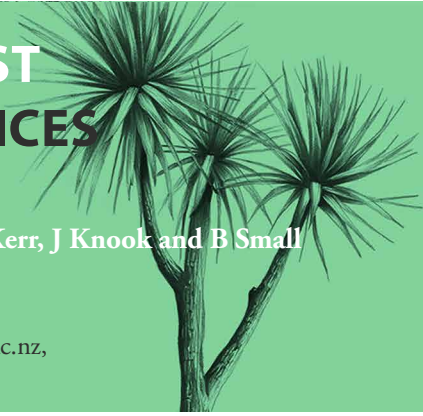


# BARRIERS TO ADOPTION OF NO-COST AGRICULTURAL MITIGATION PRACTICES



An executive summary of Motu Note #36 - May 2019

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For New Zealand to transition to a low-emissions economy, pastoral farmers need to reduce the biological greenhouse gas (GHG) emissions that come from their operations. One way to achieve this is to adopt or expand practices and options shown in research to mitigate biological GHG emissions for no cost in dairy and sheep and beef systems. This project focused on testing and verifying the no-cost status of selected mitigation practices and identifying barriers that curtail farmers' adoption or expansion of these mitigation practices.

Research has shown that there are several options for farmers that could be no-cost. In particular, the project looked at the following proposed no-cost practices: reduce stocking rate and improve animal productive performance (e.g., high-breeding-worth cows); reduce replacement rates; reduce N fertiliser use/replace some pasture with lower N feed; increase scanning percentage (better feeding/feed; and increase live-weight gain in lambs. Among the different findings and conclusions drawn from the project (fully described in the papers and synthesis report), the following can be highlighted:

### Practical and technological options for farmers:

- A system where inputs of N fertiliser and/or supplements are reduced and the system carries fewer cows of greater genetic merit can lead to reductions in total GHG emissions of between 2–16 percent and reductions of GHG emissions intensities of between 3–14 percent.
- Higher levels of animal performance reduce the GHG intensity of the farm and increase profit. Based on an analysis of a sample of 222 farm observations, mitigating total emissions from increased animal performance could cost \$397/hectare if stocking rate is reduced, but around \$174/hectare if farms with the lowest “value of emissions” (profits generated per unit of GHG) are removed from dairy production. Both values are lower than the profits that would be generated by the increase in animal performance (\$618/hectare).
- “Once-per-day milking” and “replacing beef cows with dairy beef animals”, although not proved scientifically as no-cost options, were perceived as no-cost by around a third of the surveyed farmers in the project survey, suggesting that these could be adopted more across the country.

### Training and awareness raising suggestions:

- The vast majority of farmers were familiar with the studied non-cost practices; however, most didn't believe that they could help reduce on-farm emissions. 47.5% of farmers didn't believe that agriculture should act to mitigate GHG emissions. Despite this, 80% of farmers would be interested in implementing technology that would reduce greenhouse gas emissions at no additional financial cost for their farm.
- There is a need for training or programmes for rural professionals to provide advice on GHG reductions that acknowledges the complexity of decision-making, including the barriers identified throughout this project.
- A model looking at dairy stocking rates and mitigation is freely available online at <https://moturesearch.shinyapps.io/FarmTool>.



Combine better cows  
and low stocking to reduce  
costs and emissions.

This is a one page summary of the “Barriers to Adoption of ‘No-cost’ Mitigation Options” project, funded by the New Zealand Government to support the objectives of the Livestock Research Group of the Global Research Alliance on Agricultural Greenhouse Gases. This was executed by Motu with assistance from AgResearch and Landcare Research. We thank farmers who participated in the interviews and survey conducted as part of this project and stakeholders who participated in the final project workshop.