Can pricing micronutrient content help to re-orient our broken food systems?

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Abstract: Defining and facilitating sustainable and ethical food systems in support of human and planetary health is among the greatest challenges facing humanity today. The commoditisation of food has allowed broken food systems to flourish, contributing to the triple burden of under- and over-nutrition and micronutrient deficiencies in association with degradation of ecosystems and diminished returns to farming families. Globally, farmers are often paid by weight or volume rather than for the nutritional quality of produce, while consumers, especially vulnerable households, frequently purchase food of poor nutritional quality because it is cheaper per unit weight or volume. Currently, most food labels give incomplete information on nutritional profile and do not provide an indication of the price paid for individual nutrients. This paper compares simple weight-based assessments of food with more complex analyses assessing cost-effectiveness in terms of key micronutrients. The incorporation of increased information (for example, the naturally nutrient-rich score per unit cost) either via labels or QR codes on foods or on shelves would enable consumers to select foods that will help them to achieve their recommended daily nutrient intake within available budgets. Such labelling, especially if mandatory, would promote the purchase of less processed or fresh in-season foods and production of discretionary food with higher nutritional value. It would also contribute to improving the profile and income of farming families as the producers of nutritious food, enabling them to practice sustainable, regenerative land stewardship.

Bio: Robyn Alders, AO, Principal Research Fellow, SOLES, CPC, MBI, USyd. Major research interests include domestic and global food and nutrition security, One Health/Ecohealth/Planetary Health, gender equity and Science Communication. Robyn leads the joint Charles Perkins Centre/Marie Bashir Institute Project Node on "Healthy Food Systems: Nutrition, Diversity, Safety."
Iodine Deficiency: Has fortification solved the problem in Australia?

Karen Charlton

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Co-authors: Probst Y, Lucas CJ

Abstract:

**Background**: Iodine deficiency is the largest preventable cause of brain damage and mental impairment worldwide. To address the re-emergence of iodine deficiency in Australia, a mandatory fortification programme was implemented in 2009 whereby salt used in the bread-making process is required by law to be fortified with iodine. This presentation will review the evidence on the iodine status of women of childbearing age and those that are pregnant, as well as children since introduction of the policy.

**Methods**: Using nationally representative data of repeated 24-h recalls from the 2011–2012 Australian Health Survey, the association between fortified bread intake and adequacy of iodine intake was investigated using logistic regression models in women of child-bearing age 14–50y (n= 3496) and children aged 2–18y (n=1772). In pregnant women attending a public antenatal clinic in a regional area of New South Wales, a before–after study was conducted to assess changes in median urinary iodine concentration (MUIC) measurements, according to supplement use, in convenience samples in 2008 (n = 139), 2011 (n = 147) and 2012 (n = 114).

**Results**: Fortified bread consumption at ≥100 g/day was associated with five times greater odds of achieving an adequate iodine intake (OR 5.0, 95% CI 4.96–5.13; p < 0.001) compared to lower bread consumption in women and 12 times in children (OR 12.34, 95% CI 1.71–89.26; p < 0.001). The mild iodine deficiency confirmed pre-fortification in pregnant women (MUIC (IQR) = 87.5 (62–123.5; n = 110)) steadily improved post-fortification to 145.5 μg/L (91–252) in 2011 (n = 106) and 166 (97–237) in 2012 (n = 95) (sufficiency ≥150 μg/L). However, only women taking supplements containing iodine had MUIC indicative of sufficiency in both years surveyed post fortification (2011: 178 μg/L vs. 109 μg/L, P < 0.001; 2012: 202 μg/L vs. 124 μg/L, P < 0.05).

**Conclusions**: Disparities in dietary iodine intake exist within sectors of the population, even after mandatory fortification of a staple food. On-going monitoring and surveillance of iodine status is required and other vehicles for fortification may be required if bread
consumption patterns decline further. Food fortification strategies need to be complemented with iodine supplementation in pregnant women.

**Bio:** Associate Professor Charlton is a nutritional epidemiologist who is Public Health Nutrition domain leader in the Nutrition & Dietetics program in the School of Medicine at the University of Wollongong. She works at the interface between clinical care, primary care and public health and has extensive international experience in research into translation of research into policy. Her research interests include diet and lifestyle interventions across the lifespan, including ageing in developing countries. Her work on iodine nutrition spans from the role of iodine fortification and supplementation on pregnancy outcomes to the link between cognition and iodine in older adults. On a population level, Karen works on strategies to lower blood pressure and was instrumental in providing evidence for mandatory regulation for salt target levels in various foods in South Africa.
The association of industry sponsorship with outcomes of studies examining the effect of intake of wholegrain foods with cardiovascular disease and mortality

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Abstract:

Background: It is important to establish if sponsorship should be part of the evaluation of bias of primary nutrition studies included in systematic reviews and national dietary guidelines.

Objective: The objective of this study was to determine if the presence of food industry sponsorship or author conflicts of interest in primary nutrition studies examining the association of wholegrain foods with cardiovascular outcomes is associated with effect sizes, statistical significance of results and/or conclusions that are favourable to the sponsor. We also determined whether industry sponsored studies differed in their risk of bias compared with studies with no or other sources of sponsorship.

Methods: We conducted a systematic review and meta-analysis of primary observational studies based on Cochrane methods using Stata that quantitatively compared food industry sponsored studies with those that had no or other sources of sponsorship, or study authors that had a COI with the food industry with those that had none. We also conducted meta-regression to measure differences in outcomes between industry and non-industry sponsored studies.

Results: Twenty-two studies met the criteria for inclusion. Although industry sponsored studies were more likely to have study results and conclusions favourable to industry than non-industry, the difference was not significant RR= 1.54 (95% CI 0.92-2.60). We have not completed our meta-regression to date.

Conclusion: Our preliminary findings suggest but do not establish that industry sponsorship of primary studies assessing the association of whole grain intake and cardiovascular outcomes is associated with results and conclusions that favour the sponsor.
**Bio:** Nicholas Chatres is a PhD candidate with Professor Lisa Bero conducting empirical studies assessing bias (methodological and COI) of nutrition research. My previous publication which was published in JAMA Internal Medicine, found that industry-sponsored studies were more likely to have conclusions favourable to industry than non–industry-sponsored studies.
Defining ‘Healthy’: A systematic analysis of alignment between the Australian Dietary Guidelines and the Health Star Rating System

Alexandra Jones

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Co-authors, Karin Radholm, Bruce Neal

Abstract:

Background and objectives: Unhealthy diets are a leading cause of death and disability. The Australian Dietary Guidelines (ADGs) and the Health Star Rating System (HSR) are two government-led policies to promote healthier diets. Our objective was to assess the degree to which the two policies provide consistent guidance to Australians on what they should eat.

Methods: We reviewed 54,423 products in the George Institute FoodSwitch Database. We generated a HSR for each product and assigned it as ‘core’ or ‘discretionary’ based on the ADGs. Potential ‘outliers’ (core foods that receive a HSR ≤2.0; discretionary foods receiving HSR ≥3.5) were identified and categorized these depending on whether outlier status appeared to be attributable to a fault in the HSR or ADGs.

Results: 2887 core foods received a HSR of ≤2.0 (13.7% of total core) and 5447 discretionary (22.9% of total discretionary) received HSR ≥3.5. Dairy and non-alcoholic beverages had the largest proportion of core outliers. Most were less healthy options of core foods (high salt cheeses, yoghurts high in saturated fat and sugars, fruit ‘drinks’). Convenience foods (e.g. ready meals), snack foods, and sauces, spreads and dips had the highest proportion of discretionary foods scoring HSR ≥3.5. Many were healthier formulations of discretionary foods. Others (e.g. potato chips) suggest the HSR algorithm could be improved.

Conclusions: Differences in purpose and design mean perfect alignment between the ADGs and HSR may not be attainable. Despite this, our results systematically highlight opportunities to strengthen both policies to more effectively assist Australians to eat healthier diets.
Bio: Alexandra Jones is a public health lawyer, interested in using law to create healthier food environments. Ali has previously worked on global tobacco control, and in human rights. Her PhD explores the regulation of nutrition labelling and is titled 'Can a Food Label improve Australia's diet?'
'Where is the crowd, and what are they eating?': Co-producing inclusive foodscapes through participatory approaches

Alana Mann

Chair of the Department of Media and Communications, the University of Sydney

Abstract: As cities grow it becomes more essential, and more challenging, to develop a comprehensive plan to scale-up the mutual benefits of healthy and inclusive food environments and incorporate them in master planning processes. Sustainable, community-engaged place-making requires the identification of key issues and framings by diverse stakeholders, and the development of participatory planning tools that bring the concerns and values of those most affected by changes into view. This paper discusses the challenges and opportunities of growing food and density together in inner Sydney precincts, and considers how a participation ecology approach might bring residents, government and community organisations together in co-creating healthy and socially inclusive foodscapes as part of urban transformation. Further, can the concept of participation ecology underpin strong and flexible local governance structures that ensure the sustainability of foodscapes that deliver positive and sustainable social impact?

Bio: Alana Mann is Chair of the Department of Media and Communications at the University of Sydney and a member of the Australia New Zealand Agrifood scholars network. An active member of both the Australian Food Sovereignty Alliance (AFSA) and the Right to Food Coalition, Alana’s book Global Activism in Food Politics: Power Shift was published by Palgrave Macmillan in 2014.
How does legislation empower or impede local government participation in creating a healthy, sustainable and equitable food supply?

Belinda Reeve
Lecturer, Sydney Law School, the University of Sydney

Abstract: This presentation will provide an overview of a proposed, multi-disciplinary research project examining the role of local governments and communities in creating healthy, sustainable and equitable local food systems. In many countries, city and municipal governments play a crucial role in strengthening the governance of local food systems, introducing novel initiatives that create healthier food environments, improve food security, and reduce the environmental impact of food production and consumption. In Australia, a handful of local governments have led the way in developing sophisticated governance frameworks, but local government action has not been comprehensive or sustained. Accordingly, the aim of this project is to: (i) systemically evaluate the extent of local government engagement in food system governance in the states of NSW and Victoria, and (ii) undertake an in-depth case study of food system governance by selected local governments in the two states, focusing on the barriers and enablers to action, including legislative and policy frameworks. The first part of the project will be complemented by a second study focused on the role of local communities in food system governance. First, it will systematically identify local community initiatives in selected local government areas in NSW and Victoria. This will be followed by in-depth case studies of selected initiatives, which will explore the relationships between local communities and local governments, and the legislative and policy frameworks within which these initiatives operate.

Bio: Belinda is a Lecturer at the University of Sydney Law School. Her research interests lie in public health law, with a particular focus on the intersections between law, regulation, and non-communicable disease prevention. Her current research explores the legal and regulatory options for creating a healthier food environment, including through product reformulation initiatives, restrictions on food advertising to children, and innovative measures at local government level. Along with Alexandra Jones, she was the co-convener of the inaugural 2016 Food Governance Conference at the University of Sydney, and co-founder of the Food Governance Node at the Charles Perkins Centre, a platform for cross-disciplinary research on novel legal, regulatory and policy strategies to improve nutrition and diet-related health.
Marketing or social good? Public health expert perspectives on Big Food’s CSR strategies and their consequences

Zoe Richards
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Co-author: Lyn Phillipson

Abstract: In the absence of access to internal industry documents researchers have called for studies to examine the critical perspectives of public health experts regarding the potential impacts of transnational ‘Big Food’ corporations Corporate Social Responsibility (CSR) on consumers’ health and influence on public policy. This study utilised qualitative semi-structured interviews to systematically explore experts’ perceptions of the motivations and impacts of Big Food’s CSR. Overall, experts perceived Big Food’s CSR as a complex and integrated mix of marketing strategies used to positively influence three specific target audiences (i.e. children, parents and government). Key strategies targeting these groups included: product reformulation, charitable donations, sport sponsorship, and self-regulatory marketing codes. Experts described the outcomes of these strategies as: the building of credibility and trust with children; a decrease in the conflict that parents may feel about the presence of Big Food in children's settings; and the persuasion of government that they are responsible and do not need public regulation. This study highlights the strong similarities that experts perceive between Big Food’s CSR and that of Big Tobacco and Big Alcohol. However, the study also highlights the perceived unique access that Big Food’s CSR currently has within children’s settings. Some experts perceived this critical difference as strengthening the argument for more effective regulation Big Food’s CSR activities, as another form of marketing to parents and governments, but especially to vulnerable children.

Bio: Zoe Richards' PhD investigates Big Food's use of Corporate Social Responsibility (CSR) strategies, bringing together perspectives from industry, consumers in the community, and public health experts.
Healthy, sustainable and safe food system: perceptions and role of the Australian policymaker

Emma Sainsbury

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Co-authors: S Boylan, AM Thow, T Gill, D Stellmach, C Degeling, Y Zhang, L Craven.

Abstract:

Introduction: Co-benefits exist for planetary and population health in identifying strategies to promote a healthy, sustainable and safe food system. If efforts towards establishing such a food system are to be coordinated and aligned toward the same set of objectives, then it is imperative that each stakeholder has an understanding of each other’s perceptions, processes and values. This study aims to determine how Australian policymakers define and contribute to a healthy, sustainable and safe food system in order to inform policy advocacy and outcomes.

Methods: A two-round Delphi survey was sent to policymakers across government departments at the local, state and federal level. In Round 1, qualitative responses to three questions were analysed and a set of summary statements generated. Participant’s then indicated their level of agreement with each statement (Round 2).

Results: Twenty-nine policymakers responded to the Round 1 survey, and 14 responded to Round 2. The majority of respondents were from a health department. Critical consensus (>80% agreement) was reached on three definitions of a healthy, sustainable and safe food system related to food safety, environmentally-friendly food production, and nutritious food access. Nine policymaker contributions were identified; all respondents agreed that improving access to healthy food, and applying healthy planning principles in policy were important.

Conclusion: The definitions of a healthy, sustainable and safe food system which gained consensus appeared to lack a holistic viewpoint, most likely due to the narrow representation of policymakers. Further qualitative work with a wider representation of government sectors and stakeholders is required.
**Bio:** Emma is a research officer at The Boden Institute of Obesity, Nutrition, Exercise and Eating Disorders. As a dietitian, her research interests policy options for a healthy and sustainable food environment.
Equity and social justice in global food systems

David Schlosberg
Professor of Environmental Politics, Co-Director of the Sydney Environment Institute, the University of Sydney

Co-author: Luke Craven

Abstract: Community food and energy movements are clearly not only about food and energy, but also about the creation of just communities and material systems. Actors and activists in these movements often understand their efforts to redesign systems as linked to a broad range of concerns about social justice. In particular, movement activists articulate justice concerns focused on political inclusion and engagement, a clear response to unjust and powerful institutions, and a set of basic human needs and capabilities. Across these, a rejuvenated and reengaged community is seen as a crucial to the expression and achievement of a range of justice goals. Participants in food and energy movements understand justice in multiple ways, and see concepts and practices of injustice as interrelated and mutually reinforcing. The breadth of justice concerns in these movements illustrates the reach of the discourse of environmental justice into other areas of environmental politics.

Bio: David Schlosberg is Professor of Environmental Politics and Co-Director of the Sydney Environment Institute at the University of Sydney.
A Planetary Health approach to secure, safe, sustainable food systems

Darryl Stellmach

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Robyn Alders

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Abstract: The provision of food for humanity, while ensuring there is sufficient food to maintain biological diversity and support ecosystems, is among the most important and complex of human responsibilities. Our current food systems have met many of the challenges of previous centuries, but have done so with increasing negative consequences. Our contemporary food systems have created staggering human, financial and environmental costs, while support for the kind of research and development essential to overcoming the inadequacies of the current systems has declined markedly. This necessitates a realignment of food systems, in order to provide sufficient, safe and sovereign food within planetary boundaries.

In late 2016 the Healthy Food Systems node hosted an expert workshop for practitioners, researchers, policy makers and community development workers from 17 countries and six continents.

This presentation summarizes the recommendations that emerged from the workshop, focused on restructuring the global food system. Set within a Planetary Health framework, it recognizes that regenerative agriculture and food systems designed to efficiently meet optimal human and domestic animal dietary requirements are essential to reversing current unsustainable trends.

It argues that with holistic, integrated and humanized food system that ensures optimal health and wellbeing for our planet is possible. An integrated approach—one that involves the whole of society—can provide effective and equitable solutions to our contemporary challenges.
**Bio:** Darryl Stellmach is a post-doctoral associate of the Charles Perkins Centre, Marie Bashir Institute and the School of Life and Environmental Sciences at the University of Sydney.
Management of pre-consumer food loss in the Australian sheep meat value chain

Kate Wingett

PhD Candidate, Sydney School of Life and Environmental Sciences

Co-authors: Margaret Allman-Farinelli and Robyn Alders

Abstract: In 2015, the United Nations General Assembly adopted the 2030 agenda for sustainable development, and released the Sustainable Development Goals. The aim of the goals is to "end poverty, protect the planet and ensure prosperity for all". The Sustainable Development Goals are not legally binding. The expectation is that each country will develop policies, procedures and programs to achieve these 17 goals in sustainability. Sustainable Development Goal 12 is to “ensure sustainable consumption and production patterns.” Two targets to reach this goal are to reduce food losses along production and supply chains and, to implement the 10-year framework for sustainable food systems program, with high-income countries taking the lead. A key component to the sustainable food systems program is effective communication along food value chains from farm to post-consumer waste management facilities. In 2014, the Australian sheep flock was the second largest in the world, leading to significant volumes of nutritious lamb, mutton and offal production. Despite this, Australian sheep producers have indicated they would like greater feedback on their products. Aside from high level data on volume of sheep products lost from the direct human food chain and, the presence or absence of priority endemic sheep diseases, there is limited publicly available information in this area. This hinders government and industry developing viable strategies to reduce pre-consumer loss. A nationally consistent approach to monitoring and reviewing pre-consumer food loss will assist the Australian sheep industry’s sustainability and help Australia attain the Sustainable Development Goals.

Bio: Kate is a Doctor of Philosophy candidate at the Sydney School of Life and Environmental Sciences. Her current research interests include feedback systems in the Australian red meat value chains, how modern food is contributing to non-communicable diseases in people and the relationship between agriculture, climate change and weather variability.
The potential health effects of taxing soft drinks in Estonia

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Co-authors: Kristina Köhler, Jo Martin Jewell, Marge Reinap

Abstract:

Background Soft drinks are widely consumed in Estonia and around the world, and are associated with obesity and a wide range of chronic diseases. In December 2016, the coalition of parties that form the Government of Estonia proposed to tax drinks with a high sugar content. The work in this paper was commissioned by the World Health Organization Country Office in Estonia to support decision-making regarding the design of this tax.

Methods: A multi-state life table model was used to evaluate the effects of taxing soft drinks on overweight and obesity, obesity-related diseases, health-adjusted life years and tax revenue. Type 2 diabetes, ischemic heart disease and ischemic stroke were explicitly modelled. Local data and Global Burden of Disease data were used.

Three scenarios were assessed: a flat tax of €0.20 per litre (scenario 1); a two-tiered tax with soft drinks with €0.20 and €0.40 per litre for drinks with sugar content 5-7.9g and ≥8g per 100 ml, respectively (scenario 2); and a combination tax with tiers of €0.20, €0.30 and €0.50 per litre for <5g, 5-7.9g and ≥8g of sugar per 100 ml (scenario 3).

Results: All three variants of the soft drinks tax lead to net health benefits that accrue over time. Over the lifetime of the current population of Estonia, scenario 1 is expected to have an overall benefit of 2,856 (2,008-3,797) health-adjusted life years (HALYs). The impact of Scenario 2 is about 75% greater, and the scenario 3 has twice the impact of scenario 1.

Conclusion: Informed by the results of this study, on 19 June 2017, a tax similar to our scenario 3 was approved in Parliament.
Legal System for Quality Safety of Agricultural Product in China

Dongxia Yang

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Feng Tian

Abstract: The Chinese Government pays much attention to the quality and safety of agricultural products, and a relatively perfect system of laws and rules have been formed in China. Since the 1980s, China has successively formulated a series of laws and rules, for example, the *Food Hygiene Law*, *Agricultural Law*, *Fishery Law*, *Animal Epidemic Law*, *Animal Husbandry Law* and so forth. In 2006, the *Law on Quality Safety of Agricultural Products* came into effect. It is China’s first law comprehensively normalizing the quality safety of agricultural products, and sets up a series of agricultural product quality safety supervision systems meeting both international conventions and Chinese national situations. Meanwhile, this law gives principal regulations on the contents like public financial input in the quality safety management of agricultural products, scientific research and so forth. In order to comprehensively strengthen the safety management of foods including agricultural products, the *Food Safety Law* was revised in April 2015. In 2013, the State Council adjusted the division of food Safety supervision functions, and changed the supervision on edible agricultural products from multi-section management to two-section management. At present, the *Law on Quality Safety of Agricultural Products* is in the process of being revised. We suggest considering the following contents of the law after investigation and research. Firstly, implement the achievement of supervision system reform and governmental function transformation, and make clear departmental responsibilities. Secondly, persist with giving priority to prevention and execute risk management. Thirdly, strengthen headstream control and full-process management.

Bio: Dongxia Yang is a visiting scholar at the University of Sydney, and is the Director of the Research Centre of Agricultural Law of the Agricultural Management Institute of Ministry of Agriculture in China. One of her areas of research is on legal issues relating to the quality and safety of agricultural products.