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| **Eat for personal & planetary health: modelling the climate impacts of different eating patterns in the New Zealand context** |
| **Background/Objectives**The food system is a primary contributor to climate change, which is set to have significant repercussions for human health and well-being. At a population level, transitioning to eating patterns that are both healthy and sustainable will be critical if we are to mitigate (and adapt to) the impacts of climate change. The NZ Eating and Activity Guidelines (EAGs), produced by the Ministry of Health (MOH), represents a key opportunity for the development of public policy that is inclusive of sustainability. To help inform this process, this project aimed to develop a NZ-specific database of food-related emissions that would be used to both quantify greenhouse gas emissions associated with the average NZ adult’s diet, and to model the climate impacts of a range of eating patterns that conform to the EAGs.**Methods**A NZ-specific Life-Cycle Assessment database, including cradle to point-of-sale emissions estimates for each of the 341 food items within the most recent (2008/09) NZ Adult Nutrition Survey (ANS), was developed by modifying reference estimates to the NZ context. Diet-related emissions were estimated by combining the modified food emissions database with consumption data from the ANS. Dietary scenarios were developed in consultation with the MOH; each scenario’s impact on emissions was modelled by scaling consumption of individual food groups accordingly.**Results**Whole plant foods, including fruits, vegetables, legumes, and whole grains were found to be significantly less emissions-intensive per kilogram (1-2 kgCO2ekg-1) than most animal foods, particularly red and processed meats (12-21 kgCO2ekg-1). Conforming to the EAGs with the least required change to current consumption patterns equated to a modest emissions savings of 7% (5-11%; 95% UI) for the average NZ adult. Savings of up to 50% were found to be possible with further emphasis on climate-friendly food choices and by reducing unnecessary food waste.**Discussion**If adopted at a population-level, emissions reductions from such dietary change would be equivalent to 19% of the reductions needed to meet NZ’s commitment under the Paris Agreement. This project has provided evidence for incorporating sustainability considerations within NZ’s dietary guidelines. In light of these findings, an ‘issues-based document’ on the topic of climate-friendly eating (intended to accompany the EAGs) is being prepared for the MOH.**Keywords**Climate-friendly diets, sustainable diets, life-cycle assessment |