Building Resilience in Agriculture & Forestry: A Regional Extension Perspective

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Background

- USDA-funded Coordinated Agricultural Programs

Mapping the future of pine management in a changing world
Outline

• Understanding stakeholders
• Influencing change
• What have we done?
• What has worked?
• Lessons Learned
Building Resilience in Agriculture and Forestry

- Resilience is the capacity of a socio-ecological system to withstand stressors and maintain function.
- Influence agriculture and forestry stakeholders to adapt their practices to have more resilient farms and forests.

How can we influence people to make changes?
Climate Change has a trust issue

“Is this a bunch of made up political and institutional media bullcrap or what?”

“First, define “climate change.” The climate is always changing- always has and always will as long as earth exists. Is “climate change” a new term for manmade global warming?

Climate change is a frequent issue in the media, so people are thinking about it and asking about it from the standpoint of: where is this going to lead us, down the road, in terms of being able to depend on the forest as a resource for future harvests and income, etc. Folks are concerned whether they believe climate change Is happening due to fossil fuels, nature, or some combination of human activities and nature.”
Stakeholders
Stakeholders
Stakeholders
Stakeholders

- Farmers
- Forest landowners
- Foresters
- Forest Industry
- Extension agents
  - Agriculture
  - Natural resources
  - Forestry
Influence Change-makers

Land Grant University System & the Cooperative Extension System

- Cooperative Extension Service is built on trust
- Get Extension on your side
- Early Adopters
- Behind on this issue (sometimes)
Understanding Stakeholders

- Surveys
- Needs assessments
- Informal dialogue

ONE DOES NOT SIMPLY TALK ABOUT CLIMATE CHANGE WITHOUT UNDERSTANDING STAKEHOLDERS
Extension Agents’ Perceptions - 2012

- Alarmed
- Concerned
- Cautious
- Disengaged
- Doubtful
- Dismissive

U.S. (n=1000) vs. Southeast Extension (n=2589)
Foresters’ Perceptions - 2013

What is causing climate change?

- 61% Climate change is occurring
- 33% Unsure/not enough evidence
- 6% Climate change is not occurring
Perceptions vary by state

Perceptions can change over time
Climate change attitude has a significant influence on individuals’ personal perceptions and management actions.

1. Observe climate-related changes in their environment
2. Consider those changes relevant to forestry
3. Think those changes will require different management strategies

Morris, H., Megalos, M., Boby, L. and Hubbard, W. 2016
What have we done/are doing?

- Climate Academy
- Webinars, Factsheets, Decision Support Tool
- Workshops
- Guidebook to forest management
- Partnerships

Healthy Forests
Managing for Resilience

Protecting Your Forest Asset
Managing Risks in Changing Times

Private forest owners control most of the southern forest resource and are critical to maintaining forest health in the South. Record droughts, rising temperatures, increased frequency and intensity of wildfires, insect and plant invasions, and more intense storm events all pose threats to the health of Southern forests. Scientists project that increases in temperature and changes in rainfall patterns will cause these disturbances to become more common, occurring with greater intensity or duration. This pamphlet reviews healthy forest strategies and approaches to decrease the risks associated with these disturbances on your forestland.

The use of sound management practices can prepare and protect trees and other forest resources from increasing risks. When initially owned, it is critical to take appropriate actions to improve forest health.
• Multiple approaches

• Focus on what foresters/farmers/Extension are already interested in

• Doing the “right” thing for climate change is good overall for business

Education program on adaptive forest management actions
Education program on adaptive forest management actions

- Education programs for "early adopter" foresters who agree that climate is changing
- Information to increase forest resilience
- Risk management for forest health and productivity
- Climate-based forest management tools: promotion and training
- Assessing stand vulnerability
- Silvicultural actions (climate-based)
- Planting guidelines, seedling selection, and genetics
- Growth and yield models (climate-sensitive)

Boby, L., Hubbard, W., Morris, H., and Megalos, M., 2016
Southern Region Extension Climate Academy (SRECA)

- To build capacity among Extension professionals to be leaders in their state for appropriate and relevant programming in climate variability and change.
Southern Region Extension Climate Academy (SRECA)

- 122 participants - 15 states
- Selected by Extension leaders
- Multi-sector
  - four target areas: Crops, Livestock, Forestry, and Coasts.
Changes in perceptions - SRECA

www.srecablog.wordpress.com
PINEMAP
Decision Support System
www.pinemapdss.com
Guidebook to Forest Management

PREPARATION

- Make contact with people that can provide services and expertise:
  - Local state forest agency office
  - State forestry association and local landowner association
  - NRCS district conservationist
  - Find a professional consulting forester (see "how to..." publication) with knowledge and experience with modern forest management strategies

- Explore future climate opportunities/risks at DSS

- Develop a realistic forest management plan:
  - Scale / size / sustainability
  - Primary goal to promote health, vigor, resilience
  - Secondary goal in timber production
  - Considers future climate opportunities/risks
  - Market conditions

- Prepare and submit tax and cost assistance documents:
  - Submitted paperwork to establish farm number in order to apply for EQIP
  - Tax appraisal district - Property tax valuation

- Outline steps to achieve goal

- Locate suitable contractors to complete the task by machine, tractor or hand

ACTIVITIES CHECK-LIST

- Conduct pre-harvest / harvest activities minimize cost and foster establishment the next forest stand:
  - Prescribed burning before harvest
  - No excessive debris during harvest operation - written in contract
  - Removing merchantable stems
  - "Mowing" pre-merchantable stems
  - Timing of harvest

- Order pine seedlings early in the season (Jan/Feb):
  - Save time and money - allow the vendor to order
  - 8% more than needed (425 trees to the acre * 1.05 = 450 seedlings per acre)
  - Match genetics with silviculture, soil expectations, objectives, tract size - 4 star rating system

*Preparation

Lessons Learned-
what did not work!

- Completely skipping the “climate talk”
- Trying to convince everyone about climate change
Lessons Learned

- Climate change is about environmental Stress
- Risk Management is Key
- Link to Local Issues
- Focus on what can/should be done
- Provide Sound research, recommendations and tools
Building Resilience Requires Changes & Adapting

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<th>Reach people at multiple levels</th>
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<td>early adopters</td>
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"Believing" in climate change is helpful, but not necessary

- plan programs around other risks
- many ways to influence change

Extension is important

- science-based organization
- some support from Extension directors
DO YOU HAVE ANY "QUESTIONS"