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REDUCING BIOLOGICAL GREENHOUSE GAS EMISSIONS IN NEW ZEALAND: A CLIMATE TOOL WITHOUT A STRATEGY

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Abstract

The problem posed by rising agricultural greenhouse gas emissions is one of the most wicked law reform problems facing New Zealand today. Agriculture is New Zealand's largest sector, and largest producer of greenhouse gas emissions, yet remains excluded from any policy mechanism targeted at climate change mitigation. Choosing a legislative response to address these emissions is critically important to New Zealand. However, what is more important is that the country creates a foundation in which a response can flourish and reform can succeed. This paper seeks to link the flaws in the law reform process to a flawed response for addressing biological emissions in New Zealand. By failing to build support and trust with industry, a solid evidence base, or a cross-party, cross-government framework, the government has confused a mechanism with a strategy and become locked into a precedent of inaction. A uniquely New Zealand problem requires a uniquely New Zealand solution that involves starting the process by defining the goal and establishing a strategy and foundation to achieve that goal.

Keywords: agriculture, greenhouse gas emissions, law reform, policy, climate change

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"The [government] argues that our "national circumstances" make it difficult for us to take domestic actions, particularly because about half our emissions come from agriculture. I am not persuaded – all countries have their challenges and we have opportunities that others do not." – Jan Wright, Parliamentary Commissioner for the Environment, 2015.[1]

I Introduction

The implementation of meaningful policy to address climate change is one of the main law reform issues of our time. If the atmosphere warms by more than two degrees Celsius by 2100 it will not matter what other policies we pursue because sea level rise, ocean acidification, desertification, extreme weather events and damaged ecosystems may have catastrophic effects.[2] If governments do not act on climate change to ensure that the Earth remains habitable for the future, other reform will become meaningless. Addressing greenhouse gas emissions in New Zealand poses an interesting law reform problem because of the country's unique emissions profile.

This paper will focus on the agricultural sector, seeking to identify why the reduction of biological greenhouse gas emissions from the sector has proven to be a "wicked" law reform problem.[3] It will argue that a flawed reform process has led to an inadequate policy mechanism that excludes New Zealand's highest-emitting sector.[4] By choosing a legislative tool before considering New Zealand's unique circumstances, successive governments have ignored the contextual factors that underpin legislation, and influence its success. This argument is premised on the idea that when the government passed the New Zealand Emissions Trading Scheme as a response to all greenhouse gas emissions it

[1] Jan Wright "Submission to the Minister for Climate Change Issues and the Minister for the Environment" at 4.
[2] Max Harris *The New Zealand Project* (Bridget Williams Books, Wellington, 2017) at 202.
[3] Geoffrey Palmer "Climate Change and New Zealand; is it doom or can we hope?" (2015) 11 Policy Quarterly 15 at 15; Suzi Kerr and Hugh McDonald "Why Do New Zealanders Care About Agricultural Emissions?" (2012) 8(2) Policy Quarterly 29 at 29.
[4] Ministry for the Environment "About the New Zealand Emissions Trading Scheme" (26 July 2017) Ministry for the Environment <www.mfe.govt.nz>.

rushed into Step Four of a multi-step law reform process. It did not overcome the hurdles posed by Steps One, Two and Three, which represent the practical difficulties posed by New Zealand's sociopolitical climate. These foregone steps include failing to build concern in the public domain and bolster industry trust, compile a solid evidence base and create a long-term framework for addressing biological emissions. Without due deference to these core steps, any legislative tool will lack the stable foundation required for its long-term success.

The effects of poor climate change policy are not seen daily like the effects of poor policy targeting issues such as poverty, childcare and education. Therefore, the government's approach to agricultural reform carries unique challenges and responsibilities, and building a foundation for reform is crucial to its success. Overall, this paper will argue that due to an inadequate consideration of the building blocks to successful reform, the legislation provided to date has been inapt to deliver what science suggests is necessary. The government has implemented a mechanism that fails to consider the contextual difficulties relating to biological emissions in the New Zealand law reform context.

A A Roadmap for Readers

There is an abundance of literature describing why New Zealand's response to biological emissions is inadequate. This paper seeks to link these inadequacies in outcome to shortcomings in the law reform process. It will do so by outlining the steps that are crucial to building a foundation for reform that the government has overlooked. Parts II, III and IV will outline the problem with agriculture in New Zealand and the history of reform in this area, which has been centred around implementing a legislative scheme, as opposed to finding a uniquely New Zealand solution that responds to the difficulties that agriculture poses. This paper will posit that by doing so, the government has focused its efforts on Stage Four of a multi-step law reform process. Parts V, VI, and VII will discuss the steps that the government should have taken to build a foundation for reform, and how their absence has resulted in legislation that is unfit for purpose. Step One requires engaging with industry stakeholders and the public to achieve a joint solution. Instead of considering agriculture's role in reducing emissions by communicating with industry, the government

has been subverted by industry, leading them to pass a weakened solution that is unsuitable to the New Zealand climate. Step Two requires building an evidence base that can inform the public and industry, and give government officials the plethora of solutions available to them. This section will argue that New Zealand's evidence-based policy process lacks scenario planning and the tools to combat inevitable politicisation of evidence. By inadequately focusing efforts on this step, the evidence underneath the reform is undermined and the resulting legislation lacks a solid evidential foundation. Step Three requires overcoming political partisanship to agree on a joint framework, based on the science, for policy to be based on. This is particularly important for long-term issues that require implementation and development across election cycles. Agricultural emissions policy in New Zealand has been undermined by a lack of cross-party support and polarisation of opinions, sometimes due to genuine disagreement, and sometimes due to the nature of politics. Part IX will suggest future steps for building a foundation for reform, and consider how, if a foundation had been built by following the above steps, the outcome of the reform process could have been vastly different.

II The Problem with Agriculture

Every country has a different emissions profile that affects the nature of its climate change response. As a major producer of agricultural goods, New Zealand's emissions profile is unique for a developed country.[5] The agricultural sector is New Zealand's largest emitter of greenhouse gases. It contributes 48 per cent of the country's greenhouse gas emissions,[6] or 38,419.6 ktCO2e (kilotonnes of carbon dioxide equivalent)[7] in the form of on-farm methane and nitrous oxide from intensive livestock farming, excessive fertiliser use, and pesticides.[8] This figure represents the largest level of methane emissions in the OECD as a percentage of total emissions.[9] The sector responsible for the highest level of methane and

[5] Suzi Kerr and Catherine Leining *Lessons Learned from the New Zealand Emissions Trading Scheme* (Motu Economic and Public Policy Research, Motu Working Paper 16-06, Apri 2016) at 11.
[6] Ministry for the Environment *New Zealand's Greenhouse Gas Inventory 1990-2015* (Ministry for the Environment, ME 1309, May 2017) at xxii.
[7] At xxvii.
[8] Marissa Santikarn and others (eds) *Emissions Trading Worldwide* International Carbon Action Partnership, Status Report, 2016) at 18.
[9] OECD "Greenhouse Gas Emissions" (11 Aug 2017) OECD.Stat <www.stats.oecd.org>.

nitrous oxide emissions in New Zealand, and that forms the focus of this paper, is the pastoral farming sector.[10]

The science is clear that biological emissions from methane and nitrous oxide emissions contribute to global temperature rise through agricultural practises.[11] Therefore, owing in part to its large agriculture industry, New Zealand has one of the highest rates of emissions per capita in the world, and the second highest rate of emissions per unit of GDP,[12] yet no policy measures to date have been successful in targeting the reduction of biological emissions. A failure to adequately engage with key stakeholders, science, and all areas of government to arrive at a joint solution is partly responsible for this gap.

A Current Policy Framework

New Zealand's main policy instrument aimed at reducing all greenhouse gas emissions is the Emissions Trading Scheme (the "ETS"). The ETS is a cap-and-trade system that aims to price all greenhouse gas emissions.[13] However, its effectiveness is diluted by the indefinite exclusion of the agriculture sector. Farmers must report their emission levels but the scheme provides no incentive to take mitigating action because the sector does not have to trade units or pay for its emissions.[14] Consequently, New Zealand's primary instrument for meeting emissions-reduction targets excludes 48 per cent of total greenhouse gas emissions. The exclusion of biological emissions is one of the primary reasons that New Zealand fails to meet its international obligations and greenhouse gas reduction targets.[15] In the absence of inclusion in the ETS, New Zealand lacks other policy mechanisms aimed at reducing agricultural emissions.

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[10] Michele Hollis and others *Cows, Sheep and Science: A Scientific Perspective on Biological Emissions from Agriculture* (Motu Economic and Public Policy Research, Motu Working paper 16-17, October 2016) at 12.
[11] International Panel for Climate Change (IPCC) *Climate Change 2013: The Physical Science Basis* (Summary for Policymakers, 2013) at 11.
[12] Jan Burck and others *Climate Change Performance Index: Results 2017* (Germanwatch and Climate Action Network Europe, November 2016) at 13.
[13] Ministry for the Environment "About the New Zealand Emissions Trading Scheme", above n 4.
[14] Ministry for the Environment "About the New Zealand Emissions Trading Scheme", above n 4.
[15] Ian Bailey and Tor Hakon Jackson Inderberg "New Zealand and Climate Change; what are the stakes and what can New Zealand do? (2016) 12 Policy Quarterly 3.

III How Did We Get Here? The Search for a Mechanism

For over a decade, there have been several false starts in responding to biological emissions from agriculture as the government has sought to find a mechanism before considering the role that agriculture can, and should play in New Zealand.[16] The history shows this. New Zealand's climate change response has involved endeavours to implement a price mechanism to address the problem. A drawn-out struggle to adopt the "first best" recommendation of economists, in the form of a carbon tax crashed on the rocks of political reality and was followed by the emissions trading approach.[17] The process has shown the desire to implement a price mechanism, without paying attention to the foundations required for its success. This paper will argue that the New Zealand government has prioritised, and rushed into, the search for the best passable mechanism, which is akin to starting law reform at Step Four, rather than Step One of the process.

A Carbon Tax

Climate change policy has been seriously contemplated in New Zealand since 1992, when the government signed up to the United Nations Framework Convention on Climate Change.[18] New Zealand's commitment to the Framework meant that the government had an international obligation to reduce its greenhouse gas emissions and those responsible for law reform were set on finding the appropriate mechanism to do so. In 1993, a low-level carbon charge was suggested by the National Government.[19] Polluting companies were to pay ten dollars per tonne of carbon emitted to encourage behavioural change towards reducing emissions.[20] A coalition of industrial interests was formed that lobbied for the tax to be deferred.[21] The Environment Minister, Simon Upton was criticised for

[16] Jan Wright *Climate change and agriculture: Understanding the biological greenhouse gases* (Parliamentary Commissioner for the Environment, Report, October 2016) at 6.
[17] Geoff Bertram and Simon Terry *The Carbon Challenge: New Zealand's Emissions Trading Scheme* (Bridget Williams Books, Wellington, 2010) at 11.
[18] Palmer "Climate Change and New Zealand; is it doom or can we hope?", above n 3, at 16.
[19] Simon Upton "Government Defers Decision On A Carbon Charge" (press release, 11 March 1997).
[20] Geoff Bertram, Adolf Stroombergen and Simon Terry, *Energy and Carbon Taxes: Options and Impacts* (Ministry for the Environment, 1993).
[21] Alister Barry and Abi King-Jones "Hot Air: climate change politics in New Zealand" (2014) Hot Air <www.hotairfilm.co.nz>.

racing into the policy and a case was made for moving more cautiously,[22] suggesting from an early stage that a price mechanism would be difficult to pass without the government having built a foundation of support. In 1994, the proposal was taken to cabinet where it was decided that the charge would be delayed.[23] This early attempt at leadership on climate change was stifled by public and industry scepticism, and short-term interests, highlighting the large task that governments would have ahead of them in building will for reform.[24]

1 Reconsidering an appropriate mechanism

Despite evidence that there was insufficient support for reform, during the 1990's and early 2000's, the Government held a series of working groups to discuss the most appropriate price mechanism to achieve emissions reduction in New Zealand. In 1996, the Government's Working Group on Carbon Dioxide Policy recommended an all-sectors ETS, and an interim carbon charge during the period in which the ETS was being established.[25] The recommendation was opposed by major players from industry, including the aluminium, forestry, coal, dairy processing, and gas sectors.[26]

A 2001 Tax Review undertaken by the New Zealand Treasury recommended that a broad-based carbon tax that includes the agriculture sector should be the central instrument used to meet emissions-reduction targets.[27] The review noted that:[28]

> …with 55 percent of New Zealand's greenhouse gas emissions being agricultural emissions of ruminant methane and nitrous oxide, the efficient inclusion of this sector appears central to the policy decisions not to shield emitters and to apply broadly comparable abatement incentives across sectors.

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[22] Geoff Bertram and Simon Terry *The Carbon Challenge: Response, Responsibility and the Emissions Trading Scheme* (Sustainability Council of New Zealand, Wellington, 2008) at 29.
[23] Simon Upton "Government Defers Decision On A Carbon Charge" (press release, 11 March 1997).
[24] Robert McLeod and others, *Tax Review 2001: Final Report* (Treasury, October 2001).
[25] Ministry for the Environment *Climate Change and CO2 Policy: A Durable Response: Discussion Document of the Working Group on CO_2 Policy: Summary of Submissions and the Response of the Working Group* (Ministry for the Environment, 1997).
[26] Greenhouse Policy Coalition "About the GPCNZ - Overview" (2007) Greenhouse Policy Coalition <www.gpcnz.co.nz>.
[27] Robert McLeod and others, *Tax Review 2001: Final Report*, above n 24, at 50.
[28] At [5.15].

This was in line with OECD recommendations that New Zealand should implement the polluter pays principle[29] and introduce the carbon tax.[30] The OECD recognised the need to mitigate the environmental effects of traditional forms of land-use, particularly pastoral agriculture,[31] and to develop the use of economic and other instruments to internalise damage created by agriculture's polluting activities.[32]

The Climate Change Response Act 2002 created a legal framework for New Zealand to meet its international obligations and emissions reduction targets and put in place mechanisms to measure and monitor emissions. In light of the 2001 Tax Review's decision, it created a carbon tax on energy, industrial, and transport emissions.[33] The tax, capped at $25 per tonne, was to be implemented in 2007.[34] In 2005, the government abandoned the planned carbon tax[35] because of strong lobbying pressure from industry and business interests,[36] and political opposition from its coalition partner, New Zealand First.[37]

Failure to make progress towards emissions reduction during the 1990s, and the abandonment of a minimal carbon tax, reflects government's vulnerability to regulatory capture by industry. Beginning reform by proposing mechanisms to achieve emissions reduction has come at the expense of overcoming the first hurdle of gaining the industry support required to do so. Successful lobbying by industry diverted policy away from economic instruments to the ineffective realm of voluntary agreements between the government and industry.[38] However, no move was made between two subverted attempts at implementing a mechanism to garner industry support and engage with stakeholders on

[29] OECD Working Party on Environmental Performance *Environmental Performance Reviews (1st Cycle) Conclusions and Recommendations 32 Countries (1193-2000)* (OECD WPEP, November 2002) at 191.
[30] At 194.
[31] At 190.
[32] At 191.
[33] Cabinet Paper "Climate Change – Review of Policy and Next Steps" (November 2005) CBC (05) 394 at 4.
[34] At 4.
[35] Cabinet Business Committee Minute of Decision "Climate Change: Review of Policy and Next Steps" (19 December 2005) CBC Min (05) 20/10 at [6.7].
[36] Suzi Kerr and Andrew Sweet "Inclusion of Agriculture in a Domestic Emissions Trading Scheme: New Zealand's Experience to Date" (2008) 5 Farm Policy Journal 19 at 19.
[37] Bertram and Terry *The Carbon Challenge: New Zealand's Emissions Trading Scheme*, above n 17, at 35.
[38] At 15.

the issue to arrive at a joint solution. Instead, the government was subject to intense lobbying for rushing into mechanisms,[39] which made having subsequent conversations difficult. This reaffirms that starting the reform process by implementing a legal mechanism rather than by engaging with key stakeholders to gain their trust, distorts incentives and leads to sub-par solutions that are focused on getting legislation through in the face of lobbying, rather than getting it right with industry on side.[40]

B Emissions Trading

By 2007 it had become apparent that an ETS was more politically palatable than a carbon tax because it allowed industry a greater power to negotiate the price and nature of their contribution to emissions reduction. The Labour Government's plans for an emissions trading scheme were tailored to satisfy vested interests by means of free allocations of carbon credits.[41] The Climate Change Response (Emissions Trading) Amendment Act 2008 was designed to address all greenhouse gases and phase in the participation of all industries over several years.[42] The government delayed agriculture's inclusion in the scheme until January 2013, at which time it intended to give the industry a large allocation of free units to be gradually phased out, and agreed not to introduce any other price-based measures for agriculture in the interim.[43] This politically expedient move was necessary to appease lobbyists so that the legislation could be passed, but because it failed to provide the foundation to include agriculture, the industry remains excluded.

IV Starting at Step Four: Rushing into an ETS

The ETS was envisaged as an all-inclusive mechanism, the first cap-and-trade system of its kind to respond to all greenhouse gases.[44] The ETS's ambition reflects New Zealand's desire to implement legislation overriding any regard to the practical reality of New

[39] Bertram and Terry *The Carbon Challenge: Response, Responsibility and the Emissions Trading Scheme*, above n 22, at ii.
[40] Palmer "Climate Change and New Zealand; is it doom or can we hope?", above n 3, at 15.
[41] Bertram and Terry *The Carbon Challenge: New Zealand's Emissions Trading Scheme*, above n 17, at 35.
[42] Zack Dorner and Suzi Kerr *Tackling Agricultural Emissions; Potential Leadership from a Small Country* (Motu Economic and Public Policy Research, Motu Note #13, 2013) at 5.
[43] Kerr and Sweet "Inclusion of Agriculture in a Domestic Emissions Trading Scheme: New Zealand's Experience to Date", above n 36, at 20.
[44] At 20.

Zealand's unique greenhouse gas inventory and sociopolitical context. A barrier to successful reform in New Zealand, illustrated by the plight of the ETS, is that there is a predilection for mission-minded legislation that is ideologically reformative and aspirational but experientially unworkable because the foundations for its success have not been laid. Preference for legislative endeavour is frequently at odds, in form and function, with its practical output.[45] The ETS was passed as it was the most politically palatable solution, consistent with trends around the world, not because it was the most capable at reducing emissions or best suited to New Zealand's environment. Having a mechanism is important, but fruitless, if the foundations for successful law reform are not in place.

A From Theory to Practise

Economists advocate for the use of price mechanisms to achieve behavioural change and internalise environmental externalities. However, most economists recommend a carbon tax as best practise for reducing emissions because it sends a clear signal to incentivise behavioural change.[46] A carbon tax is a strong instrument, but invites lobbyists from all industries to join in opposing the mechanism.[47] This opportunity was seized by the Greenhouse Policy Coalition in the 1990's, combining major fossil fuel, agriculture and transport companies to lobby against initial attempts to implement a carbon tax.[48] Therefore, political reality has rendered the simple economic tool a nightmare to pass. Instead of working with industry to determine how a carbon tax may work in New Zealand, government shifted approach to an ETS that is less successful at reducing emissions but provides more benefits for special interests, and therefore has more champions.[49] The change in approach demonstrates a focus on implementing a response, rather than setting the foundations for the *best* response. A tax provides a clear price signal to which quantity

[45] Nigel Jamieson "Legislation Through the Millennial Looking Glass" (2000) 9(4) Otago Law Review 714 at 730.
[46] Frances Beinecke and others "Putting a Price on Carbon: An Emissions Cap or a Tax?" (online, New Haven, 7 May 2009).
[47] Ralph Chapman *Time of Useful Consciousness; Acting Urgently on Climate Change* (BWB Texts, Wellington, 2017) at 8.
[48] Bertram and Terry *The Carbon Challenge: New Zealand's Emissions Trading Scheme*, above n 17, at 48.
[49] Roger Pielke in Beinecke and others "Putting a Price on Carbon: An Emissions Cap or a Tax?", above n 46.

may respond.[50] Under the ETS, the price signal is unclear and is set by the vagaries of supply and demand in a highly imperfect market to which New Zealand is a price taker.[51] Hence it does not give clear incentives to reduce emissions.

Industry is more open to an ETS because it is a less burdensome approach and allocations of permits are negotiable. Therefore, certain industries are able to gain preferable treatment.[52] Money that emitters pay for their permits under the ETS does not go to the government as revenue but to companies that sell their emissions units.[53] The terminology used in the Labour Government's documentation for the ETS made a rhetorical connection with the economic literature on cap-and-trade schemes, such schemes being (in principle) an efficient way to use market-based instruments to achieve environmental goals. The words "emissions trading" suggest that the New Zealand Unit will be a tradeable permit – a "right to emit". For public relations purposes, the Government was eager to use that message to distinguish the ETS from its previous unpopular proposal for an economy-wide carbon tax. The Ministerial foreword to the *Framework for a New Zealand Emissions Trading Scheme* stated that "New Zealand will adopt an emissions trading scheme…*rather than* an emissions tax" (emphasis added).[54] This politically expedient move relieved the government of industry pressure during the legislative process so that they could pass the legislation. The Framework document did not contain consideration of New Zealand's unique contextual setting, or the fact that an ETS is less well-placed to reduce emissions than a carbon tax.

The rush to implement a mechanism without setting the adequate foundation has resulted in an ETS that is neither a carbon tax, nor a regulatory cap on the nation's emissions.[55] It

[50] Jeffrey Sachs in Beinecke and others "Putting a Price on Carbon: An Emissions Cap or a Tax?", above n 46.
[51] Bertram and Terry *The Carbon Challenge: New Zealand's Emissions Trading Scheme*, above n 17, at 51.
[52] Jeffrey Sachs in Beinecke and others "Putting a Price on Carbon: An Emissions Cap or a Tax?", above n 46.
[53] Nicholas Stern *Stern Review; The Economics of Climate Change* (Cambridge University Press, Cambridge, 2007) at 318.
[54] Micheal Cullen and David Parker, *Ministerial forward to the Framework for a New Zealand Emissions Trading Scheme* (Ministry for the Environment and Treasury, ME 810, September 2007) at x.
[55] Bertram and Terry *The Carbon Challenge: New Zealand's Emissions Trading Scheme*, above n 17, at 52.

is a statute that the Government could get over the line, but it does not address the underlying difficulties that New Zealand faces in addressing climate change. The ETS is a conservative, market-led solution that the Government did not set up correctly because there is too much gaming available in its creation.[56] The ETS is preferred to a carbon tax by politicians, not by economists or scientists.[57] It combines the worst features of two theoretical options, and leaves New Zealand with neither. But it leaves New Zealand with legislation, which was the Government's primary focus, and from a reform perspective, its primary failure.

B A European Equivalent

New Zealand officials have based the ETS on the European Union cap-and-trade model, without adequately considering differences in the social, political and environmental landscapes of New Zealand and the European Union. The Government stated that the scheme was typical of "that favoured measure among developed countries," in particular in Europe.[58] This claim ignored fundamental differences between the New Zealand ETS and the European Union's trading scheme such as their respective sociopolitical climates, and the fact that New Zealand's emissions profile is closer to that of a developing, rather than a developed country.[59] These differences are significant in that they require different foundations for the scheme to work. The government's focus on implementing a mechanism meant that they took the scheme from the European Union and skipped the stage of laying the right foundations, or ensuring that the same foundations that Europe had in place were present in New Zealand.[60] Copycat legislation suggests a priority to do something, but not to do it right. Inappropriate consideration of how legislation will function or malfunction in the New Zealand environment is problematic for reform as it misses fundamental preliminary stages. Key differences between both the nature, and

[56] Roger Pielke in Frances Beinecke and others "Putting a Price on Carbon: An Emissions Cap or a Tax?", above n 46.
[57] Jeffrey Sachs in Frances Beinecke and others "Putting a Price on Carbon: An Emissions Cap or a Tax?", above n 46.
[58] Ministry for the Environment *The Framework for a New Zealand Emissions Trading Scheme* (Ministry for the Environment and Treasury, ME 810, September 2007) at 4.
[59] At 4.
[60] Jamieson "Legislation Through the Millennial Looking Glass", above n 45, at 723.

foundations of, the European Union's ETS and New Zealand's scheme require consideration.

1 Emission cap

The European scheme caps the quantity of emissions for key sectors based on the European Union's emissions-reduction target.[61] A limited number of emissions allowances, at the rate of one allowance to one tonne of CO2, is given to member states and a quantity limit is set on the total emissions allowed from included industries. Industries can trade allowances among themselves, but cannot collectively emit more than the issued total.[62] A "loophole" mechanism allows industries to supplement their allowances by purchasing limited amounts of Kyoto units from other countries outside Europe. The "loophole" allows the cap to be set at a slightly higher level (between 8-22 per cent),[63] but it does not eliminate the cap.

The New Zealand ETS operates closer to the European Union's "loophole," than their scheme itself.[64] Insofar as New Zealand Units are traded, the ETS seems like a cap-and-trade scheme. However, trading is not a process by which a rationed amount is allocated because the scheme has no cap, so the market mechanism has nothing to push against.[65] The New Zealand scheme does not restrict the proportion of a firm's emissions that may be covered by externally purchased credits.[66] Firms can use international Kyoto units to top up an indefinite volume of emissions. *The Framework for a New Zealand Emissions Trading Scheme* stated that "there will be no absolute constraint on [domestic] emissions", because "as the [Kyoto] protocol provides an international cap, an additional cap for the New Zealand ETS is not required". It then explains that "the cap on emissions for [countries] under the Kyoto Protocol does not act as an absolute limit, even at the

[61] European Commission "The EU Emissions Trading System (EU ETS)" (02 October 2017) European Commission <ec.europa.eu>.
[62] European Commission "The EU Emissions Trading System (EU ETS)", above n 61.
[63] WWF-UK *Emission Impossible: access to JI/CDM credits in phase II of the EU Emissions Trading Scheme* (WWF-UK, June 2007) at 5.
[64] Bertram and Terry *The Carbon Challenge: New Zealand's Emissions Trading Scheme*, above n 17, at 57.
[65] At 57.
[66] Ministry for the Environment *The Framework for a New Zealand Emissions Trading Scheme*, above n 58, at 48.

international level". This type of inconsistency is prevalent throughout the *Framework* document suggesting that the priority was to implement a scheme, not the correct scheme with the proper foundations of a fully functioning ETS.

2 Industry

The European Union's ETS does not include biological emissions from agriculture. Due to New Zealand's greenhouse gas inventory comprising 48 per cent agriculture, any policy instrument had to include the industry. However, the Government did not adequately consider the difficulty that agriculture would face upon inclusion in an ETS of this kind, or measures to overcome any difficulty. The focus on implementing the legislation despite this challenge has meant that agriculture has been indefinitely excluded altogether. This suggests that the policy was not targeted to work in the New Zealand domestic market. Public perceptions and industry willingness were far different in Europe than they are in New Zealand.[67] Understanding these differences and building consensus among those affected should have been the first step in considering reform in New Zealand, before deciding to implement an ETS. The difficulty of including agriculture in the scheme means that an ETS is not as appropriate a response as it is in Europe because New Zealand needs a scheme that can, and does, include agriculture.

Due to a rushed passage of the legislation, the ETS was enacted with many exceptions and it remains amendable to disruption. The ETS passed because of the possibility of negotiating free allocations, over which lobbying has been intense.[68] During the parliamentary process, the Greenhouse Policy Coalition argued for its members to be exempt from obligations under the ETS, and ran campaigns based on the alleged costs to the economy of actions to limit emissions.[69] When the ETS was first put forward as a policy in 2007, it was proposed to exclude two-thirds of emissions from its coverage.[70] Political

[67] Pew Research Centre *Europeans Face the World Divided* (Pew Research Centre, June 2016) at 13; Horizon Research *New Zealanders' Climate Change Actions and Attitudes* (Prepared for Motu Economic and Public Policy Research and the Sustainable Business Council, September 2014) at 3.
[68] Kerr and Sweet "Inclusion of Agriculture in a Domestic Emissions Trading Scheme: New Zealand's Experience to Date", above n 36, at 20.
[69] Adolf Stroombergen *New Zealand Business Roundtable and Petroleum Exploration and Production Association of New Zealand; Carbon Mitigation Scenarios* (Infometrics, 5 February 2008).
[70] Bertram and Terry *The Carbon Challenge: New Zealand's Emissions Trading Scheme*, above n 17, at 61.

trimming to appease powerful lobby groups reduced the scheme's coverage to one quarter of national emissions.[71] The agriculture industry has used its economic clout to minimise its obligations entirely.[72] This fundamental political reality has seen the theory of a hard cap fracture into a free-for-all that allows evasion to reduce costs, ultimately defeating the purpose of the policy.[73]

The European Union's ETS was established in 2005. Emissions were reduced by 20 per cent between 1990 and 2015.[74] The European Union is on track to meet its 20 per cent reduction target for 2020 and 40 per cent reduction target by 2030.[75] New Zealand, with an ETS based on a similar mechanism, has not met, and is not set to meet, any of its reduction targets domestically.[76] New Zealand's emissions have increased by 24.1 per cent between 1990 and 2015.[77] The mechanism has had a negligible effect on emissions, which have steadily risen since the advent of the ETS.[78] This suggests that New Zealand's focus on implementing a mechanism was such that inadequate foundations were laid to make it work in the same way that it does in the European Union. Instead of addressing the unique difficulties that New Zealand faces, particularly in relation to agriculture, this reform attempts to do what has been done before elsewhere, resulting in law that is grossly imitative instead of being innovative.[79] The ETS lacks original thought and a uniquely New Zealand approach to biological emissions. The mechanism provides only the faint memory of a tool that could have seriously signalled the social cost of greenhouse gas emissions had the adequate foundation had been built.[80]

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[71] Bertram and Terry *The Carbon Challenge: New Zealand's Emissions Trading Scheme*, above n 17, at 61.
[72] Climate Change Response Act 2002, s 76.
[73] Roger Pielke in Frances Beinecke and others "Putting a Price on Carbon: An Emissions Cap or a Tax?", above n 46.
[74] European Commission "Progress made in cutting emissions" (04 October 2017) European Commission <ec.europa.eu>.
[75] European Commission "Progress made in cutting emissions", above n 74.
[76] Ministry for the Environment *Environmental Stewardship for a Prosperous New Zealand* (Ministry for the Environment, Briefing for Incoming Ministers, 2014) at 4.
[77] Ministry for the Environment " New Zealand's Greenhouse Gas Inventory" (26 May 2017) Ministry for the Environment <www.mfe.govt.nz>.
[78] Palmer "Climate Change and New Zealand; is it doom or can we hope?", above n 3, at 22.
[79] Jamieson "Legislation Through the Millennial Looking Glass", above n 45, at 726.
[80] Bertram and Terry *The Carbon Challenge: New Zealand's Emissions Trading Scheme*, above n 17, at 61.

V Step One: Understanding Industry and Public Opinion

This section will argue that reform has not been successful because the government has failed to begin the process by building industry support and public concern to overcome short-term lobbying and fearmongering. A crucial first step to building a foundation for reform is understanding those who will be impacted and addressing their concerns to work towards a collective solution.[81] The government has failed to engage with key stakeholders to create a policy mechanism that can gain enough trust to minimise industry opposition and bolster public opinion.

A Failure to Gain Industry Trust

The language of politics is one of priorities.[82] Priorities in the political realm are different to those in science. Cabinet members determine policy priorities, the order in which issues will be addressed, and the resources that will be devoted to each issue.[83] They cannot resolve every problem because they face inherent trade-offs. Acting on agricultural emissions may mean foregoing policy in different areas. In this limited temporal environment, reform will rarely be appealing to Cabinet if it is not appealing to industry or the public. Ministers will be reluctant to implement controversial policies that do not align with public perceptions because in a democracy, it is through collective permission that priorities are shaped, policy takes form, and laws come into being.[84] If a response to biological emissions is to succeed, it is the role of the government to shape public opinion and gain industry trust as the foundation to a response.

Farmer's key concerns with agricultural mitigation policy are capability and trust. There is a general mistrust in government by farmers when it comes to climate change. Many farmers are uncertain about the effectiveness, feasibility and cost of mitigation options and believe that the government has limited practical experience to implement them.[85] Distrust

[81] Kerr and McDonald "Why Do New Zealanders Care About Agricultural Emissions?", above n 3, at 30.
[82] Geoffrey Palmer "International Governance; problems of legislation" (2017) 13 Policy Quarterly 68 at 68.
[83] At 68.
[84] Tom Rand *Waking the Frog: Solutions for Our Climate Change Paralysis* (ECW Press, Ontario, 2014) at 14.
[85] Suzi Kerr *Agricultural Emissions Mitigation in New Zealand: Answers to Questions from the Parliamentary Commissioner for the Environment* (Motu Economic and Public Policy Research, Motu Working Paper 16-16, October 2016) at ii.

in authority means that farmers do not want to be told how to manage their farms, such advice being a necessary incident of biological emissions policy, whether direct, or indirect.[86] By beginning the reform process directly with industry, the government would be able to gain the trust of farmers and lead industry to a solution, instead of leaving them feeling blindsided. However, to date, the government has not adequately built a foundation for successful reform by communicating the opportunities that low-emissions farming will bring. This is shown by the resilience, strength and resistance of agriculture lobby groups. Each mitigation policy proposal since 1993 has been met with heavy opposition by the agriculture industry. Giving industry a chance to engage in policy design would result in less opposition at the latter stages of implementation. Skipping this step invites lobby groups to spread the message that the government is rushing to implement a mechanism without considering difficulties in the New Zealand context. Such opposition not only affects the government's ability to implement policy, but also shapes public opinion.

1 Agricultural Emissions Levy

The power of the agriculture lobby, and the extent of farmers' mistrust of government first became apparent in 2003, when mitigating agricultural emissions seriously emerged on the policy agenda as a separate issue. The Labour Government had proposed an Agricultural Emissions Levy, an industry-specific levy to finance research into emissions reduction. In doing this it recognised that:[87]

> …no government likes to undertake unpopular measures, but this measure is our response to, probably, the world's most serious environmental crisis. New Zealand's biggest contributor to this global crisis is its pastoral farming sector, which emits more than half the country's greenhouse gases. It would be totally inappropriate for that sector, which enjoys an average taxable income of over 106,000 per taxpayer, to escape completely scot-free of any responsibility for tackling that problem.

[86] Kerr *Agricultural Emissions Mitigation in New Zealand: Answers to Questions from the Parliamentary Commissioner for the Environment,* above n 85, at 11.
[87] (22 July 2003) 610 NZPD 7131.

The research levy was to raise $8.4 million annually from the $15 billion industry,[88] amounting to around $300 per farm,[89] in addition to the $40 million that the taxpayer was already spending on agricultural research.[90] The mild nature of this proposal was not adequately communicated to industry to minimise backlash. The farming sector believed that it was being unfairly treated through a narrowly-focused policy approach.[91] Many farmers did not accept responsibility for their emissions and saw the levy as the thin edge of a wedge that would impose heavy costs on their livelihoods.[92] Federated Farmers, New Zealand's largest lobby group representing the interests of the agricultural sector, opposed the levy, organising a series of marches against the Government's proposal. The proposal was abandoned in October 2003 in the face of the high-profile opposition campaign, which received public support from members of the National Party,[93] ACT[94] and New Zealand First.[95] The scale of the lobby, and the misinformation that it produced, meant that the Government was unable to implement the levy. This failure set a precedent for every later attempt at reforming agricultural emissions policy and has had a major influence on political partisanship, industry and public opinion, acting to strengthen farmer's mistrust of government policy. The lesson that should have been learnt was that no price-based policy targeted at reducing biological emissions would be successful without building a foundation of industry support and minimising the risk of strong lobby pressure. As of 2017, all attempts to create policy targeted at, or inclusive of the agricultural sector have failed, at least in part due to not building a relationship with industry as a foundational step for successful reform.[96]

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[88] Pete Hodgson "Agricultural greenhouse gas research levy is modest and fair" (press release, 2 July 2003).
[89] (22 July 2003) 610 NZPD 7131.
[90] Pete Hodgson "Farmers 'forgetting' taxpayer millions spent on research benefiting agriculture" (press release, 18 July 2003)
[91] Jonathan Boston "The Political Challenges" in Johnathan Boston, Ralph Chapman and Margot Schwass (eds) *Confronting Climate Change; Critical Issues for New Zealand* (Victoria University Press, Wellington, 2006) at 45.
[92] Kerr and Sweet "Inclusion of Agriculture in a Domestic Emissions Trading Scheme: New Zealand's Experience to Date", above n 36, at 19.
[93] New Zealand Press Association "Farmers invade capital for 'fart tax' protest" (online ed, Auckland, 4 September 2003).
[94] ACT New Zealand "Eckhoff Tables Fart Tax Petition" (press release, 9 September 2003).
[95] Winston Peters "Fart tax – one more case of mad cows disease" (Waikato Federated Farmers Rally, Garden Place, Hamilton, 22 August 2003).
[96] Kerr and Sweet "Inclusion of Agriculture in a Domestic Emissions Trading Scheme: New Zealand's Experience to Date", above n 36, at 19.

2 A lesson

The government has not moved past the first conversation with farmers – determining whether New Zealand should do anything beyond research and voluntary efforts to mitigate biological emissions from agriculture – to discussing how to achieve successful reform as a joint effort.[97] Without jointly establishing an obligation, it is impossible to discuss the way forward. Despite not having had this conversation, the government was determined to implement a legislative response. Lobby group opposition to agricultural mitigation policy would not present as serious a political challenge if the government included the agriculture industry from the beginning and framed the conversation as one that works with industry, rather than against them. To adequately present reform, it is important to understand what the opposition is saying. Stakeholders, farmers and rural communities are more sympathetic when policy addresses their concerns and motivations.[98] Where there is backlash from stakeholders that make up a significant voting bloc, understanding and countering the lobby is a crucial foundation to reform. Otherwise, stakeholders' influence over government distorts incentives and hinders their ability to implement effective long-term policy, seeing governments instead ignore key issues in an attempt to implement policy. Failure to begin by engaging with stakeholders has meant that the Government has been forced to implement the ETS, the only mechanism that was passable, instead of considering how a stronger mechanism could have worked for industry.

B Failure to Overcome Common Public Perceptions

To a scientist, it makes sense to act on issues once scientific urgency is established. However, ministers must consider a variety of elements that go into making successful policy. Although scientists and the international community are calling for a solution, reform cannot succeed without an adequate understanding of public perceptions. Creating successful policy requires building sufficient support as a foundation for stable reform. No matter how urgently science requires a response, understanding public opinion should be the first step of any reform. In the long-term, it is important to have a stable mechanism with the legitimacy to effect behavioural change.

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[97] Kerr *Agricultural Emissions Mitigation in New Zealand: Answers to Questions from the Parliamentary Commissioner for the Environment*, above n 85, at 44.
[98] OECD *Reducing the Risk of Policy Failure: Challenges for Regulatory Compliance* (OECD, 2002) at 52.

James Renwick, professor at Victoria University of Wellington says that "climate apathy" is the biggest factor that undermines the scientific field and public advocacy in New Zealand.[99] Unlike other policy issues, some scientific proficiency is required to understand the gravity of rising emissions and the urgency of the response required. To object to issues such as poverty and inequality, one simply has to care for the plight of those less fortunate. Witnessing people struggling motivates others to call for action. In contrast, the urgency of keeping emissions below two degrees will mean little to many individuals that do not engage with science. A survey commissioned by Motu Economic and Public Policy Research and the Sustainable Business Council in 2014 to assess New Zealanders' climate change actions and attitudes found that 24 per cent of individuals think that climate change is the most important issue facing the world if nothing is done to stop it.[100] Although that number is significant, only 6.9 per cent of individuals thought that climate change was the biggest issue facing New Zealand.[101] Most people understand that climate change is a significant issue on a global scale, but fail to translate that concern to New Zealand. There is a disconnect between acknowledging that climate change is a problem, and that biological emissions contribute to that problem, necessitating a strong domestic response. This is partly because the rise of biological emissions is an issue with low impact visibility that is plagued by misinformation campaigns. The negative impacts of climate change such as higher food prices and taxes to fund agricultural research and development are seen and felt but the positive impacts of reduced risks of dangerous global warming are difficult to measure or experience.[102]

Since public perceptions are affected by a knowledge vacuum in New Zealand and influenced by industry opposition, the government needs to make efforts to educate and engage with the public on pertinent issues.[103] If the foundation is not there for the public to

[99] Jamie Morton "Q&A: NO, climate change won't kill us in this decade" *The New Zealand Herald* (online ed, Auckland, 1 Dec 2016).
[100] Horizon Research *New Zealanders' Climate Change Actions and Attitudes,* above n 67, at 3.
[101] At 12.
[102] Jonathan Boston "The Political Challenges" in Boston, Chapman and Schwass (eds) *Confronting Climate Change; Critical Issues for New Zealand,* above n 91, at 47.
[103] Mike Joy *Polluted Inheritance: New Zealand's Freshwater Crisis* (BWB Texts, Wellington, 2017) at 27.

understand and engage with the issue, individuals will react badly to policy that they think is unnecessary or hasty. Many New Zealanders are unaware of the true state of the environment. Mainstream news media gives issues superficial coverage, whereas rural media is dependent on advertising revenue from vested interests including the agriculture industry, so tends to downplay environmental issues.[104] Further, media such as Country Calendar and Farmer Weekly paint idyllic views of the romantic family farm in New Zealand, a reality that the country has outlived and intensified beyond.[105] New Zealand's clean, green, image validates this perception. Many New Zealanders are convinced by the image that the country sells to the rest of the world.[106] Surveys suggest that any public concern about New Zealand's waning clean, green image is not matched by willingness to accept the cost of measures to improve the environment.[107] Many aspects of the biological emissions problem render it difficult to break through public apathy. In an environment of industry lobbying, misinformation, and common perception problems, the ETS was doomed to fail without an adequate foundation that could overcome these factors to lead the public to an appropriate solution.

New Zealand's political climate makes it easy to blindly follow public perceptions rather than use reform as a tool to build concern. It is important to know whether the public feels immobilised or ready to act. This will enable politicians to gauge how ready the public are for policies that are necessary to effect transformative change in the agricultural sector.[108] By understanding how the mind works, institutions can learn better ways to communicate risks and policy responses.[109] Explicitly considering the underlying motivations of all New Zealanders would assist in ensuring that policy appeals to a wide range of constituents, and make implementation simple and effective at achieving the aims and concerns that New Zealanders hold for reducing agricultural emissions.[110] Adequate framing of issues, built

[104] Joy *Polluted Inheritance: New Zealand's Freshwater Crisis*, above n 103, at 66.
[105] Gerald Piddock "Intensive dairy farming threatens NZ's clean, green image" (online ed, Auckland, March 2017).
[106] Ross Cullen, Geoffrey Kerr, Kenneth Hughey *Public Perceptions of New Zealand's Environment: 2016* (Lincoln University, 2016) at 43.
[107] OECD *OECD Environmental Performance Review of New Zealand* (OECD Publishing, 2007) at 8.
[108] Chapman *Time of Useful Consciousness; Acting Urgently on Climate Change*, above n 47, at 24.
[109] Rand *Waking the Frog; Solutions for Our Climate Change Paralysis*, above n 84 at 53.
[110] Kerr and McDonald "Why Do New Zealanders Care About Agricultural Emissions?", above n 3, at 30.

on an understanding of industry and public opinion, is crucial to establishing a foundation for successful reform.

VI Step Two: Building a Reliable Evidence Base

A Evidence-based Policy Making

In 1987, Sir Kenneth Keith stated that "assembling the facts" is crucial to any successful reform.[111] The reform process for biological emissions has placed an emphasis on evidence-based policy that requires placing research-based evidence at the top of a hierarchical structure of knowledge as an input into the policy process.[112] However, the way that the government conducts evidence-based policy does not lend itself to a proper understanding of the facts in all areas, creating an imperfect foundation for reform. Once public concern has been established, it is important to have a solid factual base on which to build policy. Having such a base can even help to bolster public opinion. One reason that reform cannot achieve the biological emissions policy that the science requires is that under New Zealand's model of evidence-based policy, not all evidence is created equal. The model is built to favour emphasis on short-term costs. It lacks the tools to analyse future benefits that an issue such as agricultural mitigation requires to be a convincing policy idea. The second step to successful reform requires an evidence-based policy that incorporates adequate scenario planning tools to ensure that policy works beyond the short term.

1 Science in evidence-based policy

Scientific consensus states that climate change is happening, that agriculture contributes to the greenhouse effect and that reducing biological emissions would help New Zealand meet its emissions reduction targets.[113] The latest report by the Parliamentary Commissioner for the Environment ("PCE") on biological emissions said that there are technological solutions on the horizon, but even if all of these are implemented and commercialised to

[111] Sir Kenneth Keith "Philosophies of Law Reform" (1991) 7(3) Otago Law Review 363 at 367.
[112] Giada De Marchi, Giulia Lucertini and Alexis Tsoukiàs "From evidence-based policy making to policy analytics" (2014) 236 Ann Oper Res 15 at [4.1].
[113] Wright *Climate change and agriculture: Understanding the biological greenhouse gases,* above n 16, at 7.

full capacity, a reduction in stock levels would still be required to stabilise New Zealand's emissions.[114] After conducting a thorough analysis of all the available evidence, the PCE found that there is insufficient basis to delay agriculture's inclusion into the ETS.[115] The fact that a scientific consensus has been unable to form a political consensus or framework for action reflects problems with the way that evidence is used as an input into the policy process and as a foundation for reform.

It is easy to identify a problem, it is much harder to find, and implement a solution. Researchers are good at defining problems; therefore, policy-makers should look to the science to understand which issues require action. Science has identified that the planet is warming and that there is a need to reduce greenhouse gas emissions to limit global warming to two degrees Celsius and stabilise the climate. However, scientists are not as good at providing workable, scalable and meaningful policy solutions.[116] This is where a stable law reform process, that uses science as a *foundation,* is crucial.[117] The role of the policy-maker, as opposed to the scientist, is to consider the multiple domains that go into policy formation and the complexity involved, using the science to shape policy action.[118] The science should provide a starting point to determine that policy is needed, and form the foundation of a central framework for reform. It is only when all parties concede that science is calling for change, that change can begin to occur. Disagreeing on the nature of the change is a normal part of the process. Where there is no political consensus on the science because of fractured thinking, the settings for reform are not in place.

Once science has established a framework, it no longer dictates the policy process.[119] Different forms of evidence are used to determine policy settings. However, not all

[114] Wright *Climate change and agriculture: Understanding the biological greenhouse gases,* above n 16, at 7.
[115] Dr Jan Wright "Submission to the Finance and Expenditure Select Committee on the Climate Change Response (Moderated Emissions Trading) Bill".
[116] Peter Gluckman "Perspectives on science advising: what are the skills needed? (paper presented to the International Network for Government Science Advice, Brussels, 17 March 2017).
[117] Gluckman "Scientific advice in a troubled world", above n 117.
[118] Gluckman "Perspectives on science advising: what are the skills needed?", above n 116.
[119] Gluckman "Scientific advice in a troubled world", above n 117.

evidence is created equal, and in New Zealand, evidence-based policy focuses primarily on cost-benefit analysis and lacks scenario analysis. This is a bad sign for reform that is targeted at long-term solutions.

2 Cost-benefit analysis

Translating the science surrounding agricultural emissions to successful policy requires the government to undertake analysis of the costs involved in implementing such policies. Within New Zealand, information on the true cost of agricultural mitigation is poor.[120] Evidence-based policy in New Zealand supports the view that market principles should govern conflicts between environmentalism and economics by placing an emphasis on cost-benefit analysis as a primary pillar of the evidence-based policy model. This is reflective of wider government thinking and political ideology. However, relying on cost-benefit analysis to justify agricultural mitigation policy has not given policy-makers a full picture.

(a) Ignoring externalities

Government departments typically make policy decisions based on calculations of growth, employment, asset values and returns on private and public investments.[121] A suite of unquantified environmental externalities is ignored. These externalities are the costs of environmental degradation from agriculture including river pollution, climate change, and stranded assets such as major irrigation plants.[122] Central government ignores these externalities to a large extent because they do not feature in national accounting.[123] Estimates suggest that if the externalities of dairy farming were transparently valued they would match, or even exceed, the industry's revenue.[124] In addition, social goods such as the benefits of a healthy environment from reduced agricultural emissions cannot be valued in monetary terms. Therefore, cost-benefit analysis, the governments primary tool for

[120] Simon Anastadiadis and Suzi Kerr *Mitigation and Heterogeneity in Management Practises on New Zealand Dairy Farms* (Motu Economic and Public Policy Research, Motu Working Paper 13-11, 2013) at ii.
[121] Joy *Polluted Inheritance: New Zealand's Freshwater Crisis,* above n 103, at 21.
[122] At 21.
[123] At 22.
[124] At 22.

policy analysis, fails to account for the costs of environmental degradation and the social benefits of a cleaner atmosphere.

(b) Discount rates

As standard practise, when assessing long-term benefits including the environmental, economic and wellbeing effects of mitigating biological emissions, monetary models such as cost-benefit analysis apply social discount rates to determine the "true" cost of future activity.[125] Discount rates are used in modelling biological emissions reduction to account for the time value of money and for time preference. These rates assume that costs and benefits that arise in the future are worth less, because future money is worth less, and individuals prefer to receive benefits in the present.[126] Following this reasoning, applying cost-benefit analysis to inter-generational issues such as biological emissions policy is problematic. It assumes that the wellbeing of future generations is worth less than the wellbeing of those alive today. This creates an imbalance in intergenerational cost-benefit analysis models because comparing costs incurred today with benefits received in the future favours inaction. This imbalance is exaggerated for policy problems that span time horizons such as the mitigation of agricultural emissions where the costs will be felt today and the benefits far into the future.

Some of the largest disagreements on how aggressive agricultural mitigation policy should be are based on where to set the social discount rate.[127] Cost-benefit analysis uses subtraction: the benefits minus the costs summed over time indefinitely.[128] Due to the nature of the equation, any reasonable discount rate that is applied says that, in a short time, future benefits of reducing greenhouse gas emissions will tend to zero.[129] This model implies that there is no long-term benefit to emissions reduction because the benefits cannot

[125] William Nordhaus "A Review of the *Stern Review on the Economics of Climate Change"* (2007) 45 Journal of Economic Literature 686 at 689.
[126] Tyler Cowen and Derek Parfit "Against the Social Discount Rate" in Peter Laslett and James Fishkin (eds) *Philosophy, Politics, and Society* (Yale University Press, New Haven, 1992) 144 at 144.
[127] Cass Sunstein and David Weisbach *Climate Change and Discounting the Future: A Guide for the Perplexed* (Public Law and Legal Theory Research Paper No. 08-20, Harvard Law School, 2014) at 1.
[128] George Lakoff "Why it Matters How We Frame the Environment" (2010) 4(1) Environmental Communication 70 at 75.
[129] At 75.

be measured economically and the costs are multiplied over time.[130] Although appropriate for many policy areas, cost-benefit analysis is the wrong paradigm for considering the cost of agricultural emissions reduction, as it discounts the benefits of mitigating future global warming. Using this model has led to an inadequate evidence base limiting the options for reform.

(c) Stable variables

Traditional cost-benefit analysis is good for modelling the net benefits of single projects in isolation but is unsuitable for major systemic change, such as measuring alterations to land-use that will be required in New Zealand to fully abate agricultural emissions. Global warming will change variables, such as growth rates, that cost-benefit models tend to hold constant.[131] It is naïve to assume that the agriculture industry will continue to grow at the same rate as it is now, considering future changes in demand, technology and climate volatility.[132] The New Zealand government has relied on cost-benefit analysis that does not account for potential future costs of increased flooding, droughts, and overseas economic transformation and demand shifts that may impact future growth rates. A lack of consideration of these changing variables means that policy is not based on adequate future-cost modelling.

The conventional policy approach of analysing mitigation action in an economic framework, based on careful assessments of costs and benefits of emissions has led to little movement in this area,[133] and has been heavily criticised by independent scientists,[134] economists,[135] and the PCE.[136] When agricultural mitigation policy is left to be "optimised"

[130] Lakoff "Why it Matters How We Frame the Environment", above n 128, at 75.
[131] Tom Rand *Waking the* Rand *Waking the Frog; Solutions for Our Climate Change Paralysis,* above n 84 at 16.
[132] New Zealand *Agribusiness Agenda 2017* (KPMG, 2017) at 5.
[133] Chapman *Time of Useful Consciousness; Acting Urgently on Climate Change*, above n 47, at 34.
[134] Frank Ackerman and Ian Finlayson *The Economics of Inaction on Climate Change: A Sensitivity Analysis* (Global Development and Environment Institute, Tufts University, Working Paper No 06-07, 2006) at 1.
[135] Jonathan Aldred *Ethics and Climate Change Cost-Benefit Analysis* (University of Cambridge, Environmental Economy and Policy Research Number 44, 2009) at 9.
[136] Jan Wright *The State of New Zealand's environment: Commentary by the Parliamentary Commissioner for the Environment on* Environment Aotearoa 2015 (Parliamentary Commissioner for the Environment, Report, June 2016) at 24.

through inadequate economic models, insufficient attention is paid to the urgency of the science. The process then lacks a foundation for fully-informed debate, and therefore successful reform.[137]

B Scenario analysis

Successful reform on agricultural emissions requires a different type of analysis to traditional cost-benefit modelling, which includes long-term scenario analysis as a foundation for reform. Scenario analysis increases understanding of long-term, uncertain future pathways in complex systems to support decision-making.[138] A mechanism for future reform cannot be adequate without measuring its long-term implications. Cost-benefit analysis is important, but it should be one input, rather than the driver of decision-making. Access to intermediate and long-term forecasting and scenario analysis is vital for future planning and policy development.[139] However, no documentation describing the original ETS proposal or subsequent amendments has provided an estimate of the scale of emissions reduction that the government expects to result from the scheme because it is "too hard to predict to a high degree of certainty."[140]

Lack of scenario analysis as a foundation is an impediment to reform for long-term issues such as agricultural mitigation policy. There is a need to combine economic analysis with scientific forecasting to look at future options, both of action, and inaction. New Zealand's evidence base for future planning only allows a quantitative short-term, rather than a qualitative analysis.[141] In 2017, GLOBE NZ, a parliamentary group on climate change commissioned a report by Vivid Economics Ltd, a London-based economics consultancy group, to develop scenarios for achieving domestic emissions neutrality in New Zealand.[142] The report concluded that New Zealand needs to upgrade its evidence base to support low-

[137] Chapman *Time of Useful Consciousness; Acting Urgently on Climate Change*, above n 47, at 34.
[138] Brett Bryan et al "Land-use and sustainability under intersecting global change and domestic policy scenarios: Trajectories for Australia to 2050" (2016) 38 Global Environmental Change 130 at 131.
[139] Peter Gluckman *Towards better use of evidence in policy formation: a discussion paper* (Office of the Prime Minister's Science Advisory Committee, April 2011) at 6.
[140] Ministry for the Environment *The Framework for a New Zealand Emissions Trading Scheme*, above n 58, at 103.
[141] Alex Kazaglis and others *Net zero in New Zealand* (Vivid Economics, Technical report, March 2017) at 13.
[142] GLOBE-NZ *Global Legislators for a Balanced Environment* (GLOBE-NZ, compendium, 2017) at 9.

emissions pathway planning.[143] The most acute need is for land system modelling tools that generate bottom-up estimates of abatement opportunities and costs in the land sector,[144] because across all agricultural mitigation options, an absence of reliable estimates of costs and benefits is common.[145] Their report recommended improved cost estimates for alternate land uses such as horticulture so that policymakers are open to alternative options.[146] Overall, better understanding is required to design appropriate policy.[147] New Zealand needs to implement these recommendations to establish a reliable evidence base. Scenario analysis can account for changing variables such as demand shifts, technology improvements and increased adverse weather to gain a better picture of potential future pathways. These may contain an element of uncertainty, but will welcome a more robust conversation, and a widening of New Zealand's Overton Window, the space for what is seen as politically possible.[148] Lack of scenario planning highlights the government's focus on implementing a solution in the short-term, without adequately considering its long-term implications.

1 Example: setting New Zealand's target

Lack of future accounting is prevalent throughout climate change policy in New Zealand. In 2015, the Government commissioned two reports by Infometrics and Landcare Research to assess New Zealand's post-2020 emissions reduction target. The agencies were commissioned to undertake macroeconomic modelling on the monetary costs of New Zealand's proposed targets. No future accounting or scenario modelling was undertaken to determine the costs of New Zealand's emission reduction targets in either report because it was outside of the terms of reference set by the Ministry for the Environment. The agencies were not given the freedom to explore the cost of different responses, such as ones that may involve technological improvements, or the potential cost of missing targets. The reports assumed that agriculture would remain indefinitely excluded from any price

[143] Alex Kazaglis and others *Net zero in New Zealand* (Vivid Economics, Summary report, March 2017) at 37.
[144] At 37.
[145] Kazaglis and others *Net zero in New Zealand,* above n 141, at 86.
[146] At 86.
[147] At 86.
[148] Harris *The New Zealand Project,* above n 2, at 12.

mechanism despite significant research being put into emissions reduction technology. If agricultural emissions are not considered, it gives a more pessimistic view of New Zealand's options than is the reality. The Overton Window is narrowed when options are not put on the table.

The approach taken has been criticised by economists for not allowing detailed exploration of pathways for emissions reduction in each sector.[149] One report itself stated that the models did not account for the costs of inaction, or the co-benefits of action to reduce emissions. The government said that this is because:[150]

> The costs of inaction will be large but are hard to predict accurately and hard to express in monetary terms. This is also the case for modelling co-benefits of action such as air quality and health benefits.

The Infometrics model did not take into account: the net impacts of New Zealand's greenhouse gas emissions on climate change, including what the economic and social impacts of a changing climate might be; non-market policies to reduce emissions, such as restrictions on fossil fuels and bio-oils; and actions that consumers or governments in other countries could take against New Zealand if it was not doing enough to reduce emissions.[151] Therefore, computable general equilibrium, the cost-benefit model used, has not adequately captured non-economic costs and benefits. Evidence that is so limited in scope cannot provide an adequate foundation for considering the true implication of policies. Infometrics itself acknowledged that the report did not provide a full picture.[152] They commented that sector-specific future modelling and other quantitative and qualitative research approaches are required to develop a deeper base of knowledge for policymakers.[153] Overlooking scenario analysis leads to policy considerations that are

[149] Kazaglis and others *Net zero in New Zealand,* above n 141, at 7.
[150] Ministry for the Environment, "Modelling the economic costs of New Zealand's intended nationally determined contribution" (22 May 2015) Ministry for the Environment <www.mfe.govt.nz>.
[151] Infometrics *A General Equilibrium Analysis of Options for New Zealand's post-2020 Climate Change Contribution* (Infometrics, 13 April 2015) at 4.
[152] At 4.
[153] Infometrics *A General Equilibrium Analysis of Options for New Zealand's post-2020 Climate Change Contribution,* above n 151, at 4.

overly simplistic because they lack an adequate foundation. It is important that the government seek information on all possible outcomes to establish a reliable evidence base as part of the reform process.

The economic costs used in New Zealand's Climate Change Target discussion document, released in May 2015, are based on the modelling by Infometrics.[154] This economic modelling contributed the main policy advice informing the development of New Zealand's emissions-reduction target.[155] Thus, a focus on cost-benefit analysis means that inadequate economic models are used to pass judgment on the net costs of climate action.[156] Policy that is informed by an incomplete evidence base can fall short of its objective. Ignoring future and current co-benefits has made it difficult to achieve successful reform. It reaffirms the governments priority of implementing a policy in the short term, at the expense of ensuring a grounding in the long-term success of the policy. Without a diverse range of tools for collecting evidence, it is difficult to achieve reform that requires a long-term vision, such as a response to biological emissions in New Zealand.

2 Politicisation of evidence

Achieving a reliable evidence base as a foundation for reform requires ensuring that evidence is independent and not politicised. According to the political model of evidence-based policy, research that is equally available to all parties involved in the policy process can be used as political ammunition, to bolster differing positions.[157] This inevitable process leads to a danger of misleading information becoming the foundation of political advocacy, strategy and eventually, policy.[158] The nature, speed and pervasiveness of communication means that such misinformation gathers momentum quickly.[159]

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[154] Ministry for the Environment, "Modelling the economic costs of New Zealand's intended nationally determined contribution", above n 150.
[155] Ministry for the Environment, "Modelling the economic costs of New Zealand's intended nationally determined contribution", above n 150.
[156] Rand *Waking the Frog; Solutions for Our Climate Change Paralysis*, above n 84 at 16.
[157] Carol Weiss "The Many Meanings of Research Utilization" (1979) 39 Public Administration Review 426 at 429.
[158] Gluckman "Scientific advice in a troubled world", above n 117.
[159] Gluckman "Scientific advice in a troubled world", above n 117.

A reliable evidence base is important because scientific uncertainty is exploited to justify inaction on agricultural emissions.[160] When too much emphasis is placed on uncertainty it leads to policy inaction. The nature of science has changed so that evidence is not aimed at creating certainty, but at reducing uncertainty through increased probabilities.[161] The more that scientists discover, the more likely they are to become aware of gaps in knowledge,[162] and the easier it becomes for those gaps to be exploited by parties interested in preserving the status quo. Further, the volume of scientific research on agricultural emissions has increased significantly over time, making it harder to determine what is reliable.[163] This invites cherry-picking from the inevitable variability of results or the exploitation of remaining uncertainty. Sceptics may call for more research to resolve uncertainty and inconsistency while the original problem motivating the volume of scientific research goes unaddressed.[164]

This was seen in the New Zealand Parliamentary Debates during the passage of the ETS. Opposing parties would raise scientific reports that were not supported by 97 per cent of the scientific community. For example, during the passage of the ETS, ACT Deputy Leader Ken Shirley stated that:[165]

> Climate change is a reality – it always has been; it is a dynamic and changing factor- but mankind has a very limited capacity to influence it. If we look at the temperature data, we see that it does not support the assumption of the basic problem…yet everyone assumes that this problem is massive and upon us.

This quote is an example of the inevitable politicisation of evidence inherent in politics. Some politicians will always oppose, and there will always be information available with

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[160] Roger Pielke *The Honest Broker* (Cambridge University Press, Cambridge, 2007) at 72.
[161] Gluckman "Scientific advice in a troubled world", above n 117.
[162] Brian Head "Reconsidering evidence-based policy: Key issues and challenges" (2010) 29 Policy and Society 77 at 87.
[163] Gluckman "Scientific advice in a troubled world", above n 117.
[164] Pielke *The Honest Broker*, above n 160, at 66.
[165] (1 May 2002) 600 NZPD 125.

which to do so. It is important that counter-weights are built into the policy process to ensure that such misinformation does not receive traction. Although there has long been consensus on the causal relationship between climate change and rising biological emissions, there have been delays in politicians accepting this science.

Evidence can be ignored or manipulated by politicians and interest groups seeking to use it to their advantage, either to justify unpopular policies, or prevent the implementation of policies that are otherwise evidentially sound.[166] It is ultimately policymakers that interpret scientific reports. They are motivated by their external perceptions in the public domain, relationships with key stakeholders, and ministerial instructions.[167] Therefore, reliability of data is not contingent only on the data itself, but on how it is translated to the policy process by officials, who are motivated by things other than evidence alone. This is why it is important to have the scientific foundations in place for sound evidence-based policy on which a mechanism can be based.

The merit of science in the policy process stems from its lack of values, whereas policy decisions usually involve the weighing of values alongside evidence. In areas of controversy, evidence becomes easily contested and politicised.[168] Many politicians are motivated by short-term political interests, rather than evidence.[169] Objective evidence can be used as a pawn in a contested public debate, to support conflicting subjective positions.[170] Scientific experts on each side of the controversy cancel each other out and the more powerful political or economic interests prevail. This scenario has played out in almost every recent debate on agricultural mitigation policy.[171] The misuse of science has become a proxy for values.[172] Politicisation of science is particularly problematic when the

[166] Gluckman "Scientific advice in a troubled world", above n 117.
[167] Brian Head "Reconsidering evidence-based policy: Key issues and challenges", above n 162, at 81.
[168] At 81.
[169] Palmer "Climate Change and New Zealand; is it doom or can we hope?", above n 3, at 17.
[170] Daniel Sarewitz "Science and Environmental Policy: An Excess of Objectivity" in R Frodeman (ed) *Earth Matters: The Earth Sciences, Philosophy, and the Claims of Community* (Prentice Hall, New Jersey, 2000) at 79; Shaun Hendy *Silencing Science* (Bridget Williams Books, Wellington, 2017) at 63.
[171] Pielke *The Honest Broker*, above n 160, at 66.
[172] Gluckman "Scientific advice in a troubled world", above n 117.

competing interests are not equal and one side is able to back a problematic report, without the other having the resources to counter it. Such is the case in the realm of biological emissions policy where the well-resourced agriculture lobby groups are pitted against diffuse environmental interests.

Until there is broad consensus on the science, it will be difficult to achieve a framework for resolution of the problem. The discussion needs to focus on what needs to be done based on the science. Without agreement on the science, that becomes difficult. The nature of confrontational politics means that opposition will always be present – but opposition should be about the nature of the solution, not about whether a solution is required.

VII Step Three: Creating a Framework for Decision-Making

A crucial foundation for the success of long-term reform is the establishment of a framework for decision-making that all parties and government departments are committed to. Law reform will never succeed in the long-term without cross-party, and cross-government consensus on key points underpinning it. Science should play a central role in the framework as an objective source of knowledge, agreed on by all stakeholders.[173] Agricultural mitigation reform has been ineffective because the government has failed to produce a framework for discussion of the appropriate policy mechanism. This is in part, due to the nature of confrontational politics in New Zealand.

A framework provides any government with a base to work from. If there is consensus that action is required on an issue, then parties are likely to move *forwards* rather than back even if they disagree on any particular mechanism. Agricultural mitigation policy in New Zealand has failed because there is no parliamentary consensus on agriculture's role in climate change mitigation policy. Therefore, it is understandable that policy fails because political parties disagree as to whether agriculture should be included. Once there is consensus that *something* needs to be done, parties can debate over the strength of the mechanism such as the appropriate amount of free allocations and subsidies. Upon

[173] Shaun Hendy *Silencing Science*, above n 170, at 68.

agreement as to what agriculture's obligation is, every government department involved will have a mandate to achieve it. The government started looking for the best policy mechanism, without considering agriculture's obligations as part of the solution. In doing so, the government has missed the crucial step of building consensus on a core framework from which policy can be developed. Long-term issues such as agricultural emissions reduction require such a framework so the underlying obligations withstand changes in government and the confrontational nature of politics.

A Lack of Cross-Party Support

Climate change policy is a long-term problem mired with political difficulty. Scientific and economic inputs are important, but legislation that requires implementation and development across electoral cycles such as the ETS will only work if there is policy certainty. Research and experience suggests that policy volatility is hard to manage, and more important for long-term investment than price volatility.[174] The problem with legislation such as the ETS that provides discretion, flexibility and exceptions is that the decision whether to implement strict obligations is purely political.[175] Policy that allows such discretion is problematic when it is not passed with cross-party support and there are limited checks on Ministers that determine the settings. Cross-party support is a crucial foundation to the success of such policy.

The Climate Change Response (Emissions Trading) Amendment Act 2008 that established the ETS was passed weeks ahead of a general election, without cross-party support.[176] It received 63 ayes and 57 noes, according to the stance of respective parties on climate change mitigation policy. Just after the ETS was passed, The Labour Party lost the election to a centre-right coalition led by the National Party[177] and the implementation of the ETS was put on hold. Another round of select committee hearings took place as the new

[174] Alyssa Gilbert and others *Cap-Setting, price Uncertainty and Investment Decisions in Emissions Trading Systems* (ECOFYS, Project No. MARUK14255, 16 January 2014) at 32.
[175] Kerr and Sweet "Inclusion of Agriculture in a Domestic Emissions Trading Scheme: New Zealand's Experience to Date", above n 36, at 26.
[176] Kerr and Leining *Lessons Learned from the New Zealand Emissions Trading Scheme*, above n 5, at 31.
[177] Kerr and Sweet "Inclusion of Agriculture in a Domestic Emissions Trading Scheme: New Zealand's Experience to Date", above n 36, at 6.

administration determined the extent and form of additional concessions for agriculture and other major emitters.[178] In 2009, the National Party enacted the Climate Change (Moderated Emissions Trading) Amendment Act 2009. The amendment weakened incentives for all industries to reduce emissions.[179] It increased subsidies[180] to all polluters and delayed the inclusion of agriculture into the scheme until 1 January 2015.[181] The same government delivered further amendments to the Act in 2012. The Climate Change Response (Emissions Trading and Other Matters) Amendment Act introduced measures that weakened the operation of the scheme, particularly in relation to agricultural emissions.[182] The amendment removed a specified entry date for agriculture into the scheme and delayed its inclusion indefinitely.[183] Subsidies for all polluters were also continued indefinitely.[184] The PCE stated that while the 2009 amendment weakened the scheme, the changes in 2012 rendered it "toothless".[185]

When policy is passed without cross-party support, elections can change a country's approach to polarising issues such as agricultural emissions. Successful reform requires an approach that is static over time because a policy that is reversed or diluted every time there is a change in government lacks political sustainability.[186] The amount of time that the ETS has spent under review is driven by rushed policy-making processes that pushed through changes despite opposition.[187] Worse, depending on the controversy of the issue, policy responses can become a reason for changing the government. The passage of the ETS was one of the reasons that the Labour government lost the 2008 election, as National

[178] Bertram and Terry *The Carbon Challenge: New Zealand's Emissions Trading Scheme,* above n 17, at 35.
[179] Kerr and Sweet "Inclusion of Agriculture in a Domestic Emissions Trading Scheme: New Zealand's Experience to Date", above n 36, at 6.
[180] Dr Jan Wright "Addendum to the Submission on the Climate Change Response (Emissions Trading and Other Matters) Amendment Bill" at 4.
[181] Climate Change Response Act 2002, s 217.
[182] Climate Change Response (Emissions Trading and Other Matters) Amendment Bill (52-2), cl 85B.
[183] Wright "Addendum to the Submission on the Climate Change Response (Emissions Trading and Other Matters) Amendment Bill", above n 180, at 4.
[184] At 4.
[185] At 13.
[186] David Suzuki and Ian Harrington *Just Cool It; The Climate Crisis and What We Can Do* (NewSouth Publishing, Sydney, 2017) at 74.
[187] Kerr and Leining *Lessons Learned from the New Zealand Emissions Trading Scheme,* above n 5, at 31.

campaigned on reducing obligations.[188] Because it is a controversial issue that affects the voting bases of different parties, it is impossible to end this polarisation without establishing cross-party support for reform. If parties can agree, based on the science, that a minimal level of action is required from the agriculture industry, the question becomes how best to include agriculture and allows the policy to move forward in the long-term. Political parties will continue to disagree as to the nature of this inclusion, but that will always be the case. What is important is that they agree on a core framework, based on the science, and that they are committed to reducing emissions.

Successful reform that provides predictability and continuing support for industry requires a gradual transition to action on agricultural emissions that all parties agree to over the long-term. The exact speed at which change occurs is up to individual governments, and parties will undoubtedly debate the issue, but there should be cross-party consensus to ensure inclusion is timely. If reform is to occur, the adversarial nature of the conversation needs to be replaced with one about solutions.

There have been multiple acknowledgments of a lack of cross-party consensus being a barrier to successful reform from both sides of the political spectrum.[189] Scott Simpson of the National Party stated that climate change was a challenge that would face all governments, of all stripes, and that: [190]

> …these are issues that don't fit neatly into a three-year parliamentary cycle. So it makes sense for us to not be too politically isolated in terms of how we approach issues of this sort.

The PCE directed Parliament that "being serious about climate change needs commitment not just from the current Government but from successive future governments."[191] Despite

[188] Bryce Edwards "New Zealand" (2008) 47 European Journal of Political Research 1079 at 1079.
[189] Chris Bramwell "Cross-party report maps out climate change scenarios" (online, Auckland, 21 March 2017).
[190] (13 April 2017) 721 NZPD 17492.
[191] Jan Wright *Stepping Stones to Paris and Beyond Climate change, progress, and predictability* (Parliamentary Commissioner for the Environment, Report, July 2017) at [6].

these recommendations, the government has still failed to build cross-party consensus on the issue of agricultural emissions.

1 Polarisation

Instead of coming closer to build a framework because the issue has become more urgent, New Zealand's political parties have distanced as the agriculture industry's concern that climate change may require drastic change has heightened.[192] Reducing emissions requires a change in the way that the industry operates. Until technology can deliver a silver bullet, it is necessary to reduce stock numbers, consider agro-ecological practises, or alter land use.[193] The PCE has stated that even if all viable technology is commercialised, there is still a need to reduce stock numbers to alter land use.[194] The agriculture industry is sceptical of government intervention and the National Party took the side of the industry in 2003, joining farmers to protest the Agricultural Emissions Levy. An "us and them" mentality has become entrenched in the relationship between government and industry since the Agricultural Emissions Levy. New Zealand's two major parties have been on differing sides of the policy line ever since, entrenching agricultural policy in New Zealand as somewhat of a "culture war".[195] This is the exact opposite of what is required as a foundation for reform.

Though both sides of the political yardstick are subject to the same problem,[196] progressives tend to see climate change as a threat of greater urgency, while conservatives tend to downplay the nature of the threat,[197] assured that we make radical changes at our peril. The New Zealand National Party, typically more conservative, adopts a cautious, incremental approach to climate change policy by excluding the agriculture industry.[198] The National Party supports industry in targeting slow change, including no price mechanism and few regulations. They approach the issue carefully and are defensive of agriculture's obligation

[192] Chapman *Time of Useful Consciousness; Acting Urgently on Climate Change*, above n 47, at 36.
[193] Wright *Climate change and agriculture: Understanding the biological greenhouse gases*, above n 16, at 37.
[194] At 28.
[195] Lynn Grieveson "Stark contrast emerges on climate policy" (online ed, Auckland, August 9 2017).
[196] Rand *Waking the Frog; Solutions for Our Climate Change Paralysis*, above n 84 at 15.
[197] At 44.
[198] Rand *Waking the Frog; Solutions for Our Climate Change Paralysis*, above n 84 at 15.

to mitigate climate change, emphasising the importance of agriculture to New Zealand's economy.[199] The National Party plays into farmers wishes as a major voting bloc.

The New Zealand Labour Party is more hesitant of the status quo and believe in gradual transformational action. The 2017 election saw continued polarisation over agriculture. As part of Labour's 2017 election campaign the Party proposed the gradual inclusion of agriculture into the ETS, with a 90 per cent free allocation of permits.[200] Consistent with historic opposition, the National Party launched an advertising campaign in response, labelling the policy a "fart tax" and emphasising farmers' efforts to improve environmental conditions.[201] Little has changed in the decade following the Agricultural Emissions Levy proposal. The issue has become polarised in the minds of politicians, the public and industry players. Therefore, for this issue, politics itself acts as a barrier to reform. For successful reform, agricultural emissions management must be purged of political ideology.[202] Science and economics, rather than politics, should be the disciplines at the heart of the conversation. A decade of failures to achieve cross-party support on the issue signifies the importance of building a framework to guide long-term reform, instead of spending decades discussing the appropriate response, just to have it unwound at the next election.

B Lack of Government Cohesion

The sequence of downward revisions to the ETS illustrates the extent to which policies to reduce agricultural emissions have been developed with an inadequate foundation.[203] New Zealand's lack of central framework for dealing with climate change has been a barrier to reform because an issue that affects all sectors of society requires a cross-party, multi-sectoral, all-of-government approach. Agricultural mitigation policy lacks a central framework of commitment, both in terms of cross-party and cross-government support.

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[199] New Zealand National Party "Policy 2017 Primary Industries Factsheet" (2017) National <www.national.org.nz>.; New Zealand National Party "Policy 2017 Climate Change Factsheet" (2017) National <www.national.org.nz>.
[200] New Zealand Labour Party "Protecting our Environment" (2017) Labour <www.labour.org.nz>.
[201] Dan Satherley "National attack ads on tax 'not a lie' – Paula Bennett" (18 August 2017).
[202] Joy *Polluted Inheritance: New Zealand's Freshwater Crisis,* above n 103, at 26.
[203] Bertram and Terry *The Carbon Challenge: New Zealand's Emissions Trading Scheme,* above n 17, at 42.

Simon Upton, former Minister for the Environment and incumbent PCE, stated that people expect parliament to discuss big issues, but it rarely happens.[204] The permanent bureaucracy exists so that issues are dealt with when parliament's time is focused on other things. However, New Zealand's government system is not working well to reduce emissions. Reports prepared by New Zealand officials have identified problems flowing from an excessive focus on the efficiency of individual departments.[205] Despite the government's creation of a group of climate ministers with a mandate to consider climate change, the PCE has stated that climate policy is scattered across multiple government departments "and can be crowded out by other priorities."[206] Climate change policy is the domain of the Ministry for the Environment, and the Climate Change Minister. Agriculture is the domain of the Ministry for Primary Industries ("MPI"). The Climate Change Minister alone, cannot influence emissions. They must consult other ministers, but often, their aims and measures of success differ. MPI's incentives are economic growth and the expansion of primary industries to achieve a doubling in the value of exports by 2025.[207] MPI plays a critical part in the government's business growth agenda for building export markets, innovation, and natural resources.[208] Sustainability is one of MPI's four goals, but it does not mention climate change.[209] MPI's strategic planning document mentions that climate change could have significant effects on the primary sector, but contains nothing about mitigation.[210] To reduce biological emissions, the Minister of Climate Change can create policy, but it cannot be implemented without MPI's aid.

In its 2014 Briefing for Incoming Ministers, the Ministry for the Environment stated that:[211]

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[204] Simon Upton "Too Young – Too Old" (Valedictory Speech, New Zealand Parliament, 12 December 2000).
[205] Mark Prebble *Which Reform Is Most Important? – Some Evidence from New Zealand* (Institute for Governance and Policy Studies, Victoria University of Wellington, Working Paper 12/03, 2012) at 2.
[206] Wright *Stepping Stones to Paris and Beyond Climate change, progress, and predictability*, above n 191, at 20.
[207] Ministry for Primary Industries *Strategic Intentions 2015-2020* (Ministry for Primary Industries, September 2015) at 9.
[208] At 7.
[209] Ministry for Primary Industries "Our strategy" (09 September 2017) Ministry for Primary Industries <www.mpi.govt.nz>.
[210] Ministry for Primary Industries *Strategic Intentions 2015-2020,* above n 207, at 10.
[211] Ministry for the Environment *Environmental Stewardship for a Prosperous New Zealand,* above n 76, at 23.

> The causes of, and solutions for addressing, climate change sit across multiple portfolios including agriculture, transport, energy and primary production. Collaboration across government agencies and Ministers is needed to build a shared understanding of the synergies and differences between different sector objectives. Enduring solutions must be agreed collectively by Ministers. This will require strong leadership, effective coordination and strategic collaboration at Ministerial and agency levels.

Reform will not succeed until cohesion is achieved across ministries on this issue. An overarching policy framework that underlies decisions in all sectors is required. Over and above the creation of reference groups, every Ministry needs a mandate to reduce emissions. As potentially the biggest issue facing the primary industries, mitigation needs to be a focus for MPI. Climate change affects all sectors of society, therefore all sectors must respond.[212] A commitment to integrated policy aimed at accelerating green economic and social transformation is required.[213] This is consistent with New Zealand's commitment under the Paris Agreement 2015, to establish a resilient policy architecture with cross-party support that offers predictable processes to guide future political decision-making.[214] An all-of-government framework is crucial to the success of biological emissions policy. The stability of the context in which law is created is as important, if not more, than the substance of the legislation to achieving successful reform.[215] Climate change is probably the most significant multi-sectoral law reform problem facing the world. It is difficult to identify an area that will remain unaffected by climate change policy. For this reason, a successful foundation to climate change reform needs to include all government departments.

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[212] Pete Hodgson "The scientific and international context for climate change policy" in Johnathan Boston, Ralph Chapman and Margot Schwass (eds) *Confronting Climate Change; Critical Issues for New Zealand* (Victoria University Press, Wellington, 2006) at 39.
[213] Chapman *Time of Useful Consciousness; Acting Urgently on Climate Change*, above n 47, at vi.
[214] Suzi Kerr "A new approach to emissions trading in a post-Paris climate" *The Conversation* (online ed, New Zealand July 7, 2017).
[215] Jamieson "Legislation Through the Millennial Looking Glass", above n 45, at 722.

VIII An Unstable Precedent

A A Precedent of Inaction

Inapt legislation that is built on the wrong foundations can harm a law reform process rather than bolster it.[216] Because the government did not build the adequate foundations for reform by overlooking the importance of industry trust and public support, a solid evidence base and framework, the resultant mechanism is not achieving its aim. However, since legislation exists, it poses a challenge to those seeking further reform. Legislation creates the appearance of real progress.[217] Once legislation is implemented, the impetus for change is lost as there an appearance that the issue has been resolved. After decades of inaction, New Zealand's Overton window has narrowed as agricultural emissions policy has become mired in politics by industry capture and partisanship.

Agriculture is technically included in the ETS.[218] This has meant that alternative approaches to reducing agriculture emissions have been foregone. The Labour Party has unintentionally set a precedent for limited action on agricultural emissions by pushing through a "comprehensive" scheme that excluded agriculture from the outset because the foundations for its inclusion had not been set. This initial reluctance to include the industry may have made it easier for successors to continue the delay. It is always harder to repeal policy once legislated, than to delay implementation. Rhetoric is important in the political realm, and if legislation is enacted with the view that it is too difficult, it enables subsequent governments to continue down this path. With long-term legislation that crosses industries and sectors such as the ETS, it is imperative to get it right the first time by building a strong foundation for reform that imbeds clear aims going forward.[219] The rhetoric of delaying action until the technology is there comes from the Labour government initially, and has fallen neatly into the National Government's hands, whose actions have served to strengthen this precedent. Such rhetoric narrows the Overton window, and renders it difficult to be open-minded about change. This presence of legislation has made

[216] Jamieson "Legislation Through the Millennial Looking Glass", above n 45, at 726.
[217] Bertram and Terry *The Carbon Challenge: New Zealand's Emissions Trading Scheme,* above n 17, at 11.
[218] Ministry for the Environment "About the New Zealand Emissions Trading Scheme", above n 4.
[219] Law Commission *Presentation of New Zealand Statute Law* (NZLC Report 104, 2008) at 46.

governments lose sight of the fact that the ETS is merely a tool, not a climate strategy.[220] The foundation to reform is crucial to developing a strategy for effective legislation.

1 ETS review

Under a fractured framework that was built on implementing a tool, rather than the *right* tool, review is unlikely to achieve much if the foundations for stable reform are not present and there is a strong precedent of inaction. The same factors that affect the stability of the legislation affect the stability of the review process. Review is important to ensure that policy is achieving it aims, but without adequate foundations, review will be subject to the same inadequacies that plagued the reform process.

It is difficult to make policy work without conducting periodic reviews to assess whether it is meeting its aims. Only by doing so, can policy be improved. In 2011, under a mandatory review of the ETS, an independent panel recommended that biological emissions from animal livestock and fertiliser use enter the scheme in 2015, with two-for-one surrender obligations that are eventually phased out.[221] The government said that it would only support agriculture's inclusion under two conditions: the availability of technologies capable of reducing emissions, and international competitors taking sufficient action on their emissions in general.[222] The review suggested that the abatement options available to the sector were sufficient.[223] Such opportunities include forestry, nitrification inhibitors, and "good practice" farm management techniques that increase productivity such as holistic grazing that enhances soil's carbon sequestering potential.[224]

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[220] Tim Murphy "Climate Change: National is not for changing" Newsroom (online ed, Auckland, 20 September 2017).
[221] Emissions Trading Review Panel 2011 *Doing New Zealand's Fair Share. Emissions Trading Scheme Review 2011: Final Report* (Ministry for the Environment, June 2011) at 10.
[222] Maria Rocha and others *New Zealand deploys creative accounting to allow emissions to rise* (Climate Action Tracker policy brief, 15 June 2015) at 20.
[223] Emissions Trading Review Panel 2011 *Doing New Zealand's Fair Share; Emissions Trading Scheme Review 2011: Final Report*, above n 221, at 48.
[224] At 48.

The government did not take up this recommendation. Instead, in 2012, they amended s 160, the review provision.[225] There is accordingly no longer a mandatory review under the ETS. The decision whether to conduct a review is left to the minister's discretion.[226] Previously, the Act required an independent panel to review the Act every five years. Such review provides a mechanism for engagement, accountability and transparency that is fundamental to good governance and successful reform over the long term.[227] The most criticised aspect of the amendment is that the Minister can appoint a government agency, instead of a panel, to conduct review.[228] There are also no longer mandatory factors to consider – the Minister decides the review's scope. Under the original Act, review had to incorporate minimum considerations such as New Zealand's international obligations, linkages to overseas trading schemes and the inclusion of activities under the ETS.[229] The changes to the review provision leave the manner and method of review entirely at the Minister's discretion and provide no guiding principles for exercising that discretion.[230]

Upon amending the legislation, the government stated that it would review the ETS in 2015 and agreed that "the next review…will specifically cover agriculture's entry to the ETS."[231] Simultaneously, the amendment removed any legal obligation for the government to follow through with that statement.[232] It eliminated the requirement to consider agriculture's entry,[233] and the promise was not upheld. In 2016, a review was conducted to assess the operation and effectiveness of the ETS.[234] It focused on transition measures that moderate the scheme's impact, how it should evolve to meet New Zealand's 2030 target, as well as

[225] Climate Change Response (Emissions Trading and Other Matters) Amendment Bill 2012.
[226] Wright "Addendum to the Submission on the Climate Change Response (Emissions Trading and Other Matters) Amendment Bill", above n 180, at 8.
[227] At 8.
[228] Wright "Addendum to the Submission on the Climate Change Response (Emissions Trading and Other Matters) Amendment Bill", above n 180, at 9.
[229] Climate Change Response Act 2002, s 160(5).
[230] Wright "Addendum to the Submission on the Climate Change Response (Emissions Trading and Other Matters) Amendment Bill", above n 180, at 15.
[231]Cabinet Paper "Emissions Trading Scheme Review 2012 – final decisions on amendments to the Climate Change Response Act 2002" (2012) at 3.
[232] Wright "Addendum to the Submission on the Climate Change Response (Emissions Trading and Other Matters) Amendment Bill", above n 180, at 8.
[233] Climate Change Response (Emissions Trading and Other Matters) Amendment Act, s 61.
[234] Ministry for the Environment *The New Zealand Emissions Trading Scheme Evaluation 2016* (Ministry for the Environment, February 2016).

operational and technical improvements.[235] Any discussion of agriculture was expressly excluded. Therefore, submissions on the inclusion of agricultural surrender obligations, or discussions of agriculture in relation to the scheme were not accepted. Under the previous legislation, these considerations would have been mandatory.[236] This amendment passed despite the PCE recommending in 2009 that "allocation provided to protect competitiveness should be re-assessed *more* regularly than five yearly, and a mechanism to fast-track allocation changes should be created."[237] The government's justification for the amendment was that s 160 was causing "review fatigue"[238] and did not allow flexibility to review at the most appropriate time. However, only one review had been conducted. Although review fatigue is a valid concern for market-based mechanisms that work without interference, review is necessary for policy such as the ETS that is still being developed. The ETS will not be fully operational until agriculture is included, therefore it is necessary to have regular review to discuss the viability of its entry.

2 Implications

Often, little effort is made once law is enacted to research whether statutes achieved what was intended.[239] It is difficult to ensure that the ETS is reducing emissions without reviewing it, especially as it is aimed at long-term behavioural change. It is only by carrying out extensive reviews of how the ETS affects all sectors that it will be possible to make definitive judgments about the quality of the law and policy of the ETS.[240]A recent OECD Policy Outlook for New Zealand criticised the fact that ex-post evaluation is not mandatory and that there is no established methodology for conducting such evaluations.[241] The review suggested that government needs to be more engaged to promote evidence-based policy throughout all stages of the legislative process to stimulate well-being.[242]

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[235] International Carbon Action Partnership (ICAP) *New Zealand Emissions Trading Scheme (NZ ETS)* (ICAP, 26 September 2016) at 1.
[236] Climate Change Response Act 2002, s 160(5).
[237] Wright "Addendum to the Submission on the Climate Change Response (Emissions Trading and Other Matters) Amendment Bill", above n 180, at 2.
[238] (23 August 2012) 683 NZPD 4726.
[239] Sir Geoffrey Palmer QC "Intergenerational Governance; problems of legislation" (2017) 13 Policy Quarterly 68 at 70.
[240] At 70.
[241] OECD *OECD Regulatory Policy Outlook 2015, Country Profile, New Zealand* (OECD, 2015) at 2.
[242] OECD *OECD Regulatory Policy Outlook 2015, Country Profile, New Zealand* (OECD, 2015) at 4.

Government programmes need to be designed with future review in mind, including the data needs of such review.[243] The cost, and specific objectives of programmes should be clear to evaluators so that they can adequately analyse them.[244] All data should be made available, and a process for continuing data collection created. A stable foundation for purpose-built reform should have processes in place that outline how success is monitored and how programmes can be formally evaluated for impact and effectiveness. This may require a shift to long-term thinking rather than the current setting that is based on action, not evaluation or foundation-building.

IX Where to From Here: Establishing a Foundation

A Framing: A Starting Point

Re-building a foundation for successful reform requires going back to Step One: understanding industry and public opinion in New Zealand. Politics is about convincing people. Choosing a policy mechanism means little if the public, the agriculture industry, and other politicians do not support it. Widespread support is a crucial foundation to the success of long-term reform. We are now better placed than we were before to understand the implications of climate change and the cognitive difficulties involved in understanding the problem of biological emissions. It is time for the government to consider how to sell solutions. Successful reform will need to combine evidence, analysis, cross-party support and a central framework with positive framing to get stakeholders on board.

Those trained in public policy, science, economics and law are often of the view that reason is conscious, unemotional and logical.[245] Many believe that with knowledge of the facts on biological emissions, people will reason people to the right conclusions.[246] However,

[243] Gary Banks "Evidence based policy-making: What is it? How do we get it?" (ANZOG/ANU Public Lecture Series 2009, Canberra, 4 February 2009) at 12.
[244] At 12.
[245] Daniel Kahneman and Amos Tversky "The framing of Decisions and the Psychology of Choice" (1981) 211 Science 453 at 454.
[246] Lakoff "Why it Matters How We Frame the Environment", above n 128, at 72.

people think in unconscious structures called "frames".[247] Unless facts make sense in terms of an individual's system of frames, they are ignored. To be communicated effectively, facts must be framed properly.[248] Re-stating the science or underscoring the common-sense of taking mitigating action on agricultural emissions is unlikely to stimulate involvement of a wider constituency of people in debate about responses to anthropogenic climate change.[249] Moves to flood the public with sound data have been misguided because truth that contains implications that threaten people's beliefs is met by resistance and an increase in willingness to support alternative arguments.[250] Therefore, educating people without changing the frames of public debate, is an ineffective means of selling policy solutions.[251] Many frame-circuits have direct connections to the brain's emotional regions.[252] Repetition of ideological language strengthens the circuits for that ideology in a listener's brain.[253] An important question for law reform is: whose frames are being activated – and hence strengthened – in the mind of the public?[254] The issue of biological greenhouse gas emissions is contentious, so its framing is important. Rhetoric plays a large role in policy circles and in politics, and to play an *effective* role, the government must make better use of cognitive and brain sciences to understand how public opinion is formed, and to sell solutions that are able to counter the powerful industry resistance.[255]

1 Changing the frames

Individuals have a system of frames that shape how they make sense of facts.[256] Such systems build up over time.[257] Well-thought out public advocacy is required to develop frames that aid in understanding the issue and to build up neural circuitry to inhibit frames

[247] Lakoff "Why it Matters How We Frame the Environment", above n 128, at 72.
[248] Nancy Fagley and Paul Miller "The effect of Framing on Choice" (1990) 16 Personality and Social Psychology Bulletin 496 at 497.
[249] Tom Crompton *Common Cause: The Case for Working with our Cultural Values* (WWF-UK, 2010) at 19.
[250] At 9.
[251] At 58.
[252] Lakoff "Why it Matters How We Frame the Environment", above n 128, at 72.
[253] At 72.
[254] At 71.
[255] At 79.
[256] Daniel Kahneman and Amos Tversky "The framing of Decisions and the Psychology of Choice" (1981) 211 Science 453 at 453.
[257] Lakoff "Why it Matters How We Frame the Environment", above n 128, at 73.

that enable climate change denial.[258] To achieve successful reform, the progressive frames on the environment must be activated to inhibit conservative frames through language, an effective framing of the truth, and experiences of the natural world. Sceptics and industry have been good at using language to activate conservative frames and inhibit environmental ones. There is not a level communicative playing field and the conversation on both sides is one of fearmongering and negative connotations.[259]

(a) Fearmongering in the public domain

Fearmongering occurs on both sides of the policy debate on the reduction of biological greenhouse gas emissions. Fearmongering is a barrier to reform. It runs counter to attempts to build support for emissions reduction. Climate alarmism includes flooding the public with news about catastrophic future events resulting from rising emissions. This kind of rhetoric causes individuals to disengage. [260] People are psychologically predisposed to believe that things can continue as they are and that warnings of calamity are false. [261] Therefore, attempts to scare people into action are misguided. The industry lobby opposing reform inundates the public with figures about how costly reform will be. Biological emissions policy lends itself to this type of fearmongering because the costs of action are front-loaded and the benefits are realised in the future. This was seen in the initial backlash to a carbon tax, the agricultural emissions levy, and the more recent campaign against Labour's proposal to impose obligations on agriculture under a water tax and under the ETS. Negating a frame serves to activate that frame. For example, when it is suggested that reducing agricultural greenhouse gas emissions will *not* harm the economy, the idea of harming the economy is activated and reinforced.[262] Therefore, what is needed is an appeal to positive values, which can have a profound influence on people's motivation to engage

[258] Lakoff "Why it Matters How We Frame the Environment", above n 128, at 73.
[259] At 76.
[260] Jamie Morton "Q&A: NO, climate change won't kill us in this decade" *The New Zealand Herald* (online ed, Auckland, 1 Dec 2016).
[261] Rand *Waking the Frog; Solutions for Our Climate Change Paralysis*, above n 84 at 47.
[262] Lakoff "Why it Matters How We Frame the Environment", above n 128, at 72.

in bigger-than-self problems.[263] There is a need to create opportunity, and frame the reduction of agricultural emissions in a positive light.

2 Joining the dots: emphasising co-benefits

There is an opportunity to broaden consensus on reducing agricultural emissions by focusing on outcomes of reform other than climate change mitigation.[264] Rising greenhouse gas emissions are viewed by the public as less pertinent than other environmental issues facing New Zealand that are caused by intensive agriculture.[265] New Zealanders regularly rate freshwater degradation as their greatest environmental concern.[266] The deterioration in fresh water quality following the intensification of agriculture has been dramatic.[267] Nitrogen leaching, which has increased in New Zealand's farming sector by almost 30 per cent from 1990 to 2012,[268] harms freshwater systems.[269] Therefore, reform that is not backed by concern to reduce biological emissions may be justified when all the effects of intensive agriculture are combined.[270] Concerns about freshwater quality could justify reform to low-emissions activity in situations where emission reduction alone would not.[271] There are substantial co-benefits of reducing agricultural emissions for water quality by reducing nitrogen leaching and nitrate runoff.[272] The public is more likely to get behind policy to reduce nitrous oxide emissions if they are aware of the benefits to waterways. The problem of low impact visibility is minimised because water is tangible. Additionally, when framed in this way, arguments about the rest of the world not acting become redundant. New Zealand's actions affect domestic water pollution irrespective of the actions of other countries. A way to achieve action on global issues is to frame it in terms

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[263] Tom Crompton *Common Cause: The Case for Working with our Cultural Values* (WWF-UK, 2010) at 40.
[264] Kerr and McDonald "Why Do New Zealanders Care About Agricultural Emissions?", above n 3, at 35.
[265] Chapman *Time of Useful Consciousness; Acting Urgently on Climate Change*, above n 47, at 25.
[266] Joy *Polluted Inheritance: New Zealand's Freshwater Crisis,* above n 103, at 24.
[267] Sir Geoffrey Palmer QC "Intergenerational Governance; problems of legislation", above n 239, at 69.
[268] Statistics New Zealand "Trends in nitrogen leaching from agriculture" New Zealand's Environmental Reporting Series; Environmental Indicators <www.stats.govt.nz>.
[269] Joy *Polluted Inheritance: New Zealand's Freshwater Crisis,* above n 103, at 1.
[270] Kerr *Agricultural Emissions Mitigation in New Zealand: Answers to Questions from the Parliamentary Commissioner for the Environment,* above n 85, at 9.
[271] At 9.
[272] Hollis and others *Cows, Sheep and Science: A Scientific Perspective on Biological Emissions from Agriculture,* above n 10, at 24.

of the benefits that it will have in New Zealand. At the domestic level, measures that reduce emissions will also improve water quality.[273]

New Zealander's also rate health highly as a cause of concern, above economic factors.[274] Therefore, the health benefits of emissions reduction policies should be emphasised.[275] Specialists have identified that health outcomes are threatened by an unstable, more extreme climate.[276] Therefore, mitigation policies can achieve health and quality-of-life gains.[277] The emphasis needs to be on the co-benefits of agricultural policy measures, such as the health benefits of sustainable farming, cleaner rivers and a plant-based diet. The co-benefits will not necessarily fully compensate for the cost of agricultural mitigation policies, but will help individuals to see that tackling climate change is not essentially a matter of cost and sacrifice – there are quality-of-life benefits from lower-carbon lifestyles that can replace aspects of today's carbon-intensive patterns of living.[278]

Successful reform is a matter of making these positive frames more prominent in the minds of the public, and extending the conversation to how mitigation policy can benefit communities. Co-benefits should not only be discussed, but they should be emphasised and included in economic modelling and long-term forecasting as a foundation of reform. In 1997, the OECD Environmental Performance Review of New Zealand recommended that New Zealand should: [279]

> seek further integration of environmental concerns (soil erosion, water resource management, impact of agrochemical use and animal wastes, emission of greenhouse gases, protection of wildlife habitats) into actions taken by the agricultural sector.

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[273] Wright "Addendum to the Submission on the Climate Change Response (Emissions Trading and Other Matters) Amendment Bill", above n 180, at 10.
[274] Chapman *Time of Useful Consciousness; Acting Urgently on Climate Change*, above n 47, at 25.
[275] At 25.
[276] New Zealand College of Public Health Medicine *Climate Change and Health in New Zealand* (New Zealand College of Public Health Medicine, Policy statement on climate change, 2013) at 7.
[277] Chapman *Time of Useful Consciousness; Acting Urgently on Climate Change*, above n 47, at 26.
[278] At 26.
[279] OECD Working Party on Environmental Performance *Environmental Performance Reviews (1st Cycle) Conclusions and Recommendations 32 Countries (1993-2000)* (OECD WPEP, November 2002) at 190.

Including co-benefits in economic models will produce more favourable outcomes, and make it easier to get stakeholders on side.

(a) Long-term economic benefits

For industry, the issue should be framed in terms of economic transformation, long-term benefits, growth, and future stability. Those seeking reform must reinvigorate the economic frames. When asked what would trigger individuals to engage in activity to reduce emissions, fifteen per cent said savings, 5.7 per cent said knowledge and understanding, 2.3 per cent said concern for the future, and 1.8 per cent said climate change.[280] Conversely, the main barrier to action was high cost at 20.9 per cent. This suggests that framing the issue in terms of economic benefit and opportunity, combined with education and well-justified arguments may be the best way to frame policy in this area to sell it to the public, and to industry.

The wording must be positive and framed in terms of opportunity. Overall, New Zealanders want action on climate change, and are likely to favour policies that have co-benefits in terms of goals such as health, quality of life, energy security and long-term economic gain. These arise from enhancing New Zealand's clean, green reputation.[281] To gain farmers' support, the government needs to improve its communication and frame the message around productivity benefits and a price premium for higher-value products that are associated with environmentally friendly farming practises.[282] Farmers may support aims to achieve long-term sustainability, resilience of local communities, or increased farm profitability through improved on-farm efficiency.[283] Recognising that not all individuals are motivated by a reduction in greenhouse gas emissions could alter the way that the government responds to the problem, and increase the range of stakeholders that will support reform.[284]

[280] Horizon Research *New Zealanders' Climate Change Actions and Attitudes*, above n 67, at 4.
[281] Chapman *Time of Useful Consciousness; Acting Urgently on Climate Change*, above n 47, at 28.
[282] Kerr *Agricultural Emissions Mitigation in New Zealand: Answers to Questions from the Parliamentary Commissioner for the Environment*, above n 85, at 31.
[283] Kerr and McDonald "Why Do New Zealanders Care About Agricultural Emissions?", above n 3, at 32.
[284] Kerr and McDonald "Why Do New Zealanders Care About Agricultural Emissions?", above n 3, at 32.

Paired with the inclusion of co-benefits in government models that include the costs of both action *and* inaction, there is hope that the reduction of biological emissions can be framed in a way that the public and industry can get behind. It will require a commitment from all government departments to consider co-benefits for their portfolio and rests on the government returning to Step One and beginning discussions with industry and the public. While co-benefits from mitigation options are often site-specific, which makes generalisations difficult, modelling frameworks are being developed that allow an integrated assessment of multiple outcomes at landscape, project and smaller scales.[285] Such frameworks could be used to quantitatively estimate co-benefits to help inform and frame evidence based policy.[286]

B A Multi-Basket Solution

Had the government started the reform process by asking what agriculture's role in mitigating greenhouse gas emissions should be, and what the best solution for New Zealand is, the policy mechanism chosen may have been different, and New Zealand's biological emissions may not be rising. Proper consideration of the unique New Zealand landscape could have resulted in purpose-driven, targeted legislation. A monolithic approach to all greenhouse gas emissions was *never* going to work, particularly when the solution impacts every sector of the economy differently. Agriculture was not ready to be implemented at the time, and the implications of this were given insufficient consideration. Focusing on each sector separately allows for a targeted approach backed by evidence of best-practise in each area, and for more direct engagement with industry.

A two baskets approach has been suggested by some researchers as a response to biological emissions.[287] It removes the idea of one universal metric for all greenhouse gases and separates long-lived gases (such as carbon dioxide and nitrous oxide) from short-lived ones

[285] Reisinger et al *Modelling Agriculture's Contribution to New Zealand's Contribution to the Post-2020 Agreement* (Ministry for Primary Industries, Information Paper No: 2016/02) at 50.
[286] Kazaglis and others *Net zero in New Zealand,* above n 141, at 86.
[287] Simon Upton "Managing Biological Sources and Sinks in the Context of New Zealand's Response to Climate Change" (RMLA Conference 2016, Rutherford Hotel, Nelson, 22-24 September).

such as methane.[288] Cumulative emissions determine the temperature impact of long-lived gases. For short-lived gases, it is mostly the annual rate of emissions that affects warming, although there is some persistent effect.[289] Carbon dioxide is the main problem, but methane and nitrous oxide also cause harm.[290] The objective should be to reduce methane to a sustainable level where the greenhouse effect is controlled. Therefore, reduction can be targeted through a separate mechanism.

The two baskets approach is supported by the incumbent PCE, Simon Upton[291], and by Generation Zero's Zero Carbon Act that is supported by many political parties in New Zealand.[292] The ETS's monolithic approach results in biological emissions being thrown into the too hard basket and ignored. Instead, they should be put into a *separate* basket to be addressed in a targeted manner. Responding to biological emissions at a slower rate than carbon dioxide in recognition of the fact that methane emissions are short-lived should be a priority for the government. The European Union's ETS does not include agriculture but Europe has an "Effort Sharing Decision" that creates binding targets for all greenhouse gases not included in the ETS, including policies to help them achieve the targets.[293] New Zealand has rushed to implement a mechanism, so has failed to consider that a similar sectoral nuance could provide a solution domestically.

Collaboration with industry should be at the centre of the approach to form a joint solution. Instead, New Zealand's reform process for biological emissions has seen delay and weakened measures led by the industry lobby. The agriculture industry understands that action on methane is not as urgent as action on carbon dioxide,[294] and the government's

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[288] Patti Nyman "Methane vs Carbon Dioxide: A Greenhouse Gas Showdown" (30 September 2014) One Green Planet <www.onegreenplanet.org>.
[289] Wright *Climate change and agriculture: Understanding the biological greenhouse gases*, above n 16, at 32.
[290] At [3.4].
[291] Simon Upton "Managing Biological Sources and Sinks in the Context of New Zealand's Response to Climate Change", above n 287.
[292] Generation Zero "Zero Carbon Act Summary" (2017) Zero Carbon Act NZ <zerocarbonact.nz>.
[293] European Commission "Effort Sharing Decision" (02 October 2017) European Commission <ec.europa.eu>.
[294] Anders Crofoot "Federated Farmers: Time to focus on carbon dioxide emissions" (online ed, Auckland, 8 December 2015).

current lack of acknowledgment of this in policy responses alienates industry. Putting the science back into the conversation, forecasting for the future, and making industry aware of the opportunities may reinvigorate the conversation. Farmers are currently sceptical of climate change policy and need to be included in the conversation again. When individuals have a sense of ownership of policy, they are more likely to trust it.[295] Policy should be about working together to change future behaviour rather than punishing past behaviour. This will only work under a central framework as discussed above.

X Conclusion

The government has failed to build the foundations for agricultural law reform before passing legislation. Due to inadequate action at vital steps of the reform process, New Zealand's agricultural mitigation policy has become flawed. A focus on the appropriate mechanism, without building the foundation for its successful implementation has resulted in unsuccessful reform. Due to inadequate interaction with public and industry to gain support, the government has passed a second-best policy not well-suited to the New Zealand environment that remains amenable to being watered down. What may seem like a simple problem in the realm of science, faces many difficulties when it comes to translating it to policy. It requires an understanding of public and industry perceptions, a consideration of both present, and future costs and benefits, and the creation of a cross-party framework. By focusing on a mechanism, rather than building foundations, the ETS has failed to be a tool that is socially and politically sustainable and innovative.

This paper has focused on climate change policy targeted at the agriculture industry in New Zealand, but it is hoped that the findings in this paper will be useful for all areas of climate change policy. Every country faces special circumstances when it comes to climate change policy. Agriculture is New Zealand's, and it is hoped that the law reform lessons in this paper will be useful to others in understanding how important it is to build a stable foundation for what is probably the worlds most complicated law reform problem to date. It has aimed to highlight that if climate change legislation of any kind is to succeed,

[295] Jonathon Boston *Safeguarding the Future Governing in an Uncertain World* (BWB Texts, Wellington, 2017) at 79.

governments must work to implement the right foundations in which reform can flourish. Successful reform requires a focus on developing a climate change strategy, rather than simply implementing a legislative tool.

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