Marlborough, New Zealand Farmer Climate Change Perspectives and Concerns

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Issue

Farmers in New Zealand face many challenges including climate and weather. Marlborough is predicted to be affected by future changes in climate that could have a significant impact on agricultural production including increased drought, summer temperatures and decreasing water availability[i]. At the same time, New Zealand is implementing an emissions trading scheme that could have impacts on agricultural costs and management. Understanding farmer perspectives and concerns is necessary to design appropriate policies, outreach, and education initiatives to ensure New Zealand agriculture remains prosperous and productive in the future. This brief highlights farmer's climate change perspectives and future concerns in Marlborough, New Zealand.

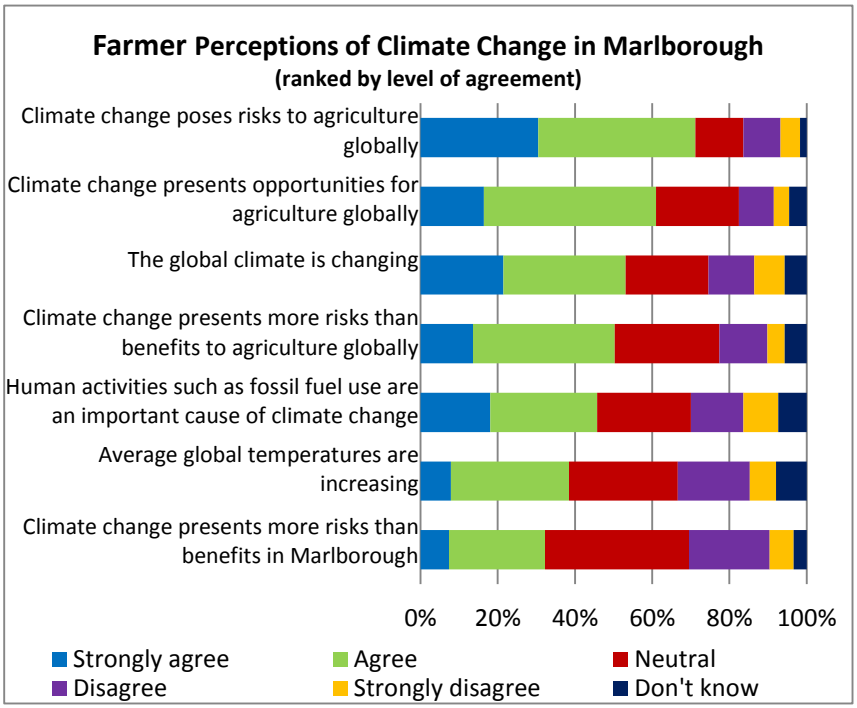

Figure 1. Marlborough farmer perspectives on climate change risk and belief.

Key Findings

- More than 70% of farmers agree that climate change presents global risks to agriculture, though only 32% agree it presents more risks than benefits to Marlborough.
- A majority (53%) of farmers agree that the global climate is changing. Only 46% agree that human activities are an important cause and only 38% agree that average global temperatures are increasing.
- The majority of farmers believe climate events have largely stayed the same over time; however, a significant minority think winter temperatures, rainfall and flooding have increased and summer temperatures and drought have decreased.
- Farmers are most concerned about policy, economic and pest risks associated with climate change, followed by water and temperature risks.

Policy Implications

As New Zealand continues to implement the emissions trading scheme and consider strategies for agricultural climate change adaptation it is important to recognize farmer perspectives of climate change and its future risks. For example, farmers appear to be concerned about pest, disease and weed issues in the future, indicating that research, outreach and education around these topics may be very welcome by farming communities. Farmers are also highly concerned about future regulations and changing markets, which suggests that policymakers should continue to engage with the agricultural sector as new policies are developed. Given New Zealand's reliance on international markets and farmer's concern for future market and economic impacts associated with climate change, these issues should be considered as both potential future challenges and opportunities. The high level of risk that farmers believe climate change presents for agriculture despite a lower percentage of farmers that believe in climate change and its human causes suggests that climate change belief may not be directly linked to risk perceptions.

Methodology

Interviews with 9 agricultural industry scientists/representatives and policymakers and 6 farmers in Marlborough were conducted in July 2012 to understand farmers' and agricultural industry climate change perspectives, management strategies, and potential for adopting new practices in the future. Interviews were used to help design a telephone survey along with input from local agricultural organizations, farmers, and industry. A telephone survey in the region was conducted in August-October 2012 with a total of 177 responses (41% cooperation rate). Among the respondents 80% were male, 68% were full-time farmers and 8% were certified organic.

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Survey questions asked about farm characteristics, management strategies, existing practices, climate change perspectives, government perspectives, and likelihood to adopt mitigation and adaptation practices in the future. The survey was also conducted in Hawke's Bay, New Zealand.

Detailed Results

Farmers' climate change belief and risk perceptions varied significantly (Figure 1). 71% of farmers agreed that climate change poses risks to agriculture, but 61% also agreed that it presents global opportunities. Only about 32% of farmers felt that climate change in Marlborough would present more risks than benefits to the region. 53% of farmers agreed the global climate was changing and nearly 46% also felt that humans were an important cause of climate change. Far fewer (38%) agreed that average global temperature are increasing.

The majority of farmers in the region have not observed changes in climate events over time (Figure 2). Some notable exceptions are perceived increases in annual rainfall (47%), flooding (44%), and winter temperature (36%). As well, 42% of farmers felt that summer temperatures and the prevalence of drought (38%) had decreased.

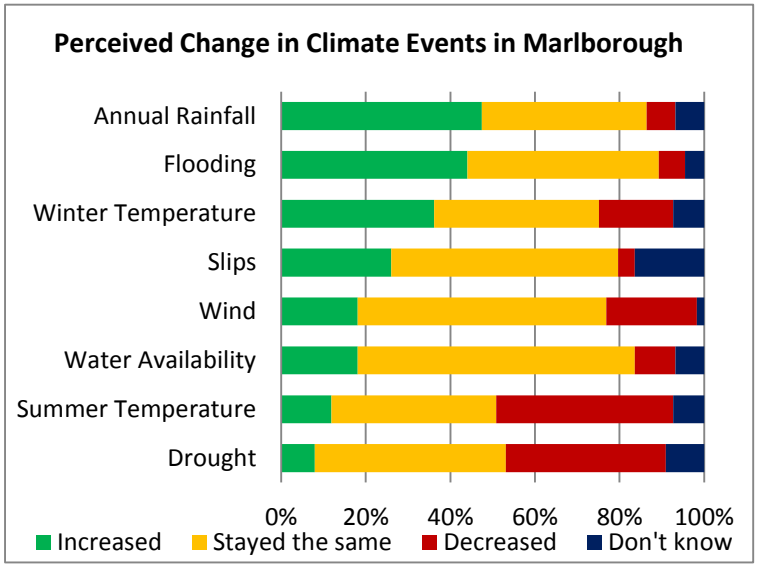

Figure 2. Farmer perceptions of changes in climatic events over time.

Farmers expressed a clear trend in their levels for future climate change related risks. Policy, economic and pest/disease/weed impacts were most concerning followed by water and temperature impacts (Figure 3). Overall 89% of farmers expressed concern (concerned or very concerned) for government regulations with similar high concern for fuel and energy prices (86% concerned) and more volatile markets (75% concerned). Pests and diseases were more concerning (80% concerned) than weeds and invasive species (68%). Water related concerns ranged from less reliable water (58% concerned) to increased slips and erosion (30%). Temperature impacts were on average the least concerning with the notable exception of increased frosts (53%) being most concerning and warmer temperatures (32%) least concerning.

Future Research Directions

This brief highlights farmers' attitudes related to climate change beliefs, risks, and potential impacts in Marlborough, New Zealand. Additional briefs will also discuss the types of climate change mitigation and adaptation strategies farmers have already implemented and are interested in adopting in the future. Briefs are also available on the same topics for Hawke's Bay, New Zealand. Additional work will assess what influences farmer's likelihood to adopt climate change practices and their climate perceptions. This research is part of a larger study comparing farmer perspectives of climate change in New Zealand and California, and future briefs will discuss comparison across these regions.

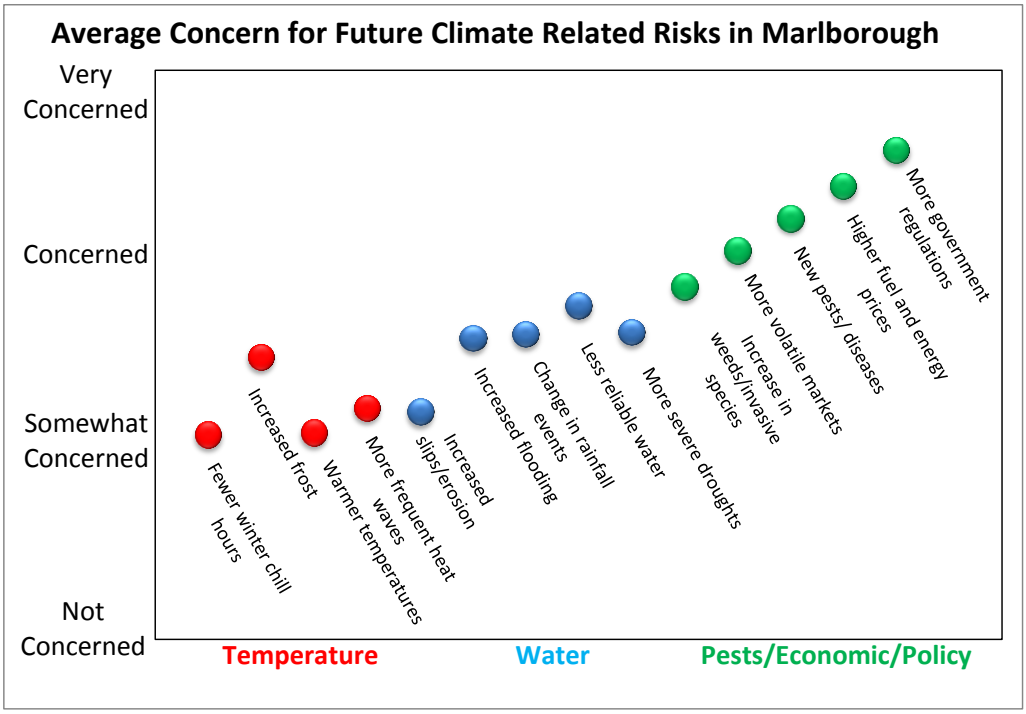

Figure 3. Marlborough farmer's average concerns for future climate-related risks. Colors represent the type of risk as indicated by the axis label.

[i] New Zealand Ministry for Agriculture and Forestry. Introduction to Climate Change, Effects and Impacts: Nelson and Marlborough.

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