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Does NZ Agriculture Add to Warming?

The idea agriculture is contributing to ongoing warming is implied by the government to justify an ETS tax on farmers. If agriculture can demonstrate we are warming neutral, then we can...

- Prove millions of dollars of ETS tax is unjustified
- Stop the recommended conversion of 1.3 to 2.8 million ha of farmland to forestry
- Improve the negative public perception which has been built on mis-information
- Take advantage of our true net GHG status by marking our products as warming neutral

Given the Government's repeated criticism of agriculture, you would think they have substantial evidence to support their case...

OIA response from MfE dated 28th May:

3. Does MfE have any research to suggest NZ agriculture is currently warming the planet once on farm trees are included?

MfE does not have any research on the net effect of trees on agricultural land offsetting the warming effects of agricultural emissions.

The truth is they have no idea what agriculture's contribution to climate change is.

Does Methane Add to Warming?

Simon Upton's report 'A Note on NZ Methane Emissions from Livestock' has given agriculture a clear goal and allows the conversation to move past the endless debate on the science.

Finding: A 10% to 22% reduction by 2050 is required to ensure Methane emissions do not add to any further warming (the 10% number assuming moderate action from other countries). On average, this equates to a 0.3% annual reduction. A view also confirmed by a recent Oxford University summary paper on this subject (below). Agriculture can now prove their 'no warming' credentials by using the recently developed GWP* metric which even the Productively Commission has agreed is a more accurate way to account for Methane.

- Gradually declining methane emissions (-0.3%/year) make no further contribution to warming. Faster cuts cause cooling, while any increase causes substantial warming.

<https://www.oxfordmartin.ox.ac.uk/downloads/reports/Climate-metrics-for-ruminant-livestock.pdf>

(right click then 'open hyperlink')

What is the NZ Situation?

The latest MfE data suggests that NZ Biological Methane emissions reduced 1.2% in 2016.

2015	"28,115.48"	-491.44	-1.7%
2016	"27,782.94"	-332.54	-1.2%

<https://emissionstracker.mfe.govt.nz/#NrAMBoDYFYF12ARnAlgHIFMAuL7AEzj6iKR4AcqusQA>

If tiny 0.3% per year reduction is warming neutral, then we are well ahead of that target. In fact, we are 29% of the way to the 2050 target in just two years! The only logical conclusion is that our Methane emissions are not adding to further warming.

How can Methane be warming neutral? Methane is currently being emitted at basically the same rate that previous emissions are decaying. This means the atmospheric Methane concentration stays the same. This is no different to a CO2 emitter offsetting 100% of their emissions by planting trees.

Is Agriculture Offsetting their N2O Emissions?

With Methane not contributing to warming the equation simply becomes, are farmers N2O emissions offset by their Carbon sinks? Agricultural N2O emissions were 8,688,250 tCO2-e in 2016.

<https://emissionstracker.mfe.govt.nz/#NrAMBoEYF12TwCIByBTALo2wBM4eiQBs2ALEsjgPJZwAcSWOQA>

Assuming a very conservative average Carbon sequestration rate for New Zealand native forest of around 10 t CO2/ha/yr.....

https://www.tanestrees.org.nz/site/assets/files/1069/10_5_carbon_sequestration.pdf

NZ agriculture would need only 868,825 ha of native bush to offset all N2O and be considered warming neutral.

- Beef and Lamb has done work which estimates 1.4 million ha of their farmer's land.
- There are no estimates from the Dairy industry on their area in trees at this stage.
- A reasonable ball park estimate might be 2 million ha between both sectors.

It is only fair to conclude that NZ agriculture is not adding to any further warming.

Pre-1990 forests sequester Carbon so must be included in any discussion about agricultural warming. The Paris Agreement does allow for the inclusion of **all** trees, so this decision is 100% at the discretion of Government.

Next steps:

1. The Productivity Commission must be encouraged to account for all trees on farmers land. There is almost no data on this currently and it is a big problem for farmers trying to seek credit for their positive contributions. When have the technology to access Carbon sequestration via satellites now, Government needs to pick up the pace on this.

2. Industry groups must start developing a smart alternative scheme.

Proposed farmer position: If NZ Agriculture is already meeting our Paris Agreement obligations by not adding to further warming. Any further emission reductions should be incentivised rather than taxed.