

Committee Secretary  
Senate Standing Committee on Rural and Regional Affairs and Transport  
PO Box 6100  
Parliament House  
Canberra ACT 2600

Dear Committee Secretary

**RE: Submission to the Senate Inquiry on Definitions of Meat and other Animal Products**

Thank you for the opportunity to make a submission to the Senate Rural and Regional Affairs and Transport Legislation Committee Inquiry on the Definitions of Meat and other Animal Products. Attached is our submission provided by a collection of academics working on food policy in Australia and internationally with a specific focus on public health and sustainability. Our submission contains the following:

- An overview of the terminology regarding novel meat analogues
- A summary of the regulatory regime for novel meat analogues with a focus on food descriptors
- A review of research and regulatory agency perspectives on whether the labelling and marketing used by developers of novel meat analogues is misleading
- An overview of the research on ultra-processed foods and on the optimal regulatory approaches to ultra-processed food
- An overview of the reasons why Australia needs to transition towards more sustainable and ethical models of food production and consumption including the issues with novel meat analogues and existing animal agricultural models for achieving this transition

Our key message is that the Inquiry is asking the wrong questions. It is focused on meat and dairy descriptors and, more broadly, on whether novel meat analogues undermine existing meat and dairy industries in Australia. This is essentially a concern of two different industries: the meat and dairy industry versus the novel meat analogue industry. We need broader inquiries on regulating ultra-processed foods and regulating for more sustainable, ethical and healthier animal production and consumption systems in Australia. On these grounds, our submission makes the following recommendations:

- Recommendation 1: Expand focus from descriptors of “meat” and “dairy”
- Recommendation 2: Support a wider inquiry into regulating ultra-processed foods in Australian rather than a focus on novel meat analogues
- Recommendation 3: Contribute to food policy and law that focuses on planetary health, sustainability and ethical outcomes more broadly

Yours sincerely

Dr Hope Johnson, Professor Christine Parker, Kate Sievert, Cherie Russel, Sarah Dickie,  
Associate Professor Gary Sacks and Dr Jennifer Lacy-Nichols

## About the authors

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Kate Sievert, Cherie Russell and Sarah Dickie are the co-conveners of Healthy Food Systems Australia, an advocacy group dedicated to bettering Australian food systems for all people and the planet through holistic and systemic policy action.

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## Terminology

Alternatives to meat and dairy extend from unprocessed plant products, like beans and lentils, to traditional and processed alternatives like tofu, seitan, tempeh, soy milk and pre-prepared combinations of beans/lentils/vegetables and other ingredients and processing aids (such as in traditional vegetarian burgers).<sup>1</sup> Since the 1960s, meat analogues have entered markets that are produced from advanced food manufacturing and are made to more closely resemble meat and dairy products (such as those sold under the brand name 'Tofurky', which use combinations of traditional and advanced processing).

More recently, food businesses are developing or have developed meat and dairy alternatives using genetic modification, synthetic biology and tissue engineering techniques. Besides the advanced and sometimes novel processing techniques, three other features set these novel meat analogues apart. Firstly, these products aim to directly mimic the sensory and nutritional qualities of meat. Secondly, these products are typically marketed as (a) more sustainable, ethical, and healthier alternatives to conventionally-produced meat and dairy products and indeed as (b) the future of meat and dairy products.<sup>2</sup> Finally, novel meat analogue products have attracted significant general and financial media attention that in turn has attracted investment capital and consumer interest worldwide.<sup>3</sup>

We will use the term 'novel meat and dairy analogues' to refer to this category of products. Food Standards Australia and New Zealand (FSANZ) also uses the terms 'meat analogue' and 'meat and dairy substitute', although neither term is currently officially defined in the *Food Standards Code*.<sup>4</sup>

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<sup>1</sup> See, eg, World Economic Forum, *Alternative Proteins* (White Paper, World Economic Forum, January 2019) <[http://www3.weforum.org/docs/WEF\\_White\\_Paper\\_Alternative\\_Proteins.pdf](http://www3.weforum.org/docs/WEF_White_Paper_Alternative_Proteins.pdf)>.

<sup>2</sup> Jennifer Lacy-Nichols, Gyorgy Scrinis and R Moodie, *The Australian Alternative Protein Industry* (Report, Future Food Hallmark Research Initiative, 21 May 2020) <[https://research.unimelb.edu.au/\\_\\_data/assets/word\\_doc/0039/179877/Report-The-Australian-Alternative-Protein-Industry-Lacy-Nichols.docx](https://research.unimelb.edu.au/__data/assets/word_doc/0039/179877/Report-The-Australian-Alternative-Protein-Industry-Lacy-Nichols.docx)>.

<sup>3</sup> See, eg, Barclays, *I Can't Believe It's Not Meat* (Barclays Investment Bank, Equity Research Team, 19 August 2019) <<https://www.investmentbank.barclays.com/our-insights/carving-up-the-alternative-meat-market.html>>.

<sup>4</sup> For FSANZ's use of the term 'meat analogue, see for example: FSANZ's two calls for submissions refer to Impossible's application as an application for 'soy leghemoglobin in meat analogue products'. This term is also used in Australia and New Zealand Ministerial Forum on Food Regulation, *Policy Guideline for the Fortification of Foods with Vitamins and Minerals (Amended 23 October 2009)* (28 May 2004) <<https://foodregulation.gov.au/internet/fr/publishing.nsf/Content/publication-Policy-Guideline-for-the->

Often, stakeholders use the term “protein” to describe meat and dairy products as well as novel meat analogues (eg ‘alternative proteins’ or ‘novel proteins’). Technically, though, protein is just one component within a whole food item. The emphasis on protein (one macronutrient in a whole food product) in food marketing is likely to have a negative impact on public understandings of the nutrition obtained in total from any particular food product.<sup>5</sup> For example, a marketing emphasis on the protein content in a product may distract attention from other less desirable features of the product such as high salt, fat or sugar content. Public health nutritionists have long criticised food-marketing practices for promoting a reductionist understanding of dietary health with an over-emphasis on individual nutrients.<sup>6</sup> On this basis, we advise against using terms such as “synthetic protein”, as used by the Inquiry. Moreover, the use of the descriptor “synthetic”, like the use of other terms such as “natural” and “unnatural”, is ambiguous.<sup>7</sup> Due to the difficulties of defining what is natural and unnatural, the US Food and Drug Administration has declined to regulate the term “natural” on food product labels, and it discourages the use of “natural” to describe food.<sup>8</sup>

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Fortification-of-Foods-with-Vitamins-and-Minerals>; Australia and New Zealand Ministerial Forum on Food Regulation, *Policy Clarification Statement to Be Read with the Policy Guideline (Policy Guideline for the Fortification of Food with Vitamins and Minerals)* (20 November 2015)  
<<https://foodregulation.gov.au/internet/fr/publishing.nsf/Content/publication-Policy-Guideline-for-the-Fortification-of-Foods-with-Vitamins-and-Minerals>>.

[For FSANZ's use of the term 'dairy and meat substitute', see:](#) FSANZ, ‘Foods in Food Group: Dairy and Meat Substitutes - Meat Substitutes’, *Food Standards Australia New Zealand* (2019)  
<<https://www.foodstandards.gov.au/science/monitoringnutrients/afcd/Pages/foodsbyfoodgroupsearch.aspx?foodGroupID=15&subFoodGroupID=67>>.

<sup>5</sup> Ariel Chen and Göran Eriksson, ‘The Mythologization of Protein: A Multimodal Critical Discourse Analysis of Snacks Packaging’ (2019) 22(4) *Food, Culture & Society* 423 (‘The Mythologization of Protein’); Lauren Alex O’Hagan, ‘Flesh-Formers or Fads? Historicizing the Contemporary Protein-Enhanced Food Trend’ (2021) 0(0) *Food, Culture & Society* 1 (‘Flesh-Formers or Fads?’); Jessica Brown, ‘We Don’t Need Nearly as Much Protein as We Consume’, *BBC* (online, 8 May 2020)  
<<https://www.bbc.com/future/article/20180522-we-dont-need-nearly-as-much-protein-as-we-consume>>; Geoff Webb, ‘The Protein Gap – Nutritional Science’s Biggest Error’, *The Conversation* (11 May 2017)  
<<http://theconversation.com/the-protein-gap-nutritional-sciences-biggest-error-76202>>.

<sup>6</sup> Gyorgy Scrinis, ‘On the Ideology of Nutritionism’ (2008) 8(1) *Gastronomica* 39; Catherine Fernan, Jonathon P Schuldts and Jeff Niederdeppe, ‘Health Halo Effects from Product Titles and Nutrient Content Claims in the Context of “Protein” Bars’ (2018) 33(12) *Health Communication* 1425.

<sup>7</sup> Helena Siipi, ‘Is Genetically Modified Food Unnatural?’ (2015) 28(5) *Journal of Agricultural and Environmental Ethics* 807, 807 who explains that ‘natural’ has various meanings, which include “...the opposite of the supernatural, independence from human beings, nutritional suitability, and environment friendliness”.

<sup>8</sup> For a few decades, the FDA has considered at various points how to regulate the term “natural”: Nicole E Negowetti, ‘Defining Natural Foods: The Search for a Natural Law Symposium: Emerging Issues in Food Law’ (2013) 26(2) *Regent University Law Review* 329 (‘Defining Natural Foods’). Note that both the

Current regulation of “meat” and “dairy” terms in Australia: Consumers are unlikely to be misled or confused about whether novel meat and dairy analogues are their traditional counterparts

Any changes to how “meat”, “dairy” and similar descriptors are regulated in Australia will require changes to the Food Standards Code. The Code contains standards for how food is described and labelled, as well as standards regarding particular ingredients such as vitamins and minerals. Some novel meat analogues will contain an ingredient, either a novel food/ingredient or a nutritive substance or food produced using genetic modification techniques, that requires pre-market approval to enter Australian markets.

The Code requires that packaged foods in Australia bear a label that must include the name of the food.<sup>9</sup> Generally, the name or description on the label must be ‘sufficient to indicate the true nature of the food’, or if a food has a name under the Code (i.e. a “named food”) then that should be used.<sup>10</sup> Accordingly, certain foods must meet compositional requirements to be able to use the prescribed name under the Code. “Named food” include meat, meat pies or ice cream.<sup>11</sup> Standard 2.2.1 of the Food Code names, i.e. defines, “meat”, “meat flesh”, “meat pie”, “offal”, “processed meat” and “sausage”. For instance, “meat” is broadly defined as ‘the whole or part of the carcass’ of the animals listed in the code (including e.g. buffalo, cattle, pig, poultry etc.) or otherwise legally allowed for consumption under state or territory law.<sup>12</sup> According to the

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FDA and the USDA have developed informal definitions of “natural”. The USDA informally defines “natural” as ‘All fresh meat qualify as natural. Products labeled as natural are products containing no artificial ingredients or added colors and only minimally processed. Minimal processing means that the product was processed in a manner that does not fundamentally alter the product. The label must also include a statement explaining the meaning of the term natural (such as “no artificial ingredients; minimally processed”). See: ‘What Does Natural Meat and Poultry Mean?’ <<https://ask.usda.gov/s/article/What-does-natural-meat-and-poultry-mean>>. However, this definition has been critiqued for being misleading, as meat products where an animal has been injected with antibiotics or other drugs or were subjected to preservatives such as nitrates could still use the word “natural” on its labels: Konstantinos G Syrengelas et al, ‘Is the Natural Label Misleading? Examining Consumer Preferences for Natural Beef’ (2018) 40(3) *Applied Economic Perspectives and Policy* 445 (‘Is the Natural Label Misleading?’).

<sup>9</sup> Standards 1.2.1-6(1), 1.2.1-8(1)(a).

<sup>10</sup> Standard 1.2.2-2(2).

<sup>11</sup> Standard 1.1.1-13(1).

<sup>12</sup> Standard 2.2.1-2.

Code, if a label describes the product as a particular food type, e.g. as a sausage, then the product itself must meet the definition of that “named food” under the Code. In other words, people buying a food product labelled as a “meat pie”, for instance, can expect that the product meets the compositional elements of a “meat pie” under the Food Standards Code; otherwise, the manufacturer is in breach of the Food Standards Code and liable under the Food Act in the state or territory where the food was sold.

Standard 1.1.1-13(4) provides somewhat of an exemption. It states that ‘If a food name is used in connection with the sale of a food (for example in the labelling), the sale is taken to be a sale of the food as the named food *unless the context makes it clear that this is not the intention*’ (*emphasis added*). Hence, if a non-dairy product label uses terms like “ice cream” or “yoghurt” but clearly identifies the product as a non-dairy product e.g. soy ice cream or coconut milk yoghurt, then it will not be in breach of the Code. This indicates that Australian food law assumed that the use of dairy (and meat) terms on non-dairy or non-meat products was not confusing as long as the labels made it clear that the product was non-dairy or non-meat.

The approach of Standard 1.1.1-13(4) also aligns with existing Australian consumer law, which emphasises that context matters when determining whether marketing is misleading and deceptive and therefore in breach of Australian consumer law.<sup>13</sup> It is worth mentioning that the state and territory Food Acts, which require compliance with the Code, also contain provisions prohibiting misleading and deceptive conduct in relation to food labelling and advertising.<sup>14</sup> The Federal Court recently reaffirmed that the legal test for determining whether a label or related marketing is misleading or deceptive, or likely to mislead and deceive, focuses on whether a reasonable person within the relevant class would be misled.<sup>15</sup>

Typically, on labels for novel meat analogues, meat and dairy terms like “mince” or “burger pattie” are qualified or featured in an equally significant manner as words such as “plant-based”.<sup>16</sup> The fact that novel meat analogues do not contain animal products is a key selling

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<sup>13</sup> *Competition and Consumer Act 2010* (Cth) sch 2 s 18.

<sup>14</sup> See, eg, *Food Act 2004* (Qld) s 37.

<sup>15</sup> *Telstra Corporation Limited v Singtel Optus Pty Ltd* [2020] FCA 1372; See also, *Google Inc v ACCC* (2013) 249 CLR 435, [7], [118].

<sup>16</sup> Lacy-Nichols, Scrinis and Moodie (n 4).

point and distinguishing feature. Emphasising the meat-free nature of these products is generally an important part of their marketing. Thus the context in which meat and dairy terms are used on novel meat analogues indicates that the reasonable consumer would not be misled into purchasing the meat analogue believing it to be meat or dairy.

This finding, that a consumer would not reasonably be misled, was reached by FSANZ during its pre-market approval process for soy leghemoglobin and LegH prep in the Impossible novel meat analogue range. In its approval report, FSANZ noted that it had discussed the marketing of meat analogues with ACCC and the NZCCC in March and April 2020.<sup>17</sup> FSANZ noted that both agencies had received complaints about the marketing of novel meat analogues representing the products as meat or dairy. The ACCC commented to FSANZ that the majority of these complaints were from competitors or traditional meat companies, and that very few of the complaints appeared to be from consumers who believed they had been misled.<sup>18</sup> Based on advice from the agencies, FSANZ observed that where a product is ‘clearly and prominently labelled as “vegan”, “vegetarian”, or “meat free” [than] it is unlikely to mislead a consumer about whether the product is meat or plant based’.<sup>19</sup> In its submission to this Inquiry, the ACCC reaffirmed that, in its view, consumers are not being misled by the labelling used on novel meat analogues when the whole label/context is taken into account.<sup>20</sup>

Of course if the labels used meat or dairy terms without indicating that the products were in fact vegetarian, plant-based and so on as relevant, then this would be misleading. However there have been no reports of this actually occurring.

There are few empirical studies specifically on consumer understandings of novel meat analogues. In fact, Estell et al commented that ‘...it is unknown if Australian consumers are truly

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<sup>17</sup> FSANZ, *Approval Report- Application A1186: Soy Leghemoglobin in Meat Analogue Products* (No [145-20], Food Standards Australia and New Zealand, 15 December 2020) 37 <<https://www.foodstandards.gov.au/code/applications/Documents/a1186-approval-report.pdf>>.

<sup>18</sup> Ibid.

<sup>19</sup> Ibid.

<sup>20</sup> Australian Competition & Consumer Commission, *Definitions of meat and other animal products: Submission 19* (23 July 2021).

viewing these [novel meat analogues] as a substitute for meat', and they observed that there was a 'significant knowledge gap regarding Australian consumer perceptions and attitudes towards these products'.<sup>21</sup> In their own 2020 survey of 679 Australian consumers and nutrition professionals, Estell et al observed that: 49.3% participants selected 'new food trend' as a key reason for trying novel meat analogues followed by ethical, then environmental and finally health concerns. Most participants neither agreed nor disagreed that novel meat analogues were healthier than traditional meat. Most agreed that novel meat analogues should be fortified with iron and vitamin b12. Only 22.1% of participants reported consuming novel meat analogues to assist in reducing meat and dairy consumption.<sup>22</sup> While these results have their own limitations, and much more research is required, these findings indicate that Australian consumers and nutrition professionals are not significantly persuaded by the marketing claims that novel meat analogues are healthy or healthier. However, they are persuaded, perhaps, by the environmental claims.

A review of the empirical work on consumers' adoption of novel meat analogues found that, although environmental, ethical and health claims were persuasive, ultimately it was the appearance and taste of such substitutes that determined whether consumers would regularly consume novel meat analogues.<sup>23</sup> Hence, the effect of any such claim may be less important than the consumer experience of the food product, and likely the pricing. We return later to the need for food regulations that assess environmental and ethical claims.

A recent survey of 155 US citizens focused on whether consumers are likely to be confused about the taste and role of novel meat analogues if the marketing of these products did not contain "meat" and "dairy" terms.<sup>24</sup> It found that removing words traditionally associated with meat and dairy from the labels of novel meat analogues creates more consumer confusion

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<sup>21</sup> Madeline Estell, Jaimee Hughes and Sara Grafenauer, 'Plant Protein and Plant-Based Meat Alternatives: Consumer and Nutrition Professional Attitudes and Perceptions' (2021) 13(3) *Sustainability* 1478 ('Plant Protein and Plant-Based Meat Alternatives').

<sup>22</sup> *Ibid.*

<sup>23</sup> Ramona Weinrich, 'Opportunities for the Adoption of Health-Based Sustainable Dietary Patterns: A Review on Consumer Research of Meat Substitutes' (2019) 11(15) *Sustainability* 4028 ('Opportunities for the Adoption of Health-Based Sustainable Dietary Patterns').

<sup>24</sup> Jareb A Gleckel, 'Are Consumers Really Confused by Plant-Based Food Labels? An Empirical Study' (2020) 12(2) *Journal of Animal & Environmental Law* 1 ('Are Consumers Really Confused by Plant-Based Food Labels?').



about the taste and uses of such products. Food labels on, and related marketing for, novel meat and dairy analogues that use terms associated with meat and dairy gives consumers a broad indication about the flavour and texture of a product and how to use it in a meal. Removing “meat” and “dairy” terms from the marketing of novel meat analogues could create consumer confusion rather than reduce it.

There is no empirical evidence to suggest that conventional meat and dairy products are disadvantaged by novel meat analogues using dairy and meat terms. Regardless, novel meat analogues, both as a phenomena and in their marketing, infer a critique of intensive meat and dairy production. The labels and related marketing of, and hype surrounding, novel meat analogues position the products as more sustainable, ethical and safe.<sup>25</sup> In doing so the marketing infers that meat and dairy is either not sustainable, ethical, healthy or safe or, at best, less sustainable, ethical, healthy and safe. These critiques of animal agriculture, and the related issues with intensive animal production and consumption, are widely supported by international institutions<sup>26</sup> and scientific reports and literature,<sup>27</sup> as well as mainstream media, and so have

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<sup>25</sup> Lacy-Nichols, Scrinis and Moodie (n 4).

<sup>26</sup> EAT-Lancet Commission, *Food in The Anthropocene: The EAT-Lancet Commission on Healthy Diets* (The Lancet, 2019) <[https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(18\)31788-4/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(18)31788-4/fulltext)>; Barbara Burlingame and Sandro Dernini (eds), *Sustainable Diets and Biodiversity: Directions and Solutions for Policy, Research and Action* (Food and Agricultural Organization, 2010); Henning Steinfeld et al, *Livestock's Long Shadow: Environmental Issues and Options* (The Livestock, Environment and Development (LEAD) Initiative, Food and Agriculture Organisation, 2006) <<ftp://ftp.fao.org/docrep/fao/010/a0701e/a0701e00.pdf>>; IPCC, 'Summary for Policy Makers' in OR Edenhofer et al (eds), *Climate Change 2014: Mitigation of Climate Change. Contribution Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. (Cambridge University Press, 2014) <[https://www.ipcc.ch/pdf/assessment-report/ar5/wg3/ipcc\\_wg3\\_ar5\\_summary-for-policymakers.pdf](https://www.ipcc.ch/pdf/assessment-report/ar5/wg3/ipcc_wg3_ar5_summary-for-policymakers.pdf)>.

<sup>27</sup> See, eg, M Doreau, HPS Makkar and P Lecomte, 'The Contribution of Animal Production to Agricultural Sustainability' in James W Oltjen, Ermias Kebreab and H  l  ne Lapierre (eds), *Energy and Protein Metabolism and Nutrition in Sustainable Animal Production: 4th International Symposium on Energy and Protein Metabolism and Nutrition Sacramento, California, USA 9-12 September 2013* (Academic Publishers, 2013) 475 <[https://doi.org/10.3920/978-90-8686-781-3\\_178](https://doi.org/10.3920/978-90-8686-781-3_178)>; Fuller W Bazer, G Cliff Lamb and Guoyao Wu, *Animal Agriculture: Sustainability, Challenges and Innovations* (Academic Press, 2019) ('*Animal Agriculture*'); Michael J Martin, Sapna E Thottathil and Thomas B Newman, 'Antibiotics Overuse in Animal Agriculture: A Call to Action for Health Care Providers' (2015) 105(12) *American Journal of Public Health* 2409 ('Antibiotics Overuse in Animal Agriculture').

become a prevalent public discourse.<sup>28</sup> These critiques and concerns are then captured in, and exploited by, the marketing of novel meat analogues.

However, novel meat analogues have not triggered the broader concerns and issues facing meat and dairy production. Certainly, animal agriculture in Australia and globally is challenged by its significant contributions to climate change, unsustainable resource use and antibiotic resistance. Public concern over animal welfare in farming is increasing,<sup>29</sup> and significant animal welfare issues exist in intensive animal agriculture in Australia.<sup>30</sup>

The role of meat in diets in Australia and globally has come under increasing scrutiny due to the need for more sustainable food systems and the health concerns associated with high consumption of red and processed meat products, which is well-supported by scientific evidence.<sup>31</sup> The Australian dietary guidelines also note these issues and the evidence supporting them, and the Guidelines specifically observed that Australian men need to consume around 20% less lean red meat than currently.<sup>32</sup> Other public health issues beyond diets are associated with intensive animal agriculture and relate to in-put use and pollution.<sup>33</sup> Australia has consistently remained one of the largest consumers of meat in the world, often

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<sup>28</sup> Tasmin Dilworth and Andrew McGregor, 'Moral Steaks? Ethical Discourses of In Vitro Meat in Academia and Australia' (2015) 28(1) *Journal of Agricultural and Environmental Ethics* 85 ('Moral Steaks?').

<sup>29</sup> See, eg, Grahame Coleman, 'Public Animal Welfare Discussions and Outlooks in Australia' (2018) 8(1) *Animal Frontiers* 14; Futureye Pty Ltd, *Australia's Shifting Mindset on Farm Animal Welfare* (Requested by the Department of Agriculture and Water Resources, 2018) <<https://www.outbreak.gov.au/sites/default/files/documents/farm-animal-welfare.pdf>>.

<sup>30</sup> See, eg, Peter John Chen, *Animal Welfare in Australia: Politics and Policy* (Sydney University Press, 2016) ('*Animal Welfare in Australia*').

<sup>31</sup> IARC, *Red Meat and Processed Meat*, vol 14 (WHO, 2018) <<https://publications.iarc.fr/Book-And-Report-Series/Iarc-Monographs-On-The-Identification-Of-Carcinogenic-Hazards-To-Humans/Red-Meat-And-Processed-Meat-2018>>.

<sup>32</sup> National Health and Medical Research Council, Department of Health and Ageing, *Eat for Health: Australian Dietary Guidelines Summary* (2013) 54 <[https://www.eatforhealth.gov.au/sites/default/files/content/The%20Guidelines/n55a\\_australian\\_dietary\\_guidelines\\_summary\\_131014\\_1.pdf](https://www.eatforhealth.gov.au/sites/default/files/content/The%20Guidelines/n55a_australian_dietary_guidelines_summary_131014_1.pdf)>.

<sup>33</sup> Liliana Serwecińska, 'Antimicrobials and Antibiotic-Resistant Bacteria: A Risk to the Environment and to Public Health' (2020) 12(12) *Water* 3313 ('Antimicrobials and Antibiotic-Resistant Bacteria').

over 100 kilograms on average per year, and this consumption consists mostly of chickens, cows and pigs.<sup>34</sup>

The Inquiry's emphasis on how meat and dairy is described, and its assumption that meat and dairy products are impaired by novel meat analogues, is a less effective basis for a public inquiry given the more complex issues facing intensive animal production and consumption that require large-scale changes. More democratic deliberation is required on how to significantly improve the sustainability and health outcomes associated with animal production and consumption in Australia. There is a need to significantly change animal agriculture and consumption towards more ethical, environmental and health outcomes. The Inquiry, therefore, is focused on the wrong questions and on a narrow set of interests.

### Recommendation 1: Expand focus from descriptors of “meat” and “dairy”

The Inquiry is concerned with the use of meat and dairy terms on meat analogue products and whether the use of such terms on these products is unfair appropriation and impairs the market for meat and dairy products in Australia. This is essentially a concern of two different industries: the meat and dairy industry versus the novel meat analogue industry. It is not a concern that reflects the broader public interest, or even consumer interest, in safe, healthy and sustainable food products.

Questions about the precise use of “meat” and “dairy” terms is a debate of interest to specific commercial actors in Australia, but does not advance meaningful dialogue about how to best regulate Australian food for the public interest. Public inquiries should advance the interests of the public in safe, healthy, sustainable and ethical food products, and not the interests of particular industries. The issues associated with intensive meat and dairy production and the issues associated with ultra-processed foods do require deeper regulatory engagement focused on how to transition to better food systems. Below we recommend some matters that should be addressed in the public interest in food regulation.

### Ultra-processed food products

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<sup>34</sup> Department of Agriculture, Tim Whitnall and Nathan Pitts, 'Meat Consumption', *ABARES* (Department of Agriculture: ABARES, March 2019) <<https://www.agriculture.gov.au/abares/research-topics/agricultural-commodities/mar-2019/meat-consumption>>.

Australian diets are, on average, high in the consumption of ultra-processed foods and lower in fruit and vegetables than is recommended.<sup>35</sup> In fact, more than 99% of all children and 96% of adults do not eat the recommended amount of vegetables.<sup>36</sup> A large and growing body of work shows that high, regular consumption of ultra-processed foods increases the risk of dietary-related non-communicable diseases and metabolic deregulations.<sup>37</sup> Reducing the consumption of ultra-processed foods is, therefore, recognised as a public health policy goal and being translated into regulatory responses such as dietary guidelines.<sup>38</sup>

The NOVA classification system is most widely used to identify and study ultra-processed food products.<sup>39</sup> As a category of foods, ultra-processed encompasses foods result from advanced industrial processes and are essentially a mix of extracts of substances from whole foods and additives. They often contain kinds of sugars, oils and fats and salts that are not commonly found in home kitchens, like high-fructose corn syrup or hydrogenated oils.<sup>40</sup> Ultra-processed foods may contain meat and dairy or they may not. Notably, ultra-processed foods are not just sweet and snack foods, but can also be key components of meals, and the concerns and

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<sup>35</sup> Priscila P Machado et al, 'Ultra-Processed Foods and Recommended Intake Levels of Nutrients Linked to Non-Communicable Diseases in Australia: Evidence from a Nationally Representative Cross-Sectional Study' (2019) 9(8) *BMJ Open* e029544 ('Ultra-Processed Foods and Recommended Intake Levels of Nutrients Linked to Non-Communicable Diseases in Australia').

<sup>36</sup> Australian Institute of Health and Welfare, *Australia's Health 2018: In Brief*. (2018) 26 ('*Australia's Health 2018*').

<sup>37</sup> See, eg, Bernard Srour et al, 'Ultra-Processed Food Intake and Risk of Cardiovascular Disease: Prospective Cohort Study (NutriNet-Sant )' (2019) 365 *BMJ* 11451 ('Ultra-Processed Food Intake and Risk of Cardiovascular Disease').

<sup>38</sup> Michael J Gibney, 'Ultra-Processed Foods: Definitions and Policy Issues' (2019) 3(nzy077) *Current Developments in Nutrition* <<https://doi.org/10.1093/cdn/nzy077>> ('Ultra-Processed Foods') where various definitions of 'ultra-processed foods' are reviewed.

<sup>39</sup> Carlos Monteiro et al, *Ultra-Processed Foods, Diet Quality and Health-Using the NOVA-Classification System* (Food and Agriculture Organization of the United Nations, 2019) <[https://www.researchgate.net/profile/Geoffrey\\_Cannon/publication/334945695\\_FAO\\_Ultra-processed\\_foods\\_diet\\_quality\\_and\\_health\\_using\\_the\\_NOVA\\_classification\\_system/links/5d45a462a6fdc370a79b7aa/FAO-Ultra-processed-foods-diet-quality-and-health-using-the-NOVA-classification-system.pdf](https://www.researchgate.net/profile/Geoffrey_Cannon/publication/334945695_FAO_Ultra-processed_foods_diet_quality_and_health_using_the_NOVA_classification_system/links/5d45a462a6fdc370a79b7aa/FAO-Ultra-processed-foods-diet-quality-and-health-using-the-NOVA-classification-system.pdf)>.

<sup>40</sup> Carlos A Monteiro et al, 'Ultra-Processed Foods: What They Are and How to Identify Them' (2019) 22(5) *Public Health Nutrition* 936, 937–938 ('Ultra-Processed Foods').

evidence regarding ultra-processed foods and their health effects is focused on their significant role in whole in diets.<sup>41</sup>

Because they involve additional processing, and often additional packaging, ultra-processed foods tend to have a higher environmental impact than less processed foods. However, a review of environmental impact analyses indicates that ultra-processed foods that do not contain animal products do not produce higher greenhouse gas emissions (GHGEs) compared to conventional meat and dairy products.<sup>42</sup>

The usefulness of categorizing foods around the level of processing is debated, and the confines of the ultra-processed food category are somewhat unclear. Very broadly, and noting the lack of specific analyses to date on this, many novel meat analogue products appear to inherently fit the description of ultra-processed. Some nutrition experts have observed that many novel meat analogues are ultra-processed and also simulate the nutritional profile of the meat products they are attempting to substitute.<sup>43</sup> Additionally, some of the meat products that novel meat products aim to replace are also ultra-processed, such as sausages. A recent study by Lacy-Nichols, Hattersley and Scrinis examined 1394 health and nutrition-related claims on 216 products novel meat analogue products in the US. They found protein content and plant-based claims to be especially prevalent.<sup>44</sup> Evidence regarding the health effects of novel meat analogues on diets is significantly lacking, and more studies are required to determine the accuracy of the nutritional claims and the desirability of their inclusion into diets. Regardless of whether it is useful to categorise them as ultra-processed, novel meat analogues are not comprised solely of the wholegrains, vegetables or fruits that are highly recommended and under-consumed in Australia.

The literature on ultra-processed foods and their regulation in Australia have long supported (a) more regulatory interventions into the marketing and sale of ultra-processed foods (b) increased independence of Australian food regulatory standards and (c) regulatory interventions that

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<sup>42</sup> Anthony Fardet and Edmond Rock, 'Ultra-Processed Foods and Food System Sustainability: What Are the Links?' (2020) 12(15) *Sustainability* 6280 ('Ultra-Processed Foods and Food System Sustainability').

<sup>43</sup> Benjamin M Bohrer, 'An Investigation of the Formulation and Nutritional Composition of Modern Meat Analogue Products' (2019) 8(4) *Food Science and Human Wellness* 320; Jennifer Lacy-Nichols, Libby Hattersley and Gyorgy Scrinis, 'Nutritional Marketing of Plant-Based Meat-Analogue Products: An Exploratory Study of Front-of-Pack and Website Claims in the USA' [2021] *Public Health Nutrition* 1 ('Nutritional Marketing of Plant-Based Meat-Analogue Products').

<sup>44</sup> Lacy-Nichols, Hattersley and Scrinis (n 43).

enable an increased consumption of wholegrains, vegetables and fruits especially among children.<sup>45</sup> Academics, particularly from public health and law, have long identified that Australia has insufficient regulation of food marketing allowing foods that are not healthy to be marketed in a misleading way that suggests they are healthier than they are.<sup>46</sup> Australian regulatory interventions need to address the market incentives to create unhealthy food products.<sup>47</sup> Australia's food regulators also need to be given the legal and institutional support required to take a more pro-active role in enforcing and monitoring food standards.<sup>48</sup>

Companies that produce and/or sell ultra-processed foods, such as retailers and food manufacturers, employ a range of strategies to ensure a regulatory environment that advances

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<sup>45</sup> Belinda Reeve and Lawrence O Gostin, "'Big" Food, Tobacco, and Alcohol: Reducing Industry Influence on Noncommunicable Disease Prevention Laws and Policies' (2019) 8(7) *International Journal of Health Policy and Management* 450 ("'Big" Food, Tobacco, and Alcohol"); Emma Sainsbury et al, 'Explaining Resistance to Regulatory Interventions to Prevent Obesity and Improve Nutrition: A Case-Study of a Sugar-Sweetened Beverages Tax in Australia' (2020) 93 *Food Policy* 101904 ('Explaining Resistance to Regulatory Interventions to Prevent Obesity and Improve Nutrition'); Tara Boelsen-Robinson et al, 'Change in Drink Purchases in 16 Australian Recreation Centres Following a Sugar-Sweetened Beverage Reduction Initiative: An Observational Study' (2020) 10(3) *BMJ Open* e029492 ('Change in Drink Purchases in 16 Australian Recreation Centres Following a Sugar-Sweetened Beverage Reduction Initiative'); Rebecca E Lee, Kristen McAlexander and Jorge Banda, *Reversing the Obesogenic Environment* (Human Kinetics, 2011); Mark Andrew Lawrence, Christina Mary Pollard and Tarun Stephen Weeramanthri, 'Positioning Food Standards Programmes to Protect Public Health: Current Performance, Future Opportunities and Necessary Reforms' (2019) 22(5) *Public Health Nutrition* 912 ('Positioning Food Standards Programmes to Protect Public Health'); Boyd A Swinburn, 'Obesity Prevention: The Role of Policies, Laws and Regulations' (2008) 5 *Australia and New Zealand Health Policy* 12 ('Obesity Prevention'); Boyd Swinburn et al, 'Strengthening of Accountability Systems to Create Healthy Food Environments and Reduce Global Obesity' (2015) 385(9986) *The Lancet* 2534; Roger S Manusson, 'What's Law Got to Do with It? Part 1: A Framework for Obesity Prevention' (2008) 5(1) *Australia and New Zealand Health Policy* <<http://www.publish.csiro.au/hp/hp080510>> ('What's Law Got to Do with It?'); Boyd Swinburn, Garry Egger and Fezeela Raza, 'Dissecting Obesogenic Environments: The Development and Application of a Framework for Identifying and Prioritizing Environmental Interventions for Obesity' (1999) 29(6) *Preventive Medicine* 563 ('Dissecting Obesogenic Environments'); Maria Shahid, Bruce Neal and Alexandra Jones, 'Uptake of Australia's Health Star Rating System 2014–2019' (2020) 12(6) *Nutrients* 1791; Christine Parker and Hope Johnson, 'Sustainable Health Food Choices: The Promise of "Holistic" Dietary Guidelines as a National and International Policy Springboard' (2018) 18(1) *QUT Law Review* 1 ('Sustainable Health Food Choices').

<sup>46</sup> See, eg, Helen G Dixon et al, 'The Effects of Television Advertisements for Junk Food versus Nutritious Food on Children's Food Attitudes and Preferences' (2007) 65(7) *Social Science & Medicine* 1311.

<sup>47</sup> See, eg, Phillip Baker, Alexandra Jones and Anne Marie Thow, 'Accelerating the Worldwide Adoption of Sugar-Sweetened Beverage Taxes: Strengthening Commitment and Capacity' (2017) 7(5) *International Journal of Health Policy and Management* 474 ('Accelerating the Worldwide Adoption of Sugar-Sweetened Beverage Taxes').

<sup>48</sup> See, eg, Curll et al (n 1).

their interests.<sup>49</sup> These strategies are well-documented and include lobbying against regulations, establishing voluntary programs to stave off stricter government regulation (that ultimately do not achieve their objectives), framing diet-related diseases as solely the outcome of personal choices, building relationships with politicians, health professionals and regulators and engaging in and promoting corporate social responsibility initiatives. Future regulatory discussions and responses need to have design features that reduce the influence of such actors on regulation.

## Recommendation 2: Support a wider inquiry into regulating ultra-processed foods in Australia rather than a focus on novel meat analogues

This Inquiry is overly focused on one kind of ultra-processed food. We need to have a broader discussion about how to regulate ultra-processed foods in Australia more generally. Focusing regulatory interventions on one kind of ultra-processed food product does not effectively address the issue of high ultra-processed food consumption and the under-consumption of recommended foods such as vegetables. If the objective is to reduce the consumption of ultra-processed foods, then narrow responses to one kind of ultra-processed food is not going to be effective. It is also more difficult to justify signalling out one kind of ultra-processed food product for special regulatory interventions under current Australian food law and relevant trade agreements.<sup>50</sup>

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<sup>49</sup> See, eg, Mélissa Mialon, Eric Crosbie and Gary Sacks, 'Mapping of Food Industry Strategies to Influence Public Health Policy, Research and Practice in South Africa' (2020) 65(7) *International Journal of Public Health* 1027; Daniel Hunt, 'How Food Companies Use Social Media to Influence Policy Debates: A Framework of Australian Ultra-Processed Food Industry Twitter Data' (2021) 24(10) *Public Health Nutrition* 3124 ('How Food Companies Use Social Media to Influence Policy Debates'); Rob Moodie et al, 'Ultra-Processed Profits: The Political Economy of Countering the Global Spread of Ultra-Processed Foods – A Synthesis Review on the Market and Political Practices of Transnational Food Corporations and Strategic Public Health Responses' (2021) 0 *International Journal of Health Policy and Management* <[https://www.ijhpm.com/article\\_4050.html](https://www.ijhpm.com/article_4050.html)> ('Ultra-Processed Profits').

<sup>50</sup> *Food Standards Australia New Zealand Act 1991* s 18(2) states that a key goal FSANZ must advance through its functions is the 'promotion of consistency between domestic and international food standards' and 'the promotion of fair trading in food'; *Marrakesh Agreement establishing the World Trade Organization*, opened for signature 15 April 1994, 1867 UNTS 493 (entered into force 1 January 1995) annex 1A ('SPS Agreement') art 2.2, which requires that a measure to protect human health only be applied 'to the extent necessary to protect' human or animal life and health (or plant life and health), be based on science and not be maintained without sufficient evidence; See also, *Marrakesh Agreement establishing the World Trade Organization*, opened for signature 15 April 1994, 1867 UNTS 493 (entered into force 1 January 1995) annex 1A ('TBT Agreement') which applies to labelling standards and requires that food labelling requirements be 'necessary to fulfil a legitimate objective' based on available scientific and technical information. It would be difficult, arguably, to make a case for why novel meat analogues

The inquiry should recommend analysis of how to regulate terms on ultra-processed food products that have a “health halo” effect. These words/phrases that might be discussed as part of such an inquiry include, for instance, “natural”, “plant-based”, “high in protein” and “clean”. The health halo effect is well-documented in social psychological literature and refers to a tendency among consumers to overgeneralise from specific health or social/environmental claims.<sup>51</sup> Where a product makes a specific claim to be, for instance, high in protein or vegetarian, there is a well-documented tendency for consumers to assume the product has other positive nutritional attributes and to overlook the negative qualities (though this may or may not affect their food choices).<sup>52</sup> Further contributing to the health halo effect is the societal tendency to focus on quantities of nutrients in foods rather than the whole food matrix and context when evaluating healthfulness.

### Recommendation 3: Contribute to food policy and law that focuses on planetary health, sustainability and ethical outcomes more broadly

We recommend that regulators focus on transitions to healthy and sustainable diets in Australia, which necessarily requires population-level reductions in consumption of both ultra-processed foods and of meat and dairy products produced from intensive animal agriculture.<sup>53</sup> A 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. Here, participants defined sustainable diets as:

[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,

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specifically require labels about their ultra-processed nature and evidence is lacking that consumers are being misled into purchasing novel meat analogues believing they are meat.

<sup>51</sup> Aparna Sundar and Frank R Kardes, ‘The Role of Perceived Variability and the Health Halo Effect in Nutritional Inference and Consumption’ (2015) 32(5) *Psychology & Marketing* 512.

<sup>52</sup> Théo Besson, Hugo Bouxom and Thibault Jaubert, ‘Halo It’s Meat! The Effect of the Vegetarian Label on Calorie Perception and Food Choices’ (2020) 59(1) *Ecology of Food and Nutrition* 3.

<sup>53</sup> Christine Parker and Hope Johnson, ‘Sustainable Healthy Food Choices: The Promise of “Holistic” Dietary Guidelines as a National and International Policy Springboard | QUT Law Review’ (2018) 18(1) *QUT Law Review* 1 (‘Sustainable Healthy Food Choices’).



accessible, economically fair and affordable; nutritionally adequate, safe and healthy; while optimizing natural and human resources.<sup>54</sup>

As this submission noted above, intensive animal production, and the over-consumption of red and processed meat products, contributes to significant environmental and related public health issues; policies, laws and regulatory processes that enable the further expansion of intensive animal production and consumption do not, therefore, enable sustainable diets. As discussed, the production of animal products in Australia also raises ethical concerns among the public.<sup>55</sup> Australia is facing resource constraints, urban encroachment on farm land and the impacts of climate change, and modelling suggests that based on its current trajectory, Australia is likely to become a net importer of many nutritious foods.<sup>56</sup>

Novel meat analogues are not a solution to these issues, as these challenges require larger-scale changes to food production and consumption. While it is possible novel meat analogues could have a role in making diets more sustainable, this role would be inherently limited and potentially counter-acted by their contribution to pre-existing food systems issues including the over-consumption of unhealthy foods (including unhealthy ultra-processed foods), the prevalence of unhealthy food environments, corporate consolidation issues and lock-in to particular kinds of agricultural innovation systems.<sup>57</sup> Cell-cultured novel meat analogues also raise further issues relating to acute food safety risks, noting that such food safety issues are also prevalent in meat and dairy production and consumption.

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<sup>54</sup> 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.

<sup>55</sup> See, eg, Grahame Coleman, 'Public Animal Welfare Discussions and Outlooks in Australia' (2018) 8(1) *Animal Frontiers* 14; Emily A Buddle, Heather J Bray and Rachel A Ankeny, "'I Feel Sorry for Them": Australian Meat Consumers' Perceptions about Sheep and Beef Cattle Transportation' (2018) 8(10) *Animals* 171 ("I Feel Sorry for Them"); Jordan O Hampton, Bidha Jones and Paul D McGreevy, 'Social License and Animal Welfare: Developments from the Past Decade in Australia' (2020) 10(12) *Animals* 2237 ('Social License and Animal Welfare').

<sup>56</sup> Graham M Turner et al, 'Squandering Australia's Food Security—The Environmental and Economic Costs of Our Unhealthy Diet and the Policy Path We're On' (2018) 195 *Journal of Cleaner Production* 1581.

<sup>57</sup> Hope Johnson, 'Regulating Cell-Cultured Animal Material for Food Systems Transformation: Current Approaches and Future Directions' (2021) 13(1) *Law, Innovation and Technology* 108 ('Regulating Cell-Cultured Animal Material for Food Systems Transformation').

Various regulatory interventions are required to transition towards better food systems in Australia from health, environmental and ethical standpoints.<sup>58</sup> Future regulatory developments in this space should focus on developing inquiries based on democratic processes informed by the input and expertise of the full range of relevant stakeholder groups. These kinds of regulatory processes should be engaged with questions about what kinds of foods and food systems regulators should be enabling (and how).

Pro-active and re-active regulation of food labels, and related food marketing, that seeks to verify key environmental, ethical and human health claims would be beneficial as part of a mix of regulatory responses. Currently, the most pro-active regulatory oversight of food marketing occurs during pre-market approval processes but only a small minority of foods trigger the pre-market approval process and FSANZ does not consider or verify environmental or ethical claims on food labels. Australian food law does not regulate claims on food labels regarding environmental benefits or ethical claims about production, hence no regulator pro-actively assesses claims that one product is environmentally superior.

Even if there was a pro-active and reactive regulatory system for environmental claims in food marketing, there would still need to be a mix of regulatory responses designed at transitioning food systems.<sup>59</sup> The idea that individual consumers can bring about a better food system through individual food choices has significant limitations in practice.<sup>60</sup> Labelling is only one area of food law and policy that requires improvement for large-scale food systems change towards more just, healthy and sustainable outcomes.

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<sup>58</sup> See, eg, Christine Parker, Fiona Haines and Laura Boehm, 'The Promise of Ecological Regulation: The Case of Intensive Meat' (2018) 59 *Jurimetrics* 15 ('The Promise of Ecological Regulation').

<sup>59</sup> Christine Parker and Fiona Haines, 'An Ecological Approach to Regulatory Studies Law for a New Economy: Enterprise, Sharing, Regulation: Section III: Regulation' (2018) 45(1) *Journal of Law and Society* 136 ('An Ecological Approach to Regulatory Studies Law for a New Economy').

<sup>60</sup> Christine Parker et al, 'Can Labelling Create Transformative Food System Change for Human and Planetary Health? A Case Study of Meat' (2020) 0 *International Journal of Health Policy and Management* <[https://www.ijhpm.com/article\\_3979.html](https://www.ijhpm.com/article_3979.html)> ('Can Labelling Create Transformative Food System Change for Human and Planetary Health?').





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