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Challenges in Communicating Climate Change to Extension Audiences

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This fact sheet, the first in a series on climate change, outlines four areas of communication challenges. The second in this series, “Strategies for Communicating Climate Change to Extension Audiences,” provides useful strategies for beginning climate conversations with audiences and clients. The third, “Risk Perceptions and Needs: Defining Extension’s Climate Change Adaptation Role,” suggests themes that link climate concepts to various audiences.



Unusual weather, high fuel prices, coastal erosion, and severe wildfires have one thing in common: they generate headlines that suggest climate change is upon us. Media reports often spawn editorials that present alternate interpretations of the evidence, point to uncertainty in the climate models, and rebuke the implications. Anyone can be easily confused by the plethora of information. Extension agents are trusted sources of information and can play a valuable role providing educational programs to clients seeking to understand climate changes and appropriate adaptation strategies (Franz, Piercy, Donaldson, Westbrook, and Richard 2010). This fact

sheet explains four key challenges of climate change communication to help Extension agents successfully provide science-based perspectives and avoid ideological conflicts and problems.

CHALLENGE #1: CLIMATE CHANGE IS COMPLEX, UNCERTAIN, AND VARIABLE

Introducing an issue as complex as climate change to a group of citizens can be a minefield for Extension agents accustomed to presenting issues with more simple solutions, such as building a compost bin to reduce solid waste. It seems obvious to begin the discussion with weather, but even that is problematic. We experience and remember daily weather events, but climate is a function of decades of averaged data, not anomalies. As powerful as our brains are, they do not easily compute long term trends from experience (Kahneman 2011). If an Extension agent began a conversation with, “In what ways is the weather now different from the ways it used to be?” people would be invited to compare observations to their sense of long-term climate assumptions. This might help

switch their attention to those climate trends. If audiences are most concerned about solutions to variable weather phenomena, the program could continue with strategies to reduce risk by preparing for extreme events.

The climate system is complex and some of the most important variables (such as carbon emissions) could change in the future, creating uncertainty in the forecasts. Climate predictions for specific locations are not easily created from large scale datasets. Changes in temperature can impact a number of other variables, such as wind and ocean currents, which can affect precipitation patterns, which can change the location and extent of snowfall and rainfall events (NRC 2012). Complex feedback loops and relationships between climate variables are still being explored as more scientists investigate the relationships in complex climate systems.

Many scientists rely on models, which are by definition a simplification of reality. A model can predict an accurate outcome only if all of the important variables and relationships are included. Models for the planet may not address local geography, so projecting what changes will happen at any place on the planet is extremely challenging. Any good scientist will explain the degree to which their projection is likely, and this statement of uncertainty makes it that much harder for the public to understand and believe the message (Shome & Marx 2009).

News articles commonly mention “global climate change,” as if the entire planet will experience the same changes. The Earth normally has both very wet and very dry regions, and climate projections suggest some will be wetter and others will be drier. Even locally there will be variability. Plants and animals that live on the edge of their range may find the future habitat more challenging, or more conducive to range expansion. The variety of possible outcomes of climate change may be too numerous to imagine, which leads people to focus on either the most likely scenarios or the most impactful.

So a good deal of why climate change communication is a challenge is simply a function of the topic (Weber & Stern 2011). It is complicated, hard to simplify, uncertain, yet likely to manifest in many different ways depending on where you are. If agents can offer local examples of visible

differences, research-based evidence of changes over time, and suggestions for how people are likely to be affected by climate change in the local region, audiences will be more likely to listen.

CHALLENGE #2: PEOPLE LEARN AND REMEMBER SELECTIVELY

People learn most easily from their experience. The more likely an experience is to be repeated, the more likely we are to commit our reactions to memory and better prepare for the next time (Kaplan & Kaplan 1982). After burning a finger while taking a pan from the oven, we will likely readjust the mitt the next time. Painful impacts command our attention.

When we are not guided by experience, we learn from the next best thing. This might be through stories, vivid examples, or television coverage that mimics experience and can assist us in learning about the possibilities of beating Goliath or setting foot on the moon (Kaplan & Kaplan 1982). It might also be from people we trust to give us good advice and to whom we pay close attention (Kahneman & Tversky 1973). A friend’s complaints about a new car, for example, may be enough to cause people to avoid that model when they consider a purchase.

In addition to these characteristics that affect what we choose to remember, people are also selective when it comes to what they perceive (Kaplan & Kaplan 1982). The world is loaded with information that competes for our attention so we tend to perceive those things that match what we expect to see (Nickerson 1998, Jones & Sugden 2001) or that confirm what we think. Competing sports fans do not see the same evidence the referees see, despite the replayed telecast. We even avoid reading articles that we deem to be wastes of time if we do not agree with the line of reasoning presented. This tendency to perceive selectively makes it difficult for people to learn information that conflicts with what they believe to be true (Centola, Gonzalez-Avella, Eguiluz, and Miguel 2007; McCright & Dunlap 2011).

These features of human perception have several implications for learning about climate change. First, if climate changes have not been experienced, it is difficult to accept the new information as fact. Second, if personal



experiences have not been significant, important, or obvious, once again new information is more likely to be ignored. Climate changes may be everywhere but if people are not living on mountaintops or in the Arctic the change may be too subtle to perceive or not relevant enough to warrant concern. Third, we believe those we trust. For Extension agents who are trusted purveyors of science-based information, this is an important lever for climate change education and worth additional background to better understand (see challenge #3). And fourth, we are most likely to listen to what we already believe. Including information that people trust, and therefore, believe, while introducing new information may help people begin to listen.

CHALLENGE #3: PEOPLE PAY ATTENTION TO PEOPLE WHO ARE LIKE THEM

The Cooperative Extension Service has become a leading agency in encouraging behavior change, in part because we hire agents who are similar to the audiences with whom they work (Rogers 2003). County staff shop, send their children to school, and participate in the communities they serve. To the extent that Extension agents are similar to their audience, they can be trusted to provide reasonable, useful, and helpful information.

When it comes to an issue as divisive as climate change, researchers suggest that something else is affecting how people perceive information. Rather than accepting all information as neutral and equivalent, the Identity

Protective Cognition theory posits that along with content, information carries cultural meanings. Prior beliefs and expectations are activated, and so are attitudes, values, and worldviews (McCright & Dunlap 2011). Messages that conflict with cultural norms can be more easily dismissed than messages that recognize and support those norms, even if the information is similar.

Thus, the implications for climate change communication are important. Not only are we more likely to pay attention to someone who is similar to us, we also trust information from those we respect (McPherson, Smith-Lovin & Cook 2001, Moser 2010). For example, political leaders and celebrities may not be climatologists, but their views carry weight among the general public. A careful communicator can create a message or communication ‘frame’ that resonates with an audience by establishing a bond that speaks to a common culture, using key phrases, and addressing cherished values (Nesbit 2009).

CHALLENGE #4: AUDIENCES VARY

The final challenge for communicating about climate change is that many groups are likely to include people who have different and even opposite perspectives about climate change (Leiserowitz, Maibach, Roser-Renouf & Hmielowski 2012). Researchers at Yale and George Mason Universities have surveyed public opinion over the last decade to ascertain beliefs about climate, risk, and willingness to act. They categorized respondents into six groups (Maibach, Leiserowitz, Roser-Renouf & Mertz 2011)

Six Americas Audience Categories	Description	You might hear
Alarmed	Convinced global warming is a serious and urgent threat; highly engaged; most likely to change behavior.	I'm so upset and worried about the future.
Concerned	Convinced global warming is a serious threat; somewhat engaged; less likely to change behavior	I think this is something politicians should address.
Cautious	Believe global warming is a problem but not a personal or urgent threat	So what is it all about?
Disengaged	Give little thought to global warming; change beliefs easily; not perceived as a problem for them	I have other things to think about, like how to pay the bills
Doubtful	Not sure if global warming is happening	Seems like climate always changes. This is a political issue.
Dismissive	Firmly believe global warming is not occurring; highly engaged in preventing change in policies; very knowledgeable	It's arrogant to believe people can change the climate. There is evidence the scientists are wrong.

Table 1. Six Americas Categories, adapted from Leiserowitz et al. 2012



based on respondents' perceptions. Table 1 describes these six categories of perceptions of global warming, which they defined as recent increase in temperature and interpret as perceptions of recent climate change, and offers sample comments that portray how people think about this issue. Extension agents who embark on climate education programs may wish to ask a few questions of an audience to determine whether the full range of possible perceptions are present (e.g., Do you believe natural causes of climate variation are equally or more important in explaining recent changes? Do you trust climate scientists to convey accurate and honest information?). Individuals are not likely to shift between categories quickly, and conversion should not be a goal of an Extension program. Rather, answering questions and providing information in a way that people can hear and understand it would be more feasible.

SUMMARY

Extension agents can use human characteristics and psychological theories to inform approaches to climate change programming (Fraisie, Breuer, Zierden & Ingram 2009, Pike, Doppelt & Herr 2010, Shome & Marx 2009). Relaying an understanding climate change is not easily accomplished in one presentation or program, so agents might consider a strategy that introduces information over time and then asks participants what they want to know more about to guide the development of future programs and selection of speakers. An Extension agent may be more likely to be a respected source of information when they use communication frames that the audience is likely to care about, such as the health and welfare of their families

and the community, or the responsibility they might feel for vulnerable populations of people and animals in more distant places. Those who are firmly convinced that humans have not altered the climate may still be willing to think about how they can adapt to an uncertain future, since recent evidence suggests that some effects of climate change are happening more quickly than anticipated. Those who feel responsible for the impacts their actions may be causing may be curious to learn more about alternative strategies they can adopt to mitigate climate change. Fact Sheet #2 explores general guidelines and offers specific tips for how to engage stakeholders in constructive dialogue and learning about climate change.

Extension agents may be unaccustomed to engaging audiences who perceive climate change information as controversial, scientists to be untrustworthy, or the media to be conveying falsehoods. Understanding that the sources of these perceptions arise from our human nature may make it easier to plan a program that conveys a position that with everyone working together and with all of the available evidence, we can determine the most practical solutions to our climate challenges.

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