesity Federation, *Recommendations Towards a Global Convention to Protect and Promote Healthy Diets* (2014). See also discussion at IIB(1) below.

This paper argues that ongoing advocacy for, and development of, national and international instruments to address diet-related NCDs through dietary guidelines should promote diets that are both healthy and sustainable.¹⁴ This is in line with the increasing acknowledgement that international and domestic institutions must seek to employ the interconnections between food production and food consumption patterns, and that environmental and nutritional health are compatible and synergistic.¹⁵ This holistic approach may gain greater political traction in the context of the diverse commitments to the SDGs than a focus on either health or environmental sustainability alone.¹⁶ Because it unites environmental and public health matters in the context of food, the framing offered by sustainable diets could provide a stronger political case by drawing allies from a broader range of stakeholders. This paper therefore positions 'holistic' dietary guidelines as a basis for developing policy coherence and integrated international legal responses to the globalisation of health and environmental issues related to food systems and within domestic policy making. We suggest that dietary guidelines are holistic when they promote eating practices that are both healthy and sustainable, and act as a springboard for further regulatory developments that harness the synergies between nutrition and environmental health.

Like other companies whose products are associated with an increased risk of NCDs, corporate actors within the food industry use a range of avenues to mitigate the potential for increased regulation of their products.¹⁷ Dietary guidelines have not escaped such opposition. The second paper in this two-fold study¹⁸ therefore examines whether international economic law hinders the development of holistic dietary guidelines or provides an avenue for opposition by corporate actors. Specifically, the second paper centres on how vulnerable holistic dietary guidelines would be to challenge under the dispute settlement system of the World Trade

¹⁴ See Carlos Gonzalez Fischer and Tara Garnet, *Plates, Pyramids and Planets: Developments in National Healthy and Sustainable Dietary Guidelines: A State of Play Assessment* (FAO and University of Oxford, 2016) 17–55; Mark A Lawrence et al, 'Formulating Policy Activities to Promote Healthy and Sustainable Diets' (2015) 18 *Public Health Nutrition* 2333.

¹⁵ See, eg, Paul Behrens et al, 'Evaluating the Environmental Impacts of Dietary Recommendations' (2017) 114 *Proceedings of the National Academy of Sciences* 13412; Jessica L Johnston, Jessica C Fanzo and Bruce Cogill, 'Understanding Sustainable Diets: A Descriptive Analysis of the Determinants and Processes That Influence Diets and Their Impact on Health, Food Security, and Environmental Sustainability' (2014) 5 *Advances in Nutrition: An International Review Journal* 418; Tara Garnett, 'Food Sustainability: Problems, Perspectives and Solutions' (2013) 72 *The Proceedings of the Nutrition Society* 29; Álvaro Toledo and Barbara Burlingame, 'Biodiversity and Nutrition: A Common Path Toward Global Food Security and Sustainable Development' (2006) 19 *Journal of Food Composition and Analysis* 477. Cf Ella Megan Ridgway, Mark Andrew Lawrence and Julie Woods, 'Integrating Environmental Sustainability Considerations into Food and Nutrition Policies: Insights from Australia's National Food Plan' (2015) 2 *Frontiers in Nutrition* 1. See discussion at IIA below. In a report for the FAO, for instance, Padilla et al advised 'For the immediate future, we recommend a better synergy between environmental and health education to obtain agreement for a dietary change for the general public': Martine Padilla, Roberto Capone and Giulia Palma, 'Sustainability of the Food Chain from the Field to the Plate: The Case of the Mediterranean Diet' in Barbara Burlingame and Sandro Dernini (eds), *Sustainable Diets and Biodiversity: Directions and Solutions for Policy, Research and Action* (Nutrition and Consumer Protection Division, FAO, 2010) 231, 238.

¹⁶ See Mason and Lang, above n 2, 308, where they suggest the need 'to aim for Sustainable Dietary Guidelines to meet the Sustainable Development Goals'.

¹⁷ Kelly D Brownell and Kenneth E Warner, 'The Perils of Ignoring History: Big Tobacco Played Dirty and Millions Died. How Similar Is Big Food?' (2009) 87 *The Milbank Quarterly* 259.

¹⁸ See Tania Voon and Hope Johnson, 'Sustainable Healthy Food Choices: Dietary Guidelines and International Economic Law' *QUT Law Review* (this issue).

Organization ('WTO') or under investor–state dispute settlement, and how they might be buttressed against such challenge.¹⁹

Part II of this article outlines the policy context in which dietary guidelines that consider nutrition and ecological sustainability holistically are already gaining traction as a policy instrument at national and international levels with both state and non-state actors. The analysis in this section is three-fold. Firstly, we examine how holistic dietary guidelines can operationalise the connections between addressing intersecting health challenges, mitigating environmental crises and reducing financial and social exclusion. Secondly, we show how holistic dietary guidelines are already emerging in some countries and suggested at the international level. Thirdly, on the basis of the analysis in the previous sections we set out three main desiderata or defining features for holistic dietary guidelines, which we go on to consider in more detail in Parts III, IV and V of the paper.

Parts III, IV and V of this article set out three key features that sustainable and healthy dietary guidelines should possess. Part III briefly sets out the specific eating practices that healthy and sustainable dietary guidelines should promote. Holistic dietary guidelines acknowledge the interlinkages between nutrition and environmental sustainability, and integrate the traditional 'food pyramid'-type approach with information about the sustainability of food choices, including which types of foods consumers should eat more of or less of, and which production methods consumers should prefer. Part IV argues that dietary guidelines are most useful when they act as a policy springboard. They should be used to guide implementation of regulatory policy initiatives aimed at integrating measures for healthy eating through areas such as government procurement, planning, marketing and labelling regulation, industry standards, taxation, agricultural policy and so on.²⁰ Part V discusses the need for holistic dietary guidelines to be evidence-based and avoid conflicts of interest, and Part VI concludes. In the second paper in this special issue we consider the international economic law implications of our analysis.²¹

II THE POLICY CONTEXT FOR HEALTHY AND SUSTAINABLE (HOLISTIC) DIETARY GUIDELINES

In relation to diets, NCD risks are increased by, inter alia, 'elevated consumption of energy-dense, nutrient-poor foods that are high in fat, sugar and salt'.²² Converging, global drivers have influenced a worldwide dietary shift towards nutrient-poor but energy-dense diets.²³ These drivers include urbanisation, improvements in transport, food processing and storage technologies, industrialisation of agricultural production, as well as the growth in international trade and foreign investment underpinned by international economic law.²⁴ With the number

¹⁹ Voon and Johnson above n 18.

²⁰ An argument that has previously been made powerfully by Ingrid Keller and Tim Lang, 'Food-Based Dietary Guidelines and Implementation: Lessons from Four Countries — Chile, Germany, New Zealand and South Africa' (2008) 11 *Public Health Nutrition* 867.

²¹ Voon and Johnson above n 18.

²² World Health Organization, *Global Strategy on Diet, Physical Activity and Health* (2004) [10].

²³ See eg, Barry M Popkin, 'Global Nutrition Dynamics: The World Is Shifting Rapidly toward a Diet Linked with Noncommunicable Diseases' (2006) 84 *The American Journal of Clinical Nutrition* 289.

²⁴ See eg, Corinna Hawkes, 'Uneven Dietary Development: Linking the Policies and Processes of Globalization with the Nutrition Transition, Obesity and Diet-Related Chronic Diseases' (2006) 2 *Globalization and Health* 4;

of obese people now exceeding those underweight both globally and in most regions,²⁵ diet-related NCDs impose significant health, economic and human development costs.

Various domestic and international regulatory actors have developed holistic dietary guidelines to draw out more detailed, context-specific sustainable dietary advice aimed at certain populations. These guidelines are an emerging best practice that positions healthy sustainable dietary guidelines as a basis for active implementation of food systems policy by government, industry and civil society. In the first sub-section, we outline the global context in which holistic dietary guidelines are beginning to emerge. In the second sub-section, we explore how holistic dietary guidelines are emerging in international instruments (IIB.1) and in nation state and non-state actor policies and guidelines (IIB.2).

A *Global Trends and Policy Context for Holistic Dietary Guidelines*

1 *The Nutrition Transition*

Foods, diets and nutrition have a crucial role in the development and prevention of certain NCDs, particularly cardiovascular diseases, type II diabetes, and some types of cancers (such as colon and pancreatic cancer).²⁶ While respiratory diseases account for 3.9 million NCD deaths and diabetes accounts for 1.6 million, most NCD deaths are caused by cardiovascular diseases (17.7 million deaths annually) and cancer (8.8 million deaths annually).²⁷ Specific dietary components increase the probability of these NCDs occurring in individuals, for instance, diets low in fruit and vegetables are associated with an increased risk. Globally, around 5.2 million deaths in 2013 were causally linked to inadequate fruit and vegetable consumption.²⁸ It is also well-established that a high consumption of high sodium and energy-dense but nutrient-poor foods ('ultra-processed foods'),²⁹ and foods high in saturated fats, such as meat, especially preserved meats, are associated with an increased risk of NCDs.³⁰

Tim Lang and Geof Rayner, 'Ecological Public Health: The 21st Century's Big Idea?' (2012) 345 *BMJ* (online) e4566, doi:10.1136/bmj.e4566.

²⁵ NCD Risk Factor Collaboration, 'Trends in Adult Body-mass Index in 200 Countries from 1975 to 2014: A Pooled Analysis of 1698 Population-based Measurement Studies with 19.2 Million Participants' (2016) 387 *Lancet* 1377.

²⁶ See, eg, Mohammad H Forouzanfar et al, 'Global, Regional, and National Comparative Risk Assessment of 79 Behavioural, Environmental and Occupational, and Metabolic Risks or Clusters of Risks, 1990–2015: A Systematic Analysis for the Global Burden of Disease Study 2015' (2016) 388(10053) *The Lancet* 1659.

²⁷ World Health Organization, *Global Status Report on Noncommunicable Diseases* (2014).

²⁸ World Health Organization, *Increasing Fruit and Vegetable Consumption to Reduce the Risk of Noncommunicable Diseases* (10 January 2017) <http://www.who.int/elena/titles/fruit_vegetables_ncds/en/>.

²⁹ Daniela Silva Canella et al, 'Ultra-Processed Food Products and Obesity in Brazilian Households (2008–2009)' (2014) 9(3) *PLoS ONE* e92752, doi:10.1371/journal.pone.0092752; Euridice Martínez Steele et al, 'The Share of Ultra-Processed Foods and the Overall Nutritional Quality of Diets in the US: Evidence from a Nationally Representative Cross-Sectional Study' (2017) 15 *Population Health Metrics* 6; Jean-Claude Moubarac et al, 'Consumption of Ultra-Processed Foods Predicts Diet Quality in Canada' (2017) 108 *Appetite* 512.

³⁰ See eg, Teresa Norat et al, 'Meat Consumption and Colorectal Cancer Risk: Dose–Response Meta-Analysis of Epidemiological Studies' (2002) 98 *International Journal of Cancer* 241; Alberto Ascherio et al, 'Dietary Fat and Risk of Coronary Heart Disease in Men: Cohort Follow up Study in the United States' (1996) 313(7049) *British Medical Journal* 84; Susanna C Larsson and Alicja Wolk, 'Meat Consumption and Risk of Colorectal Cancer: A Meta-analysis of Prospective Studies' (2006) 119 *International Journal of Cancer* 2657; Raphaëlle L Santarelli, Fabrice Pierre and Denis E Corpet, 'Processed Meat and Colorectal Cancer: A Review of Epidemiologic and Experimental Evidence' (2008) 60(2) *Nutrition and Cancer* 131.

Connected to the rising prevalence of NCDs is the worldwide shift towards ‘Western’ dietary patterns, characterised by high intakes of meat and ultra-processed foods; correspondingly, diets high in fibre-rich and plant-based foods, which tend to be components of traditional diets, have declined globally.³¹ This global trend towards Western dietary patterns, commonly termed ‘the nutrition transition’, is driven by various factors.³² Changing demographics is one key driver. For instance, urbanisation has provided less energy-intensive work and an increased demand for, and access to, processed and pre-prepared foods as a response to longer hours of work.³³ And rising income levels in middle-income countries, especially China and India, have caused meat consumption to rise rapidly.³⁴

Other key drivers of the nutrition transition include the liberalisation of food and agricultural markets, especially in the later part of the 20th century, and the corresponding expanse of interdependent, industrial, and commercial food systems. It is widely documented that the liberalisation of food and agricultural markets, combined with advances in food processing and agriculture technologies, facilitated an influx of cheaper edible oils, animal products and value-added, ultra-processed foods into food systems.³⁵ Together, these developments have facilitated a world-wide dispersal of particular plant and animal varieties, and led to a process of ‘global food delocalisation’, whereby food varieties, production methods and dietary patterns are increasingly uniform and westernised.³⁶ Processed foods now account for 80 per cent of food sales worldwide.³⁷

³¹ Barry M Popkin and Penny Gordon-Larsen, ‘The Nutrition Transition: Worldwide Obesity Dynamics and Their Determinants’ (2004) 28 *International Journal of Obesity* S2, doi:10.1038/sj.ijo.0802804; HV Kuhnlein and O Receveur, ‘Dietary Change and Traditional Food Systems of Indigenous Peoples’ (1996) 16 *Annual Review of Nutrition* 417; Elizabeth Lipski, ‘Traditional Non-Western Diets’ (2010) 25(6) *Nutrition in Clinical Practice* 585; Francesco Sofi et al, ‘Adherence to Mediterranean Diet and Health Status: Meta-analysis’ (2008) 337 *British Medical Journal (Clinical Research Edition)* 1, doi:10.1136/bmj.a1344; MB Nordeide et al, ‘Nutrient Composition and Nutritional Importance of Green Leaves and Wild Food Resources in an Agricultural District, Koutiala, in Southern Mali’ (1996) 47 *International Journal of Food Sciences and Nutrition* 455; Joan M Naughton, Kerin O’Dea and Andrew J Sinclair, ‘Animal Foods in Traditional Australian Aboriginal Diets: Polyunsaturated and Low in Fat’ (1986) 21 *Lipids* 684; Antonia Trichopoulou, Stavroula Soukara and Effie Vasilopoulou, ‘Traditional Foods: A Science and Society Perspective’ (2007) 18 *Trends in Food Science & Technology* 420; Patience Mensah and Andrew Tomkins, ‘Household-level Technologies to Improve the Availability and Preparation of Adequate and Safe Complementary Foods’ (2003) 24(1) *Food and Nutrition Bulletin* 104; Christine Hotz and Rosalind S Gibson, ‘Traditional Food-processing and Preparation Practices to Enhance the Bioavailability of Micronutrients in Plant-based Diets’ (2007) 137 *The Journal of Nutrition* 1097.

³² Popkin and Gordon-Larsen, above n 31, S4–S5.

³³ See, eg, David Satterthwaite, Gordon McGranahan and Cecilia Tacoli, ‘Urbanization and Its Implications for Food and Farming’ (2010) 365(1554) *Philosophical Transactions of the Royal Society of London B: Biological Sciences* 2809.

³⁴ Sylvain Bonhommeau et al, ‘Eating up the World’s Food Web and the Human Trophic Level’ (2013) 110 *Proceedings of the National Academy of Sciences* 20617; Christopher L Delgado, ‘Rising Consumption of Meat and Milk in Developing Countries Has Created a New Food Revolution’ (2003) 133 *The Journal of Nutrition* 3907S; European Commission ‘World Food Consumption Patterns — Trends and Drivers’ (EU Agricultural Markets Briefs No 6, June 2015).

³⁵ Rachel Nugent, ‘Bringing Agriculture to the Table: How Agriculture and Food Policy Can Play a Role in Preventing Chronic Disease’ (Research Report, The Chicago Council on Global Affairs, 19 September 2011) 17–36.

³⁶ See eg, Gretel H Pelto and Pertti J Pelto, ‘Diet and Delocalization: Dietary Changes Since 1750’ (1983) 14 *The Journal of Interdisciplinary History* 507.

³⁷ Mario Mazzocchi, Bhavani Shankar and Bruce Traill, ‘The Development of Global Diets since ICN 1992:

2 Sustainable Food and Agriculture

The nutrition transition is entwined with environmental challenges for food systems. As Burlingame et al have observed, 'High-input industrial agriculture and long-distant transport have increased the availability and affordability of refined carbohydrates and fats, leading to a simplification of diets and a reliance on a limited number of energy-rich foods'.³⁸ Diets high in ultra-processed foods rely on industrial agriculture to produce large amounts of uniform commodities that meet the demands of food processors for standardised, raw agricultural commodities. These raw commodities are transformed in a way that increases their palatability and allows for a long life, and are easy to transport and store.³⁹ Industrial approaches to agriculture entail high levels of external inputs (eg chemicals, hormones) with the aim of producing large amounts of a single crop variety or breed of livestock. Consequently, industrial standardisation and specialisation, as well as food processing and refining, have created food systems dependent on a low diversity of crops and breeds, and a restricted variety of food being consumed.⁴⁰

These challenges threaten to undermine long-term food and nutrition security. For instance, 75 per cent of the world's food is now generated from just 12 plant and five animal species.⁴¹ Low levels of biodiversity on farms is one of the main threats to future food security, which requires diversity to decrease the need for external inputs and increase the resilience of agriculture to shocks and climate change.⁴² Johns and Eyzaguirre have explained that '[d]egradation of ecosystems, simplification of diets and loss of species, and of knowledge of them, expose [humans] to new health challenges and undermine the adaptive resilience inherent in diversity'.⁴³ This kind of adaptive resilience is required urgently for the changing climatic conditions, given destabilised earth systems in the Anthropocene.

Influences of Agri-food Sector Trends and Policies' (FAO Commodity and Trade Policy Research Working Paper No 34, Food and Agriculture Organization of the United Nations, 2012) 2.

³⁸ Barbara Burlingame et al, 'Food Biodiversity and Sustainable Diets: Implications of Applications for Food Production and Processing' in Joyce I Boye and Yves Arcand (eds), *Green Technologies in Food Production and Processing* (Springer US, 2012) 643, 644.

³⁹ See eg, Michael Duffy, 'Economies of Size in Production Agriculture' (2009) 4 *Journal of Hunger & Environmental Nutrition* 375; Miguel A Altieri, 'Ecological Impacts of Industrial Agriculture and the Possibilities for Truly Sustainable Farming' (1998) 50(3) *Monthly Review* 60; David Pimentel et al, 'Environmental, Energetic, and Economic Comparisons of Organic and Conventional Farming Systems' (2005) 55 *Bioscience* 573; CA Monteiro et al, 'Ultra-processed Products Are Becoming Dominant in the Global Food System' (2013) 14 *Obesity Reviews* 21.

⁴⁰ Denis Lairon, 'Biodiversity and Sustainable Nutrition with a Food-based Approach' in Barbara Burlingame and Sandro Dernini (eds), *Sustainable Diets and Biodiversity — Directions and Solutions for Policy Research and Action* (Food and Agricultural Organization of the United Nations, 2012) 31, 31.

⁴¹ 'What Is Agrobiodiversity?' (Fact Sheet, Food and Agriculture Organisation of the United Nations, 2004) <<http://www.fao.org/docrep/007/y5609e/y5609e00.htm#Contents>>; Brian Groombridge and Martin Jenkins, *World Atlas of Biodiversity: Earth's Living Resources in the 21st Century* (University of California Press, 2002) 41.

⁴² Lori Ann Thrupp, 'Linking Agricultural Biodiversity and Food Security: The Valuable Role of Sustainable Agriculture' (2000) 76 *International Affairs (Royal Institute of International Affairs 1944-)* 265; Emile A Frison et al, 'Agricultural Biodiversity, Nutrition, and Health: Making a Difference to Hunger and Nutrition in the Developing World' (2006) 27 *Food & Nutrition Bulletin* 167.

⁴³ Timothy Johns and Pablo B Eyzaguirre, 'Linking Biodiversity, Diet and Health in Policy and Practice' (2006) 65 *The Proceedings of the Nutrition Society* 182, 183.

Indeed, food production and consumption are major contributors to the fact that, as a planet, we are fast approaching the ‘planetary boundaries’ for climate change, biodiversity loss, and the nitrogen and phosphorous cycles, all at the same time and with likely catastrophic interaction effects.⁴⁴ The contribution of agriculture to anthropogenic global warming, the vulnerability of food supply to climate change, and the imminent implications make it particularly urgent to ensure that dietary guidelines are also sustainable.

3 *Sustainable Diets*

The development of ‘sustainable diets’ as a concept, area of research and policy goal is the outcome of efforts to encapsulate the synergies between combating diet-related NCDs and reducing the environmental impacts of food systems. The most commonly cited definition of sustainable diets originates from the International Scientific Symposium ‘Biodiversity and Sustainable Diets: United Against Hunger’, organised jointly by the Food and Agriculture Organization of the UN (‘FAO’) and Biodiversity International. At this symposium, participants agreed that sustainable diets are:

[t]hose diets with low environmental impacts which contribute to food and nutrition security and to healthy life for present and future generations. Sustainable diets are protective and respectful of biodiversity and ecosystems, culturally acceptable, accessible, economically fair and affordable; nutritionally adequate, safe and healthy; while optimizing natural and human resources.⁴⁵

From this definition, some of the key dimensions of sustainable diets include sustainable agriculture and food systems, traditional or local food cultures, physical and economic access to food, food safety, inter-generational equity, and nutritional adequacy. However, the specific kinds of dietary patterns that would meet the definition of a ‘sustainable diet’ are not identified. This absence is, at least in part, due to the lack of reliable data on global food consumption and composition, coupled with the absence of a consistent methodology and research design for analysing the sustainability of diets.⁴⁶ In addition, the sustainability of a diet will depend on locations, cultures and climates. Thus the context-specific nature of sustainable diets further inhibits a clearer definition or standards.

4 *The Human Right to Adequate Food*

Along with the concept of sustainable diets, the human right to adequate food is another key aspect of the policy context for holistic dietary guidelines. Article 25 of the *Universal Declaration of Human Rights* recognises the right of each human to adequate food. This is enshrined in article 11 of the *International Covenant on Economic, Social and Cultural Rights* (‘ICESCR’), which proclaims ‘the right to everyone to an adequate standard of living... including adequate food’, and sets out obligations on state parties to ‘take appropriate steps to

⁴⁴ Planetary boundaries refers to the ‘safe operating space for human societies to develop and thrive, based on our evolving understanding of the functioning and resilience of the Earth system’: Will Steffen et al, ‘Planetary Boundaries: Guiding Human Development on a Changing Planet’ (2015) 347(6223) *Science* 1259855.

⁴⁵ Barbara Burlingame, ‘Preface’ in Barbara Burlingame and Sandro Dernini (eds), *Sustainable Diets and Biodiversity — Directions and Solutions for Policy Research and Action* (Food and Agricultural Organization of the United Nations, 2012) 7, 7.

⁴⁶ See eg, Andrew Jones et al, ‘A Systematic Review of the Conceptualization and Measurement of Sustainable Diets’ (2015) 29(1 Supplement) *The FASEB Journal* 898.

ensure the realization of this right, recognizing to this effect the essential importance of international co-operation'. Notably then, the human right to adequate food emphasises the need for international cooperation in regard to interventions designed to protect, respect and facilitate the right to adequate food.

The reference to 'adequacy' of food seems to encompass the qualities as well as quantities of food consumed, however, the right has been interpreted even more broadly. In reflection of the environmental challenges caused by and affecting food systems, and the interdependent relationship between natural environments and food, the Committee on Economic, Social and Cultural Rights interpreted the right as entailing both sustainability and satisfaction of dietary needs. According to their interpretation, the right to adequate food requires individuals to have access to food 'in a quantity and quality sufficient to satisfy dietary needs, free from adverse substances and acceptable within a given culture' while also ensuring that this access occurs 'in ways that are sustainable and do not interfere with the enjoyment of other human rights' such as the rights to life, water or health.⁴⁷ To make genuine, durable progress towards realising the human right to food then, states, together and in cooperation with each other, must address all forms of malnutrition in a way that also addresses the sustainability and equity of food systems. Production and consumption of food are connected and cannot be prised apart.⁴⁸ In making policy about healthy diets, therefore, we cannot ignore the need for sustainable production. Significant transformations of both production and consumption must occur in order for the right to food to be realised. As suggested above in the introduction to this paper, the SDGs recognise this on a broad scale,⁴⁹ as do a number of international and national policy instruments for dietary guidelines (as discussed in II.B below).

B *Developments in Holistic Dietary Guidelines*

1 *Public International*

Besides the SDGs, discussed in the introduction, several international instruments have recognised the need to prevent and control NCDs through the adoption of dietary guidelines and global and multi-sectoral measures (summarised in Table 1).⁵⁰ The majority of these

⁴⁷ Committee on Economic, Social and Cultural Rights, *Substantive Issues Arising in the Implementation of the International Covenant on Economic, Social and Cultural Rights: General Comment 12 — The Right to Adequate Food (Art 11)*, UN ESCOR, 20th sess, Agenda Item 7, UN Doc E/C.12/1999/5 (12 May 1999).

⁴⁸ See UN Human Rights Council, *Report Submitted by the Special Rapporteur on the Right to Food, Olivier de Schutter*, UN GAOR, 22nd sess, Agenda Item 3, A/HRC/19/59 (26 December 2011); see also Hope Johnson, 'Eating for Health and the Environment: Australian Regulatory Responses for Dietary Change' (2015) 15 *QUT Law Review* 122.

⁴⁹ See text accompanying notes 1 to 3. See also Mason and Lang, above n 2, 327 where they suggest the 'SDG squared' strategy, ie sustainable dietary guidelines to address the Sustainable Development Goals.

⁵⁰ *Prevention and Control of Non-communicable Diseases*, GA Res 64/265, UN GAOR, 64th sess, 86th plen mtg, Agenda Item 114, Supp No 49, UN Doc A/RES/64/265 (20 May 2010); *Political Declaration of the High-level Meeting of the General Assembly*, above n 10; *Outcome Document of the High-Level Meeting of the General Assembly on the Comprehensive Review and Assessment of the Progress Achieved in the Prevention and Control of Non-Communicable Diseases*, GA Res 68/300, UN GAOR, 68th sess, 100th plen mtg, Agenda Item 118, UN Doc A/Res/68/300 (17 July 2014); International Conference on Nutrition, *World Declaration and Plan of Action for Nutrition* (Food and Agriculture Organization of the United Nations and the World Health Organization, 11 December 1992); Second International Conference on Nutrition, *Conference Outcome Document: Rome*

instruments expressly promote dietary guidelines as a policy tool to educate the public and inform policy makers about healthy diets to address undernutrition (insufficient food intake), micronutrient deficiency (inadequate consumption of particular nutrients), and overnutrition (obesity and related NCDs).⁵¹ For instance, the *World Declaration and Plan of Action for Nutrition*, which was adopted by 159 governments in 1992, stated that governments should:

On the basis of energy and nutrient recommendations, provide advice to the public by disseminating, through the use of mass media and other appropriate means, qualitative and/or quantitative dietary guidelines relevant for different age groups and lifestyles and appropriate for the country's population.⁵²

In addition, international instruments concerning diet-related NCDs have tended to emphasise the need for policy interventions across various sectors, including agriculture, in order to address the multiple factors influencing the uptake of unhealthy diets.⁵³ For instance, the WHO's *Global Action Plan for the Prevention and Control of NCDs 2013–2020* acknowledged that the prevention of NCDs requires 'health-in-all policies and whole-of-government approaches across sectors such as... agriculture, communication, education and... environment'.⁵⁴ Thus, the WHO advocates for integrated policy responses, the exploitation of co-benefits, and a move away from departmentalization of complex and multi-faceted issues.⁵⁵ Finally, many of these international instruments affirm the importance of global responses to diet-related concerns, given the increasingly globalised nature of diets, food supply chains and diet-related NCDs. The UN General Assembly's *Political Declaration of the High-level Meeting on the Prevention and Control of Non-communicable Diseases* recognised an urgent need for, inter alia, 'global measures and noted the critical importance of reducing the level of exposure of individuals and populations to the common modifiable risk factors for non-communicable diseases, namely, tobacco use, unhealthy diets...'.⁵⁶

Declaration on Nutrition, Doc ICN2 2014/2 (October 2014); World Health Organization, *Global Strategy for the Prevention and Control of Noncommunicable Diseases*, adopted by the World Health Assembly, Resolution WHA 53.14 (22 March 2000); World Health Organization, *Prevention and Control of Noncommunicable Diseases: Implementation of the Global Strategy*, adopted by the World Health Assembly, Resolution WHA 60.23 (23 May 2007) <http://apps.who.int/iris/bitstream/10665/22598/1/A60_R23-en.pdf>; World Health Organization, *2008–2013 Prevention and Control of Noncommunicable Diseases: Implementation of the Global Strategy*, endorsed at the 61st World Health Assembly (May 2008); World Health Organization, *Follow-up to the Political Declaration of the High-level Meeting of the General Assembly on the Prevention and Control of Non-communicable Diseases*, Agenda Item 13.1, Resolution WHA 66.10 (27 May 2013) <http://apps.who.int/gb/ebwha/pdf_files/WHA66/A66_R10-en.pdf>.

⁵¹ See Table 1.

⁵² International Conference on Nutrition, above n 50, art 45(d).

⁵³ See Table 1.

⁵⁴ World Health Organization, *Follow-up to the Political Declaration of the High-level Meeting*, above n 50, 12.

⁵⁵ See also, World Health Organization, *Health in All Policies: Framework for Country Action* (2014) (the 'Helsinki Statement').

⁵⁶ *Ibid* [35].

Table 1: International Policy Developments Concerning Holistic Dietary Guidelines

International Body or Agency	Year/s	Document	References to Dietary Guidelines?	Integration of health and sustainability in relation to food and agriculture
United Nations General Assembly	2010	Resolution 64/265- <i>Prevention and Control of Non-Communicable Disease</i> ⁵⁷	No	Acknowledged unhealthy diets as a common risk factor with broader socioeconomic and environmental determinants.
United Nations General Assembly	2011	Resolution 66/2- <i>Political Declaration of the High-level meeting of the General Assembly on the Prevention and Control of Non-Communicable Diseases</i> ⁵⁸	Advocated for the development, strengthening and implementation of multi-sectoral public policies to promote health education including information strategies	Acknowledged the need to pursue policies that support the production and manufacture of, as well as access to, healthy foods by providing greater opportunities for use of ‘healthy local agricultural products and food’. ⁵⁹ Promoted the use of cost-effective regulatory interventions that reduce unhealthy aspects of diets (e.g. salt, sugar, trans-fats) by ‘discouraging the production and marketing of foods that contribute to [an] unhealthy diet’. ⁶⁰
United Nations General Assembly	2014	Resolution 68/300- <i>Outcome document of the high-level meeting of the General Assembly on the comprehensive</i>	Parties agreed to continue to develop and implement multi-sectoral public policies	Reiterated the continued need to encourage policies that enable the production and manufacture of, as well as access to, healthy foods and to ‘provide greater opportunities for the utilization of healthy local agricultural products and foods’. ⁶³

⁵⁷ *Prevention and Control of Non-Communicable Diseases*, GA Res 64/265, UN GAOR, 64th sess, Agenda Item 114, UN Doc A/RES/64/265 (20 May 2010).

⁵⁸ *Political Declaration of the High-level meeting of the General Assembly on the Prevention and Control of Non-Communicable Diseases*, GA Res 66/2, 64th sess, Agenda Item 117, UN Doc A/Res/66/2 (24 January 2012).

⁵⁹ Ibid 43(h).

⁶⁰ Ibid 43(g).

⁶³ Ibid [27].



*QUT Law Review: Law and Non-Communicable Diseases:
International and Domestic Regulation of Food and Alcohol*

		<i>review and assessment of the progress achieved in the prevention and control of non-communicable diseases</i> ⁶¹	that promote health education. ⁶²	State parties committed to ‘consider’ developing a multi-sectoral agency to implement a health-in-all policies, whole-of-government response to act on the determinants of NCDs including social and environmental factors. ⁶⁴
United Nations General Assembly	2015	Resolution 70/1- <i>Transforming our World: The 2030 Agenda for Sustainable Development</i> ⁶⁵	No	Explicitly address food and its environmental sustainability and healthiness of diets in a number of ways that highlight the synergy between environmentally sustainable production and consumption of food and healthy diets. Goal 2 is entitled ‘End Hunger, achieve food security and improved nutrition and promote sustainable agriculture’. ⁶⁶ The

⁶¹ *Outcome document of the high-level meeting of the General Assembly on the comprehensive review and assessment of the progress achieved in the prevention and control of non-communicable diseases*, GA Res 68/300, 68th sess, Agenda item 118, UN Doc A/Res/68/300 (17 July 2014).

⁶² *Ibid* [30.3].

⁶⁴ *Ibid* [29].

⁶⁵ *Transforming Our World: The 2030 Agenda for Sustainable Development*, GA Res 70/1, Agenda Items 15 and 116, UN Doc A/RES/70/1 (25 September 2015)

⁶⁶ Targets include:

- By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment
- By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality

*Sustainable Healthy Food Choices:
The Promise of 'Holistic' Dietary Guidelines as a National and International Policy Springboard*

				preceding paragraphs expand on these goals. In particular, by 2030, the parties agreed to: maintain genetic diversity, end all forms of malnutrition and double agricultural productivity along with the incomes of (food insecure) small-scale farmers.
World Health Organization (WHO) and the Food and Agriculture Organization of the United Nations (FAO)	1992	<i>World Declaration and Plan of Action for Nutrition</i> (International Conference on Nutrition) ⁶⁷	Advised governments to provide public health advice by disseminating dietary guidelines. ⁶⁸	Does not explicitly integrate environmental sustainability with food-based dietary guidelines. But, does encourage dietary diversification by producing and consuming more micro-nutrient rich foods including traditional foods.
WHO and FAO	1996	<i>Preparation and Use of Food-Based Dietary Guidelines</i> ⁶⁹	Promotes the adoption of food-based dietary guidelines as accessible and able to reflect epidemiological links between dietary patterns and low incidences of disease.	Does suggest need to take into account agricultural supply of relevant foods. In particular the instrument states that food-based dietary guidelines are inclusive of agricultural and environmental science. Furthermore, the instrument notes evidence that some developed countries (including Australia) cannot enable citizens to follow their dietary guidelines unless fruit and vegetable production increases. Finally, the instrument concludes that 'The need for sustainable food production using

- By 2020, maintain the genetic diversity of seeds, cultivated plants and farmed and domesticated animals and their related wild species, including through soundly managed and diversified seed and plant banks at the national, regional and international levels, and promote access to and fair and equitable sharing of benefits arising from the utilization of genetic resources and associated traditional knowledge, as internationally agreed

⁶⁷ International Conference on Nutrition, *World Declaration and Plan of Action for Nutrition*, Food and Agriculture Organization of the United Nations and the World Health Organization (11 December) <<http://apps.who.int/iris/bitstream/10665/61051/1/a34303.pdf>>.

⁶⁸ Ibid 45(d).

⁶⁹ The World Health Organization and the Food and Agriculture Organization of the United Nations, *Preparation and use of food-based dietary guidelines*, Doc WHO/NUT/96.6 (Report of a Joint FAO/WHO consultation, 1996) <<http://www.fao.org/docrep/x0243e/x0243e00.htm>>.

*QUT Law Review: Law and Non-Communicable Diseases:
International and Domestic Regulation of Food and Alcohol*

			Creates a best-practice process for adopting food-based dietary guidelines.	existing natural resources is becoming more and more apparent. ⁷⁰
WHO and FAO	2014	<i>Rome Declaration on Nutrition</i> (Second International Conference on Nutrition) ⁷¹	Affirmed that consumers are empowered if they are provided with evidence-based health and nutrition information and education.	Adopted a food systems understanding of malnutrition. Acknowledged that current food systems were constrained by ‘resource scarcity and environmental degradation, unsustainable production and consumption patterns, food losses and waste, and unbalanced distribution’. Recognised that these constraints were restricting the ability of food systems to provide ‘adequate, safe, diversified and nutrient rich food’. ⁷² Members committed to improve the sustainability of food systems by developing unified policies on the production and consumption of food and which apply across multiple sectors. ⁷³
WHO	2000	<i>Global Strategy for the Prevention and Control of Noncommunicable Diseases</i> ⁷⁴	No	Required member states to assess issues outside of the health sector that influence NCDs. Promoted cross-sectoral efforts by governments.

⁷⁰ Ibid [2.2.4].

⁷¹ Second International Conference on Nutrition, *Conference outcome Document: Rome Declaration on Nutrition*, Doc ICN2 2014/2 (October 2014).

⁷² Ibid [10].

⁷³ Ibid [15].

⁷⁴ The World Health Organization, *Global strategy for the prevention and control of noncommunicable diseases*, adopted by the World Health Assembly, Resolution WHA 53.14 (March 2000) <http://www.who.int/nmh/publications/wha_resolution53_14/en/>.

*Sustainable Healthy Food Choices:
The Promise of 'Holistic' Dietary Guidelines as a National and International Policy Springboard*

WHO	2004	<i>Global Strategy on Diet, Physical Activity and Health</i> ⁷⁵	Encourages governments to create national and evidence-based dietary guidelines that 'advise national nutrition policy, nutrition education, other public health interventions and intersectoral collaboration'. ⁷⁶	Does not explicitly integrate environmental sustainability with food-based dietary guidelines. But does acknowledge that 'agricultural policy and production often have a great effect on national diets', and that governments 'need to take healthy nutrition into account in agricultural policies'. ⁷⁷
-----	------	--	--	---

⁷⁵ World Health Organization, *Global Strategy on diet physical activity and health*, adopted by the World Health Assembly, Resolution WHA 55.23 (May 2004) <http://www.who.int/dietphysicalactivity/strategy/eb11344/strategy_english_web.pdf>.

⁷⁶ Ibid 6.

⁷⁷ Ibid 8.

*QUT Law Review: Law and Non-Communicable Diseases:
International and Domestic Regulation of Food and Alcohol*

WHO	2007	<i>Prevention and Control of Noncommunicable Diseases: Implementation of the Global Strategy</i> ⁷⁸	Noted the importance of educating individuals to make healthy choices	Does not explicitly integrate environmental sustainability with food-based dietary guidelines.
WHO	2008	<i>2008-2013 Action Plan for the Global Strategy for the Prevention and Control of Noncommunicable Diseases</i> ⁷⁹	Acknowledged the importance of food-based dietary guidelines to: reduce salt levels, eliminate industrially produced trans-fatty acids, decrease saturated fats and limit free sugars.	Does not explicitly integrate environmental sustainability with food-based dietary guidelines. Does identify the importance of preventative public policies in the domains of trade, food and agriculture.

⁷⁸ The World Health Organization, *Prevention and control of noncommunicable diseases: implementation of the global strategy*, adopted by the World Health Assembly, Resolution WHA 60.23 (23 May 2007) <http://apps.who.int/iris/bitstream/10665/22598/1/A60_R23-en.pdf>.

⁷⁹ The World Health Organization, *2008-2013 Prevention and control of noncommunicable diseases: implementation of the global strategy*, endorsed at the 61st World Health Assembly (May 2008).

*Sustainable Healthy Food Choices:
The Promise of 'Holistic' Dietary Guidelines as a National and International Policy Springboard*

WHO	2013	<i>Global Action Plan for the Prevention and Control of NCDs 2013-2020</i> ⁸⁰	Notes that member states should protect their dietary guidance from the influence of corporate actors or other conflicting interests. Recommends Member states carry out social marketing campaigns aimed at encouraging consumers to follow healthy dietary guidance.	Does not explicitly integrate environmental sustainability with food-based dietary guidelines. But does promote multisectoral action including across health, agriculture and education sectors.
FAO	2010	<i>International Scientific Symposium on Biodiversity and Sustainable Diets Against Hunger</i> ⁸¹	Examines various ways in which to promote sustainable diets including through dietary guidelines.	Defines sustainable diet. Recommends that food-based dietary guidelines and their related policies incorporate sustainability into goals aimed at healthy nutrition.
FAO – Commission on Genetic Resources for	2013	<i>Review of Key Issues on Biodiversity and Nutrition</i> ⁸²	Acknowledges food-based dietary guidelines and their role in promoting sustainable diets.	Examines the interconnections between biodiversity decline and dietary diversity decline, as well as the linkages between sustainable agriculture and sustainable diets.

⁸⁰ World Health Organization, *Follow-up to the Political Declaration of the High-level Meeting of the General Assembly on the Prevention and Control of Non-communicable Diseases, agenda item 13.1*, Resolution WHA 66.10 (27 May 2013) < http://apps.who.int/gb/ebwha/pdf_files/WHA66/A66_R10-en.pdf >.

⁸¹ Annex 1 'International Scientific Symposium Biodiversity and Sustainable Diets United Against Hunger- Final Document' in Barbara Burlingame and Sandro Dernini (eds), *Sustainable Diets and Biodiversity: Directions and Solutions for Policy, Research and Action* (Food and Agricultural Organization, 2010).

⁸² *Review of key issues on biodiversity and nutrition*, Commission on Genetic Resources for Food and Agriculture, Item 2.5 of the Provisional Agenda, 14th regular session UN Doc CGRFA-14/13/8 (February 2013).

*QUT Law Review: Law and Non-Communicable Diseases:
International and Domestic Regulation of Food and Alcohol*

Food and Agriculture				Requested the FAO to continue its incorporation of biodiversity and sustainable diets into its nutrition activity including food-based dietary guidelines and nutrition policy development.
FAO	2015	<i>Voluntary Guidelines for Mainstreaming Biodiversity into Policies, Programmes and National and Regional Plans on Nutrition</i> ⁸³	Mentioned dietary guidelines in relation to a state's "nutrition activities"	Recommends that dietary guidelines incorporate foods from specific varieties, cultivars and breeds of plants and animals including underutilized species into food-based dietary guidelines and agricultural activities.
FAO and The Food Climate Research Network at The University of Oxford	2016	<i>Plates, Pyramids and Planets: Developments in National Healthy and Sustainable Dietary Guidelines: A State of Play Assessment</i> ⁸⁴	Dietary guidelines as foundational	Evaluates food-based dietary guidelines. Found that only four countries' dietary guidelines drew connections between the unsustainability of food systems and the dietary patterns that influence them.
Consumers International and World Obesity Federation	2014	<i>Recommendations Towards a Global Convention to Protect and Promote Healthy Diets</i> ⁸⁵	Dietary guidelines as foundational	Does not explicitly integrate environmental sustainability with food-based dietary guidelines

⁸³ *Voluntary Guidelines for Mainstreaming Biodiversity into Policies, Programmes and National and Regional Plans of Action on Nutrition*, adopted by the FAO Commission on Genetic Resources for Food and Agriculture, 15th Regular Session (15 January 2015).

⁸⁴ Carlos Gonzalez and Tara Garnett, *Plates, Pyramids and Planets-Developments in National Healthy and Sustainable Dietary Guidelines: A State of Play Assessment* (Food and Agricultural Organization, 2016).

⁸⁵ Consumer International et al, 'Open Letter to Margarete Chan and Jose Graziano ahead of the Second International Conference on Nutrition', 17 May 2014 <https://s3.eu-central-1.amazonaws.com/ps-wof-web-dev/site_media/uploads/WorldObesity_Open_Letter.pdf>.

*Sustainable Healthy Food Choices:
The Promise of 'Holistic' Dietary Guidelines as a National and International Policy Springboard*

Barilla Centre for Food and Nutrition	2016	<i>Double Food Pyramid: A More Sustainable Future Depends on Us</i> ⁸⁶	Dietary guidelines as foundational	Establishes a double food pyramid that illustrates how dietary recommendations tend to be consistent with sustainable food choices.
---------------------------------------	------	---	------------------------------------	---

⁸⁶ 'Double Pyramid: Healthy Food for People, Sustainable Food for the Planet' (Barilla Center for Food & Nutrition, 2011) 1 <http://www.unscn.org/layout/modules/resources/files/Double_pyramide.pdf>.

Consistent with these policy directions and recommendations, a range of stakeholders, including Consumers International and the World Obesity Federation, have recommended the creation of a *Global Convention to Protect and Promote Healthy Diets*.⁸⁷ The proposed convention positions dietary guidelines as foundational to developing policy interventions that prevent NCDs.⁸⁸ The proposed healthy diets convention is modelled in part on the *WHO Framework Convention on Tobacco Control* ('*WHO FCTC*'),⁸⁹ which is seen as 'the most powerful tool the international community has to help reduce the NCD burden'. The proponents of the healthy diets convention argue that:

The WHO FCTC is also among the fastest treaties in history to be negotiated, adopted and entered into force, and provides new legal dimensions for global health cooperation. Unhealthy dietary patterns now rank above tobacco as the world's leading driver of preventable NCDs. The strength of commitment from the international community embodied in the WHO FCTC is now required to achieve a global transformation in diets.⁹⁰

The foundational obligation of the recommended convention would be that parties to the convention should, in accordance with their capabilities, 'develop and promote national nutritional recommendations, food-based dietary guidelines and nutrient profile models' with effective mechanisms for coordination and delivery of nutrition strategies, plans and programmes, and monitoring and reporting.⁹¹ In addition, the proposed convention emphasises the need for policy coherence across food systems from food production to consumption.⁹² International instruments are now drawing connections between diets and broader issues associated with how actors produce, process, distribute and retail food. This is especially evident through the instruments' acknowledgment of the need for multi-sectoral responses and policy coherence. Yet, global coordination around a holistic approach to diet-related NCDs is only in its early stages. International instruments generally do not expressly consider holistic dietary guidelines or the co-benefits of addressing the broader sustainability dimensions associated with diets and their health properties.

The FAO is the exception to this (see II.A.3). This UN agency has been relatively active in promoting the link between sustainable agriculture, biodiversity and healthy diets. In 2016 the FAO published a report based on the assumption that 'global populations need to move to diets that are both healthy and also respectful of environmental limits'.⁹³ The report advocates that '[o]ne important step that governments can take to signal their commitment to a more sustainable and healthy future, is to develop and disseminate food based dietary guidelines that embed health and sustainability objectives. These can then form the basis of policies seeking

⁸⁷ Consumers International and the World Obesity Federation, *Recommendations Towards a Global Convention to Protect and Promote Healthy Diets* (May 2014); Brigit Toebes, 'International Health Law: An Emerging Field of Public International Law' (2015) 55 *Indian Journal of International Law* 299; Stefanie Vandevijvere, 'Why a Global Convention to Protect and Promote Healthy Diets Is Timely' (2014) 17 *Public Health Nutrition* 2387; Taylor, Parento and Schmidt, above n 13.

⁸⁸ Consumers International and the World Obesity Federation, above n 57, art 4.

⁸⁹ *WHO Framework Convention on Tobacco Control*, opened for signature 21 May 2003, 2302 UNTS 116 (entered into force 27 February 2005).

⁹⁰ Consumers International and the World Obesity Federation, above n 57, Foreword.

⁹¹ *Ibid* art 4.

⁹² *Ibid* art 5.

⁹³ Carlos Gonzalez and Tara Garnett, *Plates, Pyramids and Planets — Developments in National Healthy and Sustainable Dietary Guidelines: A State of Play Assessment* (Food and Agricultural Organization, 2016) 1.



to foster such patterns.’ The FAO, therefore, is positioning itself as an agency capable of providing technical advice on developing holistic dietary guidelines.

Along with the efforts of the FAO, the incorporation of NCD prevention and control into the SDGs may enable a necessary increase in international responses and coordination. As noted in the Introduction to this article, the SDGs explicitly address food and its environmental sustainability and healthiness of diets in a number of ways that highlight the synergy between environmentally sustainable production and consumption of food and healthy diets. Parallel to the increased political momentum around initiatives like sustainable dietary guidelines is opposition from market-dominant food corporations and their industry bodies. At the international level, these corporate actors may choose to channel their opposition through the dispute resolution avenues open in international economic law, as has been the case with tobacco control measures. We will return to this point in section V of this paper, and the potential for international economic law challenges is comprehensively explored in the second paper in this special issue.

2 *Nation States*

According to the FAO, more than 100 states have created national dietary guidelines to address public health, with most first developed in the 1990s and early 2000s.⁹⁴ In recent years a number of countries and some non-governmental organisations have created dietary guidelines that incorporate sustainability considerations to varying degrees. These are summarised in Table 2.

On one end of the spectrum are five states that have integrated sustainability considerations fully into their official dietary guidelines: Brazil, Qatar, Germany, the Netherlands, and Sweden. Brazil’s Dietary Guidelines are the most focused on sustainability considerations.⁹⁵ A principle underpinning its guidelines is the ‘interdependence between healthy diets and the social and environmental sustainability of the food system’, which is then incorporated throughout the guidelines.⁹⁶ Brazil’s approach is influencing other South American countries, with Uruguay now adopting similar guidelines.⁹⁷

Sweden’s dietary guidelines take a similar approach to Brazil, but, unlike Brazil, they do not promote traditional and local supply chains.⁹⁸ The aim of Sweden’s dietary guidelines is to provide advice on how citizens can eat sustainably to benefit health and the environment.⁹⁹ Each suggestion in the guidelines explains why such a choice is good for one’s health and the

⁹⁴ FAO, *Food-Based Dietary Guidelines*, above n 11.

⁹⁵ Ministério da Saúde, Brasília [Ministry of Health of Brazil], *Guia Alimentar Para a População Brasileira* [Dietary Guidelines for the Brazilian Population] (2014).

⁹⁶ *Ibid* ch 5.

⁹⁷ A translated version of Uruguay’s official dietary guidelines is not available. However, the FAO reports that Uruguay’s guidelines contain recommendations such as to cook more traditional foods and reduce the consumption of processed meats. Food and Agriculture Organization of the United Nations, *Food-Based Dietary Guidelines — Uruguay* (2016).

⁹⁸ Livsmedelsverket [Swedish National Food Agency], *Find Your Way to Eat Greener, Not Too Much and Be Active* (2015).

⁹⁹ *Ibid* 2.

environment. For instance, the guidelines suggest increasing the consumption of high fibre vegetables for bodily health reasons and because ‘they have less of an impact on environment than salad greens and can be stored for longer’.¹⁰⁰ While the Netherlands, German and Qatar dietary guidelines make express references to environmental considerations in relation to their recommendations, the references are comparatively brief and not integrated throughout the guidelines.¹⁰¹

Some other countries refer to environmental considerations in dietary guidelines without integrating them into the content of the guidelines. For example, Australia highlights the synergies between healthy diets and lower environmental impact in an appendix to its official dietary guidelines.¹⁰² The appendix further contains some suggestions such as to avoid the over-consumption of food and how to store foods properly to avoid waste.¹⁰³ Other countries, such as the Netherlands and France, have developed and released sustainable food guidelines alongside their official national dietary guidelines. For instance, the Health Council of Netherlands advised in *Guidelines for a Healthy Diet: The Ecological Perspective* that citizens should lower their consumption of ultra-processed and animal-based foods, not over-consume food and reduce food waste.¹⁰⁴

¹⁰⁰ Ibid 3.

¹⁰¹ Deutsche Gesellschaft für Ernährung e V [The German Nutrition Society], *10 Guidelines of the German Nutrition Society (DGE) For a Wholesome Diet* (2013); Supreme Council of Health, *Qatar Dietary Guidelines* (2015).

¹⁰² National Health and Medical Research Council, *Australian Dietary Guidelines* (2013) ‘Appendix G: Food, Nutrition and Environmental Sustainability’.

¹⁰³ However, a recommendation to reduce consumption of animal products is notably missing: see, eg, Linda A Selvey and Marion G Carey, ‘Australia’s Dietary Guidelines and the Environmental Impact of Food “from Paddock to Plate”’ (2013) 198 *Medical Journal of Australia* 18.

¹⁰⁴ Health Council of the Netherlands, *Guidelines for a Healthy Diet: The Ecological Perspective* (2011).

Table 1: International Policy Developments Concerning Holistic Dietary Guidelines

International Body or Agency	Year/s	Document	References to Dietary Guidelines?	Integration of health and sustainability in relation to food and agriculture
United Nations General Assembly	2010	Resolution 64/265- <i>Prevention and Control of Non-Communicable Disease</i> ¹⁰⁵	No	Acknowledged unhealthy diets as a common risk factor with broader socioeconomic and environmental determinants.
United Nations General Assembly	2011	Resolution 66/2- <i>Political Declaration of the High-level meeting of the General Assembly on the Prevention and Control of Non-Communicable Diseases</i> ¹⁰⁶	Advocated for the development, strengthening and implementation of multi-sectoral public policies to promote health education including information strategies	Acknowledged the need to pursue policies that support the production and manufacture of, as well as access to, healthy foods by providing greater opportunities for use of ‘healthy local agricultural products and food’. ¹⁰⁷ Promoted the use of cost-effective regulatory interventions that reduce unhealthy aspects of diets (e.g. salt, sugar, trans-fats) by ‘discouraging the production and marketing of foods that contribute to [an] unhealthy diet’. ¹⁰⁸
United Nations General Assembly	2014	Resolution 68/300- <i>Outcome document of the high-level meeting of the General Assembly</i>	Parties agreed to continue to develop and implement multi-	Reiterated the continued need to encourage policies that enable the production and manufacture of, as well as access to, healthy foods and to ‘provide greater

¹⁰⁵ *Prevention and Control of Non-Communicable Diseases*, GA Res 64/265, UN GAOR, 64th sess, Agenda Item 114, UN Doc A/RES/64/265 (20 May 2010).

¹⁰⁶ *Political Declaration of the High-level meeting of the General Assembly on the Prevention and Control of Non-Communicable Diseases*, GA Res 66/2, 64th sess, Agenda Item 117, UN Doc A/Res/66/2 (24 January 2012).

¹⁰⁷ Ibid 43(h).

¹⁰⁸ Ibid 43(g).



*QUT Law Review: Law and Non-Communicable Diseases:
International and Domestic Regulation of Food and Alcohol*

		<i>on the comprehensive review and assessment of the progress achieved in the prevention and control of non-communicable diseases</i> ¹⁰⁹	sectoral public policies that promote health education. ¹¹⁰	opportunities for the utilization of healthy local agricultural products and foods'. ¹¹¹ State parties committed to 'consider' developing a multi-sectoral agency to implement a health-in-all policies, whole-of-government response to act on the determinants of NCDs including social and environmental factors. ¹¹²
United Nations General Assembly	2015	Resolution 70/1- <i>Transforming our World: The 2030 Agenda for Sustainable Development</i> ¹¹³	No	Explicitly address food and its environmental sustainability and healthiness of diets in a number of ways that highlight the synergy between environmentally sustainable production and consumption of food and healthy diets. Goal 2 is entitled 'End Hunger, achieve food security and improved nutrition and promote sustainable agriculture'. ¹¹⁴ The preceding paragraphs expand on these goals. In particular, by 2030, the parties agreed to:

¹⁰⁹ *Outcome document of the high-level meeting of the General Assembly on the comprehensive review and assessment of the progress achieved in the prevention and control of non-communicable diseases*, GA Res 68/300, 68th sess, Agenda item 118, UN Doc A/Res/68/300 (17 July 2014).

¹¹⁰ *Ibid* [30.3].

¹¹¹ *Ibid* [27].

¹¹² *Ibid* [29].

¹¹³ *Transforming Our World: The 2030 Agenda for Sustainable Development*, GA Res 70/1, Agenda Items 15 and 116, UN Doc A/RES/70/1 (25 September 2015)

¹¹⁴ Targets include: By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employmen; By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality; By 2020, maintain the genetic diversity of seeds, cultivated plants and farmed and domesticated animals and their related wild species, including through soundly managed and diversified seed and plant banks at the national, regional and international levels, and promote access to and fair and equitable sharing of benefits arising from the utilization of genetic resources and associated traditional knowledge, as internationally agreed.

*Sustainable Healthy Food Choices:
The Promise of 'Holistic' Dietary Guidelines as a National and International Policy Springboard*

				maintain genetic diversity, end all forms of malnutrition and double agricultural productivity along with the incomes of (food insecure) small-scale farmers.
World Health Organization (WHO) and the Food and Agriculture Organization of the United Nations (FAO)	1992	<i>World Declaration and Plan of Action for Nutrition</i> (International Conference on Nutrition) ¹¹⁵	Advised governments to provide public health advice by disseminating dietary guidelines. ¹¹⁶	Does not explicitly integrate environmental sustainability with food-based dietary guidelines. But, does encourage dietary diversification by producing and consuming more micro-nutrient rich foods including traditional foods.
WHO and FAO	1996	<i>Preparation and Use of Food-Based Dietary Guidelines</i> ¹¹⁷	Promotes the adoption of food-based dietary guidelines as accessible and able to reflect epidemiological links between dietary patterns and low incidences of disease. Creates a best-practice process for adopting food-based dietary guidelines.	Does suggest need to take into account agricultural supply of relevant foods. In particular the instrument states that food-based dietary guidelines are inclusive of agricultural and environmental science. Furthermore, the instrument notes evidence that some developed countries (including Australia) cannot enable citizens to follow their dietary guidelines unless fruit and vegetable production increases. Finally, the instrument concludes that 'The need for sustainable food production using existing natural resources is becoming more and more apparent.' ¹¹⁸

¹¹⁵ International Conference on Nutrition, *World Declaration and Plan of Action for Nutrition*, Food and Agriculture Organization of the United Nations and the World Health Organization (11 December) <<http://apps.who.int/iris/bitstream/10665/61051/1/a34303.pdf>>.

¹¹⁶ Ibid 45(d).

¹¹⁷ The World Health Organization and the Food and Agriculture Organization of the United Nations, *Preparation and use of food-based dietary guidelines*, Doc WHO/NUT/96.6 (Report of a Joint FAO/WHO consultation, 1996) <<http://www.fao.org/docrep/x0243e/x0243e00.htm>>.

¹¹⁸ Ibid [2.2.4].

*QUT Law Review: Law and Non-Communicable Diseases:
International and Domestic Regulation of Food and Alcohol*

WHO and FAO	2014	<i>Rome Declaration on Nutrition (Second International Conference on Nutrition)</i> ¹¹⁹	Affirmed that consumers are empowered if they are provided with evidence-based health and nutrition information and education.	Adopted a food systems understanding of malnutrition. Acknowledged that current food systems were constrained by ‘resource scarcity and environmental degradation, unsustainable production and consumption patterns, food losses and waste, and unbalanced distribution’. Recognised that these constraints were restricting the ability of food systems to provide ‘adequate, safe, diversified and nutrient rich food’. ¹²⁰ Members committed to improve the sustainability of food systems by developing unified policies on the production and consumption of food and which apply across multiple sectors. ¹²¹
WHO	2000	<i>Global Strategy for the Prevention and Control of Noncommunicable Diseases</i> ¹²²	No	Required member states to assess issues outside of the health sector that influence NCDs. Promoted cross-sectoral efforts by governments.

¹¹⁹ Second International Conference on Nutrition, *Conference outcome Document: Rome Declaration on Nutrition*, Doc ICN2 2014/2 (October 2014).

¹²⁰ Ibid [10].

¹²¹ Ibid [15].

¹²² The World Health Organization, *Global strategy for the prevention and control of noncommunicable diseases*, adopted by the World Health Assembly, Resolution WHA 53.14 (March 2000) <http://www.who.int/nmh/publications/wha_resolution53_14/en/>.

*Sustainable Healthy Food Choices:
The Promise of 'Holistic' Dietary Guidelines as a National and International Policy Springboard*

WHO	2004	<i>Global Strategy on Diet, Physical Activity and Health</i> ¹²³	Encourages governments to create national and evidence-based dietary guidelines that 'advise national nutrition policy, nutrition education, other public health interventions and intersectoral collaboration'. ¹²⁴	Does not explicitly integrate environmental sustainability with food-based dietary guidelines. But does acknowledge that 'agricultural policy and production often have a great effect on national diets', and that governments 'need to take healthy nutrition into account in agricultural policies'. ¹²⁵
-----	------	---	---	--

¹²³ World Health Organization, *Global Strategy on diet physical activity and health*, adopted by the World Health Assembly, Resolution WHA 55.23 (May 2004) <http://www.who.int/dietphysicalactivity/strategy/eb11344/strategy_english_web.pdf>.

¹²⁴ Ibid 6.

¹²⁵ Ibid 8.

*QUT Law Review: Law and Non-Communicable Diseases:
International and Domestic Regulation of Food and Alcohol*

WHO	2007	<i>Prevention and Control of Noncommunicable Diseases: Implementation of the Global Strategy</i> ¹²⁶	Noted the importance of educating individuals to make healthy choices	Does not explicitly integrate environmental sustainability with food-based dietary guidelines.
WHO	2008	<i>2008-2013 Action Plan for the Global Strategy for the Prevention and Control of Noncommunicable Diseases</i> ¹²⁷	Acknowledged the importance of food-based dietary guidelines to: reduce salt levels, eliminate industrially produced trans-fatty acids, decrease saturated fats and limit free sugars.	Does not explicitly integrate environmental sustainability with food-based dietary guidelines. Does identify the importance of preventative public policies in the domains of trade, food and agriculture.

¹²⁶ The World Health Organization, *Prevention and control of noncommunicable diseases: implementation of the global strategy*, adopted by the World Health Assembly, Resolution WHA 60.23 (23 May 2007) <http://apps.who.int/iris/bitstream/10665/22598/1/A60_R23-en.pdf>.

¹²⁷ The World Health Organization, *2008-2013 Prevention and control of noncommunicable diseases: implementation of the global strategy*, endorsed at the 61st World Health Assembly (May 2008).

*Sustainable Healthy Food Choices:
The Promise of 'Holistic' Dietary Guidelines as a National and International Policy Springboard*

WHO	2013	<i>Global Action Plan for the Prevention and Control of NCDs 2013-2020</i> ¹²⁸	Notes that member states should protect their dietary guidance from the influence of corporate actors or other conflicting interests. Recommends Member states carry out social marketing campaigns aimed at encouraging consumers to follow healthy dietary guidance.	Does not explicitly integrate environmental sustainability with food-based dietary guidelines. But does promote multisectoral action including across health, agriculture and education sectors.
FAO	2010	<i>International Scientific Symposium on Biodiversity and Sustainable Diets Against Hunger</i> ¹²⁹	Examines various ways in which to promote sustainable diets including through dietary guidelines.	Defines sustainable diet. Recommends that food-based dietary guidelines and their related policies incorporate sustainability into goals aimed at healthy nutrition.
FAO – Commission on Genetic Resources for Food and Agriculture	2013	<i>Review of Key Issues on Biodiversity and Nutrition</i> ¹³⁰	Acknowledges food-based dietary guidelines and their role in promoting sustainable diets.	Examines the interconnections between biodiversity decline and dietary diversity decline, as well as the linkages between sustainable agriculture and sustainable diets. Requested the FAO to continue its incorporation of biodiversity and sustainable diets into its nutrition activity

¹²⁸ World Health Organization, *Follow-up to the Political Declaration of the High-level Meeting of the General Assembly on the Prevention and Control of Non-communicable Diseases, agenda item 13.1*, Resolution WHA 66.10 (27 May 2013) <http://apps.who.int/gb/ebwha/pdf_files/WHA66/A66_R10-en.pdf>.

¹²⁹ Annex 1 'International Scientific Symposium Biodiversity and Sustainable Diets United Against Hunger- Final Document' in Barbara Burlingame and Sandro Dernini (eds), *Sustainable Diets and Biodiversity: Directions and Solutions for Policy, Research and Action* (Food and Agricultural Organization, 2010).

¹³⁰ *Review of key issues on biodiversity and nutrition*, Commission on Genetic Resources for Food and Agriculture, Item 2.5 of the Provisional Agenda, 14th regular session UN Doc CGRFA-14/13/8 (February 2013).

				including food-based dietary guidelines and nutrition policy development.
FAO	2015	<i>Voluntary Guidelines for Mainstreaming Biodiversity into Policies, Programmes and National and Regional Plans on Nutrition</i> ¹³¹	Mentioned dietary guidelines in relation to a state’s “nutrition activities”	Recommends that dietary guidelines incorporate foods from specific varieties, cultivars and breeds of plants and animals including underutilized species into food-based dietary guidelines and agricultural activities.
FAO and The Food Climate Research Network at The University of Oxford	2016	<i>Plates, Pyramids and Planets: Developments in National Healthy and Sustainable Dietary Guidelines: A State of Play Assessment</i> ¹³²	Dietary guidelines as foundational	Evaluates food-based dietary guidelines. Found that only four countries’ dietary guidelines drew connections between the unsustainability of food systems and the dietary patterns that influence them.
Consumers International and World Obesity Federation	2014	<i>Recommendations Towards a Global Convention to Protect and Promote Healthy Diets</i> ¹³³	Dietary guidelines as foundational	Does not explicitly integrate environmental sustainability with food-based dietary guidelines

¹³¹ *Voluntary Guidelines for Mainstreaming Biodiversity into Policies, Programmes and National and Regional Plans of Action on Nutrition*, adopted by the FAO Commission on Genetic Resources for Food and Agriculture, 15th Regular Session (15 January 2015).

¹³² Carlos Gonzalez and Tara Garnett, *Plates, Pyramids and Planets-Developments in National Healthy and Sustainable Dietary Guidelines: A State of Play Assessment* (Food and Agricultural Organization, 2016).

¹³³ Consumer International et al, ‘Open Letter to Margarete Chan and Jose Graziano ahead of the Second International Conference on Nutrition’, 17 May 2014 <https://s3.eu-central-1.amazonaws.com/ps-wof-web-dev/site_media/uploads/WorldObesity_Open_Letter.pdf>.

*Sustainable Healthy Food Choices:
The Promise of 'Holistic' Dietary Guidelines as a National and International Policy Springboard*

Barilla Centre for Food and Nutrition	2016	<i>Double Food Pyramid: A More Sustainable Future Depends on Us</i> ¹³⁴	Dietary guidelines as foundational	Establishes a double food pyramid that illustrates how dietary recommendations tend to be consistent with sustainable food choices.
---------------------------------------	------	--	------------------------------------	---

¹³⁴ 'Double Pyramid: Healthy Food for People, Sustainable Food for the Planet' (Barilla Center for Food & Nutrition, 2011) 1 <http://www.unscn.org/layout/modules/resources/files/Double_pyramide.pdf>.

C *Standards for Holistic Dietary Guidelines*

From this emerging policy best practice, we identify three important, overarching features of holistic dietary guidelines:

- (a) They contain advice specific to eating practices that are based on an integration of health and sustainability concerns, not narrowly based on reductionist ‘nutritionism’, and reflect how particular social, environmental and cultural contexts shape eating practices (discussed in Part III below).
- (b) They are not just a communications tool aimed at individual behaviour change, but are also a springboard for policy coherence and the development of regulatory measures aimed at ensuring the whole food system provides conditions that support healthy eating (discussed in Part IV below).
- (c) They are evidence-based and not subject to conflicts of interest or undue influence by those who have a vested interest in the continuation of unhealthy dietary patterns (discussed in Part V below).

Each is explained in more detail in the subsections below.

III SPECIFIC EATING PRACTICES

A *Conventional Nutrients-based Dietary Guidelines*

Generally, dietary guidelines aim to inform consumers about food choices that will foster health and well-being while reducing the risk of disease, sickness and illness. These guidelines can also set the basis for food and nutritional programs and policies within a country, and the information they contain is often widely disseminated through marketing campaigns. Although dietary guidelines can take the form of technical reports based on nutritional science, those guidelines designed to influence food choices tend to be food-based. Such an approach to dietary guidance is thought to be more informative and accessible as ‘consumers think in terms of foods [eg olive, fish, fruits and vegetables] rather than of nutrients [eg calcium, omega-3, iron]’.¹³⁵ Hence, most of the technical advice and literature discusses the need for ‘food-based dietary guidelines’.¹³⁶

International recommendations tend to focus on a few key messages and some specific nutrients. The WHO’s previous and current editions of its *Global NCD Action Plan*, for example, focus on reducing the level of salt/sodium added to food, reducing saturated fat and trans-fat added to food (and replacing with unsaturated fat), reducing the content of free and added sugars in food and alcoholic beverages, and limiting excess calorie intake (eg reducing portion size and energy density of foods).¹³⁷ The global action plan also recommends greater consumption of fruit and vegetables.¹³⁸

¹³⁵ World Health Organization and the Food and Agriculture Organization of the United Nations, *Preparation and Use of Food-based Dietary Guidelines*, WHO/NUT/96.6 (1996) 1.

¹³⁶ See Table 1.

¹³⁷ World Health Organization, *2008–2013 Prevention and Control of Noncommunicable Diseases*, above n 50, 20; World Health Organization, *Follow-up to the Political Declaration of the High-level Meeting*, above n 50, 24.

¹³⁸ World Health Organization, *Follow-up to the Political Declaration of the High-level Meeting*, above n 50, 24.



Critics of conventional food-based dietary guidelines suggest that they are still focused on the nutrient composition of foods.¹³⁹ Their concern is that the emphasis on the links between nutrition and bodily health is reductionist and, at times, counter-productive. It further alienates food from the cultural, social and environmental contexts in which people produce and consume food. Carlos Monteiro and his collaborators, who were chief architects of the Brazilian dietary guidelines, argue that:

[c]onventional dietary guidelines typically understate the relationship between diet and health. They treat foods as mere carriers of isolated nutrients, largely ignore food processing, meals and the contexts of eating, overlook the cultural dimensions of diets and do not consider the link between diet and the social and environmental sustainability of food systems.¹⁴⁰

They suggest that conventional dietary guidelines ignore the fact that nutrients are components of foods that include other compounds, which interact with each other and in the human body and which are prepared as part of a meal in a social, cultural, environmental and economic context. In particular, Monteiro argues that conventional dietary guidelines:

...are slow to respond to changes in food supplies and patterns of population health and wellbeing. Current examples of these changes are the conversion of countless national and local food systems into one monolithic globalised industrial system dependent on intense food processing, the increasing availability of relatively cheap, aggressively marketed ready-to-consume soft drinks and snack products, and the parallel pandemic of obesity and diabetes.¹⁴¹

Thus, Monteiro and others have been critical of how conventional dietary guidelines do not draw connections between the ways in which food is farmed, processed, transported or sold, and the effects of how these activities are carried out on the end nutritional quality of food.¹⁴² Not only is a nutrient-centred approach simplistic, but also the emphasis on nutrients arguably enables markets to make false and misleading statements about the health benefits of a particular product, namely nutritional supplements and 'super food' claims.¹⁴³

B A 'Real Meal' Based Approach

As suggested above, the Brazilian dietary guidelines have taken a different approach compared to more conventional dietary guidelines. Based on data gathered through national surveys, Brazil's dietary guidelines include recommendations of real meals consumed by the one-fifth of Brazilians who are healthier and whose diet relies on natural or minimally processed foods,

¹³⁹ See, eg, Gyorgy Scrinis, *Nutritionism: The Science and Politics of Dietary Advice* (Columbia University Press, 2013); Matteo Bonotti, 'Food Policy, Nutritionism, and Public Justification' (2015) 46 *Journal of Social Philosophy* 402.

¹⁴⁰ Carlos Augusto Monteiro et al, 'Dietary Guidelines to Nourish Humanity and the Planet in the Twenty-First Century: A Blueprint From Brazil' (2015) 18 *Public Health Nutrition* 2311, 2312; See also Scrinis, above n 139, 5.

¹⁴¹ Monteiro et al, above n 80.

¹⁴² R Lal, 'Soil Degradation as a Reason for Inadequate Human Nutrition' (2009) 1(1) *Food Security* 45; Scrinis, above n 79; Anthony Fardet and Edmond Rock, 'From a Reductionist to a Holistic Approach in Preventive Nutrition to Define New and More Ethical Paradigms' (2015) 3 *Healthcare* 1054.

¹⁴³ Janine Curll et al, 'Unlocking the Energy of the Amazon: The Need for a Food Fraud Policy Approach to the Regulation of Anti-ageing Health Claims on Superfood Labelling' (2016) 44 *Federal Law Review* 419.

freshly prepared. The guidelines do this in part by suggesting that Brazilians should prefer to prepare fresh food at home and eat with family and should reduce their consumption of ultra-processed food in a commercial environment. They further recommend reducing consumption of animal-based products. In a way that directly addresses Monteiro's critique above, Brazil's dietary guidelines also examine broader food systems issues such as long transport networks that use excess non-renewable energy and generate pollution, and promote consumption of locally produced food and traditional Brazilian diets. As the guidelines explain:

Food supplies and dietary patterns based on rice, beans, corn, cassava, potatoes, vegetables and fruits are socially beneficial. They encourage family farming and local economies, and living and producing in solidarity. They also promote biodiversity and reduce the environmental impact of food production and distribution.¹⁴⁴

In line with this recommendation, Brazil's dietary guidelines suggest that consumers themselves take some responsibility for changing the food system, advising:

The more the people seek for organic and agro-ecological based foods, the greater will be the support received by agro-ecologic family farmers, and the more socially and environmentally sustainable food systems will become.¹⁴⁵

This is intended as a way of empowering consumers to help support healthy sustainable food systems, rather than putting the onus on consumers as individuals. Other policy actions aimed at food production and the food environment are also required (as discussed in Part IV below).

C Local Food Recommendations

As Brazil's dietary guidelines illustrate, some commentators and guidelines suggest that sourcing foods locally is an aspect of sustainable diets. Activists, scholars and food writers see developing local food systems as a way to: build connections with places and communities; enable connections between farmers and consumers that increase farmer income; and support ecologically sustainable methods of producing and distributing food.¹⁴⁶ Over the last decade, demand for locally produced food has increased especially in high-income countries.¹⁴⁷ The trend is associated with the environmental movement, which encourages people to consider the environmental impacts of long supply chains and intensive farming practices. The preference for locally produced and distributed food is also a response to mass-produced and imported food — framed as a rejection of 'food from nowhere' for 'food from somewhere'.¹⁴⁸

However, whether smaller food supply chains promote sustainable diets depends on the context and the actors.¹⁴⁹ Born and Purcell for example have critiqued the assumption that local-scale food systems necessarily lead to sustainable diets. They observe, 'Local-scale food systems are

¹⁴⁴ Ministério da Saúde, Brasília, above n 65, 31.

¹⁴⁵ Ibid 32.

¹⁴⁶ See eg, Gail W Feenstra, 'Local Food Systems and Sustainable Communities' (1997) 12(1) *American Journal of Alternative Agriculture* 28.

¹⁴⁷ Steve Martinez, *Local Food Systems; Concepts, Impacts, and Issues* (DIANE Publishing, 2010) 1–2.

¹⁴⁸ Philip McMichael, 'A Food Regime Genealogy' (2009) 36(1) *The Journal of Peasant Studies* 139, 147.

¹⁴⁹ Caroline Saunders and Peter Hayes, 'Air Freight Transport of Fresh Fruit and Vegetables: Report for the International Trade Centre (ITC) Geneva, Switzerland' (Research Report No 299, Agribusiness and Economics Research Unit, Lincoln University, 2007) 32.

equally likely to be just or unjust, sustainable or unsustainable, secure or insecure. No matter what its scale, the outcomes produced by a food system are contextual: they depend on the actors and agendas'.¹⁵⁰ Because of these complexities, scientific studies comparing global to local food chains for particular foods have conflicting findings, methods and scopes. Some studies and reviews concerning fruit and vegetables have found that the method of agriculture employed to produce a food (ie greenhouse or field grown, using pesticides or organic, etc) is the greatest determinant of its environmental impact, rather than transportation.¹⁵¹ Other research has found that fruit and vegetables imported by plane and not in season have a significantly larger carbon footprint than seasonal foods produced domestically.¹⁵² Consequently, the notion that sustainable diets necessarily entail local food chains lacks conclusive evidence either way, and much will depend on the particular context. In addition, the scope and spatial limits of local food systems is subjectively constructed and dynamic, which further complicates claims that locally produced food is an important part of sustainable diets.¹⁵³ It is however clear that a diversity of food grown in different places is highly desirable to help ensure the resilience of the global food system in general and of each individual locale. For example, if a city were cut off from global transport chains by a flood (as occurred in Brisbane in 2011) then local peri-urban horticulture production could be quite important.¹⁵⁴ Similarly large mono-crop plantations in one location might be vulnerable to an adverse weather event or pest invasion; therefore multiple locations with diverse species are desirable. Schnell's research indicates that consumers use 'local food' as an umbrella term for a range of values that do not necessarily relate to the scale of a food system. Rather, Schnell suggests that local food refers to transparent food production and consumption embedded in social relationships and based on cultivating a sense of belonging and responsibility for specific ecologies.¹⁵⁵ Drafters of dietary guidelines and related regulatory instruments should acknowledge these underlying values as opposed to expressly promoting local food systems. Such an approach may also be advisable in the context of international trade obligations discussed further in the second paper in this research project.

¹⁵⁰ Branden Born and Mark Purcell, 'Avoiding the Local Trap: Scale and Food Systems in Planning Research' (2006) 26 *Journal of Planning Education and Research* 195, 195–6.

¹⁵¹ See eg, Tara Garnett, 'Fruit and Vegetables & UK Greenhouse Gas Emissions: Exploring the Relationship' (Working Paper, Food Climate Research Network, Oxford Martin School, 2006) 127; Christopher L Weber and H Scott Matthews, 'Food-miles and the Relative Climate Impacts of Food Choices in the United States' (2008) 42 *Environmental Science & Technology* 3508.

¹⁵² Franziska Stoessel et al, 'Life Cycle Inventory and Carbon and Water FoodPrint of Fruits and Vegetables: Application to a Swiss Retailer' (2012) 46 *Environmental Science & Technology* 3253; Niels Jungbluth, Olaf Tietje and Roland W Scholz, 'Food Purchases: Impacts from the Consumers' Point of View Investigated with a Modular LCA' (2000) 5(3) *The International Journal of Life Cycle Assessment* 134; Annika Carlsson-Kanyama, Marianne Pipping Ekström and Helena Shanahan, 'Food and Life Cycle Energy Inputs: Consequences of Diet and Ways to Increase Efficiency' (2003) 44 *Ecological Economics* 293.

¹⁵³ Robert Feagan, 'The Place of Food: Mapping out the "Local" in Local Food Systems' (2007) 31(1) *Progress in Human Geography* 23; C Clare Hinrichs, 'The Practice and Politics of Food System Localization' (2003) 19(1) *Journal of Rural Studies* 33.

¹⁵⁴ See Paul Burton et al, 'Urban Food Security, Urban Resilience and Climate Change' (Report, National Climate Change Adaptation Research Facility, 2013); Rachel Carey et al, 'Melbourne's Food Future: Planning a Resilient City Foodbowl' (Report, Victorian Eco-Innovation Lab, The University of Melbourne, 2016).

¹⁵⁵ Steven M Schnell, 'Food with a Farmer's Face: Community-supported Agriculture in the United States' (2007) 97 *Geographical Review* 550.

D *Broadly Supported Principles of Diets that are Both Healthy and Sustainable*

A small but growing body of work has reviewed and gathered empirical evidence concerning the commonalities between diets that are healthy and diets that are sustainable, as well as how to shift diets towards delivering better health and sustainability outcomes.¹⁵⁶ From this body of work, we summarise the main commonalities between healthy and sustainable diets as follows:

- *Low consumption of ultra-processed foods high in sugars, oils, salts or trans-fats:*
In relation to sustainability, the processing of such products tends to be energy-intensive and involve the production of more waste products.¹⁵⁷ They are also nutrient-poor and energy dense, and as we have seen, all conventional dietary guidelines recommend reduced consumption for health reasons. In terms of specific eating practices, this can mean recommending reduced consumption of highly processed foods including confectionary, crisps and sugary drinks.¹⁵⁸ Garnett et al suggest that reducing consumption of palm oil and ensuring all palm oil consumed is produced sustainably are particularly relevant practices for both health and sustainability gains.¹⁵⁹
- *Balanced consumption, that is, balance between energy intake and energy needs:*
From a sustainability point of view, the over-consumption of foods represents preventable resource loss because food has been produced that is not required to meet a person's energy requirements.¹⁶⁰ From a health point of view, over consumption of food facilitates diet-related NCDs.¹⁶¹ In terms of specific eating practices, this leads to a recommendation for many populations to limit consumption overall for both health and sustainability reasons.
- *High diversity:*
Diverse diets are required to meet nutritional needs and preserve on-farm biodiversity. This coalesces with recommendations to eat diets high in minimally processed tubers, whole grains, legumes, fruits and vegetables, and including unsalted nuts and seeds. Some holistic dietary guidelines recommend fruit and vegetables that are field grown, 'robust' (less prone to spoilage) or otherwise reduce the demand for rapid and energy

¹⁵⁶ Behrens et al, above n 15; Gonzalez and Garnett, above n 63, 1; Tara Garnett et al, 'Policies and Actions to Shift Eating Patterns: What Works?' (2015) 515 *Foresight* 518; Sharon Friel, Laurel J Barosh and Mark Lawrence, 'Towards Healthy and Sustainable Food Consumption: An Australian Case Study' (2014) 17 *Public Health Nutrition* 1156; Miriam E Nelson et al, 'Alignment of Healthy Dietary Patterns and Environmental Sustainability: A Systematic Review' (2016) 7 *Advances in Nutrition* 1005.

¹⁵⁷ Gilly A Hendrie et al, 'Greenhouse Gas Emissions and the Australian Diet — Comparing Dietary Recommendations with Average Intakes' (2014) 6(1) *Nutrients* 289, where the authors found that nutrient poor, ultra-processed foods accounted for 27% of diet-related emissions.

¹⁵⁸ Jennifer Clapp and Gyorgy Scrinis, 'Big Food, Nutritionism, and Corporate Power' (2016) 14 *Globalizations* 578; Carlos Augusto Monteiro et al, 'A New Classification of Foods Based on the Extent and Purpose of Their Processing' (2010) 26 *Cadernos de Saúde Pública* 2039, for analyses of a much broader range of highly processed foods that may also fall foul of this recommendation.

¹⁵⁹ Garnett et al, above n 156, 13.

¹⁶⁰ Friel, Barosh and Lawrence, above n 156, 1157–8; See also, Gilly A Hendrie et al, 'Overconsumption of Energy and Excessive Discretionary Food Intake Inflates Dietary Greenhouse Gas Emissions in Australia' (2016) 8 *Nutrients* 690, doi:10.3390/nu8110690.

¹⁶¹ See, eg, Krisela Steyn and Albertino Damasceno, 'Lifestyle and Related Risk Factors for Chronic Diseases' in Dean T Jamison et al (eds), *Disease and Mortality in Sub-Saharan Africa* (World Bank, 2nd ed, 2006) 319.

intensive transport modes, in order to avoid the environmental impacts of food waste and fossil fuel transport.

- *Low consumption of meat (especially red meat and processed meat products) and moderate consumption of dairy products:*

Animal-derived products tend to be far more resource intensive than plant-based products.¹⁶² It is also widely acknowledged that industrial food animal production can cause great pain and suffering for animals, arguably counter to the ethics underpinning sustainable development.¹⁶³ Although meat can be an important source of nutrition, higher consumption is also associated with various health risk factors. The WHO has classified processed meat as a 'Group 1' carcinogen for humans, based on sufficient evidence that it causes colorectal cancer, and red meat as a 'Group 2A' probable carcinogen to humans.¹⁶⁴ High intake of red and processed meat is also a risk factor for diet-related NCDs including type II diabetes, cardiovascular diseases, colorectal and other cancers and all-cause mortality.¹⁶⁵ Intensive livestock systems are also the locus for a range of public health hazards associated with the use of pharmaceuticals including antibiotics, and effluent management.¹⁶⁶

IV A SPRINGBOARD FOR REGULATORY POLICY

Typically, regulatory interventions aimed at influencing diets have centred on providing information to citizens, through dietary guidelines and related marketing campaigns, with the hope that informed citizens will make better food choices.¹⁶⁷ Evidence regarding the effectiveness of such an approach is limited, but worldwide the prevalence of diet-related

¹⁶² See, eg, David Pimentel and Marcia Pimentel, 'Sustainability of Meat-based and Plant-based Diets and the Environment' (2003) 78 *The American Journal of Clinical Nutrition* 660S; Nelson et al, above n 96; Tara Garnett, 'Where Are the Best Opportunities for Reducing Greenhouse Gas Emissions in the Food System (Including the Food Chain)?' (2011) 36 (Supplement 1) *Food Policy* S23; See also, Janet Ranganathan et al, 'Shifting Diets for a Sustainable Food Future' (Working Paper, World Resources Institute, 2016); Christian J Peters et al, 'Carrying Capacity of US Agricultural Land: Ten Diet Scenarios' (2016) 4 *Elementa* 116.

¹⁶³ See, eg, Kate Rawles, 'Developing Ethical, Sustainable and Compassionate Food Policies' in Joyce D'Silva and John Webster (eds), *The Meat Crisis: Developing More Sustainable and Ethical Production and Consumption* (Routledge, 2nd ed, 2017) 259.

¹⁶⁴ International Agency for Research on Cancer (WHO), 'IARC Monographs Evaluate Consumption of Red Meat and Processed Meat' (Press Release, No 240, 26 October 2015). Note that eating seafood is problematic as health considerations encourage greater consumption of seafood for many populations, but environmental considerations suggest decreased consumption, as many or most seafood stocks are very low to the point of being unsustainable. See, eg, Anna K Farmery et al, 'Assessing the Inclusion of Seafood in the Sustainable Diet Literature' (2017) 18 *Fish and Fisheries* 607.

¹⁶⁵ MH Rouhani et al, 'Is There a Relationship between Red or Processed Meat Intake and Obesity? A Systematic Review and Meta-analysis of Observational Studies' (2014) 15 *Obesity Reviews: An Official Journal of the International Association for the Study of Obesity* 740; Cem Ekmekcioglu et al, 'Red Meat, Diseases, and Healthy Alternatives: A Critical Review' (2018) 58 *Critical Reviews in Food Science and Nutrition* 247.

¹⁶⁶ See, eg, Ramona Cristina Ilea, 'Intensive Livestock Farming: Global Trends, Increased Environmental Concerns, and Ethical Solutions' (2009) 22(2) *Journal of Agricultural and Environmental Ethics* 153.

¹⁶⁷ See, eg, Taylor, Parento and Schmidt, above n 13; Walter Wymer, 'Rethinking the Boundaries of Social Marketing: Activism or Advertising?' (2010) 63(2) *Journal of Business Research* 99; Boyd A Swinburn et al, 'The Global Obesity Pandemic: Shaped by Global Drivers and Local Environments' (2011) 378(9793) *The Lancet* 804.

NCDs is increasing, and over the last 33 years there have been no significant ‘national success stories’ of declines in diet-related NCD levels.¹⁶⁸ For example, social marketing campaigns aimed at influencing diets have been found, at best, to be one strategy that can contribute to the prevention of diet-related NCDs,¹⁶⁹ but at worst they can be counter-productive and increase the occurrence of weight discrimination.¹⁷⁰

Accordingly, commentators have called for more significant regulatory interventions because the many factors which contribute to dietary-related NCDs are outside the control of an individual.¹⁷¹ As the opening article in a 2015 *Lancet* series on obesity argued, ‘although individuals bear some responsibility for their health... environmental factors exploit biological, psychological, social, and economic vulnerabilities that promote overconsumption of unhealthy foods’.¹⁷² Regulatory action, not just education and guidance, is positioned as a way to reduce the systems that facilitate and reinforce healthy eating, including as a way to break the negative feedback loops between a person’s consumption of unhealthy foods, food marketing in their environment, and the market demand for unhealthy foods being produced and processed.¹⁷³

Holistic dietary guidelines should, therefore, be used as ‘a “springboard” for other broader, health strategies’¹⁷⁴ including regulatory interventions. As Keller and Lang suggest, dietary guidelines can ‘form the bedrock for governmental health strategies and in particular be used to align wider agriculture, food and nutrition policies’ and thus become ‘a policy and organising tool as well as a scientific tool’.¹⁷⁵ International instruments, as illustrated in Table 1, consistently support policy coherence and multi-sectoral approaches to diet-related NCDs. Positioning holistic dietary guidelines as the basis for other regulatory interventions is, therefore, an approach broadly supported at the international level.

Indeed a number of authors have set out the range of legal, market-based, self-regulatory, soft law, and political regulatory tools necessary to create healthy food environments and reduce global obesity.¹⁷⁶ These include:

¹⁶⁸ Forouzanfar et al, above n 266.

¹⁶⁹ See, eg, Luis Gracia-Marco, Luis A Moreno and Germán Vicente-Rodríguez, ‘Impact of Social Marketing in the Prevention of Childhood Obesity’ (2012) 3 *Advances in Nutrition: An International Review Journal* 611S.

¹⁷⁰ Clare Herrick, ‘Risky Bodies: Public Health, Social Marketing and the Governance of Obesity’ (2007) 38(1) *Geoforum* 90; Wymer, above n 167.

¹⁷¹ Sara Capacci et al, ‘Policies to Promote Healthy Eating in Europe: A Structured Review of Policies and Their Effectiveness’ (2012) 70(3) *Nutrition Reviews* 188; Christina A Roberto et al, ‘Patchy Progress on Obesity Prevention: Emerging Examples, Entrenched Barriers, and New Thinking’ (2015) 385(9985) *The Lancet* 2400.

¹⁷² Roberto et al, above n 171, 2401.

¹⁷³ Roberto et al, above n 171; Gyorgy Scrinis and Christine Parker, ‘Front-of-Pack Food Labeling and the Politics of Nutritional Nudges’ (2016) 38(3) *Law & Policy* 234. See also, Taylor, Parento and Schmidt, above n 13, 290, where the authors state ‘The traditional tools of relatively mild taxation and educational campaigns have done little to nothing to stem the global rise of obesity. In recognition of the critical nature of the epidemic, countries have been increasingly willing to impose stronger educational and tax initiatives and to build on those measures by employing different and novel techniques to combat obesity, moving beyond a “personal responsibility framework” to a framework in which interventions seek to address broader social determinants of health’.

¹⁷⁴ Keller and Lang, above n 20, 868–9.

¹⁷⁵ *Ibid* 873.

¹⁷⁶ See eg, Boyd Swinburn et al, ‘Strengthening of Accountability Systems to Create Healthy Food Environments and Reduce Global Obesity’ (2015) 385(9986) *The Lancet* 2534; See also, Taylor, Parento and Schmidt, above n 13, where the authors analyse the different types of regulatory tools available to combat global obesity, including

- strengthened tax measures (more and higher) against less healthy foods;
- powerfully-imagined hard hitting counter-advertising (for example a NYC advertisement in which a man is shown drinking gobs of human fat from a soda bottle);
- stricter labelling requirements (eg incorporating symbols such as traffic lights or stop signs);
- zoning and planning rules (eg stopping fast food restaurants in certain areas);
- financial incentives to make healthy food more physically and economically accessible;
- health and sustainability conditions on procurement of food for schools, hospitals and government agencies;
- restrictions on marketing unhealthy food (especially to children);
- greater regulatory scrutiny of health claims on foods;
- regulation requiring the reformulation of products (eg banning the use of trans fats in processed foods); and
- health services screening and targeting of high risk individuals.¹⁷⁷

A pluralised approach in which a network of government, industry and civil society actors all have a role to play in implementing these measures is consistent with broader regulatory studies approaches too.¹⁷⁸ A useful framework for such interventions was developed by Hawkes et al.¹⁷⁹ They proposed the NOURISHING food policy framework for the World Cancer Research Fund International, as a way of systematising the range of policy measures that might address food related NCDs. NOURISHING is an acronym referring to 10 types of policy actions that can be taken across three broad categories:

- The food environment:
 - Nutrition labelling and regulating the claims on foods;
 - Offering healthy foods in public institutions via procurement standards;
 - Using economic approaches, such as food taxes or targeted subsidies;
 - Restriction of food advertising and other forms of commercial promotion of certain foods;
 - Improving nutritional quality of the whole food supply chain; and
 - Setting incentives and rules for healthy retail and food service environments.
- The food system:
 - Harnessing both food supply chain and other actors to encourage healthy behaviours through both health-related and non-health-related policies.
- Behaviour change-communication:

voluntary approaches and industry–government partnerships.

¹⁷⁷ This list is based on Taylor, Parento and Schmidt, above n 13, 13–28; Belinda Reeve and Lawrence O Gostin, 'Creating the Conditions for People to Lead Healthy, Fulfilling Lives: Law Reform to Prevent and Control NCDs' (Legal Studies Research Paper 15/98, Sydney Law School, University of Sydney, 11 November 2015) 168. See also, William H Dietz, Donald E Benken and Alicia S Hunter, 'Public Health Law and the Prevention and Control of Obesity' (2009) 87 *The Milbank Quarterly* 215.

¹⁷⁸ See, eg, Burkard Eberlein et al, 'Transnational Business Governance Interactions: Conceptualization and Framework for Analysis' (2014) 8 *Regulation & Governance* 1; Christine Parker, 'The Pluralization of Regulation' (2008) 9 *Theoretical Inquiries in Law* 349. Specifically in the food policy space, see Swinburn et al, above n 176; Scrinis and Parker, above n 173.

¹⁷⁹ See, eg, Roberto et al, above n 171; World Cancer Research Fund International, 'NOURISHING: Methods for Compiling and Updating the Database' (Working Document, 3 August 2017); Corinna Hawkes et al, 'Smart Food Policies for Obesity Prevention' (2015) 385(9985) *The Lancet* 2410; Ranganathan et al, above n 162.

- Informing people about food and nutrition through public awareness campaigns;
- Nutrition advice through health care visits and nutrition-counselling interventions; and
- Giving nutrition education and skills.

The NOURISHING framework illustrates a full range of regulatory interventions possible in relation to diet-related NCDs. Moreover, it exemplifies the kinds of approaches promoted by international instruments that emphasise the need for whole-of-government and multi-sectoral approaches to diet-related NCDs (see Table 1).

Most of the literature on specific policy and regulatory initiatives has not, however, focused on policy initiatives that integrate health and broader sustainability concerns, despite the emerging literature and policy practice in holistic dietary guidelines.¹⁸⁰ Taylor et al suggested that:

Arguably, the most progressive policy regimes for combating obesity today are multi-sectoral, integrated programs that link systems of food production and transport with food distribution and trade in ways that promote the health of the environment and the health of people by making healthy food choices maximally available.¹⁸¹

Finding and updating the evidence as to what production and eating practices and which policy tools will promote healthy sustainable diets best is likely to be a challenge, especially where multi-sectoral, integrated programmes are required. Besides the political challenges of introducing such measures in countries with a strong free market ethos and powerful industry, international trade and investment agreements may act as another significant barrier. Broadly, these agreements seek to restrict signatories from introducing measures that may influence the supply or demand for particular products. Moreover as Taylor et al also point out, ‘companies must sell less food if the population is to lose weight’.¹⁸² We might add that increased trade and investment may depend on increased consumption, which may be in conflict with measures to prevent diet-related NCDs. The second paper in this research examines the potential for international trade and investment laws to influence the introduction and implementation of holistic dietary guidelines and related measures.

V EVIDENCE-BASED AND NOT SUBJECT TO CONFLICTS OF INTEREST

Dietary guidelines are generally derived from public consultations, available information about nutritional trends within a society, and scientific evidence about relationships between nutrient intake and disease prevalence.¹⁸³ The evidence may be formulated both by the in-house

¹⁸⁰ But see Geof Rayner and Tim Lang, *Ecological Public Health: Reshaping the Conditions for Good Health* (Routledge, 2013); Mason and Lang, above n 2; Ranganathan et al, above n 162. Garnett et al, above n 156, does provide a useful literature review of effectiveness of policy interventions in relation to four specific healthy sustainable eating practices. Gonzalez and Garnett, above n 93, describe healthy sustainable dietary guidelines initiatives but do not consider how they are to be implemented in policy.

¹⁸¹ Taylor, Parento and Schmidt, above n 13, 285 suggest this means promoting local food production and consumption, but as we saw above, the evidence on local food is in fact mixed.

¹⁸² Ibid.

¹⁸³ Michael Gibney and Brittmarie Sandström, ‘A Framework for Food-based Dietary Guidelines in the European Union’ (2001) 4 *Public Health Nutrition* 293, 294–5, explain the process of making food-based dietary guidelines

government department formulating the guidelines and by either corporate or university-based researchers. Generally, epidemiological studies and clinical trials provide the main source of scientific evidence.¹⁸⁴ The collated information is then reviewed and considered by a government-mandated special working group representing stakeholders and experts.¹⁸⁵ The working group considers and translates the evidence into advice for ordinary, non-specialist citizens. These working groups tend to be made up of, for instance, representatives from relevant government departments (education, agriculture, health), nutritional and medical experts and food industry representatives.¹⁸⁶ Commonly, stakeholder participation, including through working groups, centres on nutrients and dietary patterns, and overlooks how nutrition policies influence, or should influence, other food system activities and outcomes.¹⁸⁷

However, the complex structural and personal causes of diets that contribute to NCDs mean there are still large gaps in the public health literature, making it difficult to draft cogent internationally applicable standards¹⁸⁸ Holistic dietary guidelines present additional challenges for collecting an adequate evidence base, as information will be required not only about the health impact, but also the environmental impact of specific eating practices, as well as the possibility for synergies and conflicts between healthy diets and environmental sustainability.¹⁸⁹ Moreover, in order to justify certain policy interventions, evidence on the effectiveness of different policy interventions is also required. This type of evidence often does not become available until a government acts and intervenes, but governments may want evidence of likely policy effectiveness before intervening.¹⁹⁰ We therefore suggest that standards and measures must be dynamic in response to new and emerging evidence and different contexts. Procedures and regulations to reduce personal, technical or disciplinary biases should be embedded within institutional arrangements around the gathering and evaluation of evidence required to create and update holistic dietary guidelines and

as follows: (1) identification of major food sources of the nutrient of interest; (2) identification of foods contributing substantially to population intakes; (3) identification of foods or food patterns compatible with desirable nutrient intakes or explaining variations in nutrient intakes; and (4) formulation of FBDG into foods, portion sizes, frequency of intake, meal composition taking attainability and acceptability as well as compatibility of co-existing guidelines into account.

¹⁸⁴ Janet C King, 'An Evidence-based Approach for Establishing Dietary Guidelines' (2007) 137 *The Journal of Nutrition* 480.

¹⁸⁵ Ricardo Uauy, Eva Hertrampf and Alan D Dabgiur, 'Food-based Dietary Guidelines for Healthier Populations: International Considerations' in Maurice Edward Shils and Moshe Shike (eds), *Modern Nutrition in Health and Disease* (Lippincott Williams & Wilkins, 2006) 1701, 1709.

¹⁸⁶ WHO and FAO, *Preparation and Use*, above n 135, ch 4.

¹⁸⁷ See, eg, Richard J Jackson et al, 'Agriculture Policy Is Health Policy' (2009) 4 *Journal of Hunger & Environmental Nutrition* 393; *Agriculture and Nutrition: A Common Future: A Framework for Joint Action* (European Commission; Food and Agriculture Organization of the United Nations; Technical Centre for Agricultural and Rural Cooperation; World Bank Group, 2014).

¹⁸⁸ Taylor, Parento and Schmidt, above n 13, 287.

¹⁸⁹ Gonzalez and Garnett, above n 93, set out some of the difficulties in establishing an evidence base for diets that are both sustainable and healthy at the same time, highlighting in particular the uncertainty around the role of fish in the diet (healthy but often not environmentally sustainable); and some ultra-processed foods (unhealthy but not necessarily environmentally unsustainable).

¹⁹⁰ But see, eg, R Magnusson, 'Using a Legal and Regulatory Framework to Identify and Evaluate Priorities for Cancer Prevention' (2011) 125 *Public Health* 854, reviewing a range of regulatory measures and recommending specific priorities for Australia.

situations.¹⁹¹ Moreover, an effort should be made to collect different types of evidence relevant to both health and sustainability goals, and the interaction between them and the broader food system. Such procedures and institutional rules should focus, in part, on dealing with inherent uncertainty and complexity.¹⁹² There is also a need for ongoing and systematic monitoring and evaluation to collect further evidence about what are appropriate eating practices and policy interventions, using multiple criteria from different stakeholders' bodies of knowledge (eg including traditional dietary knowledge, as in the Brazilian dietary guidelines, as well as nutritionists' recommendations) and different stakeholders' potential for action (eg government regulation, industry self-regulation, and health services' interventions). These suggestions are consistent with literature on evidence-based policy, and specifically the work regarding the kinds of institutional arrangements necessary to bridge evidence and social policy in a democratically legitimate way.¹⁹³

A number of NGO initiatives model the kinds of institutional arrangements that may be possible between the public sector and other stakeholders. For example, the NOURISHING framework, outlined above, is used by the World Cancer Research Fund as a systematic basis for collecting and disseminating evidence about policy initiatives and their effectiveness. Supporting the NOURISHING framework, Boyd Swinburn (University of Auckland), the World Obesity Federation, and a range of public interest groups have created INFORMAS (the International Network for Food and Obesity/Non-communicable Diseases Research, Monitoring and Action Support) to 'monitor, and support public and private sector actions to create healthy food environments and reduce obesity and non-communicable diseases (NCDs) and their related inequalities'.¹⁹⁴ There are also emerging initiatives collecting evidence about integrated healthy and sustainable eating practices and policy initiatives, as discussed previously.¹⁹⁵

Even where institutional arrangements are such that evidence is effectively used to inform holistic dietary guidelines and related regulatory interventions, it is the political willingness to take action that generally influences the interpretation of the evidence regarding, inter alia, diet-related NCDs, rather than the evidence influencing political willingness to intervene through regulatory mechanisms.¹⁹⁶ This point is somewhat captured in the recommendation (above) that holistic dietary guidelines be the output of procedures that seek to reduce bias in the creation and evaluation of evidence.

¹⁹¹ See, eg, Justin Parkhurst, *The Politics of Evidence: From Evidence-based Policy to the Good Governance of Evidence* (Routledge, 2016) 200–203.

¹⁹² Benjamin Dehe and David Bamford, 'Development, Test and Comparison of Two Multiple Criteria Decision Analysis (MCDA) Models: A Case of Healthcare Infrastructure Location' (2015) 42 *Expert Systems with Applications* 6717.

¹⁹³ Sandra M Nutley, Isabel Walter and Huw T O Davies, *Using Evidence: How Research Can Inform Public Services* (Policy Press, 2007).

¹⁹⁴ See School of Population Health, University of Auckland, *INFORMAS* (20 October 2017) <<https://www.fmhs.auckland.ac.nz/en/soph/global-health/projects/informas.html>>; and Swinburn et al, above n 176.

¹⁹⁵ Notably, Tim Lang and co-authors based at the Food Policy Centre (City University London) working on ecological public health and sustainable diets, the Food Climate Research Network led by Tara Garnett at University of Oxford and the World Resources Institute.

¹⁹⁶ MG Marmot, 'Epidemiology and the Art of the Soluable' (1986) 327(8486) *The Lancet* 897.

Regardless, the social and economic systems around bodies of evidence will influence the significance apportioned to a finding, and the methods used to formulate and share the relevant evidence. Where governance arrangements are embedded in capitalist systems, as the governance arrangements of WTO member states must necessarily be to an extent, evidence that does not challenge the notion of self-regulating markets is likely to be more influential over dietary guidelines and related regulatory interventions. Consistent with this observation, Monteiro et al suggest that the dominant, medicalised, nutritionist approach to collecting an evidence base for conventional dietary guidelines indirectly favours processed food companies (who can play the game and manipulate the evidence) and devalues understandings of healthy sustainable diets 'implicit in long-established tried-and-tested dietary patterns developed as part of human evolution and adaptation'.¹⁹⁷ Drawing on this observation, holistic dietary guidelines transcend the rift between humanity and ecology supported by capitalist food systems, the commodification of food, and the distance between producing and consuming food in especially developed countries. Accordingly, evidence and understanding that support the closure of this rift come into conflict with the premises of capitalism, while nutritionist-based evidence maintains the divide, and so has garnered, and is likely to continue to garner, strong political support.¹⁹⁸

Besides seeking to dilute indirect influences on evidence underpinning dietary guidelines, holistic dietary guidelines should be free from the undue influence of food industry actors. All the international recommendations for dietary guidelines emphasise the need to 'ensure that the processes for the development of nutrition recommendations, [dietary guidelines] and nutrient profile models are free from undue influence from non-state actors with commercial interests'.¹⁹⁹ Yet 'big food' corporations naturally have an interest in selling more of the type of (processed) food that much of the public health and environmental evidence suggests should be consumed less. The food policy literature details the various direct and indirect ways in which 'big food' has successfully influenced national and international policy and rule making, and even evidence collection, as well as public perceptions of their products and activities.²⁰⁰ One way in which it may seek to hinder the establishment or scope of holistic dietary guidelines is through challenges on the basis of international trade and investment law. The second paper from this research will therefore examine critically the possibility of challenge on the basis of international trade and investment law and potential strategies to buttress the use of holistic dietary guidelines against such attack.

¹⁹⁷ Carlos Augusto Monteiro et al, 'Dietary Guidelines to Nourish Humanity and the Planet in the Twenty-First Century. A Blueprint from Brazil' (2015) 18 *Public Health Nutrition* 2311, 2312.

¹⁹⁸ See, for eg, John Bellamy Foster, 'Marx's Theory of Metabolic Rift: Classical Foundations for Environmental Sociology' (1999) 105 *American Journal of Sociology* 366.

¹⁹⁹ Consumer International and World Obesity Federation, above n 13, 12 (art 6, recommendation 3).

²⁰⁰ See, for eg, Jennifer Clapp and Gyorgy Scrinis, 'Big Food, Nutritionism, and Corporate Power' (2017) 14 *Globalizations* 578: use direct lobbying, public-private partnerships and marketing claims to focus attention on potentials for product reformulation, but in essence this allows the sale and advertising of 'nutri-washed' reformulated goods rather than availability of truly more sustainable and healthy alternative; David Stuckler and Marion Nestle, 'Big Food, Food Systems, and Global Health' (2012) 9 *PLoS Medicine* e1001242, doi:10.1371/journal.pmed.1001242; Frances E Baum et al, 'Assessing the Health Impact of Transnational Corporations: Its Importance and a Framework' (2016) 12 *Globalization and Health* 27.

Where dietary guidelines have been developed with a strong and balanced evidence base, this can make it very difficult for even strong pressure groups to oppose the guidelines. The *Planet, Plates, Pyramids* report gives the example of the Swedish guidelines, which included such a strong risk and benefit management report that it was very difficult for even the dairy industry to oppose the recommendations.²⁰¹ However in both the US and Australia, even with strong evidence bases for including sustainability considerations in dietary guidelines, industry lobbying and political considerations succeeded in taking sustainability out of the guidelines.²⁰² There are also serious concerns about the influence of the food industry on international standard-setting in regard to food at the Codex Alimentarius (the main international body harmonising international standards for food).²⁰³ Strong national and international NGOs that also collect independent evidence (as noted above) can provide a bulwark even where official institutions are affected by conflict of interest. Finally, basing holistic dietary guidelines on evidence about meals that people actually prepare can act as a safeguard against the interests of processed food companies, particularly in countries where traditional diets are still intact to some extent.

VI CONCLUSION

Although adopted only by a handful of countries, holistic dietary guidelines are an emerging, yet promising development that aligns with achieving the Sustainable Development Goals. These guidelines reflect the complex interactions within foods and between the environment and the nutritional quality of foods. These guidelines represent the first attempt by regulators to influence food consumption in ways that help human activities stay within planetary boundaries. To be significantly innovative and influential, holistic dietary guidelines must act as a springboard for other regulatory interventions into food production and consumption. However, their adoption as a policy springboard may have implications for, or be restrained by international economic law, which will be examined in the second article from this research.

²⁰¹ Gonzalez and Garnett, above n 93, 59.

²⁰² Ibid 60.

²⁰³ See, eg, David E Winickoff and Douglas M Bushey, 'Science and Power in Global Food Regulation: The Rise of the Codex Alimentarius' (2010) 35 *Science, Technology & Human Values* 356.