Perspectives from Michigan field crop farmers on climate change

Julie E. Doll[1] & Claire N. Layman[2]

[1]Kellogg Biological Station, Michigan State University; [2]Michigan State University Extension

Why discuss climate change with farmers?

Farmers stand to be greatly affected by changes in the climate. Changes in CO_2 levels, precipitation regimes, and temperatures have the potential to negatively and positively affect crop production.

While about 7% of total greenhouse gas emissions in the United States are associated with the agricultural sector[1], scientists have documented ways to farm that can mitigate climate change, including no-till farming and reduced nitrogen fertilizer use, without hurting crop yields[2,3].

For agriculture to adapt to and help mitigate climate change, a dialogue is needed between farmers, scientists, policymakers, and other agricultural decision makers.

How did we assess farmer perspectives?

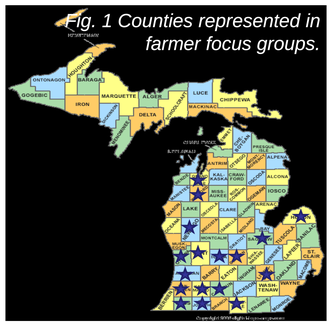

Fig. 1 Counties represented in farmer focus groups.

We held four focus groups with field crop farmers from Michigan. Extension Educators and Michigan Farm Bureau helped recruit farmers. Farmers were either reimbursed for their travel or paid a $50 honorarium for participating. We had 17 counties represented (Fig 1.) by participating farmers. At each hour-long focus group, participants were asked a series of open-questions about climate change and agriculture. Conversations were recorded and transcribed.

What did the farmers say?

1. Farmers noted that conditions are changing, but they don't necessarily believe in human-caused "climate change." Changes in precipitation regimes --- "rain events instead of rain falls" – and a lengthening of the growing season were mentioned. However, many expressed doubt that climate change was due to human influence, expressing that they are small actors in a huge system, and that the changes they see are most likely part of a natural cycle.

2. Farmers spoke of climate change adaptations they are doing that are not often discussed in the scientific literature. Examples include dealing with more variable weather patterns by buying larger equipment to complete field work faster, keeping better weather records, and becoming better communicators to explain how agriculture is good for the environment.

3. Farmers view themselves as stewards of the land and expressed frustration that often agriculture is blamed for problems such as climate change without recognition that other sectors also emit greenhouse gases, and without acknowledgement of how agriculture is good for the climate by sequestering carbon.

4. Farmers noted both potential positive (increased production with more CO_2 and longer growing seasons) and negative effects (problems with shifting rainfall patterns) of climate change, but the majority did not seem too concerned with future changes. One farmer noted: "I am more concerned with something catastrophic happening than I am a slow change, like we have with the carbon dioxide."

5. Farmers questioned how much they could tailor management to adapt to climate change and the extent that agriculture would be able to help mitigate climate change**.**

6. Farmers expressed a great deal of trust in MSU and Extension to provide solid information, but at the same time felt the science was lacking on climate change. They were grateful for the opportunity to discuss the topic.

How has this info been used?

We shared this information with Michigan State University Extension Educators at a Climate Change and Agriculture training event at KBS in March 2011. We used a deliberative process[4] to address the question: *How can MSU Extension help farmers adapt to and help mitigate climate change?*

Participants deliberated over the most appropriate approach to deal with climate change, and common ground was reached: form a working group to develop climate change outreach and education programming.

Literature cited

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Acknowledgements: This work was support by grants from the Environmental Protection Agency and Michigan State University's Project GREEEN. Support for this research was also provided by the NSF Long-Term Ecological Research Program at the Kellogg Biological Station and by Michigan State University AgBioResearch