

Modelled methods and impacts of shifts in dietary intake

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Funded by Healthier Lives He Oranga Hauora National Science Challenge (grant UOOX1902) The Sustainable NZ Kai project used modelling methods to estimate the impact of New Zealanders switching to more sustainable, healthy dietary intake.

The following illustrations show how this modelling was done.....











The modelling starts with the original dietary intake of New Zealanders:



And then compares theoretical dietary intake with the baseline dietary intake.

For example, if the whole of the New Zealand population started eating a NZ version of the Eat Lancet Diet. This is how dietary intake would change:



The model estimates the health, health system cost, health equity and climate impacts of this shift in dietary intake:

NZ VERSION OF EAT-LANCET DIET- IMPACT



HEALTH 'Health adjusted life years' added per 1000 people over the lifecourse COST SAVINGS Total billion \$NZ savings to the health system over the lifecourse EQUITY Ratio of health gain between Māori and non-Māori (>1 is higher per capita health gain for Māori, reducing inequity) CLIMATE Greenhouse gas emissions as a percentage of baseline dietary emissions The same process was followed for these three scenarios, where red and processed meat was reduced and replaced with alternatives:



Here are the health, health system cost, health equity and climate impacts of these shifts in dietary intake:



Results are presented in these two journal articles:

Cleghorn C, Nghiem N, Ni Mhurchu C. Assessing the health and environmental benefits of a New Zealand diet optimised for health and climate protection. Sustainability. 2022 Oct 26;14(21):13900.

Reynolds AN, Mhurchu CN, Kok ZY, Cleghorn C. The neglected potential of red and processed meat replacement with alternative protein sources: Simulation modelling and systematic review. EClinicalMedicine. 2023 Feb

For further information about this project and our findings please see:

https://www.otago.ac.nz/wellington/research/group s/research-groups-in-the-department-of-publichealth/a-sustainable-diet-for-health-and-theclimate-in-aotearoa-new-zealand

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