

Title: Can we communicate more effectively to farmers about climate change?

Policy-makers frequently fail to communicate scientific knowledge about climate change effectively, with the result that targeted groups often reject potentially useful advice. Our research addressed New Zealand dairy farmers' perceptions of climate conditions and their perceptions of climate science. Dairy farmer understandings of climate change matter: they are politically influential in the New Zealand context, and farming practice may either exacerbate or mitigate the challenges posed by climate change. Despite being in many ways at the frontline of climate change, New Zealand farmers demonstrate relatively low confidence in the policy-making and scientific agencies that support the agricultural sector. They are often reluctant to accept advice coming from official agencies.

A recent observation by one of the researchers illustrates such farmer attitudes. On April 8th 2019 in Palmerston North, more than 300 stakeholders gathered at the New Zealand Agricultural Climate Change Conference. When an executive from the Ministry of Primary Industries addressed farmers about "climate change", many eyeballs visibly rolled. The speaker's words about extreme weather, sea-rise and the role of farmers became lost as many in the audience looked at the ceiling and engaged in the odd bit of heckling.

In contrast, very different farmer responses were evident at a 2018 Dairy New Zealand Discussion Group with 12 farmers in the living room of a sharemilker's house in a Northland township. The group convenor introduced a talk about the last drought and what farmers might do to get ready for the next one. The discussion about drought was participative, if sometimes depressing. Farmers who had worked for months directly with the animals the previous year were "getting pretty down about it" and commented on "high stock losses with cows just dying in terrible, absolutely distressing conditions". Farmers talked about water storage options, the timing of feed purchases and showed each other empathy: "Yeah, I was in that situation a couple of years ago and I know what it's like.". Why was communication in this setting engaged and meaningful, unlike the climate change conference address by a government official?

We drew on findings from extensive work in psychology that has explored why people often reject information, particularly information that is complex and unwelcome. This field of research has found that people employ mental short-cuts to simplify complex information. Such short-cuts allow us to filter information efficiently. Crucially, these short-cuts include a person's sense of identity in relation to the source of the information. This explains why the same information coming from a non-farming 'townie' is less meaningful to a farmer than if it came from a farmer. Furthermore, 'motivated reasoning' occurs when people are biased towards believing and seeing things that conform to what they want to see and believe. These models from psychology help explain why communication about climate change has been so enduringly divisive, but do not offer much insight specific to farmers or pathways to more effective communication. Our research showed how selecting words, places and people results in patterned responses – the building blocks of savvy communication.

Informed by extensive interviews with 15 dairy industry experts, the research involved driving over 2,600 kilometres to interview 38 farmers on 27 farms around New Zealand. One of the researchers walked with farmers on their paddocks, sat over tea in their kitchens and tried to understand farm life.

We found farmers are shaped emotionally and socially by uniquely stressful events. Droughts, floods, storm wind and disease affect their entire lifestyle because farming is not just a job, but a

situation in which their residence is located near their herd: “it takes a life; you actually have to absorb your life into it” as one farmer put it. The physicality of work is embodied in their callouses and skin from exposure to sun and wind. Rural suicides are disproportionately high in New Zealand at about 28 each year over the past 10 years. Among farmers, long hours and demanding work in isolation were listed as likely factors. Our study confirmed that the deeply-etched emotional experiences of farm life strongly shapes the identity of farmers.

Socially, we found that farmers prefer to learn from others they look up to and with whom they share a common identity: “farmers prefer to learn from other farmers”. Beliefs and attitudes thus often clustered as a result of social interaction. Belief formation about climate change fuelled norms within farming communities. Interestingly, forecasts for weather or climate were taken by farmers with “a grain of salt – especially the long range stuff”. Farmers were more concerned about preparation to recover from extreme weather. Social ties within the community of farmers defined who could be relied upon in practice. Social contact – talking over the fence, at the pub, in the town hall – provided emotional bonds as much as practical advice.

How can policy-makers engage in savvy communication about our changing climate?

We believe savvy communication can address the legacy of divisiveness hindering ministerial efforts to prepare rural New Zealand in a changing climate. In its 2019 report ‘Climate Issues Facing Farmers’, the Ministry of Primary Industries interpreted survey findings from hundreds of farmers over a 10-year period: “the lack of reliable and consistent information appears to be a barrier to increasing acceptance of climate change and achieving behavioural change”. Our research suggests the problem is not a lack of “evidenced-based science” or “better accuracy of risk perception”. Rather, we find that what matters for communication is *who* is relaying the information and whether it resonates emotionally with the intended audience.

To engage in savvy communication, we suggest that policy-makers focus more on social networks in rural communities and decentralisation of ministerial resources to support local communication. Using the words ‘our changing climate’ instead of ‘climate change’ reduces the political stigma of emissions costs. Savvy communicators point out their farming background to gain any benefit available from insider-status. Finally, selecting trusted insiders to communicate and choosing places that are familiar to farmers (town hall, local pub or ‘farm-walk’ with a high-status farmer) are savvy ways to communicate.