Vermont Farm Resilience in a Changing Climate: Survey of Vermont Agricultural Service Providers

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Introduction

In 2011, a group of researchers and extensionists at the University of Vermont started working on a collaborative, long-term participatory process with a focus on climate change mitigation and adaptation in Vermont agriculture. The vision was to integrate research, education and outreach in a collaborative process, with an emphasis on farm management and policy. In general, we aim to better understand the interactions among farmer management and decision making and current and alternative policy regimes addressing climate change. More specifically, we are interested in 1) identifying existing farming management practices that contribute to climate change mitigation and/or adaptation goals (climate change best management practices-CCBMPs); 2) Assessing farmers’ interest in pursuing specific farm management strategies under different climate change and policy scenarios; 3) Determining how current responses to climate change could be improved through agroecological, outreach and policy innovations; and 4) Providing decision support for policy makers and extension outreach programs related to climate change mitigation and adaptation in the agricultural landscape of Vermont.

As a first step in this process we developed a short, online survey to begin to document the perceptions of key issues related to climate change from the perspective of agricultural service providers, researchers and policy makers that work directly or indirectly with farmers. With a small grant from the UVM Gund Institute for Ecological Economics, we conducted the survey and organized a workshop to discuss these results with a broad audience of key stakeholders working on agricultural issues in Vermont. This report presents the results from the online survey.

Methods

Survey recipient names were solicited from colleagues and organizational contacts. These individuals were selected as appropriate research subjects due to their membership or affiliation with organizations that address agricultural production, conservation issues, and/or climate change. We focused on service providers because they are uniquely poised to educate, disseminate information, and support the Vermont agricultural community to address complex problems, such as climate change.

The survey was delivered using Lime, a UVM online platform, and was released, accompanied by a letter to recipients, on March 27, 2012. A reminder email was sent a week later, as recommended by Dillman (2007). The survey was closed two weeks after the initial solicitation. Responses were downloaded into SPSS software for analysis.
Results
The survey was sent to approximately 170 recipients. There were originally 105 individuals targeted by the research team, but some of the original recipients forwarded the survey onto other professionals in their network, making it difficult to count the total number of individuals that received the survey. We obtained 50 survey responses, with 43 of these completing the full survey. Respondents were grouped into 6 categories: Researchers (34%), farmers (20%), funders (12%), policy makers (6%), and “other” (responses included administrators, conservation organization, educators, Extension specialists, farm health and safety specialist, federal government staff, and land trust trustees.)

When those respondents who worked directly with farmers were asked how often they talk with these farmers about climate change, 55% (20 respondents) reported that they sometimes talked about climate change, while 30% (11 respondents) reported that they often talked about climate change. Figure 1 below details the topics related to climate change that service providers reported discussing with farmers, with climate change adaptation being a predominant topic. Climate change adaptation is not exclusive to other topics however, and respondents also frequently reported discussing topics like water management, soil health and management, and crop species and variety selection. Respondents could select up to 3 options.

We asked survey participants who work directly with farmers to identify up to 3 topics related to climate change that (a) they thought required the most attention and (b) were most important to farmers. Figure 2, on page 3, shows us that while many respondents who work directly with farmers think that although adaptation approaches and soil health and management are of great importance, farmers are more concerned with the economic impacts of climate change and rainfall levels/flooding. Again, it is understood that these categories of concerns are not exclusive to one another. As one respondent succinctly stated “For most farmers with whom I speak, they are concerned about economic impacts—soil health, livestock stress, flooding, energy, IPM, are all important to farmers from a profitability standpoint.”

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Figure 1: If you talk with farmers about climate change, what do you talk about?

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Survey recipients were asked to identify what they believed were the biggest barriers to addressing climate change through Vermont agriculture. This question asked not only if the Vermont agricultural community is positioned to change/adapt in response to climate change, but also if it can serve as a tool for supporting rural communities to mitigate and adapt. The barriers that were selected most frequently by survey recipients were lack of information (64% of respondents), lack of funding (58% of respondents), and lack of political will (25% of respondents). Service providers who answered this question had a lot to say in the open-ended portion of the question; their responses can be grouped into 4 general categories:

1. **Climate change is a big problem, and people feel overwhelmed by it.**

   “People care, they just feel like it is out of their hands.”

   “The issue is so big that we need to find ways to make it tangible.”

   “The problem is so huge that most people don’t know how to even approach it.”

   “Climate change is such a large issue which makes it daunting to think about addressing.”

2. **Politics are confounding.**

   “Climate change is a lofty term and often has political connotations (at least used more for political purposes at this point than real on-the-ground work.) Biggest barrier is to make climate change meaningful at the farm level.

3. **Markets will prevail.**

   “Smart business owners will have the incentive to find solutions for themselves, let us not discredit their need to adapt.”

4. **There is no unified approach to climate change and general confusion on the topic.**

   “There is a “lack of connecting short term practical steps to address (a) long term issue that has less certainty about it.”

   “There is a “lack of knowledge and solutions.”

   “The words climate change are not well defined. It can be manmade or maybe naturally occurring yet the term climate change has come to mean mostly changes in climate due to environmental changes (that are) manmade.”

   “There is an “uncertainty of severity of near and medium term impacts.”
These responses make it clear that education related to climate change that is politically neutral in nature is greatly needed. De-politicizing the term climate change may not be possible, but much could be done to provide service providers, farmers, and other stakeholders in the food system with trustworthy information, and spaces to exchange this information, on the multiple facets of climate change adaptation and mitigation.

Some respondents believe that farmers are already armed with sufficient information, but are not supported to act on that knowledge. When asked about opportunities for addressing climate change through Vermont agriculture, respondents said:

“Farmers are already doing a lot, we just need to provide them with more support”

“Farmers generally accept the science and have a strong vested self interest in understanding and addressing climate change.”

Other respondents identified strategic investments to help farmers withstand the demands of a changing climate, including:

“Funding research that links certain specific agricultural practices to carbon sequestration over time, developing a program or system to “audit” farms.”

“Developing innovative methods of production that are not affected by the impact of expected changes in climate.”

Tropical Storm Irene was identified as a catalyst that increased farmers’ interest in and receptivity to education related to climate change mitigation and adaptation. Additional responses showed service provider interest in renewable energy (fuel and electric), pasture based management systems for livestock, support for farmers of all generations, and increased emphasis on mitigation efforts. The need for short term successes that can increase farmer investment in climate change mitigation and adaptation practices was articulated by this service provider, as follows:

“We should “promote practices that yield short term compelling benefits while also facilitating long term adaptation and mitigation. (We should) work to identify which practices most effectively do both.”

Discussion

In general, the findings of this preliminary demonstrate a felt need from agricultural service providers, and the farmers that they support, for more information on climate change adaptation and mitigation. Our Vermont climate change initiatives seek to address this need by engaging researchers, service providers, farmers and other relevant stakeholders in a research and outreach process, where information is generated and shared through strong collaboration and partnerships. This participatory action research approach requires significant investment and commitment towards developing strong collaborative networks between stakeholders. We foresee that the survey reported here and the “Vermont Farm Resilience in a Changing Climate Workshop” are two important beginning steps into forming and consolidating these partnerships.

The ARLG would like to thank the Gund Institute for Ecological Economics, the UVM Food Systems Spire and the UVM Environmental Studies Program for their financial support.