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Using Farmer Storytelling to Build Understanding of Our "New Weather Reality"

Erin H. Roche
University of Maine

Ellen B. Mallory
University of Maine

Sonja K. Birthisel
University of Maine

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Abstract

A storytelling session was successful in raising awareness and understanding of the types of changes in weather patterns farmers are experiencing in Maine, what impacts those changes are having on their operations, and the changes farmers are making in response. Using an outreach approach rooted in farmer stories allowed us to bypass the controversy that often surrounds topics related to climate change. Likewise, focusing on the farmers' experiences and avoiding corrective statements during this introductory session resulted in productive dialogue. We recommend replicating this approach within different agricultural sectors to increase understanding of sector-specific risks and strategies for adaptation.

Keywords: storytelling, narrative, weather, climate change, adaptation

Erin H. Roche
Crop Insurance Education Professional
erin.roche@maine.edu

Ellen B. Mallory
Extension Professor and Professor of Sustainable Agriculture
ellen.mallory@maine.edu

Sonja K. Birthisel
Postdoctoral Research Associate
School of Forest Resources
sonja.birthisel@maine.edu

University of Maine
Orono, Maine

Why a Storytelling Approach?

The purpose of the session described herein was to increase awareness and understanding among farmers and agricultural service providers of climate change issues in Maine. Changes in average and extreme weather over the last century in the state are well documented (Fernandez et al., 2015), and these trends are expected to continue and have increasing impacts on agriculture in coming decades (Wolfe et al., 2018). Farmer adaptation to climate change–related challenges and opportunities could be facilitated by more effective outreach and resource sharing (Chatrchyan et al., 2017). Others within Extension have recommended that effective programming on this topic include face-to-face dialogue with target audiences (Doll, Eschbach, & DeDecker, 2018; Thorn et al., 2017) and focus on current experiences rather than future projections (Jemison, Hall, Welcomer, & Haskell, 2014). Stories can be powerful tools for helping people understand old and new situations, and their attendant risks and opportunities (Franz, 2016). Further, stories can memorably convey meaning and relevance as opposed to facts and statistics alone (Dahlstrom, 2014). We thought that featuring farmer experiences through stories might be particularly effective in communicating on this topic, for which the interpretation of historical fact and confidence in future projections are sometimes disputed (Chatrchyan et al., 2017). To remain focused on our goal and minimize the chance of inadvertently politicizing our session, we used the language "changes in weather patterns" and

"new weather reality" in our advertising and introduction to the session.

Session Format

The Maine Climate and Agriculture Network, in partnership with the Maine Sustainable Agriculture Society, organized a farmer storytelling session titled "Farming in a New Weather Reality" at the 2018 Maine Agricultural Trades Show. To select farmers, we solicited recommendations from agricultural service providers for experienced farmers representing a diversity of agricultural sectors: turf, sheep and fiber, honeybees, apples, and vegetables. We invited five farmers, four of whom farmed full time, each with at least 20 years of experience, to speak as panelists for the 2.5-hr session.

Before the session, each panelist was asked to prepare one 5-min story about

- how a shift in weather patterns or extremes had affected his or her farm, either positively or negatively;
- what changes he or she had made in the farm operation as a result; and
- what information or resources might be helpful for responding to similar situations in the future.

The session was well advertised within Maine's agricultural community. We invited agricultural service providers to introduce resources currently available to help farmers manage issues related to weather. Over 50 people attended the session.

In introductory remarks, the session facilitator (a member of our author team) stressed that the purpose of the session was not to debate the existence or causes of climate change, but rather to discuss what farmers are currently experiencing and how they are coping. Each panelist had 5 uninterrupted minutes to share a prepared story and time to answer questions. Following the stories, we encouraged farmers in the audience to share their experiences, and there was a facilitated discussion to highlight currently available adaptation resources and needs in the state. Note takers' documentation and an audio recording helped us accurately condense the session into a summary report (Mallory & Roche, 2018).

The Stories

The farmers on the panel and in the audience told of a variety of shifts in weather patterns that had affected their farms (Table 1). We noted that the stories did not typically focus on a single isolated weather change or effect, but were multifaceted, mirroring the inherent complexity of the growers' farming systems. As well, several farmers expressed that a change he or she had made to respond to a weather issue had had unforeseen consequences in other aspects of the farm operation, either positive or negative. Site- and system-specific conditions, in combination with each farmer's skill set and beliefs, made the farmers' experiences unique. One farmer, a part-time beekeeper, reported that he had not observed any changes in weather patterns and doubted climate science, but in general the conversation focused on discussing tangible weather or climate impacts and actions.

Table 1.

Observed Weather Changes, Impacts, and Response Actions Shared by Farmers During a Storytelling Session and Subsequent Discussion

Observed weather change[a]	Observed impact(s)	Response action(s)
⬆ heavy precipitation (4)	⬆ soil erosion ⬇ field access Poor crop establishment	Established permanent raised beds and wheel tracks Added berms to fields Adopted quick-growing grasses
⬆ growing season length and growing degree days, milder winters (3)	⬆ Lyme disease ⬇ apple tree mortality due to freezing New pests and parasites More efficient solar dye time (for wool)	Stopped farming because of exposure to Lyme disease Grew longer-season varieties
Cooler, wetter springs (2)	Lamb death and wet wool Slow nitrogen mineralization Delayed manure spreading	Changed lambing time
⬆ drought (2)	⬇ productivity Altered white grub phenology ⬆ customer demand for drought-tolerant grasses ⬇ pasture regrowth	Invested in irrigation Changed pesticide spray times Adopted drought-tolerant varieties Purchased off-farm feed
⬆ ice storm frequency (1)	⬆ building and fence damage	Sought financial assistance

Note. ⬆ = increased prevalence or severity; ⬇ = decreased prevalence or severity.

[a]The number of farmers who mentioned the observed change is indicated in parentheses.

Session Feedback

An evaluation survey distributed at the end of the session and filled out by 12 attendees (24% response rate) indicated that 92% of respondents increased their understanding and awareness of the weather changes farmers are experiencing in Maine and that 100% had a better understanding of the specific challenges and opportunities farmers face as a result of changes in weather. When asked about ideas for future sessions on the topic, one participant wrote, "More conversations like this! It didn't get too political—great idea to keep it experienced based."

Recommendations

On the basis of our experience with this session, we recommend using a storytelling approach to increase understanding of the issues farmers are facing related to changes in the weather and to highlight possible responses. We bypassed controversy around "climate change" and its causes by avoiding the term and explicitly focusing the conversation on what farmers are currently experiencing and doing. The facilitator of such a session should anticipate that climate change skeptics may be in attendance. As noted by Dixon (2015), finding and emphasizing common ground is a useful technique for engaging climate change skeptics in Extension work as it opens the door to productive dialogue. Delegating one person as the facilitator and a few as note takers was useful for keeping the conversation focused and summarizing themes accurately

afterward. One challenge we experienced with our approach was that although stories are compelling, they are subjective. Some of the weather changes farmers perceived, or connections they made between weather changes and impacts, did not align with available data. To avoid discouraging open dialogue, we chose to forgo correcting statements and, rather, emphasized at the start of the session that the panelists were describing their own observations and experiences, which may not be generalizable. Lastly, although the broad sector representation in our session allowed us to identify commonalities, similar to Doll et al. (2018), we recommend repeating this approach within individual agricultural sectors and with a variety of Extension client groups, to more clearly identify sector-specific adaptation strategies and needs.

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For Further Information

The Maine Climate and Agriculture Network was initiated by University of Maine faculty to increase communication and coordination among those working on issues related to climate and agriculture. The network represents agricultural concerns and activities in broader climate change conversations with other institutions and agencies in the state and region. Information about the Maine Climate and Agriculture Network is available at https://umaine.edu/climate-ag/.

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