

Hawke's Bay, New Zealand Farmer Climate Change Perspectives and Concerns

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Issue

This brief highlights farmer's climate change perspectives and future concerns in Hawke's Bay, New Zealand. Farmers in New Zealand face many challenges including climate and weather. Hawke's Bay is predicted to be affected by future changes in climate that could have a significant impact on agricultural production including likely drier winters and springs and higher temperatures¹. As well, New Zealand is implementing an emissions trading scheme along with resource management regulations 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.

Key Findings

- 2/3 of farmers agree that climate change presents global risks to agriculture; 41% agree it presents more risks than benefits to Hawke's Bay
- 51% of farmers agree that the global climate is changing, but only 37% agree that average global temperatures are increasing or that human activities are an important cause of climate change
- 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 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 proposed, developed and implemented. 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 8 agricultural industry scientists/representatives and policymakers and 6 farmers in Hawke's Bay 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. A telephone survey in the region was conducted in August-October 2012 with a total of 313 responses (41% cooperation rate). Among the respondents 84% were male, 77% were full-time farmers and 6% were certified organic.

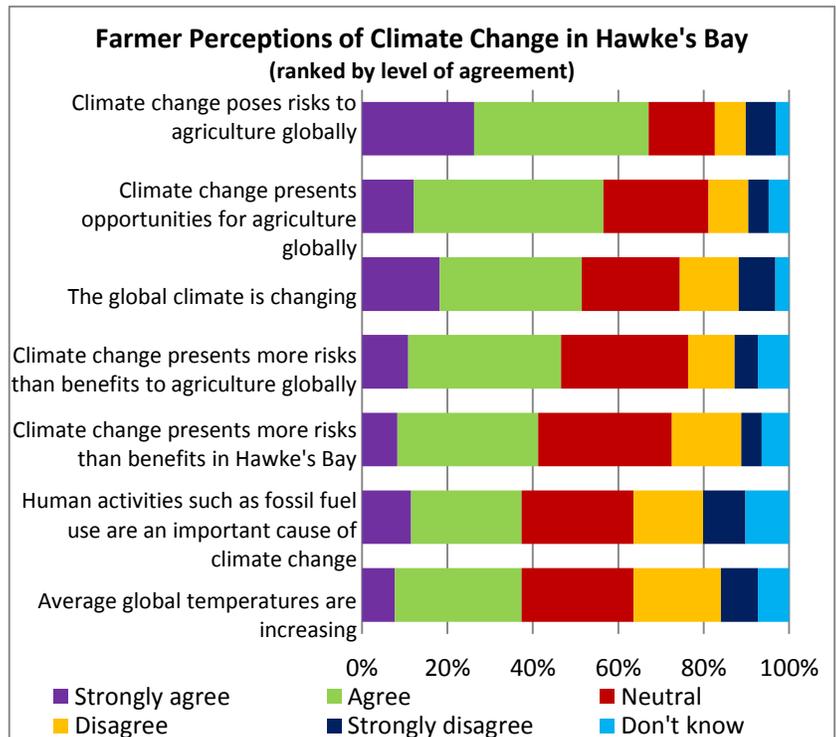


Figure 1. Hawke's Bay farmer perspectives of climate change, risk and opportunities

Survey questions asked about farm characteristics, management strategies, existing practices, climate change perspectives, government perspectives, and future adoption of mitigation and adaptation practices. The survey was also conducted in Marlborough, New Zealand.

Detailed Results

Farmers’ climate change belief and risk perceptions varied significantly (Figure 1). 67% of farmers agreed that climate change poses risks to agriculture, though nearly 57% agreed that it also presents global opportunities. Only 41% of farmers felt that climate change in Hawke’s Bay would present more risks than benefits to the region. For climate change belief- slightly more than half of farmers (51%) agreed the global climate was changing, while far fewer (37%) agreed that global temperature are increasing or that human activities contribute to climate change.

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 (33%), flooding (34%), and winter temperature (36%). As well, 30% of farmers felt that summer temperatures had decreased.

Farmers expressed a clear trend in their concern 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 90% 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 (77% concerned) than weeds and invasive species (60%). Water related concerns ranged from less reliable water (56% concerned) to increased slips and erosion (36%). Temperature impacts were on average the least concerning with more frequent heat waves the most concerning (48%) and fewer winter chill hours the least concerning (28%).

Future Research Directions

This brief highlights farmers’ attitudes related to climate change beliefs, risks, and potential impacts in Hawke’s Bay, 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 Marlborough, 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.

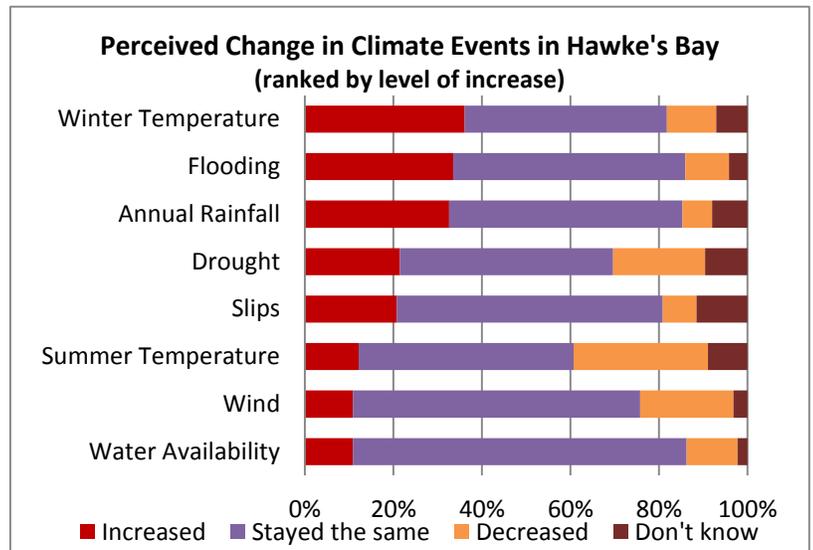


Figure 2. Farmer perceptions of changes in climatic events over time.

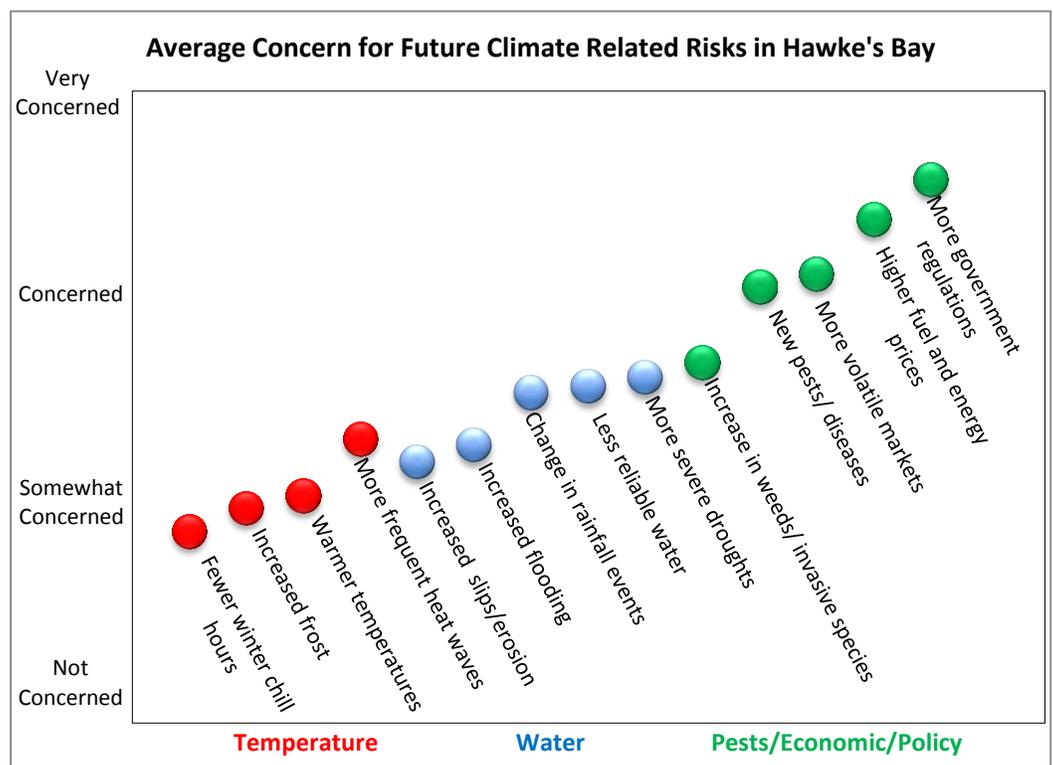


Figure 3. Hawke’s Bay farmer’s average concerns for future climate-related risks. Colors represent the type of risk as indicated by the axis label.

¹ New Zealand Ministry of Agriculture and Forestry. Introduction to Climate Change, Effects and Impacts: Gisborne to Wairarapa.